



Made In America: Primary Metal Products

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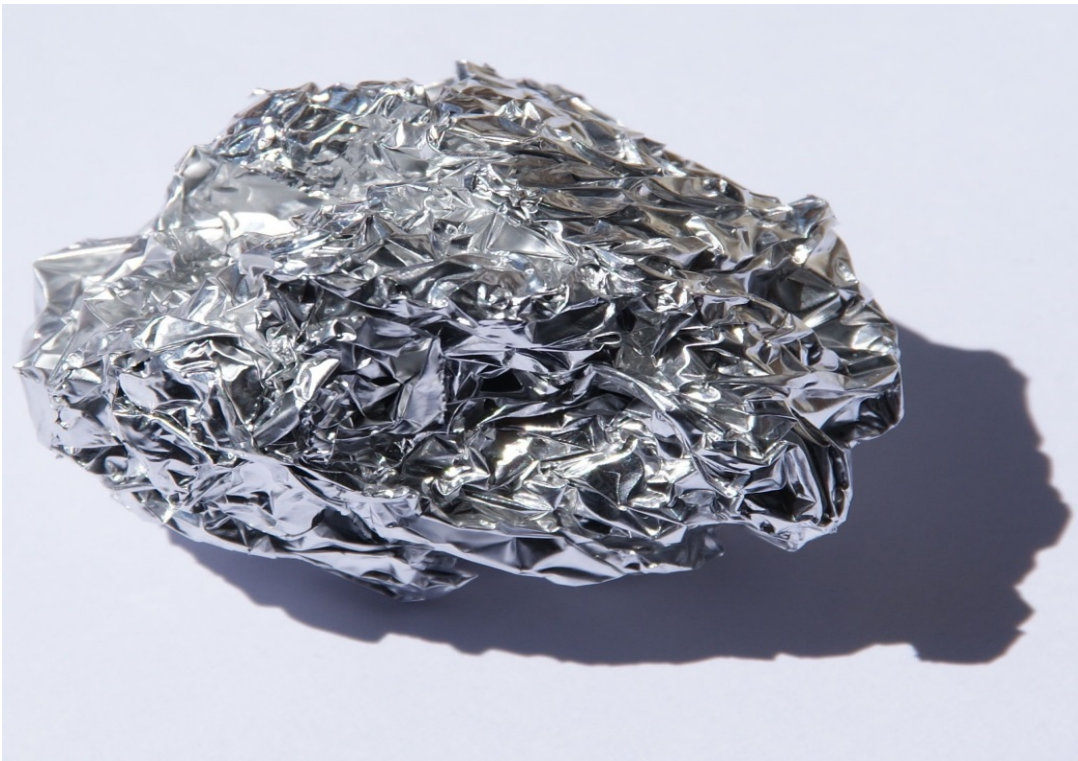
In 2013, shipments from the U.S. manufacturing sector totaled \$5.8 trillion.¹ How much of these shipments do we make in the United States? This series of manufacturing profiles by the U.S. Commerce Department's Office of the Chief Economist (OCE) will answer that question one industry at a time. This ninth profile explores primary metal products.² Previous profiles examined [machinery](#); [food, beverages and tobacco products](#); [transportation equipment \(excluding motor vehicles\)](#); [chemicals](#); [apparel, leather, and allied products](#); [petroleum and coal products](#); [computer and electronic products](#); and [fabricated metal products](#).

Among other findings, this report shows that the primary metal product manufacturing industry shipped \$279.3 billion in products, employed nearly 400,000 workers and ranked 6th in pay among the 21 manufacturing industries with a median hourly wage of \$19.34 in 2014. This represents a 5 percent premium above the overall manufacturing industry median hourly wage of \$18.34. Iron and steel mills and ferroalloys account for 41 percent of the industry's revenue, with demand largely coming from manufacturers of durable goods, such as motor vehicles, machinery, containers, and construction steel.³



