

IRON AND STEEL¹

(Data in million metric tons of metal unless otherwise noted)

Domestic Production and Use: The iron and steel industry and ferrous foundries produced goods in 2016 with an estimated value of about \$130 billion, down from a revised \$143 billion in 2015. Pig iron was produced by three companies operating integrated steel mills in 11 locations. About 55 companies produce raw steel at 108 minimills. Combined production capacity was about 111 million tons. Indiana accounted for 29% of total raw steel production, followed by Ohio, 11%; Michigan, 7%; and Pennsylvania, 6%, with no other State having more than 5% of total domestic raw steel production. The distribution of steel shipments was estimated to be warehouses and steel service centers, 29%; construction, 20%; transportation (predominantly automotive), 18%; cans and containers, 2%; and other, 31%.

Salient Statistics—United States:	2012	2013	2014	2015	2016^e
Pig iron production ²	30.1	30.3	29.4	25.4	23
Raw steel production	88.7	86.9	88.2	78.8	80
Basic oxygen furnaces, percent	40.9	39.4	37.4	37	33
Electric arc furnaces, percent	59.1	60.6	62.6	63	67
Continuously cast steel, percent	98.6	98.8	98.5	99	99
Shipments:					
Steel mill products	87.0	86.6	89.1	78.5	78
Steel castings ^{e, 3}	0.4	0.4	0.4	0.4	0.4
Iron castings ^{e, 3}	4.0	4.0	4.0	4.0	4.0
Imports of steel mill products	30.4	29.2	40.2	35.2	30
Exports of steel mill products	12.5	11.5	10.9	9.0	9.0
Apparent steel consumption ⁴	98	98	107	99	94
Producer price index for steel mill products (1982=100) ⁵	208.0	195.0	200.2	177.1	168
Steel mill product stocks at service centers, yearend ⁶	7.8	7.6	9.0	7.5	8.0
Total employment, average, number:					
Blast furnaces and steel mills ⁵	92,600	90,900	91,000	87,000	87,000
Iron and steel foundries ⁵	70,500	69,400	67,600	66,000	66,000
Net import reliance ⁷ as a percentage of apparent consumption	11	12	30	22	16

Recycling: See Iron and Steel Scrap and Iron and Steel Slag.

Import Sources (2012–15): Canada, 15%; Brazil, 14%; Republic of Korea, 13%; Taiwan, 7%; and other, 51%.

Tariff:	Item	Number	Normal Trade Relations 12–31–16
Carbon steel:			
Semifinished		7207.00.0000	Free.
Sheets, hot-rolled		7208.10.0000	Free.
Hot-rolled, pickled		7208.10.1500	Free.
Cold-rolled		7209.00.0000	Free.
Galvanized		7210.00.0000	Free.
Bars, hot-rolled		7213.00.0000	Free.
Structural shapes		7216.00.0000	Free.
Stainless steel:			
Semifinished		7218.00.0000	Free.
Cold-rolled sheets		7219.31.0000	Free.
Bars, cold-finished		7222.20.0000	Free.

Depletion Allowance: Not applicable.

Government Stockpile: None.

Events, Trends, and Issues: The expansion or contraction of gross domestic product (GDP) may be considered a predictor of the health of the steelmaking and steel manufacturing industries, worldwide and domestically. The World Bank's forecast of global GDP growth rates for 2016, 2017, and 2018 was 2.4%, 2.8%, and 3.0%, respectively. The World Bank's forecast for the U.S. 2016, 2017, and 2018 GDP growth rates was 1.9%, 2.2%, and 2.1%, respectively.

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The U.S. Government's Corporate Average Fuel Economy standards will nearly double by 2025 with the average mileage for light-duty vehicles increasing to more than 54 miles per gallon of fuel. About two-thirds, by weight, of every vehicle operating today contains steel in sheet metal structural components, deck lids, doors, fenders, and hoods. The U.S. steel industry will continue to introduce a wide variety of advanced automotive high-strength lightweight steels to replace mild steel to satisfy these new requirements.

The Organisation for Economic Co-operation and Development reported a massive global steel overcapacity estimated at nearly 544 million tons in 2015 and continuing into 2016, as a result of foreign government subsidies and other steel market-distorting policies. Overcapacity, along with depressed global steel demand and import barriers in other markets, had resulted in high levels of steel imports entering into the U.S. market in recent years; however, increased enforcement of duties and increased import tariffs placed on steel imports from select countries reduced imports in 2016. The increase in enforcement and duty rates followed allegations of illegal dumping from many countries in which steel production is thought to be heavily subsidized, including Brazil, China, India, the Republic of Korea, Turkey, and others. In China, the world's leading producer and consumer of steel, significant overcapacity is expected to continue until 2020, while consumption is unlikely to exceed 700 million tons.

Near yearend 2016, the U.S. Department of Commerce was expected to begin a formal investigation to determine whether steel companies in China have been shipping steel through Vietnam to avoid U.S. import tariffs. Trade data show steel shipments from Vietnam to the United States have increased, while shipments from China to Vietnam also increased. In addition, Canada's parliamentary trade committee held its first meeting to study dumping of foreign steel into Canada. The study began, in part, because a large steel producer in Canada was going through insolvency proceedings.

World Production:

	Pig iron		Raw steel	
	<u>2015</u>	<u>2016^e</u>	<u>2015</u>	<u>2016^e</u>
United States	26	23	79	80
Brazil	28	25	33	30
China	691	685	804	800
France	10	11	15	17
Germany	28	28	43	44
India	58	62	89	83
Japan	81	81	105	105
Korea, Republic of	48	45	70	67
Russia	53	52	71	70
Taiwan	14	14	21	21
Turkey	10	10	32	32
Ukraine	22	24	23	25
United Kingdom	9	9	11	10
Other countries	<u>80</u>	<u>80</u>	<u>218</u>	<u>213</u>
World total (rounded)	1,160	1,150	1,610	1,600

World Resources: Not applicable. See Iron Ore and Iron and Steel Scrap for steelmaking raw-material resources.

Substitutes: Iron is the least expensive and most widely used metal. In most applications, iron and steel compete either with less expensive nonmetallic materials or with more expensive materials that have a performance advantage. Iron and steel compete with lighter materials, such as aluminum and plastics, in the motor vehicle industry; aluminum, concrete, and wood in construction; and aluminum, glass, paper, and plastics in containers.

^eEstimated.

¹Production and shipments data source is the American Iron and Steel Institute; see also Iron Ore and Iron and Steel Scrap.

²More than 95% of iron made is transported in molten form to steelmaking furnaces located at the same site.

³Source: U.S. Census Bureau. North American Industry Classification System: 3311, 331511, 331512, and 331513.

⁴Defined as steel shipments + imports – exports + adjustments for industry stock changes – semifinished steel product imports.

⁵U.S. Department of Labor, Bureau of Labor Statistics.

⁶Metals Service Center Institute.

⁷Defined as imports – exports + adjustments for industry stock changes.