

# Manufacturing: Industry Profile

MAY 2023

State of Maine - DECD



**Department of Economic  
& Community Development**

# PROJECT OVERVIEW

## Report Purpose

This document provides an in-depth analysis of the Manufacturing sector in Maine, including its domestic trade activity.

Industry classification ranges from 2-digit industries (most broad) to 6-digit industries (most specific) under the North American Industry Classification System (NAICS). This report focuses on the 3- to 6-digit industry level to give more detailed analysis of Maine's domestic trade activity in the Manufacturing sector. For details about all industries that are included in this analysis, please see the Appendix. Manufacturing subsectors will be examined in greater detail in subsequent domestic trade profiles.

## Project Funding

This project is commissioned by the Office of Business Development through the Domestic Trade Pilot Program and is funded in part by the Maine Jobs and Recovery Plan.

## Data

The most recent year of data in this report is 2022. Five-year growth rates refer to changes from 2017-2022, and five-year projections refer to 2022-2027, unless otherwise specified. For more information about the data used in this report, see the Appendix – Data Sources.

## Consultant Team



Jim Damicis, Senior Vice President  
Project Principal

Jessica Tagliafierro, Director of Impact Analysis  
Senior Analyst

Tori McNiff  
Project Manager

Angela Hallowell  
Project Analyst

Stephen Houdlette  
Project Analyst

# KEY FINDINGS

## Manufacturing Sector

**The sector has seen strong growth in the last five years**, adding nearly 3,500 jobs, totaling 6.5% growth since 2017. The sector is also projected to grow by an additional 1,400 jobs between 2022-2027. Sectors like Chemical Manufacturing (driven by Pharmaceutical and Medical Manufacturing subsectors), Transportation Equipment Manufacturing, and Beverage Manufacturing lead the sector for growth and projected growth.

**Maine has room to improve to meet demand in-state.** In 2022, 82% of total demand for the manufacturing sector was met by out-of-state sources. This ranks Maine 36<sup>th</sup> in the nation for in-region demand, indicating that the B2B sales environment for the sector in Maine may not be keeping up with national trends.

**The sector has strong trade activity**, with 82% of all sector sales being exported outside of Maine. Some opportunities for domestic trade growth can be found in South Atlantic and some Midwest states, which have generally high rates of imported demand in the sector.

**Manufacturing has relatively average concentration**, with roughly the same share of the overall workforce as the nation. That said, certain industries within Manufacturing are highly concentrated and make up integral parts of Maine's economy. Paper & Wood Product Manufacturing; Textile Product Mills; Transportation Equipment Manufacturing (including Ship Building); Beverage Manufacturing; and Chemical Manufacturing are examples of highly-concentrated subsectors within the Manufacturing sectors.

## Subsectors included in this report

- **311 Food Manufacturing**
- **312 Beverage and Tobacco Product Manufacturing**
- **313 Textile Mills**
- **314 Textile Product Mills**
- **315 Apparel Manufacturing**
- **316 Leather and Allied Product Manufacturing**
- **321 Wood Product Manufacturing**
- **322 Paper Manufacturing**
- **323 Printing and Related Support Activities**
- **324 Petroleum and Coal Products Manufacturing**
- **325 Pharmaceutical, Medical, and Other Chemical Manufacturing**
- **326 Plastics and Rubber Products Manufacturing**
- **327 Nonmetallic Mineral Product Manufacturing**
- **331 Primary Metal Manufacturing**
- **332 Fabricated Metal Product Manufacturing**
- **333 Machinery Manufacturing**
- **334 Computer and Electronic Product Manufacturing**
- **335 Electrical Equipment, Appliance, and Component Manufacturing**
- **336 Transportation Equipment Manufacturing**
- **337 Furniture and Related Product Manufacturing**
- **339 Miscellaneous Manufacturing**

Additional profiles will be completed to provide in-depth analysis of specific manufacturing subsectors in Maine.

# NATIONAL TRENDS

## KEY TRENDS

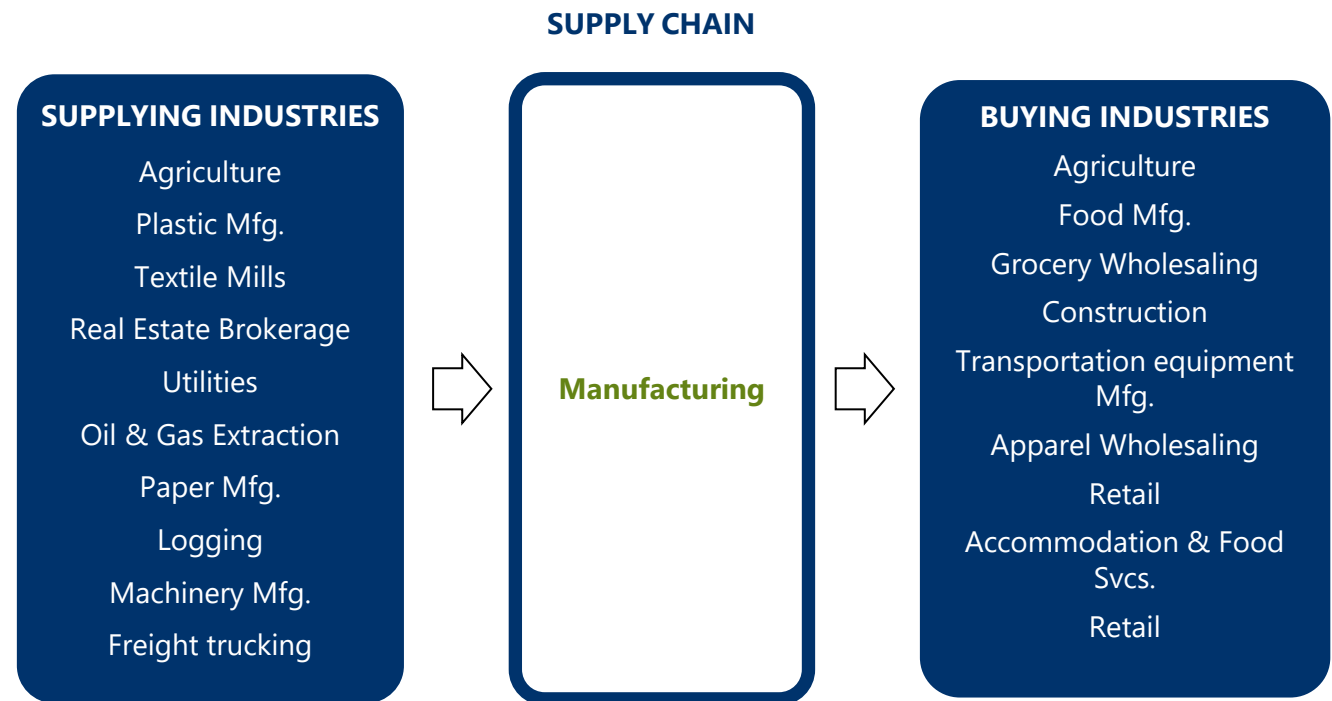
- The sector has been in a highly globalized state for the last few years.
- The value of the dollar tends to negatively correlate with sector revenue. Thus, recent declines in the strength of the US dollar relative to other currencies has benefitted sector revenues.
- The number of manufacturing establishments is estimated to increase.
- Process and product innovation in the sector will likely make domestic products more desirable on the international market.
- Sector employment is expected to increase over the next five years.
- Manufacturers are likely to rely on diverse global supply chains.
- Volatility in commodity prices, trade tensions, and coronavirus-induced tepid global demand have led industry exports to decline nationally.

## RECENT DEVELOPMENTS

- Spiraling inflation causes product prices to rise, leading to reduced consumer purchasing power and slight decreases in discretionary manufacturing items.
- Producers are burdened by parts shortages and delays translated into higher costs for finished products in 2022.
- US factory jobs have expanded since the pandemic, a trend that is forecasted to continue as more consumers prefer to support domestically manufactured products.

## INDUSTRY DRIVERS

- World price of crude oil
- US Gross Domestic Product
- Trade-weighted index
- World price of steel
- Manufacturing Capacity Utilization



Source: IBISWorld

## DATA NOTE:

This page provides a brief qualitative overview of macro trends facing this sector and structural causes of growth for the sector. A supply chain summary shows key industries upstream and downstream of the sector. Trends and projections noted by IBISWorld typically reflect a period of +/- 5 years

# NATIONAL TRENDS



**Jobs (2022)**  
16 Million



**Job Growth**  
2017-2022: 6.9%  
2022-2027 Projected: 0.2%



**Establishments (2022)**  
785,274



**Avg. earnings (2022)**  
\$65,716



**Domestic Demand (2022)**  
\$10.4 Trillion

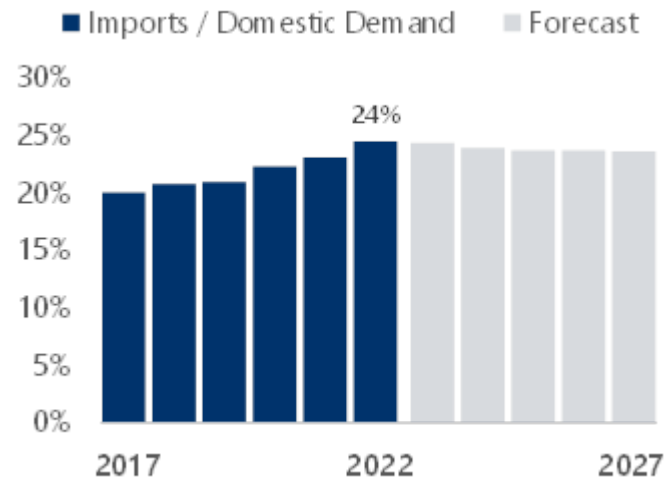


**Top Partners (2022)**  
Imports: China, Mexico, Canada, Japan, Germany  
Exports: Canada, Mexico, China, Germany, Japan

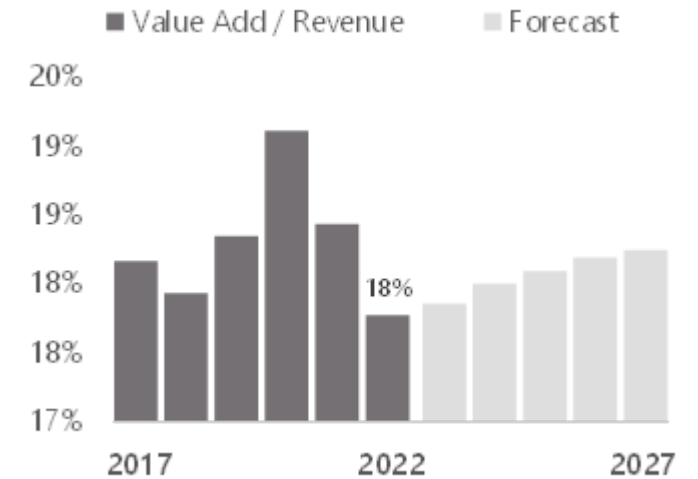
**The exports share of revenue** was 17% in 2022. This indicator shows the relative importance of exports to the sector's overall revenue strength.



**The imports share of domestic demand** was 24% in 2022. This demonstrates how much of demand for the sector's products in the US are met by foreign imports.