Overview

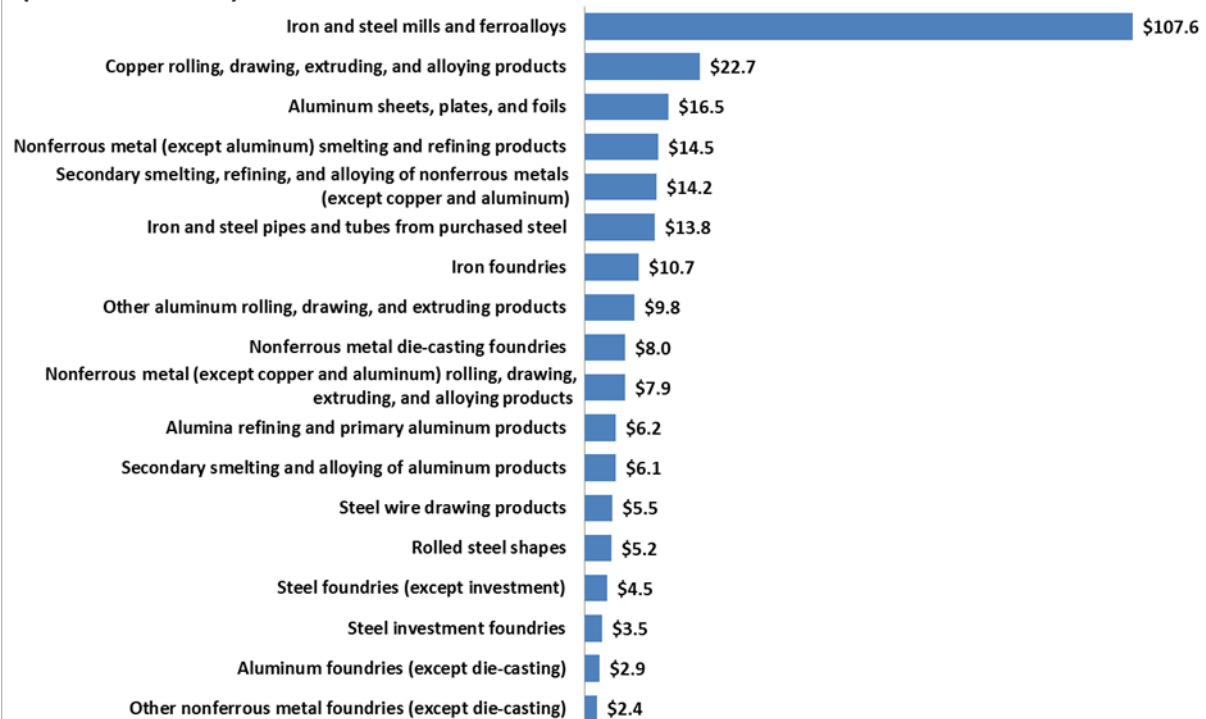
Shipments of primary metal products totaled \$262.2 billion, or 4.5 percent of all manufacturing shipments in 2013.⁴ According to the North American Industry Classification System (NAICS), the primary metal industry engages in smelting and refining of “ferrous and nonferrous metals from ore, pig, or scrap, using electrometallurgical and other metallurgical techniques.” Establishments may refine metals, cast molten metal into desired shapes, or produce the inputs for refining or casting pieces. The resulting product “of smelting and refining (in ingot form) is used in rolling, drawing, and extruding operations to make sheet, strip, bar, rod, or wire, and in molten form to make castings and other basic metal products.”⁵ Plants also produce pure metal products or alloys and superalloys in the form of end products or by introducing other chemical elements to pure metals in the form of end products or stock for use by other industries.



