

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 2008 that were valued at about \$117 billion. Pig iron was produced by 8 companies operating integrated steel mills in about 18 locations. About 57 companies, producing raw steel at about 116 plants, had combined production capability of about 113 million tons. Indiana accounted for 25% of total raw steel production, followed by Ohio, 14%, Pennsylvania, 6%, and Michigan, 5%. The distribution of steel shipments was estimated to be: warehouses and steel service centers, 19%; construction, 16%; transportation (predominantly automotive), 13%; cans and containers, 3%; and other, 49%. About 564 iron foundries and 239 steel foundries operated in the United States in 2008.

Salient Statistics—United States:	2004	2005	2006	2007	2008^e
Pig iron production ²	42.3	37.2	37.9	36.3	35.6
Steel production:	99.7	94.9	98.2	98.1	93.7
Basic oxygen furnaces, percent	47.9	45.0	42.9*	41.8*	42*
Electric arc furnaces, percent	52.1	55.0	57.1*	58.2*	58*
Continuously cast steel, percent	97.1	96.8	96.7	96.7	97.1
Shipments:					
Steel mill products	101	95.2	99.3	96.5	97.9
Steel castings ³	0.7	0.7	^e 0.7	^e 0.7	0.7
Iron castings ³	7.5	7.4	^e 7.4	^e 7.4	7.4
Imports of steel mill products	32.5	29.1	41.1	30.2	29.4
Exports of steel mill products	7.2	8.5	8.8	10.1	12.8
Apparent steel consumption ⁴	117	113	120	114	107
Producer price index for steel mill products (1982=100) ⁵	147.2	159.7	174.1	182.9	225
Steel mill product stocks at service centers yearend ⁶	14.4	11.7	15.0	11.1	13.0
Total employment, average, number ⁷					
Blast furnaces and steel mills	123,000	122,000	122,000	121,000	121,000
Iron and steel foundries ^e	116,000	115,000	115,000	115,000	115,000
Net import reliance ⁸ as a percentage of apparent consumption	14	15	17	16	8

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

Import Sources (2004-07): Canada, 16%; European Union, 16%; Mexico, 10%; China, 10%; and other, 48%.

Tariff:	Item	Number	Normal Trade Relations
			12-31-08
	Pig iron	7201.10.0000	Free.
	Carbon steel:		
	Semifinished	7207.12.0050	Free.
	Hot-rolled, pickled	7208.27.0060	Free.
	Sheets, hot-rolled	7208.39.0030	Free.
	Cold-rolled	7209.18.2550	Free.
	Galvanized	7210.49.0090	Free.
	Bars, hot-rolled	7213.20.0000	Free.
	Structural shapes	7216.33.0090	Free.
	Stainless steel:		
	Semifinished	7218.91.0015	Free.
	Do.	7218.99.0015	Free.
	Cold-rolled sheets	7219.33.0035	Free.
	Bars, cold-finished	7222.20.0075	Free.
	Pipe and tube	7304.41.3045	Free.

Depletion Allowance: Not applicable.

Government Stockpile: None.

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Events, Trends and Issues: Gross domestic product (GDP) growth may be considered a predictor of the health of the steelmaking and steel manufacturing industries worldwide and domestically. The World Bank forecasts world GDP growth in 2008 to be 2.7%, down from its earlier forecast of 3.3%, and down from 3.7% in 2007. GDP forecasts for 2009 and 2010 are 3.0% and 3.4%, respectively. The U.S. GDP growth is expected to be 1.1% in 2008, down from an earlier 1.9% forecast. GDP growth forecasts for 2008 for the European euro zone, Japan, and China were also revised downward to 1.7%, 1.4%, and 9.4%, respectively. For 2009, the International Monetary Fund predicted GDP growth for Canada, Japan, the United Kingdom, and the United States to be 1.2%, 0.5%, 0.1%, and 0.1%, respectively.

Soaring demand for steel products and ferrous raw materials in China and other countries caused record price increases and profits for steelmakers and raw material suppliers during 2008. The global economy, which may have entered a recession by the end of 2008 and which has been characterized by major problems in the commodity, credit, and financial sectors, adversely affected customers of steel used in construction, industrial equipment, and vehicles. Reduced consumption of steel led to rapidly declining steel prices, prompting steelmakers in Asia, Europe, and North America to slash output, delay mill-expansion plans, and furlough workers. Before the end of 2008, the world's leading iron ore miners saw spot iron ore prices fall as global steel output declined. The world's leading iron ore producer announced cuts in iron-ore pellet production in Brazil by 65%, while the world's third-leading iron ore exporter also planned to cut production.

In addition, the coking coal market began to deteriorate before yearend 2008. The world's largest steel producer by volume of production announced plans to reduce production in North America by 35% and in Europe by 30%, and to lay off indefinitely as many as 2,444 employees in its Burns Harbor, IN, plant. China's steelmakers are expected to collectively decrease active production capacity by 20% in 2009. Globally, lower revenues and additional layoffs are forecast into 2009. A general economic recovery is not anticipated until at least the latter part of 2009. U.S. steel production and revenues are likely to decline in 2009.

World Production:

	Pig iron		Raw steel	
	2007	2008 ^e	2007	2008 ^e
United States	36	36	98	94
Brazil	36	37	32	36
China	469	478	489	513
France	12	12	19	19
Germany	31	30	49	48
Italy	11	11	32	32
Japan	87	88	120	123
Korea, Republic of	29	31	52	55
Russia	52	52	72	74
Ukraine	36	34	43	40
United Kingdom	11	11	14	14
Other countries	137	138	320	312
World total (rounded)	947	958	1,340	1,360

World Resources: Not applicable. See Iron Ore.

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. *Correction posted April 23, 2019.

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.

³U.S. Census Bureau.

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.

⁷U.S. Department of Labor, Bureau of Labor Statistics. Blast furnaces and steel mills: NAICS 33111; Iron and steel foundries: NAICS 33151.

⁸Defined as imports - exports + adjustments for Government and industry stock changes.