**The value-add-to-revenue ratio** was 18% in 2022. This indicator shows how much value the production process adds to products relative to the overall size of the sector.



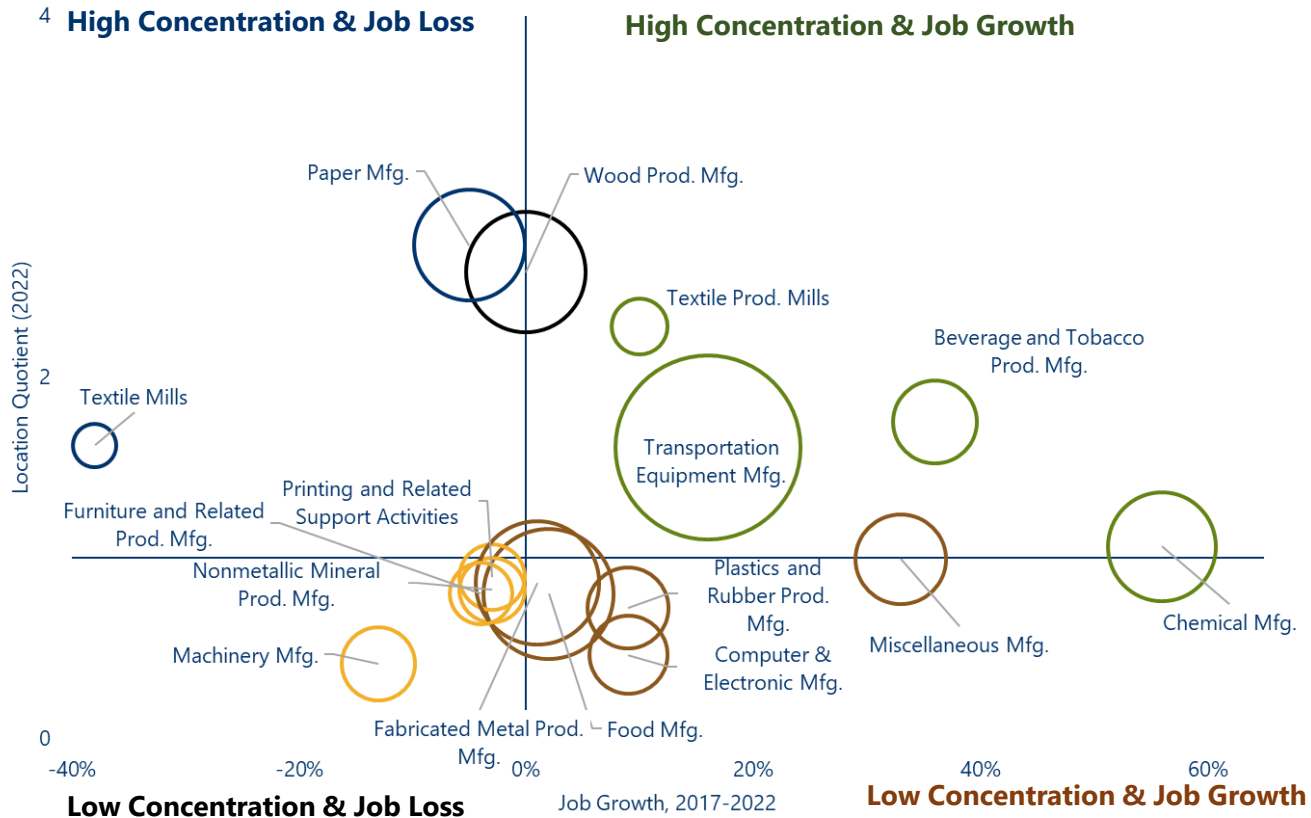
# SECTOR SUMMARY

Manufacturing Summary		
<b>Jobs: 56,881</b> <ul style="list-style-type: none"> <li>Data for 2022</li> <li>7.9% of the State's total employment</li> </ul>	<b>Job Growth: +3,494, +6.5%</b> <ul style="list-style-type: none"> <li>Data compares 2017-2022</li> <li>Gains in sectors like Chemical Manufacturing, Transport Equip. Mfg, and others outweigh losses in sectors like Leather &amp; Allied Product Mfg, Textile Mills, Machinery Mfg and others.</li> </ul>	<b>Job Growth Projection: +1,376</b> <ul style="list-style-type: none"> <li>Data compares 2017-2022</li> <li>While some industries are projected to grow (Chemical Mfg, Transportation Equip Mfg, Beverage Mfg), others are projected to decline (Paper Mfg, Wood Product Mfg, Leather and Allied Product Mfg)</li> </ul>
<b>Concentration: 1.03</b> <ul style="list-style-type: none"> <li>Data for 2022</li> <li>Jobs are approximately as concentrated in the sector as the United States average. Industries like Pulp &amp; Paper Mills, Footwear Mfg, Ship and Boat Building, and Sawmills have stronger concentration.</li> </ul>	<b>Establishments: 1,887</b> <ul style="list-style-type: none"> <li>Data for 2022</li> <li>30 jobs per establishment, lower than the nation (34)</li> </ul>	<b>Average Earnings: \$79,164</b> <ul style="list-style-type: none"> <li>Data for 2022</li> <li>Higher than the State's average earnings across all industries (\$66,730)</li> <li>Lower than the national average for the sector (\$96,088)</li> </ul>
<b>Competitive Effect: +1,990</b> <ul style="list-style-type: none"> <li>Data compares 2017-2022</li> <li>Local competitive factors contribute more jobs than would be expected if Maine were trending with national and industry growth</li> </ul>	<b>Gross Regional Product: \$8.8 Billion</b> <ul style="list-style-type: none"> <li>Data for 2022</li> <li>10.4% of Maine's total GRP A similar share as the US (10.9% of total GRP)</li> </ul>	<b>Productivity: \$154,194</b> <ul style="list-style-type: none"> <li>Data for 2022</li> <li>GRP Per Worker</li> <li>Lower than the figure for the United States, \$207,574</li> </ul>
<b>Total Sales: \$19.5 Billion</b> <ul style="list-style-type: none"> <li>Data for 2022</li> <li>82% of sales exported out of state</li> <li>Accounts for 11.5% of Maine's total sales, slightly underperforming the nation (13.7% of total sales)</li> </ul>	<b>Demand: \$19.5 Billion</b> <ul style="list-style-type: none"> <li>Data for 2022</li> <li>82% of Maine's Manufacturing demand is met by out-of-state sources</li> </ul>	<b>Leakage: \$15.9 Billion</b> <ul style="list-style-type: none"> <li>Data for 2022</li> <li>An estimated \$15.9 billion could be recaptured by Maine firms.</li> </ul>

Source: Lightcast

**DATA NOTE:** National figures on this page were calculated using a different source than on page 5, which may lead to some differences.

# KEY SUBSECTORS



Bubble size = 2022 jobs

**Source:** Lightcast, Camoin Associates

**Note:** Figure includes 3-digit NAICS industries and aggregated industry groups with at least 500 jobs in 2022. Leather & Allied Product Mfg excluded for clarity (LQ=11.0, -24% decline, 1,453 jobs)

## Findings:

- Several subsectors are both strong and growing, Textile Product Mills, Transportation Equipment, Beverage & Tobacco, and Chemical Manufacturing. Transportation Equipment includes shipbuilding and aerospace sectors.
- Three are strong but declining (legacy): Paper, Textile Mills, and Leather & Allied Products (excluded for clarity – 11.0 LQ).
- Plastics & Rubber, Computer & Electronic, Food, Fabricated Metal, and Misc. Manufacturing can be considered as “emerging”, with LQ<1 but job growth from 2017-2022.
- The strength and growth in chemical manufacturing is driven by biological product, pharmaceutical, and medical manufacturing.
- Note: Textile Mills and Textile Product Mills are two different sectors. Textile Mills describes businesses that turn basic or raw fiber into textiles like yarn or fabric that can be turned into other items. Textile Product Mills describes businesses that then turn these textiles into products like curtains, sheets, towels, etc.

## Industries Included:

- Apparel & Leather Product Manufacturing
- Pharmaceutical, Medical, and Other Chemical Manufacturing
- Computer, Electronic, Electrical Equipment, and Appliance Manufacturing
- Food & Beverage Manufacturing
- Furniture & Related Product Manufacturing
- Machinery Manufacturing
- Misc. Manufacturing
- Nonmetallic Mineral Product Manufacturing
- Paper Manufacturing
- Petroleum and Coal Products Manufacturing
- Plastics & Rubber Product Manufacturing
- Primary & Fabricated Metal Product Mfg.
- Printing & Related Support Activities
- Textile Mills & Textile Product Mills
- Transportation Equipment Manufacturing
- Wood Product Manufacturing

## DATA NOTE:

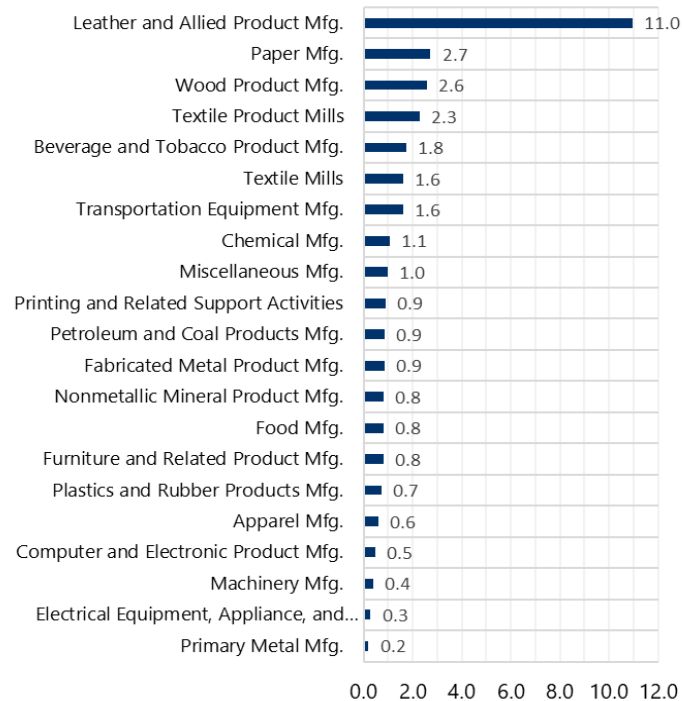
There are three performance measures in the chart above that combine to relate the competitiveness of this activity, (1) bubble size is size of industry by jobs, (2) vertical axis measures industry concentration in Maine, (3) horizontal axis measures recent jobs growth.