Shipments

Figure 1: Shipments in Primary Metal Product Manufacturing, 2013

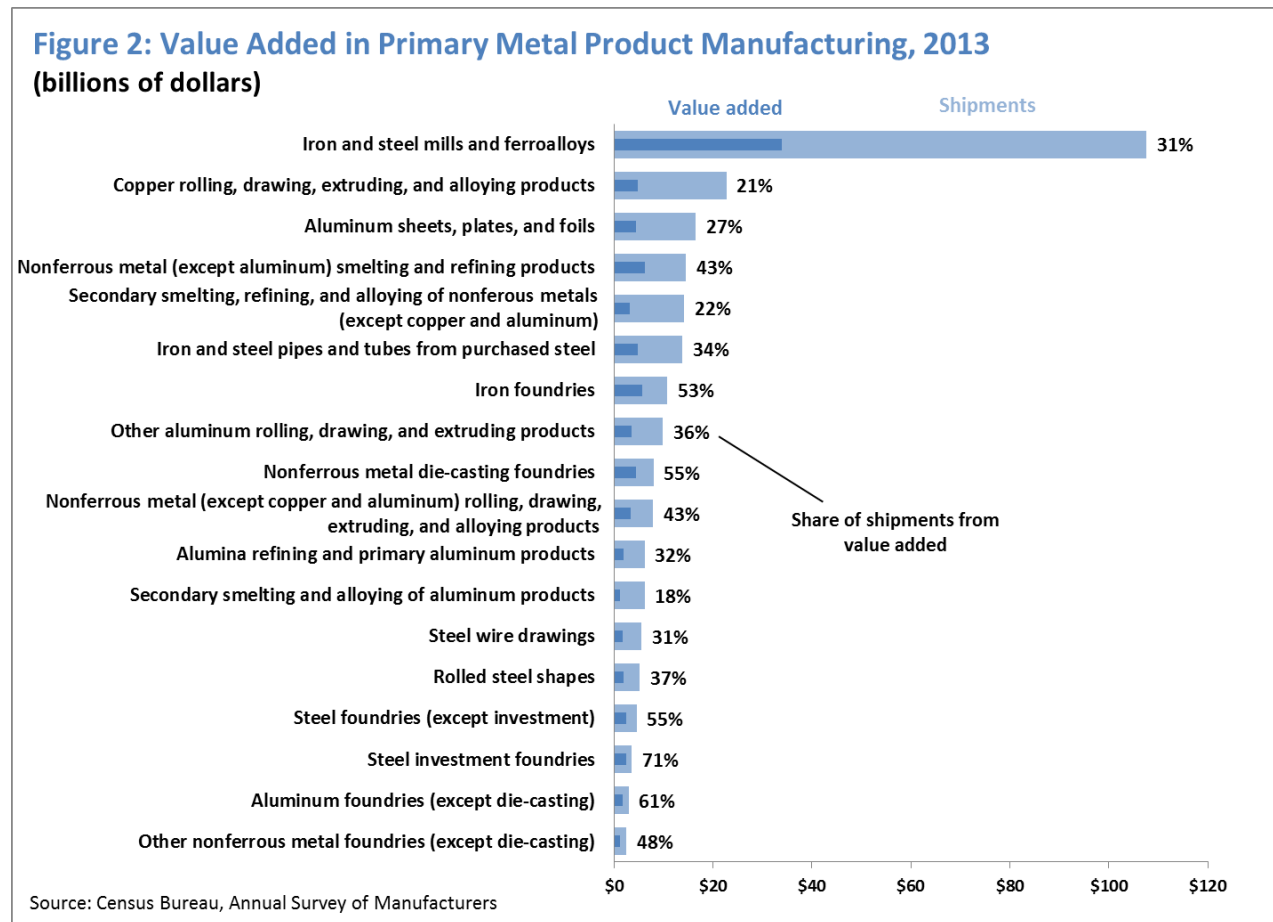
(billions of dollars)