# KEY SUBSECTOR PERFORMANCE

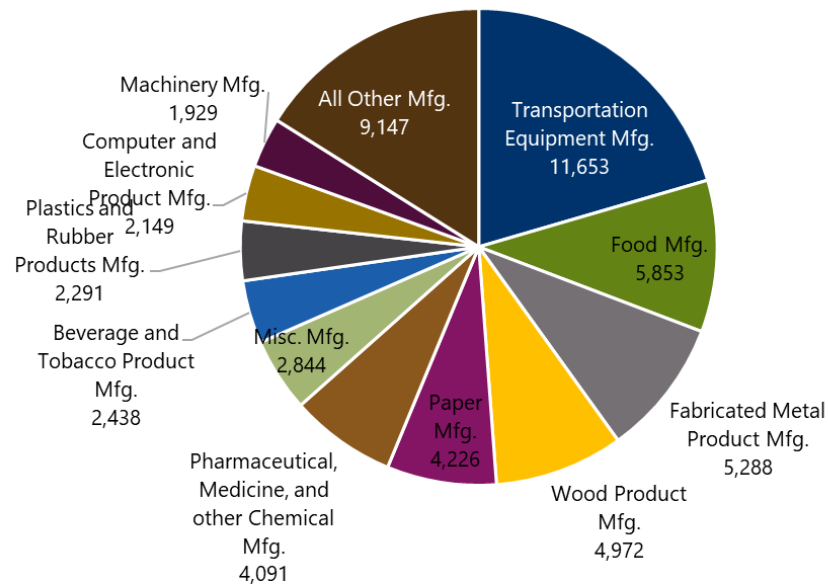
In 2022, Maine had 56,881 jobs in the Manufacturing Sector

- **Maine’s Manufacturing Sector outpaces the nation’s growth**, with 7.0% growth over the last five years compared to 1.4% nationwide. Additionally, Maine’s Manufacturing Sector has a strong competitive effect, adding almost 2,000 more jobs than would be expected given national and overall industry trends. However, the state lags the nation in productivity and wages.
- **Transportation Equipment Manufacturing, which includes Ship & Boat Building and Aerospace-related manufacturing, is the largest key subsector**, with over 11,600 jobs in 2022. It has a Location Quotient of 1.6, meaning it is 1.6 times more specialized than would be expected for an economy of Maine’s size. This subsector also makes up the largest sector by GRP, coming in at almost \$1.4 billion in 2022.
- **Pharmaceutical and Medical Manufacturing has grown significantly last five years**, adding 1,369 jobs. This industry makes up 85% of Maine’s Chemical Manufacturing sector. Chemical manufacturing is the highest-earning subsector within the Manufacturing sector, with average earnings of almost \$132,000 in 2022. This subsector also has the highest productivity, with GRP per worker of \$393,000 in 2022.
- **Leather and Allied Product Manufacturing is the most specialized in Maine**, with a Location Quotient of 11.0. Within this subsector, Footwear Manufacturing has the highest LQ at 23.6. This sector includes businesses like LL Bean and New Balance.

Location Quotients of Manufacturing Industries (2022)



Job Distribution (2022)



Source: Lightcast

## DATA NOTE:

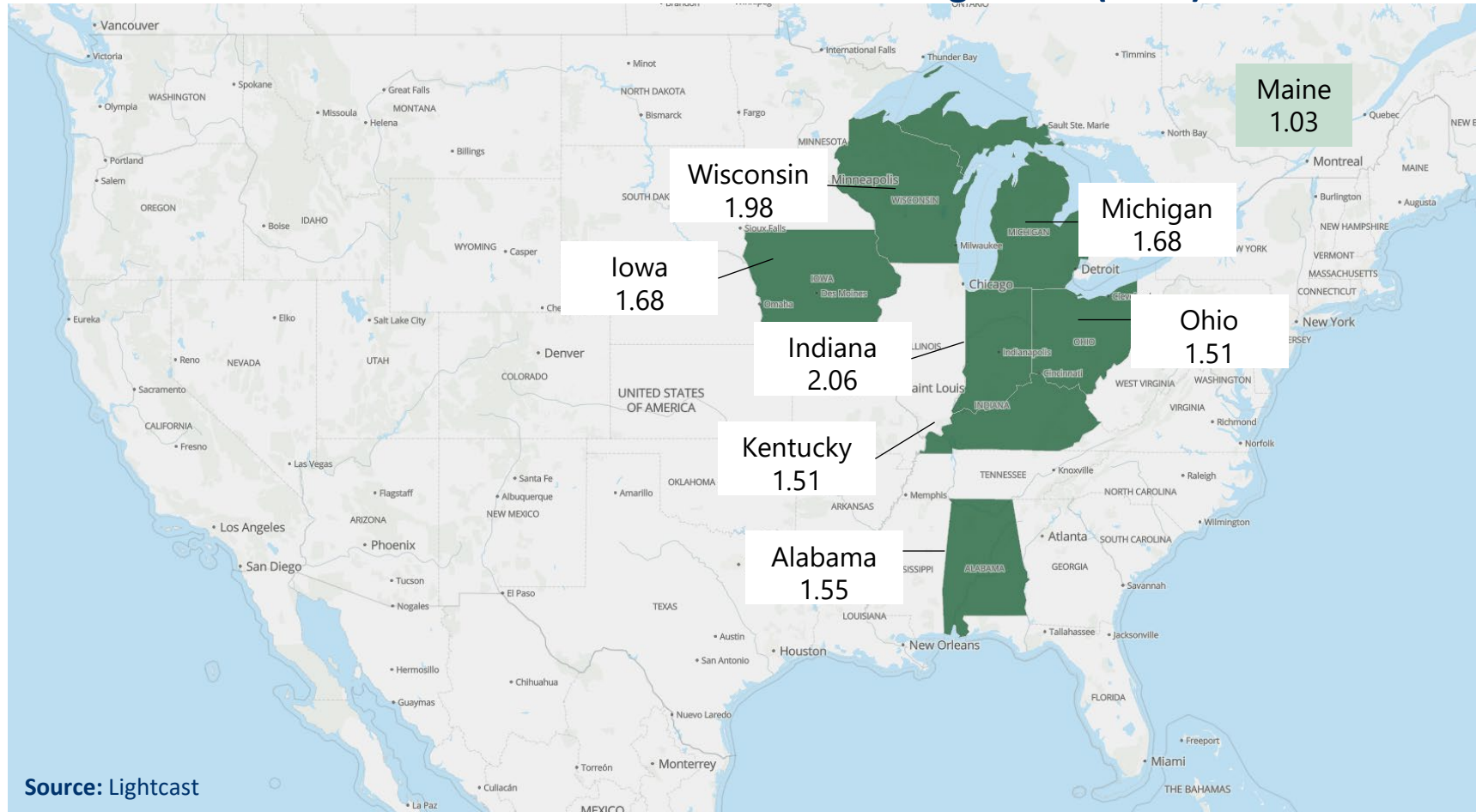
**Location quotient (LQ)** is a measure of industry concentration within a region. An LQ of 1.0 means that an industry is as concentrated within the region as it is on a national level. An LQ greater than 1.0 indicates that an industry is more concentrated in a region than at the national level.

The **competitive effect** illustrates how much change in an industry is not explained by national economic or industry trends. A positive competitive effect means that the region has unique characteristics giving it a competitive advantage in that respective industry. However, a negative competitive effect indicates that an industry is either not growing as quickly *or* shrinking faster than national industry trends for the US.



# KEY NATIONAL PLAYERS

## States with >1.5 Location Quotient for the Manufacturing Sector (2022)



### DATA NOTE:

**Location quotient (LQ)** is a measure of industry concentration within a region. An LQ of 1.0 means that an industry is as concentrated within the region as it is on a national level. An LQ greater than 1.0 indicates that an industry is more concentrated in a region than at the national level.

---

# Industry Demand and Purchases

---

Where is Maine's Manufacturing sector buying from?

# PURCHASING INDUSTRIES

## Industries Maine Manufacturing Purchases From

Top 25 Industries the Manufacturing Sector Purchases From, 2022

NAICS	Purchases from	In-region Purchases	% In-region Purchases	Imported Purchases	% Imported Purchases	Total Purchases
551114	Corporate, Subsidiary, and Regional Managing Offices	\$280,828,122	65.50%	\$147,624,447	34.50%	\$428,452,569
<b>321113</b>	<b>Sawmills</b>	\$254,479,588	92.00%	\$22,124,084	8.00%	\$276,603,673
113310	Logging	\$236,850,107	95.40%	\$11,459,732	4.60%	\$248,309,839
112000	Animal Production	\$33,385,415	16.10%	\$174,414,037	83.90%	\$207,799,452
493110	General Warehousing and Storage	\$71,081,708	37.70%	\$117,563,816	62.30%	\$188,645,524
111000	Crop Production	\$111,844,911	59.70%	\$75,401,107	40.30%	\$187,246,018
<b>331110</b>	<b>Iron and Steel Mills and Ferroalloy Manufacturing</b>	\$1,077,117	0.60%	\$182,173,608	99.40%	\$183,250,726
<b>324110</b>	<b>Petroleum Refineries</b>	\$0	0.00%	\$130,673,003	100.00%	\$130,673,003
484121	General Freight Trucking, Long-Distance, Truckload	\$79,978,066	65.20%	\$42,670,953	34.80%	\$122,649,018
<b>325211</b>	<b>Plastics Material and Resin Manufacturing</b>	\$12,310,352	10.50%	\$104,832,969	89.50%	\$117,143,321
424210	Drugs and Druggists' Sundries Merchant Wholesalers	\$46,214,010	39.60%	\$70,356,392	60.40%	\$116,570,402
<b>322211</b>	<b>Corrugated and Solid Fiber Box Manufacturing</b>	\$20,090,254	18.60%	\$88,143,732	81.40%	\$108,233,985
541110	Offices of Lawyers	\$54,347,223	55.20%	\$44,093,754	44.80%	\$98,440,977
<b>332710</b>	<b>Machine Shops</b>	\$25,547,959	27.00%	\$69,101,064	73.00%	\$94,649,023
482110	Rail transportation	\$54,511,214	60.10%	\$36,123,732	39.90%	\$90,634,946
<b>325199</b>	<b>All Other Basic Organic Chemical Manufacturing</b>	\$1,783,469	2.00%	\$87,370,321	98.00%	\$89,153,790
<b>336412</b>	<b>Aircraft Engine and Engine Parts Manufacturing</b>	\$70,249,476	84.30%	\$13,129,334	15.70%	\$83,378,810
<b>322130</b>	<b>Paperboard Mills</b>	\$0	0.00%	\$69,215,655	100.00%	\$69,215,655
541990	All Other Professional, Scientific, and Technical Services	\$56,300,068	84.70%	\$10,151,076	15.30%	\$66,451,144
484110	General Freight Trucking, Local	\$33,322,967	52.50%	\$30,110,952	47.50%	\$63,433,918
518210	Data Processing, Hosting, and Related Services	\$14,891,574	23.70%	\$47,894,017	76.30%	\$62,785,591
533110	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	\$13,139,686	21.10%	\$49,138,518	78.90%	\$62,278,204
221122	Electric Power Distribution	\$52,376,107	86.00%	\$8,543,598	14.00%	\$60,919,705
<b>325414</b>	<b>Biological Product (except Diagnostic) Manufacturing</b>	\$45,893,544	77.30%	\$13,447,503	22.70%	\$59,341,046
<b>325411</b>	<b>Medicinal and Botanical Manufacturing</b>	\$19,120,258	34.30%	\$36,544,239	65.70%	\$55,664,497

Source: Lightcast

Note: Industries that are **bolded** indicate that they are included in the overall Manufacturing sector.