Source: Census Bureau, Annual Survey of Manufacturers

- Iron and steel mills and ferroalloys lead the primary metals industry when measured by the value of annual shipments, with \$107.6 billion (41 percent of the total) in 2013 and this shipments share has remained steady overtime.
- Shipments of copper rolling, drawing, extruding, and alloying products were second, at \$22.7 billion (9 percent), followed by aluminum sheets, plates, and foils at \$16.5 billion (6 percent) and nonferrous metal (except aluminum) smelting and refining products at \$14.5 billion (6 percent).
- The fifth largest category among primary metal industries is the secondary smelting of nonferrous metals industry, with \$14.2 million in total shipments. Establishments in this industry recover metals and alloys from new and used scrap and dross (a layer that forms on the surface of molten metal) or produce alloys from purchased refined metals, including precious metals.
- In 2013, businesses purchased more than half of the primary metal products sold in the United States (55 percent) while the government purchased 27 percent and consumers purchased the remaining 18 percent.⁶
- The primary metals which are most often purchased by consumers include hot or cold rolled steel, stainless steel, and aluminum in bar, tube, sheet, or plate form.⁷

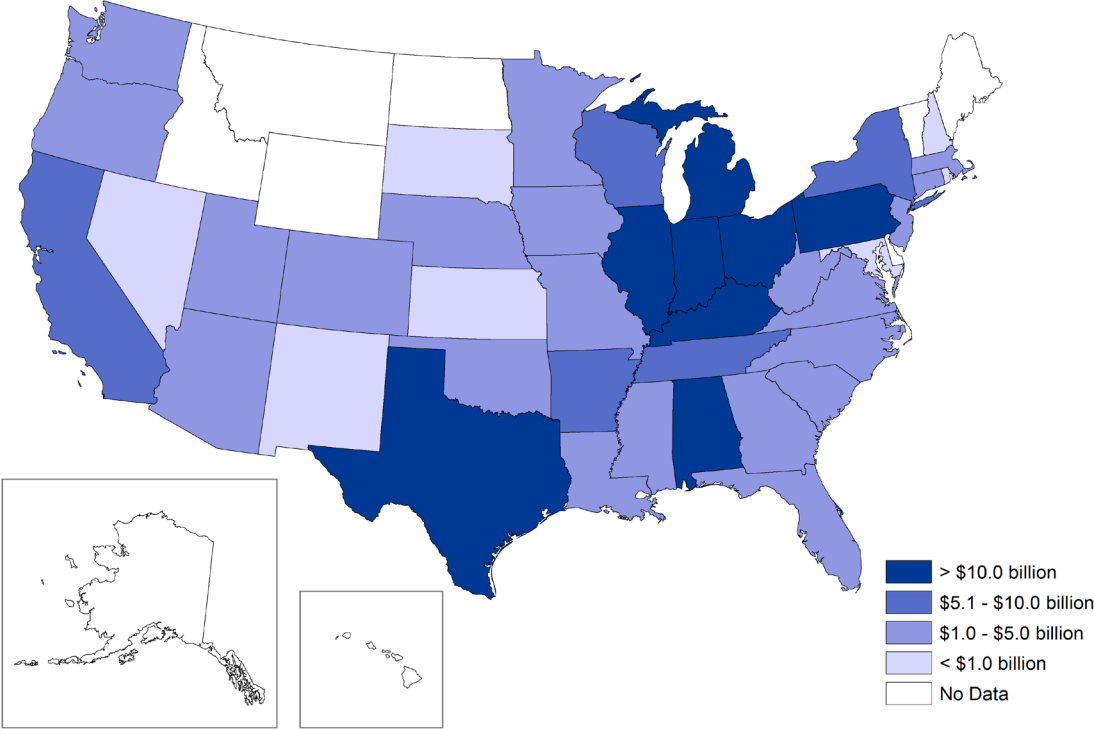
Value added



- In 2013, value added accounted for 34 percent of the total dollar amount of primary metal products manufacturing, while purchased inputs, materials, and other supplies accounted for the remaining 66 percent. Among industries that produce primary metals, value added as a share of shipments was highest in the steel investment foundries industry (71 percent) and lowest in the secondary smelting and alloying aluminum products industry (18 percent).⁸
- Value added in primary metal product manufacturing is mostly split between returns to labor or employee compensation (53 percent) and returns to capital (43 percent).⁹ Among all manufacturing sectors, labor compensation was the highest share of value added in the furniture and related products manufacturing industry at 74 percent; the petroleum and coal products industry had the lower share, at 10 percent.
- Overall, the median hourly wage (as of May 2014) in the primary metal industry was \$19.34, 5 percent higher than that of the manufacturing sector as a whole (\$18.34). The three most common jobs in the industry are production workers (58 percent of total employment); installation, maintenance, and repair workers (11 percent); and transportation and material moving workers (8 percent).¹⁰

Which States Make Primary Metal Products?