- The top 25 industries that the Manufacturing sector purchases from represent 17% of total demand. **This indicates that Manufacturing's demand is broadly spread throughout the Maine economy.**
- The Corporate, Subsidiary and Regional Managing Offices sector is the largest supplier of the Manufacturing sector**, with a total of over \$428 million in 2022. About two-thirds of these purchases were from in-region suppliers. This industry is made up of establishments such as headquarters or corporate offices that handle centralized administration of companies. These offices cut across multiple industries.
- Sawmills play a strong role in Maine Manufacturing's supply chain** and is the sector's second-largest supplier and second-largest in-state buyer overall. 92% of the state's purchases from Sawmills were in-region purchases, totaling over \$254 million statewide. The Manufacturing sector also sold over \$90 million to Sawmills in 2022.
- Logging is an important part of Maine's in-state supply chain for the Manufacturing industry.** Of the over \$248 million of goods that the Maine Manufacturing sector purchased from Logging, over 95% was from in-region sources, the highest in-region share of all industries.
- Industries like Iron and Animal Production, Iron and Steel Mills, Plastics Material and Resin Manufacturing, Corrugated and Solid Fiber Box Manufacturing, and several others present opportunities for growth in Maine**, as these are top suppliers to the Manufacturing sector but have low (<20%) shares of in-region purchases, meaning the Manufacturing sector heavily relies on imports of these products.

### DATA NOTE:

This table gives greater insight into supply chain gaps within the Manufacturing Sector. Industries that have low shares of in-region purchases indicate opportunities where Maine relies heavily on imported supply, but where Maine businesses could potentially expand to recapture transactions. The figure above is sorted by total purchases.

# DEMAND COMPARISON

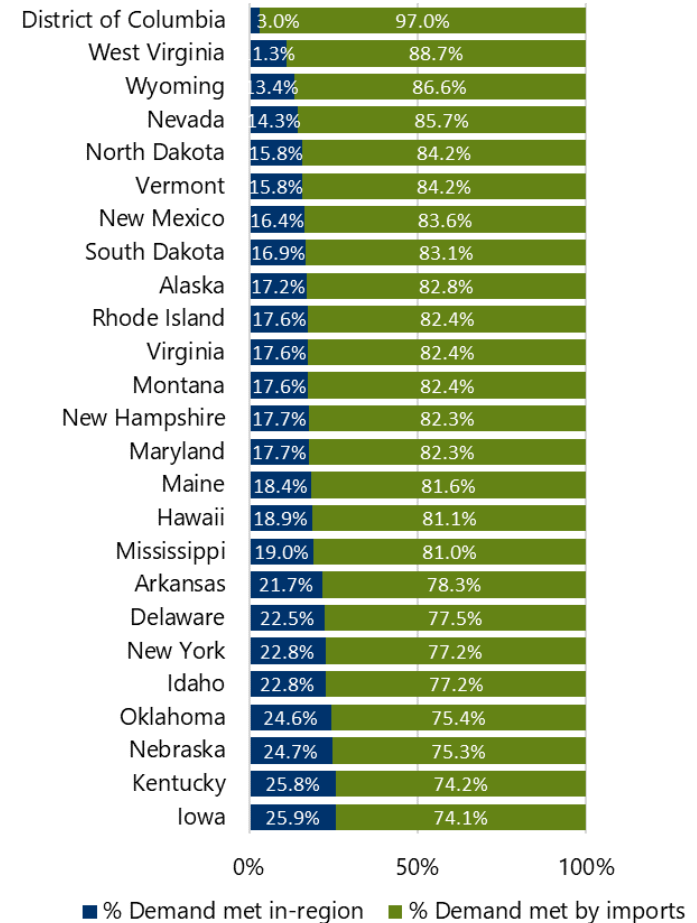
Top 10 States by Total Demand for the Manufacturing Sector (2022)

	Payrolled Business Locations	Demand met in-region	% Demand met in-region	Demand met by imports	% Demand met by imports	Total Demand
California	45,192	\$394,597,614,071	58.2%	\$283,934,616,920.00	41.8%	\$678,532,230,991
Texas	27,548	\$257,301,760,103	52.2%	\$235,986,983,013.00	47.8%	\$493,288,743,116
New York	23,426	\$84,355,122,736	29.7%	\$199,832,900,803.00	70.3%	\$284,188,023,539
Florida	18,983	\$91,815,509,957	41.4%	\$129,825,418,852.00	58.6%	\$221,640,928,809
Ohio	18,372	\$93,777,091,337	43.7%	\$120,903,414,849.00	56.3%	\$214,680,506,186
Illinois	16,026	\$74,423,861,382	22.8%	\$252,063,065,341.00	77.2%	\$326,486,926,723
Michigan	15,592	\$93,048,905,798	41.4%	\$131,598,346,745.00	58.6%	\$224,647,252,543
Pennsylvania	14,468	\$71,241,345,565	34.2%	\$136,772,293,870.00	65.8%	\$208,013,639,435
Georgia	11,410	\$52,928,196,138	31.4%	\$115,649,138,492.00	68.6%	\$168,577,334,630
North Carolina	10,614	\$50,663,408,173	30.8%	\$113,609,491,002.00	69.2%	\$164,272,899,175

Source: Lightcast

- **California has the greatest demand at \$678.5 billion in 2022**, followed by Texas (\$493.3 billion), and New York (\$284.2 billion).
- **Maine ranks 42<sup>nd</sup> among all states** for total demand.
- **The largest importer of the Manufacturing sector is the District of Columbia**, with 97.0% of total demand being met by imports in 2022.
- Maine has a comparatively low share of Manufacturing demand met in Maine, ranking **15<sup>th</sup> overall by the percent of demand met by imports**.
- **The West North Central (IA, KY, NE, ND, SD), Mountain (ID, MT, NM, NV, WY) and South Atlantic (DE, MD, VA, WV, DC) regions make up the bulk of states with the highest imported demand.**
- The states with the largest share of demand met by imports have relatively small demand for the sector overall. The top ten states for percent met by imports all rank in the bottom half of states for total demand for the manufacturing sector.

Top 25 States by Share of Sector Demand Met by Imports (2022)



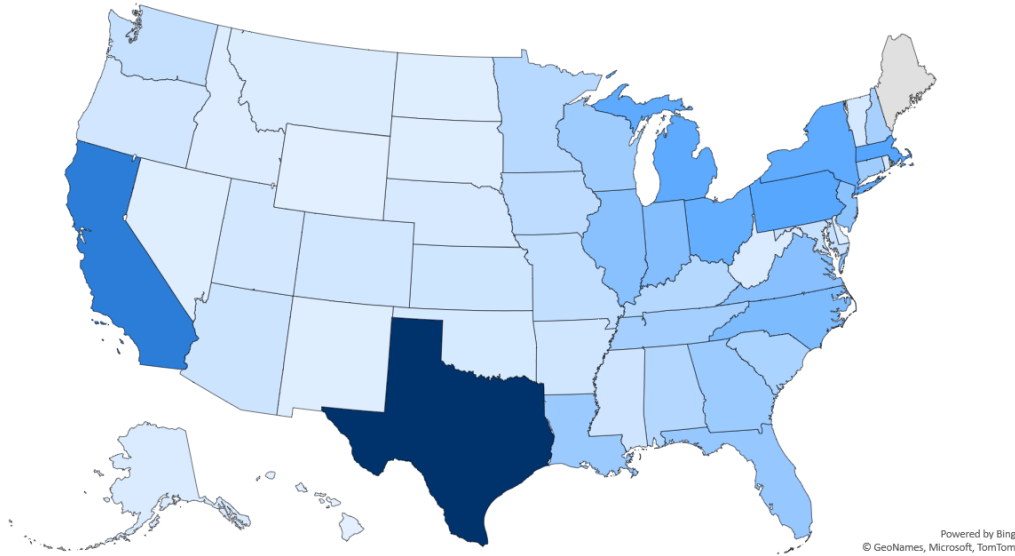
Source: Lightcast

## DATA NOTE:

Metrics for sector demand by state indicate the states that have the largest local markets for this type of activity. States whose local demand is met by imports at a high rate are using imports instead of local firms and could be a good target for Maine exports.

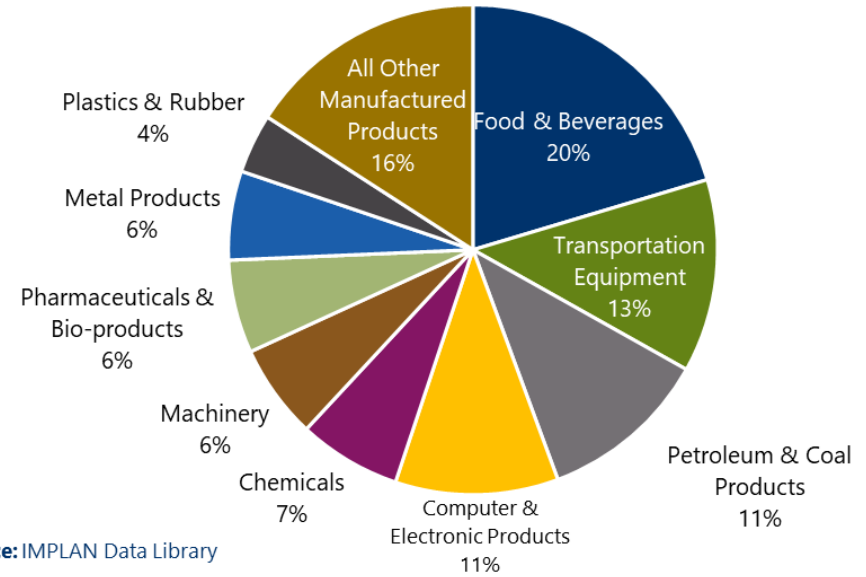
# DOMESTIC IMPORTS MANUFACTURED PRODUCTS

Out-of-State Suppliers of Manufacturing Commodities (2021)



Source: IMPLAN Data Library

Import Summary for Manufactured Products (2021)



Source: IMPLAN Data Library

## Maine imported Manufacturing products from every state in 2021.

- **California was the largest overall supplier of the Sector's commodities to Maine in 2021, with over \$2.5 billion in trade value.** Other important state suppliers were Massachusetts, Pennsylvania, and Michigan, from which Maine imported over \$1.0 billion of goods each.
- **Food, Beverages, and Tobacco makes up the largest import category,** accounting for 20% of all manufacturing imports. **Meat** was the most-imported commodity by trade value, at about \$345 million in 2021. Overall, Virginia is the largest supplier of Food, Beverages, and Tobacco products to Maine, with over half of imports from VA being tobacco products.
- **Petroleum & Coal Products account for over a tenth of Maine's domestic imports in 2021.** Imports of Refined Petroleum Products were valued at nearly \$2.2 billion. Texas was Maine's largest supplier of refined petroleum, followed by Louisiana. Maine's Climate Plan will reduce the state's reliance on these energy sources and reduce overall imports over time.
- Imports of Manufacturing products **have decreased an annual rate of 0.2% from 2011-2021. Excluding Petroleum & Coal Products, imports have increased at an annual rate of 0.4%.**

**DATA NOTE:** Figures on this page are from IMPLAN's Data Library and may not match other data in this report. IMPLAN domestic trade flows data covers commodities, or the products and services that are produced by a sector. This differs from other data in this report, which covers NAICS industries. Industries often produce more than one commodity.