Figure 3. Primary Metal Product Manufacturing Shipments, 2013
(billions of dollars)



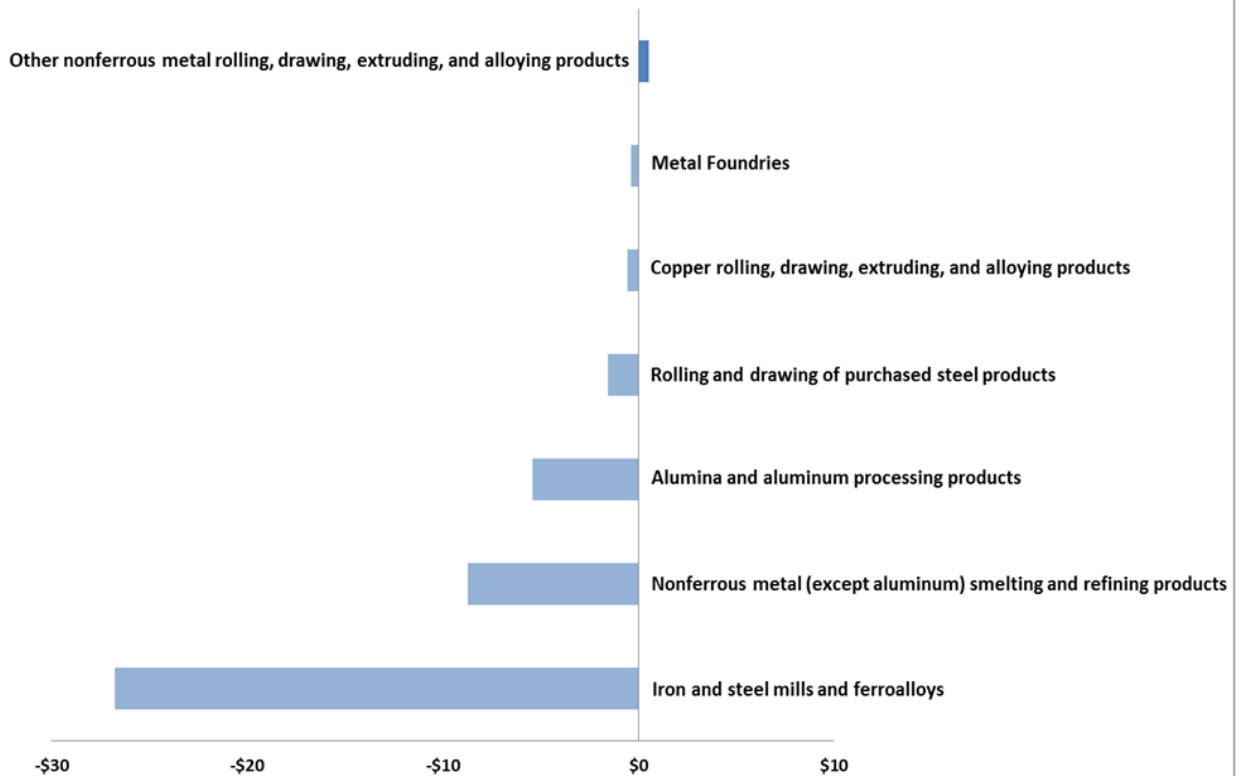
Source: Census Bureau, Annual Survey of Manufacturers

- In 2013, nearly half (47 percent) of total U.S. shipments of primary metals were from five states— Indiana (13 percent), Ohio (11 percent), Pennsylvania (10 percent), Texas (7 percent), and Alabama (6 percent).
- Indiana also took the lead in primary metal products employment with 41,641, or 11 percent of all jobs in the industry. Ohio and Pennsylvania followed with a 10 percent share of jobs each.
- For the United States as a whole, primary metals products accounted for 4 percent of total manufacturing shipments in 2013. In some states, primary metal shipments made up a much larger share of manufacturing shipments. Among those are Indiana (14 percent of total manufacturing shipments), Alabama (12 percent), West Virginia, Pennsylvania, Arkansas, and Kentucky (all 11 percent).