# DEMAND & IMPORTS



## TOTAL DEMAND

Maine: \$19.5 Billion  
United States: \$5.6 Trillion

Source: Lightcast, US Census Bureau



## MET BY IMPORTS

Maine: \$15.9 Billion  
United States: N/A

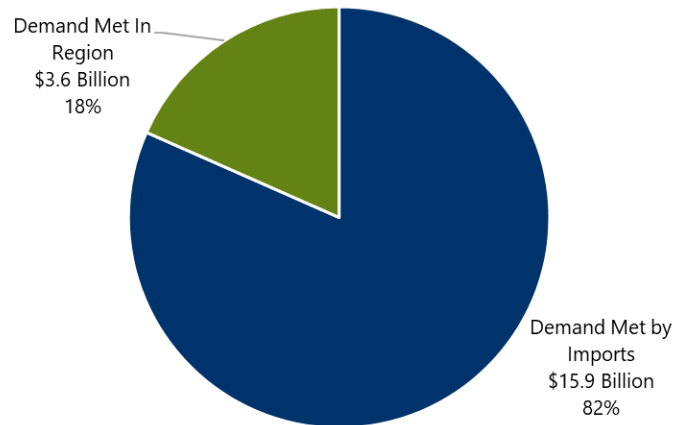


## FOREIGN IMPORTS

Maine: \$6.9 Billion  
United States: \$2.8 Trillion

- The Manufacturing Sector had a total demand of \$19.5 billion in 2022, of which 82% (\$15.9 billion) is met out of state.
- According to US Census data, the foreign import value of the sector is \$6.9 billion.
- Foreign imports account for 35.6% of total demand in the State of Maine, compared to 50.2% in the United States.
- Petroleum & Coal Products are the largest import to the Manufacturing sector, accounting for \$3.5 billion in 2022. This makes up 22.1% of total sector imports and 43.1% of total foreign imports in Maine.
- Pulp, Paper, & Paperboard Mill Products makes up both the second-largest import and export, with nearly \$449 million imported into Maine in 2022. This accounts for 2.8% of total sector imports.
- Manufacturing imports account for 85.1% of all foreign imports into the State of Maine, with a large portion due to the import of Petroleum & Coal products. Maine's high dependence on fossil fuels subsequently impacts the state's reliance on foreign imports of these goods.

Total Manufacturing Demand in Maine



Source: Lightcast

Top Foreign Imports by Value for Maine Manufacturing, 2022

Commodity	Customs Value (Gen) (\$US)	Foreign Share of Total Imports	Industry Share of Total Foreign Imports
3241 Petroleum & Coal Products	\$3,511,418,713	22.1%	43.1%
3221 Pulp, Paper & Paperboard Mill Products	\$448,891,047	2.8%	5.5%
3152 Apparel	\$277,349,002	1.7%	3.4%
3211 Sawmill & Wood Products	\$243,007,592	1.5%	3.0%
3261 Plastics Products	\$237,342,590	1.5%	2.9%
3162 Footwear	\$187,218,724	1.2%	2.3%
3364 Aerospace Products & Parts	\$120,815,227	0.8%	1.5%
3251 Basic Chemicals	\$103,071,470	0.6%	1.3%
3331 Ag & Construction & Machinery	\$97,421,320	0.6%	1.2%
3339 Other General Purpose Machinery	\$93,376,661	0.6%	1.1%
<b>Total</b>	<b>\$6,936,349,447</b>	<b>43.7%</b>	<b>85.1%</b>

Source: US Census Bureau

### DATA NOTE:

Maine's demand for this sector's products shows the size of the local market. The share of that market supplied in-region versus imports (either from other states in the U.S. or other countries) relates the success of local firms or the competitiveness of domestic and international import goods.

---

# Industry Sales and Exports

---

Where is Maine's Manufacturing sector selling to?



# SALES INDUSTRIES Industries Maine Manufacturing Sells To

## Top 25 Industries the Manufacturing Sector Sells To In Maine (2022)

NAICS	Industry	In-Region Sales	Percent of In-Region Sales
<b>321113</b>	<b>Sawmills</b>	\$ 90,294,287	4.1%
<b>322121</b>	<b>Paper (except Newsprint) Mills</b>	\$ 81,416,381	3.7%
622110	General Medical and Surgical Hospitals	\$ 80,627,834	3.6%
<b>322110</b>	<b>Pulp Mills</b>	\$ 75,687,833	3.4%
<b>336412</b>	<b>Aircraft Engine and Engine Parts Manufacturing</b>	\$ 69,389,656	3.1%
238910	Site Preparation Contractors	\$ 56,235,804	2.5%
238220	Plumbing, Heating, and Air-Conditioning Contractors	\$ 55,679,275	2.5%
901200	Federal Government, Military	\$ 48,051,032	2.2%
722511	Full-Service Restaurants	\$ 43,302,678	1.9%
238210	Electrical Contractors and Other Wiring Installation Contractors	\$ 42,663,004	1.9%
<b>325413</b>	<b>In-Vitro Diagnostic Substance Manufacturing</b>	\$ 40,124,203	1.8%
902999	State Government, Excluding Education and Hospitals	\$ 38,702,420	1.7%
722513	Limited-Service Restaurants	\$ 33,128,975	1.5%
236115	New Single-Family Housing Construction (except For-Sale Builders)	\$ 32,618,555	1.5%
<b>325412</b>	<b>Pharmaceutical Preparation Manufacturing</b>	\$ 31,034,667	1.4%
236118	Residential Remodelers	\$ 30,139,151	1.4%
<b>336611</b>	<b>Ship Building and Repairing</b>	\$ 29,893,192	1.3%
<b>312140</b>	<b>Distilleries</b>	\$ 29,790,737	1.3%
236220	Commercial and Institutional Building Construction	\$ 27,274,459	1.2%
237310	Highway, Street, and Bridge Construction	\$ 24,785,829	1.1%
<b>321999</b>	<b>All Other Miscellaneous Wood Product Manufacturing</b>	\$ 22,417,824	1.0%
<b>312120</b>	<b>Breweries</b>	\$ 21,249,478	1.0%
903999	Local Government, Excluding Education and Hospitals	\$ 21,241,106	1.0%
<b>336612</b>	<b>Boat Building</b>	\$ 20,687,852	0.9%
238320	Painting and Wall Covering Contractors	\$ 19,542,993	0.9%

Source: Lightcast

Note: Industries that are **bolded** indicate that they are included in the overall Sector.

- The top 25 sectors the sector sells to represent 48% of all in-region sales. **This indicates that Manufacturing's sales and demand are broadly spread throughout the Maine economy.**
- **Sawmills in Maine make up the largest in-state buyer of the manufacturing sector's products**, with \$90.3 million of in-region sales in 2022. This represents 4.1% of the sector's in-region sales to other industries. Paper Mills and Pulp Mills are also among the top five industries the sector sells to, an indicator of the importance of Maine's Forest Products sector.
- The Construction Industry represents 8 of the top 25 industries that the Manufacturing Sector sells to within Maine, indicating the interconnectedness of the two sectors and the importance of Maine's B2B and supply chain environment.
- **General Medical and Surgical Hospitals** is another top in-region buyer of Maine's manufactured products, accounting for \$80.6 million of sales in Maine in 2022.

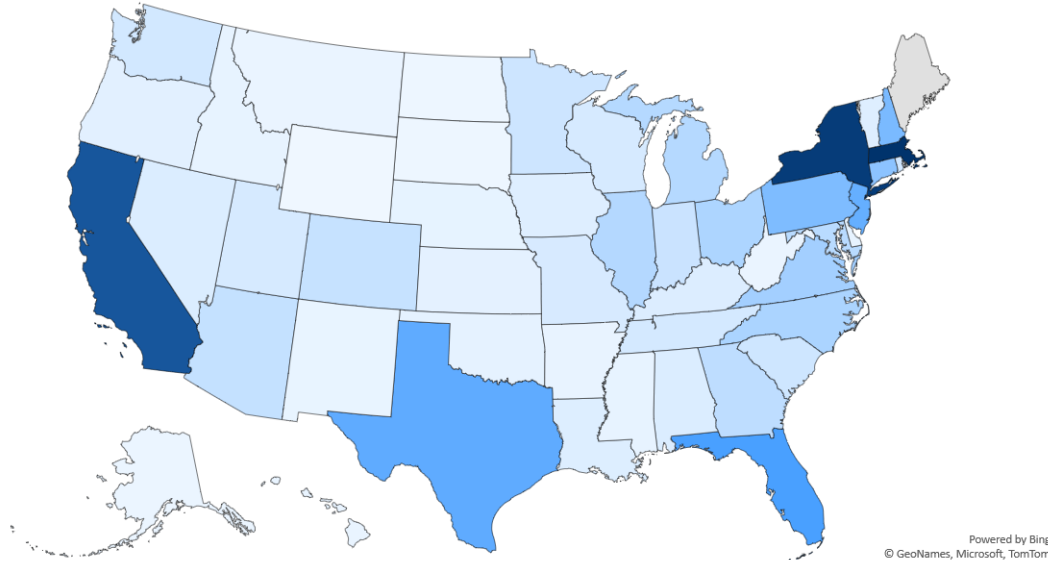
### DATA NOTE:

The sales in this table do not add up to total in-region sales because it only captures sales to other industries, and not other entities like consumers. The Percent of Total In-Region Sector Sales shows the portion of sales to a given industry as it relates to total sales to *all industries*, not total in-region sales including sales to consumers.



# DOMESTIC EXPORTS MANUFACTURED PRODUCTS

Top Out-of-State Buyers of Manufacturing Commodities

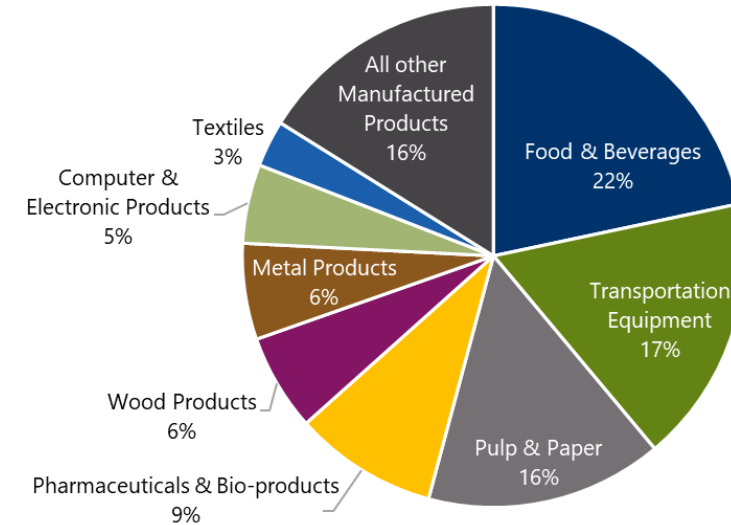


Source: IMPLAN Data Library

**Maine exported Manufacturing products to every state in 2021.**

- **Massachusetts, New York, and California were the largest buyers of Maine's manufactured products in 2021, each receiving over \$1 billion of exports.**
- **Food and Beverages had the highest export value**, accounting for almost a quarter of total manufacturing export value. **Bottled & Canned Soft Drinks & Water** was the most-exported commodity by trade value, followed by Distilled Liquors and Seafood Products. Overall, New York and Massachusetts are the largest buyers of Maine's food & beverages, each receiving over \$500 million worth of these products in 2021.
- **Transportation Equipment accounts for about 17% of total Sector imports.** **Ships** was the most-exported commodity by trade value, with about \$1.5 billion in 2021. California was the largest buyer of Maine's Ships in 2021, followed by Massachusetts. Ships account for 52% of all Transportation Equipment exports, while Aerospace products account for an additional 32%.
- **Pulp & Paper and Wood are both highly-traded, representing the importance of Maine's Forest Products sector.** Together, these account for 22% of Maine's domestic exports. The largest commodity in this category was **Paper from Pulp**, with exports valued at about \$1.7 billion in 2021. New York, Massachusetts, and California were the largest buyers of Maine's Paper from Pulp.
- Exports of Manufacturing commodities **have increased an annual rate of 1.0% from 2011-2021.** Medical Equipment and Supplies (+7.4% annually) and Pharmaceuticals and Bio-Products (6.8% annually) have increased the fastest over this time period.