Satisfying Demand for Fabricated Metal Products Here and Abroad

Figure 4. Surplus and Deficits in U.S. Primary Metal Product Manufacturing Trade, 2014 (billions of dollars)



Source: Census Bureau, USA Trade Online

- Although not as integral to the export economy as many other manufacturing industries, U.S. exports of primary metal products totaled \$58.7 billion in 2014. Nonferrous metal (except aluminum) smelting and refining products accounted for 43 percent of these exports.
- The United States imported almost twice as many primary metals products as it exported, resulting in a trade deficit of \$42.8 billion. This deficit accounted for 6 percent of the total manufacturing trade deficit.
- About a third of the total primary metal products industry imports originated from Canada and Mexico.
- Iron and steel mills and ferroalloys accounted for most of the imports and totaled \$42.7 billion, or 42 percent, of total industry imports.
- More than half of primary metal products purchased by U.S. businesses and consumers in 2012 were domestically made.¹¹

Suggested citation:

Diagne, Adjil Fatou. Office of the Chief Economist, Economics and Statistics Administration, U.S. Department of Commerce. December 2015. Made in America: Primary Metal Products. Retrieved from <http://www.esa.gov/sites/default/files/made-in-america-primary-metal-products.pdf>

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Endnotes

- ¹. Figure based on most recent data from U.S. Census Bureau, 2013 Annual Survey of Manufacturers (ASM).
- ². For additional information about how to measure what is made in America and for further explanation of concepts used in this report, see Economics and Statistics Administration, “What is Made in America?” available at: <http://www.esa.doc.gov/Reports/what-made-america>.
- ³. Author’s calculations using 2013 data from Annual Survey of Manufacturers (ASM) shipments final demand from BEA’s table on *The Use of Commodities by Industries, After Redefinitions (Producers’ Prices)*. Data are available online at BEA’s website: http://www.bea.gov/iTable/index_industry_io.cfm
- ⁴. Shipments in 2014 totaled \$279.3 billion. The 2013 ASM is used here and below because it allows us to examine the underlying component industries of the fabricated metal sector in greater detail.
- ⁵. The primary metal product manufacturing subsector is categorized by the North American Industry Classification System (NAICS) as NAICS 331. Industry definition available at: <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=331&search=2012%20NAICS%20Search>. For full classification structure, see: <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2012>.
- ⁶. Calculated using BEA’s 2014 table on *The Use of Commodities by Industries, After Redefinitions (Producers’ Prices)*. Data are available online at BEA’s website: http://www.bea.gov/iTable/index_industry_io.cfm.
- ⁷. For more information on types of metals, visit <http://metalsupermarkets.com/metals/>.
- ⁸. Value added considers only the new production completed at each stage of the manufacturing process—i.e., the labor and capital applied by each firm to the purchased inputs produced elsewhere. This measure of manufacturing activity is derived from the ASM by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.
- ⁹. Bureau of Economic Analysis industry data available from: www.bea.gov. For more information on these concepts, see “Measuring the Nation’s Economy: An Industry Perspective. A Primer on BEA’s Industry Accounts.” *Bureau of Economic Analysis*. Available at: http://bea.gov/industry/pdf/industry_primer.pdf.
- ¹⁰. Calculated using BLS Occupational Employment Statistics May 2014 national data, available online at BLS’s website: <http://www.bls.gov/oes/>
- ¹¹. Economics and Statistics Administration, “What is Made in America?” See Figure 8 and associated discussion.