Export Summary for Manufacturing Products (2021)



Source: IMPLAN Data Library

# SALES & EXPORTS



## TOTAL SALES

Maine: \$19.5 Billion  
United States: \$6.6 Trillion

Source: Lightcast, US Census Bureau



## EXPORTED SALES

Maine: \$15.9 Billion  
United States: N/A

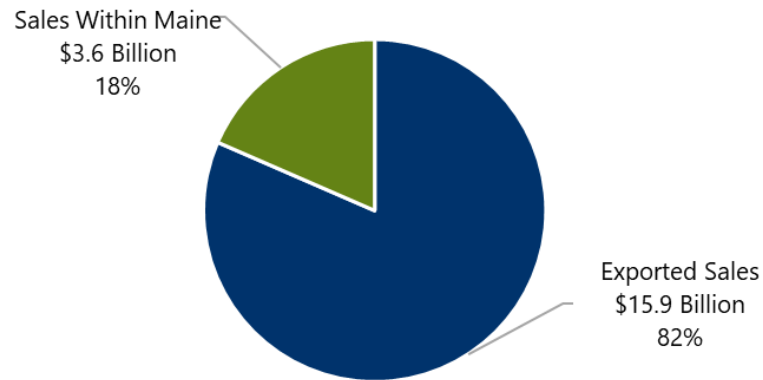


## FOREIGN EXPORTS

Maine: \$2.1 Billion  
United States: \$1.6 Trillion

- Manufacturing Products in Maine had total sales of \$19.5 billion in 2022, of which 81.5% are exported out of state (\$15.9 billion).
- Foreign exports were valued at \$2.1 billion in 2022 based on US Census data, leading to an export value of 10.9% of total sales. Within the United States, foreign exports are 24.2% of total sales.
- Top exports in Maine's Manufacturing sector are displayed in the table below. The top foreign export is Aerospace Products & Parts, valued at \$451 million in 2022, accounting for 2.8% of the sector's total exports and 13.2% of total foreign exports in all sectors.

### Total Manufacturing Sales



Source: Lightcast

### Top Exports by Value for Manufacturing, 2022

Commodity	Total Exports Value (\$US)	Foreign Share of Total Exports	Industry Share of Total Foreign Exports
3364 Aerospace Products & Parts	\$450,936,298	2.8%	13.2%
3221 Pulp, Paper & Paperboard Mill Products	\$287,721,921	1.8%	8.4%
3344 Semiconductors & Other Electronic Components	\$235,645,827	1.5%	6.9%
3254 Pharmaceuticals & Medicines	\$106,854,638	0.7%	3.1%
3345 Navigational/measuring/medical/control Instrument	\$104,134,503	0.7%	3.0%
3222 Converted Paper Products	\$89,264,092	0.6%	2.6%
3119 Foods, Nesoi	\$60,819,050	0.4%	1.8%
3211 Sawmill & Wood Products	\$55,389,513	0.3%	1.6%
3362 Motor Vehicle Bodies & Trailers	\$48,503,135	0.3%	1.4%
3114 Fruits & Veg Preserves & Specialty Foods	\$48,011,042	0.3%	1.4%
<b>Total</b>	<b>\$2,128,271,504</b>	<b>13.4%</b>	<b>62.2%</b>

Source: US Census Bureau

### DATA NOTE:

Maine sales and exports for this sector indicate the scale of the industry activity and the share of that activity that is sold locally either as an intermediate good or to end consumers. Exports include sales to domestic (U.S.) markets as well as international exports.

# OTHER RESOURCES

## **Maine APEX Accelerator (Formerly PTAC) ([maineptac.org](http://maineptac.org))**

The Maine APEX Accelerator (formerly known as the Procurement Technical Assistance Center) provides training and technical assistance to local businesses statewide so they can find, win, and perform on government contracts. AS part of a nationwide network of APEX accelerators, its partnerships and in-depth knowledge of government contracting gives businesses the tools to sell their goods and services to local, state, and federal governments.

## **Maine Manufacturing Extension Partnership ([mainemep.org](http://mainemep.org))**

The most comprehensive resource available for manufacturers in Maine. Whether working with high-tech companies or start-up artisans, Maine MEP forges close and collaborative relationships with clients to meet their particular needs, helping small businesses grow.

## **Manufacturers Association of Maine (MAME) ([mainemfg.com](http://mainemfg.com))**

Provides business development, member services, Manufacturing Career Connections (MCC) and networking and events. Their focus is offering members value-added services such as legislative advocacy, scholarship programs, career connections for students and job seekers and networking opportunities and events.

## **Higher Education Program Resources & Partners**

- [University of Maine](#)
  - [The Advanced Manufacturing Center](#)
  - [Mechanical Engineering](#)
- [University of Southern Maine, Department of Engineering](#)
- [The Roux Institute, Northeastern University](#)
- [Central Maine Community College, Precision Machining Technology](#)
- [Eastern Maine Community College, Electrical & Automation Technology](#)
- [Kennebec Valley Precision Community College](#)
- [Northern Maine Community College, Computer Numerical Control Program](#)
- [Southern Maine Community College, Precision Machining & Manufacturing](#)
- [Washington County Community College, Electromechanical Instrumentation Technology](#)
- [York County Community College \(Sandford, Maine\)](#)

# APPENDIX

## Manufacturing Subsector Summary

NAICS	Description	2017 Jobs	2022 Jobs	2027 Jobs	2017 - 2022 Change	2017 - 2022 % Change	Avg. Earnings Per Job	2022 Location Quotient	Competitive Effect	2022 Payrolled Business Locations	2022 Total Demand	2022 % Demand met In-Region	2022 % Demand met by Imports	2022 Total Sales	2022 GRP	GRP per worker
311	Food Manufacturing	5,747	5,853	5,803	105	2%	\$58,386	0.80	(564)	285	\$2,886,110,816	16%	84%	\$1,907,512,040	\$606,672,865	\$103,656
312	Beverage and Tobacco Product Manufacturing	1,789	2,438	2,673	650	36%	\$70,764	1.75	325	137	\$725,229,038	41%	59%	\$1,436,605,183	\$686,762,447	\$281,634
313	Textile Mills	1,139	708	586	(432)	(38%)	\$62,292	1.62	(367)	28	\$114,318,815	32%	68%	\$200,371,360	\$70,990,644	\$100,304
314	Textile Product Mills	1,025	1,129	1,177	105	10%	\$56,138	2.28	231	62	\$95,045,860	35%	65%	\$201,667,611	\$83,643,167	\$74,060
315	Apparel Manufacturing	297	272	281	(25)	(8%)	\$43,290	0.60	87	14	\$51,561,574	19%	81%	\$31,504,413	\$14,903,407	\$54,833
316	Leather and Allied Product Manufacturing	1,920	1,453	1,241	(467)	(24%)	\$51,745	10.96	(680)	29	\$31,323,186	50%	50%	\$375,351,475	\$90,909,283	\$62,567
321	Wood Product Manufacturing	4,962	4,972	4,734	10	0%	\$64,661	2.58	(896)	173	\$901,254,251	60%	40%	\$1,674,577,760	\$680,673,661	\$136,904
322	Paper Manufacturing	4,441	4,226	3,685	(214)	(5%)	\$102,072	2.73	(657)	19	\$652,261,119	27%	73%	\$2,775,774,158	\$995,328,228	\$235,517
323	Printing and Related Support Activities	1,553	1,511	1,396	(41)	(3%)	\$58,696	0.89	229	128	\$255,742,694	20%	80%	\$271,191,632	\$135,197,833	\$89,454
324	Petroleum and Coal Products Manufacturing	393	388	439	(5)	(1%)	\$126,192	0.86	68	23	\$1,674,157,254	3%	97%	\$307,725,388	\$88,993,145	\$229,413
325	Chemical Manufacturing	2,623	4,091	4,959	1,469	56%	\$131,964	1.06	1,934	87	\$2,313,527,915	21%	79%	\$2,419,854,610	\$1,607,589,893	\$392,924
326	Plastics and Rubber Products Manufacturing	2,098	2,291	2,349	193	9%	\$74,594	0.72	39	47	\$796,066,318	13%	87%	\$699,194,697	\$261,127,370	\$113,985
327	Nonmetallic Mineral Product Manufacturing	1,539	1,488	1,462	(51)	(3%)	\$67,611	0.82	(150)	91	\$547,579,455	44%	56%	\$405,035,281	\$191,243,106	\$128,534
331	Primary Metal Manufacturing	375	321	332	(54)	(14%)	\$85,112	0.21	(32)	10	\$520,153,840	5%	95%	\$235,084,546	\$74,767,195	\$232,737
332	Fabricated Metal Product Manufacturing	5,217	5,288	5,350	71	1%	\$71,255	0.86	(36)	261	\$1,305,656,665	22%	78%	\$1,144,878,504	\$514,687,039	\$97,340
333	Machinery Manufacturing	2,230	1,929	1,964	(301)	(13%)	\$84,822	0.41	(264)	65	\$1,216,072,100	8%	92%	\$653,947,458	\$284,967,674	\$147,733
334	Computer and Electronic Product Manufacturing	1,972	2,149	2,186	177	9%	\$103,628	0.46	85	45	\$1,113,529,801	10%	90%	\$575,758,178	\$439,269,994	\$204,389
335	Electrical Equipment, Appliance, and Component Manufacturing	426	490	580	64	15%	\$94,953	0.28	108	18	\$437,505,712	4%	96%	\$160,355,768	\$77,302,624	\$157,756
336	Transportation Equipment Manufacturing	10,053	11,653	12,142	1,600	16%	\$83,737	1.61	1,460	102	\$2,898,876,763	14%	86%	\$3,152,746,325	\$1,416,044,557	\$121,522
337	Furniture and Related Product Manufacturing	1,449	1,387	1,383	(62)	(4%)	\$63,315	0.80	(48)	94	\$313,631,066	15%	85%	\$274,316,821	\$111,741,420	\$80,571
339	Miscellaneous Manufacturing	2,142	2,844	3,538	702	33%	\$67,434	0.99	1,119	172	\$620,282,598	13%	87%	\$611,269,522	\$337,959,483	\$118,815
<b>Maine Total</b>		<b>53,387</b>	<b>56,881</b>	<b>58,257</b>	<b>3,494</b>	<b>6.5%</b>	<b>\$79,164</b>	<b>1.03</b>	<b>1,990</b>	<b>1,887</b>	<b>\$19,469,886,841</b>	<b>18%</b>	<b>82%</b>	<b>\$19,514,722,730</b>	<b>\$8,770,775,036</b>	<b>\$154,194</b>
<b>United States Total</b>		<b>12,698,794</b>	<b>12,871,836</b>	<b>13,356,344</b>	<b>173,042</b>	<b>1.4%</b>	<b>\$96,088</b>		<b>0</b>	<b>373,848</b>	<b>\$5,565,551,603,010</b>	<b>100%</b>	<b>0%</b>	<b>\$6,599,871,872,800</b>	<b>\$2,671,853,188,954</b>	<b>\$207,574</b>

e:

# APPENDIX

## Industries Included in the Manufacturing Sector

<b>311 Food Manufacturing</b>	
311111	Dog and Cat Food Manufacturing
311119	Other Animal Food Manufacturing
311211	Flour Milling
311212	Rice Milling
311213	Malt Manufacturing
311221	Wet Corn Milling
311224	Soybean and Other Oilseed Processing
311225	Fats and Oils Refining and Blending
311230	Breakfast Cereal Manufacturing
311313	Beet Sugar Manufacturing
311314	Cane Sugar Manufacturing
311340	Nonchocolate Confectionery Manufacturing
311351	Chocolate and Confectionery Manufacturing from Cacao Beans
311352	Confectionery Manufacturing from Purchased Chocolate
311411	Frozen Fruit, Juice, and Vegetable Manufacturing
311412	Frozen Specialty Food Manufacturing
311421	Fruit and Vegetable Canning
311422	Specialty Canning
311423	Dried and Dehydrated Food Manufacturing
311511	Fluid Milk Manufacturing
311512	Creamery Butter Manufacturing
311513	Cheese Manufacturing
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing
311520	Ice Cream and Frozen Dessert Manufacturing
311611	Animal (except Poultry) Slaughtering
311612	Meat Processed from Carcasses
311613	Rendering and Meat Byproduct Processing
311615	Poultry Processing
311710	Seafood Product Preparation and Packaging
311811	Retail Bakeries
311812	Commercial Bakeries
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing
311821	Cookie and Cracker Manufacturing
311824	Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour
311830	Tortilla Manufacturing
311911	Roasted Nuts and Peanut Butter Manufacturing
311919	Other Snack Food Manufacturing
311920	Coffee and Tea Manufacturing
311930	Flavoring Syrup and Concentrate Manufacturing
311941	Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing
311942	Spice and Extract Manufacturing
311991	Perishable Prepared Food Manufacturing
311999	All Other Miscellaneous Food Manufacturing

## Continued:

<b>312 Beverage and Tobacco Product Manufacturing</b>	
312111	Soft Drink Manufacturing
312112	Bottled Water Manufacturing
312113	Ice Manufacturing
312120	Breweries
312130	Wineries
312140	Distilleries
312230	Tobacco Manufacturing
<b>313 Textile Mills</b>	
313110	Fiber, Yarn, and Thread Mills
313210	Broadwoven Fabric Mills
313220	Narrow Fabric Mills and Schifflli Machine Embroidery
313230	Nonwoven Fabric Mills
313240	Knit Fabric Mills
313310	Textile and Fabric Finishing Mills
313320	Fabric Coating Mills
<b>314 Textile Product Mills</b>	
314110	Carpet and Rug Mills
314120	Curtain and Linen Mills
314910	Textile Bag and Canvas Mills
314994	Rope, Cordage, Twine, Tire Cord, and Tire Fabric Mills
314999	All Other Miscellaneous Textile Product Mills
<b>315 Apparel Manufacturing</b>	
315110	Hosiery and Sock Mills
315190	Other Apparel Knitting Mills
315210	Cut and Sew Apparel Contractors
315220	Men's and Boys' Cut and Sew Apparel Manufacturing
315240	Women's, Girls', and Infants' Cut and Sew Apparel Manufacturing
315280	Other Cut and Sew Apparel Manufacturing
315990	Apparel Accessories and Other Apparel Manufacturing
<b>316 Leather and Allied Product Manufacturing</b>	
316110	Leather and Hide Tanning and Finishing
316210	Footwear Manufacturing
316992	Women's Handbag and Purse Manufacturing
316998	All Other Leather Good and Allied Product Manufacturing

# APPENDIX

Continued:

<b>321 Wood Product Manufacturing</b>	
321113	Sawmills
321114	Wood Preservation
321211	Hardwood Veneer and Plywood Manufacturing
321212	Softwood Veneer and Plywood Manufacturing
321213	Engineered Wood Member (except Truss) Manufacturing
321214	Truss Manufacturing
321219	Reconstituted Wood Product Manufacturing
321911	Wood Window and Door Manufacturing
321912	Cut Stock, Resawing Lumber, and Planing
321918	Other Millwork (including Flooring)
321920	Wood Container and Pallet Manufacturing
321991	Manufactured Home (Mobile Home) Manufacturing
321992	Prefabricated Wood Building Manufacturing
321999	All Other Miscellaneous Wood Product Manufacturing
<b>322 Paper Manufacturing</b>	
322110	Pulp Mills
322121	Paper (except Newsprint) Mills
322122	Newsprint Mills
322130	Paperboard Mills
322211	Corrugated and Solid Fiber Box Manufacturing
322212	Folding Paperboard Box Manufacturing
322219	Other Paperboard Container Manufacturing
322220	Paper Bag and Coated and Treated Paper Manufacturing
322230	Stationery Product Manufacturing
322291	Sanitary Paper Product Manufacturing
322299	All Other Converted Paper Product Manufacturing
<b>323 Printing and Related Support Activities</b>	
323111	Commercial Printing (except Screen and Books)
323113	Commercial Screen Printing
323117	Books Printing
323120	Support Activities for Printing

<b>324 Petroleum and Coal Products Manufacturing</b>	
324110	Petroleum Refineries
324121	Asphalt Paving Mixture and Block Manufacturing
324122	Asphalt Shingle and Coating Materials Manufacturing
324191	Petroleum Lubricating Oil and Grease Manufacturing
324199	All Other Petroleum and Coal Products Manufacturing
<b>325 Chemical Manufacturing</b>	
325110	Petrochemical Manufacturing
325120	Industrial Gas Manufacturing
325130	Synthetic Dye and Pigment Manufacturing
325180	Other Basic Inorganic Chemical Manufacturing
325193	Ethyl Alcohol Manufacturing
325194	Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing
325199	All Other Basic Organic Chemical Manufacturing
325211	Plastics Material and Resin Manufacturing
325212	Synthetic Rubber Manufacturing
325220	Artificial and Synthetic Fibers and Filaments Manufacturing
325311	Nitrogenous Fertilizer Manufacturing
325312	Phosphatic Fertilizer Manufacturing
325314	Fertilizer (Mixing Only) Manufacturing
325320	Pesticide and Other Agricultural Chemical Manufacturing
325411	Medicinal and Botanical Manufacturing
325412	Pharmaceutical Preparation Manufacturing
325413	In-Vitro Diagnostic Substance Manufacturing
325414	Biological Product (except Diagnostic) Manufacturing
325510	Paint and Coating Manufacturing
325520	Adhesive Manufacturing
325611	Soap and Other Detergent Manufacturing
325612	Polish and Other Sanitation Good Manufacturing
325613	Surface Active Agent Manufacturing
325620	Toilet Preparation Manufacturing
325910	Printing Ink Manufacturing
325920	Explosives Manufacturing
325991	Custom Compounding of Purchased Resins
325992	Photographic Film, Paper, Plate, and Chemical Manufacturing
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing

# APPENDIX

<b>326 Plastics and Rubber Products Manufacturing</b>	
326111	Plastics Bag and Pouch Manufacturing
326112	Plastics Packaging Film and Sheet (including Laminated) Manufacturing
326113	Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing
326121	Unlaminated Plastics Profile Shape Manufacturing
326122	Plastics Pipe and Pipe Fitting Manufacturing
326130	Laminated Plastics Plate, Sheet (except Packaging), and Shape Manufacturing
326140	Polystyrene Foam Product Manufacturing
326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing
326160	Plastics Bottle Manufacturing
326191	Plastics Plumbing Fixture Manufacturing
326199	All Other Plastics Product Manufacturing
326211	Tire Manufacturing (except Retreading)
326212	Tire Retreading
326220	Rubber and Plastics Hoses and Belting Manufacturing
326291	Rubber Product Manufacturing for Mechanical Use
326299	All Other Rubber Product Manufacturing
<b>327 Nonmetallic Mineral Product Manufacturing</b>	
327110	Pottery, Ceramics, and Plumbing Fixture Manufacturing
327120	Clay Building Material and Refractories Manufacturing
327211	Flat Glass Manufacturing
327212	Other Pressed and Blown Glass and Glassware Manufacturing
327213	Glass Container Manufacturing
327215	Glass Product Manufacturing Made of Purchased Glass
327310	Cement Manufacturing
327320	Ready-Mix Concrete Manufacturing
327331	Concrete Block and Brick Manufacturing
327332	Concrete Pipe Manufacturing
327390	Other Concrete Product Manufacturing
327410	Lime Manufacturing
327420	Gypsum Product Manufacturing
327910	Abrasive Product Manufacturing
327991	Cut Stone and Stone Product Manufacturing
327992	Ground or Treated Mineral and Earth Manufacturing
327993	Mineral Wool Manufacturing
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing

<b>331 Primary Metal Manufacturing</b>	
331110	Iron and Steel Mills and Ferroalloy Manufacturing
331210	Iron and Steel Pipe and Tube Manufacturing from Purchased Steel
331221	Rolled Steel Shape Manufacturing
331222	Steel Wire Drawing
331313	Alumina Refining and Primary Aluminum Production
331314	Secondary Smelting and Alloying of Aluminum
331315	Aluminum Sheet, Plate, and Foil Manufacturing
331318	Other Aluminum Rolling, Drawing, and Extruding
331410	Nonferrous Metal (except Aluminum) Smelting and Refining
331420	Copper Rolling, Drawing, Extruding, and Alloying
331491	Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding
	Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and
331492	Aluminum)
331511	Iron Foundries
331512	Steel Investment Foundries
331513	Steel Foundries (except Investment)
331523	Nonferrous Metal Die-Casting Foundries
331524	Aluminum Foundries (except Die-Casting)
331529	Other Nonferrous Metal Foundries (except Die-Casting)



# APPENDIX

332 Fabricated Metal Product Manufacturing	
332111	Iron and Steel Forging
332112	Nonferrous Forging
332114	Custom Roll Forming
332117	Powder Metallurgy Part Manufacturing
332119	Metal Crown, Closure, and Other Metal Stamping (except Automotive)
332215	Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (except Precious) Manufacturing
332216	Saw Blade and Handtool Manufacturing
332311	Prefabricated Metal Building and Component Manufacturing
332312	Fabricated Structural Metal Manufacturing
332313	Plate Work Manufacturing
332321	Metal Window and Door Manufacturing
332322	Sheet Metal Work Manufacturing
332323	Ornamental and Architectural Metal Work Manufacturing
332410	Power Boiler and Heat Exchanger Manufacturing
332420	Metal Tank (Heavy Gauge) Manufacturing
332431	Metal Can Manufacturing
332439	Other Metal Container Manufacturing
332510	Hardware Manufacturing
332613	Spring Manufacturing
332618	Other Fabricated Wire Product Manufacturing
332710	Machine Shops
332721	Precision Turned Product Manufacturing
332722	Bolt, Nut, Screw, Rivet, and Washer Manufacturing
332811	Metal Heat Treating
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers
332813	Electroplating, Plating, Polishing, Anodizing, and Coloring
332911	Industrial Valve Manufacturing
332912	Fluid Power Valve and Hose Fitting Manufacturing
332913	Plumbing Fixture Fitting and Trim Manufacturing
332919	Other Metal Valve and Pipe Fitting Manufacturing
332991	Ball and Roller Bearing Manufacturing
332992	Small Arms Ammunition Manufacturing
332993	Ammunition (except Small Arms) Manufacturing
332994	Small Arms, Ordnance, and Ordnance Accessories Manufacturing
332996	Fabricated Pipe and Pipe Fitting Manufacturing
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing

333 Machinery Manufacturing	
333111	Farm Machinery and Equipment Manufacturing
333112	Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing
333120	Construction Machinery Manufacturing
333131	Mining Machinery and Equipment Manufacturing
333132	Oil and Gas Field Machinery and Equipment Manufacturing
333241	Food Product Machinery Manufacturing
333242	Semiconductor Machinery Manufacturing
333243	Sawmill, Woodworking, and Paper Machinery Manufacturing
333244	Printing Machinery and Equipment Manufacturing
333249	Other Industrial Machinery Manufacturing
333314	Optical Instrument and Lens Manufacturing
333316	Photographic and Photocopying Equipment Manufacturing
333318	Other Commercial and Service Industry Machinery Manufacturing
333413	Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing
333414	Heating Equipment (except Warm Air Furnaces) Manufacturing
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing
333511	Industrial Mold Manufacturing
333514	Special Die and Tool, Die Set, Jig, and Fixture Manufacturing
333515	Cutting Tool and Machine Tool Accessory Manufacturing
333517	Machine Tool Manufacturing
333519	Rolling Mill and Other Metalworking Machinery Manufacturing
333611	Turbine and Turbine Generator Set Units Manufacturing
333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing
333613	Mechanical Power Transmission Equipment Manufacturing
333618	Other Engine Equipment Manufacturing
333912	Air and Gas Compressor Manufacturing
333914	Measuring, Dispensing, and Other Pumping Equipment Manufacturing
333921	Elevator and Moving Stairway Manufacturing
333922	Conveyor and Conveying Equipment Manufacturing
333923	Overhead Traveling Crane, Hoist, and Monorail System Manufacturing
333924	Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing
333991	Power-Driven Handtool Manufacturing
333992	Welding and Soldering Equipment Manufacturing
333993	Packaging Machinery Manufacturing
333994	Industrial Process Furnace and Oven Manufacturing
333995	Fluid Power Cylinder and Actuator Manufacturing
333996	Fluid Power Pump and Motor Manufacturing
333997	Scale and Balance Manufacturing
333999	All Other Miscellaneous General Purpose Machinery Manufacturing



# APPENDIX

<b>334 Computer and Electronic Product Manufacturing</b>	
334111	Electronic Computer Manufacturing
334112	Computer Storage Device Manufacturing
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing
334210	Telephone Apparatus Manufacturing
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
334290	Other Communications Equipment Manufacturing
334310	Audio and Video Equipment Manufacturing
334412	Bare Printed Circuit Board Manufacturing
334413	Semiconductor and Related Device Manufacturing
334416	Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing
334417	Electronic Connector Manufacturing
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing
334419	Other Electronic Component Manufacturing
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables
334514	Totalizing Fluid Meter and Counting Device Manufacturing
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals
334516	Analytical Laboratory Instrument Manufacturing
334517	Irradiation Apparatus Manufacturing
334519	Other Measuring and Controlling Device Manufacturing
334613	Blank Magnetic and Optical Recording Media Manufacturing
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing
<b>335 Electrical Equipment, Appliance, and Component Manufacturing</b>	
335110	Electric Lamp Bulb and Part Manufacturing
335121	Residential Electric Lighting Fixture Manufacturing
335122	Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing
335129	Other Lighting Equipment Manufacturing
335210	Small Electrical Appliance Manufacturing
335220	Major Household Appliance Manufacturing
335311	Power, Distribution, and Specialty Transformer Manufacturing
335312	Motor and Generator Manufacturing
335313	Switchgear and Switchboard Apparatus Manufacturing
335314	Relay and Industrial Control Manufacturing
335911	Storage Battery Manufacturing
335912	Primary Battery Manufacturing
335921	Fiber Optic Cable Manufacturing
335929	Other Communication and Energy Wire Manufacturing
335931	Current-Carrying Wiring Device Manufacturing
335932	Noncurrent-Carrying Wiring Device Manufacturing
335991	Carbon and Graphite Product Manufacturing
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing

<b>336 Transportation Equipment Manufacturing</b>	
336111	Automobile Manufacturing
336112	Light Truck and Utility Vehicle Manufacturing
336120	Heavy Duty Truck Manufacturing
336211	Motor Vehicle Body Manufacturing
336212	Truck Trailer Manufacturing
336213	Motor Home Manufacturing
336214	Travel Trailer and Camper Manufacturing
336310	Motor Vehicle Gasoline Engine and Engine Parts Manufacturing
336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing
336330	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing
336340	Motor Vehicle Brake System Manufacturing
336350	Motor Vehicle Transmission and Power Train Parts Manufacturing
336360	Motor Vehicle Seating and Interior Trim Manufacturing
336370	Motor Vehicle Metal Stamping
336390	Other Motor Vehicle Parts Manufacturing
336411	Aircraft Manufacturing
336412	Aircraft Engine and Engine Parts Manufacturing
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing
336414	Guided Missile and Space Vehicle Manufacturing
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing
336510	Railroad Rolling Stock Manufacturing
336611	Ship Building and Repairing
336612	Boat Building
336991	Motorcycle, Bicycle, and Parts Manufacturing
336992	Military Armored Vehicle, Tank, and Tank Component Manufacturing
336999	All Other Transportation Equipment Manufacturing
<b>337 Furniture and Related Product Manufacturing</b>	
337110	Wood Kitchen Cabinet and Countertop Manufacturing
337121	Upholstered Household Furniture Manufacturing
337122	Nonupholstered Wood Household Furniture Manufacturing
337124	Metal Household Furniture Manufacturing
337125	Household Furniture (except Wood and Metal) Manufacturing
337127	Institutional Furniture Manufacturing
337211	Wood Office Furniture Manufacturing
337212	Custom Architectural Woodwork and Millwork Manufacturing
337214	Office Furniture (except Wood) Manufacturing
337215	Showcase, Partition, Shelving, and Locker Manufacturing
337910	Mattress Manufacturing
337920	Blind and Shade Manufacturing

# APPENDIX

339 Miscellaneous Manufacturing	
339112	Surgical and Medical Instrument Manufacturing
339113	Surgical Appliance and Supplies Manufacturing
339114	Dental Equipment and Supplies Manufacturing
339115	Ophthalmic Goods Manufacturing
339116	Dental Laboratories
339910	Jewelry and Silverware Manufacturing
339920	Sporting and Athletic Goods Manufacturing
339930	Doll, Toy, and Game Manufacturing
339940	Office Supplies (except Paper) Manufacturing
339950	Sign Manufacturing
339991	Gasket, Packing, and Sealing Device Manufacturing
339992	Musical Instrument Manufacturing
339993	Fastener, Button, Needle, and Pin Manufacturing
339994	Broom, Brush, and Mop Manufacturing
339995	Burial Casket Manufacturing
339999	All Other Miscellaneous Manufacturing

# GLOSSARY

**Competitive Effect:** Competitive effect indicates how much of the job change within a given region is the result of some unique competitive advantage of the region. This is because the competitive effect, by definition, measures the job change that occurs within a regional industry that cannot be explained by broader trends (i.e. the National Growth Effect and the Industrial Mix Effect). It's important to note that this effect can be positive even if regional employment is declining. This would indicate that regional employment is declining *less* than national employment.

**Gross Regional Product (GRP):** Gross Regional Product (GRP) is simply GDP for the region of study. More commonly, GRP is GDP for any region smaller than the United States, such as a state or metro. GRP measures the final market value of all goods and services produced in the region of study. GRP is the sum of total industry earnings, taxes on production & imports, and profits, less subsidies

**Location quotient:** Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region "unique." For example, if the leather products manufacturing industry accounts for 10% of jobs in your area but 1% of jobs nationally, then the area's leather-producing industry has an LQ of 10. So, in your area, leather manufacturing accounts for a larger than average "share" of total jobs—the share is ten times larger than normal.

**Manufacturing Capacity Utilization:** Manufacturing capacity utilization (MCU) is calculated as the ratio of actual manufacturing output to potential full capacity output. The higher the utilization rate, the less slack there is at plants to take on additional work. Consequently, high utilization rates are typically viewed as a leading indicator for rising inflation and higher long-term interest rates. The data for this report is sourced from the Federal Reserve. The values presented in this report are annual figures, derived from equally weighted monthly averages.

**Trade-Weighted Index:** This index measures the strength of the US Dollar relative to the currencies of the nation's trading partners, weighted based on the share of trade conducted with each country. This index is produced by the Federal Reserve.

**Source:** Lightcast Knowledge Base

# DATA SOURCES



**Lightcast** (formerly Emsi Burning Glass) is a global leader in labor market analytics, offering a data platform that gives a comprehensive, nuanced, and up-to-date picture of labor markets at all scales from national to local. Key components of the platform include traditional labor market information, job postings analytics, talent profile data, compensation data, and skills analytics. Lightcast integrates government data with information from online job postings, talent profiles, and resumes to produce timely intelligence on the state of the labor market. Job and compensation data is available by industry, occupation, educational program, and skill type. [Click to learn more.](#)



**TradeStats Express** (TSE) National and State Dashboards present data on US exports and imports by trade partner and product for 2009 forward. Data are presented using two classification systems: the Harmonized System (HS) and the North American Industrial Classification System (NAICS). National trade statistics in TSE cover the physical movement of merchandise between the United States and foreign regions. State trade statistics cover the physical movement of merchandise between a given state and foreign regions. [Click to learn more.](#)



**IBISWorld** is a leading provider of expert industry research and analysis for broad sectors and niche industries across the economy. Thoroughly researched industry reports from IBISWorld leverage economic, demographic, and market data into forward-looking insight, providing detailed data and narrative on current and historic trends, as well as future outlook and projections. Topics covered include products and services, major markets, upstream and downstream supply chain industries, performance drivers, factors for competitiveness, operating conditions, major players, and key statistics on industry performance. Reports are available by industry at the global, national, and state level. [Click to learn more.](#)



**IMPLAN** is prominent supplier of economic impact data and analytical applications, for decades serving the economic data needs of researchers, policy makers, decision makers, advocates, business leaders, governments, and more. IMPLAN has been redefining the field of economics for over 40 years. Created by academics to serve the needs of the United States Forest Service, it has been transformed today to serve as a solution-provider for anyone interested in understanding their economy. [Click to learn more.](#)