

IRON AND STEEL¹

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

Domestic Production and Use: The U.S. iron and steel industry and ferrous foundries produced goods in 2018 with an estimated value of about \$137 billion, up from \$127 billion in 2017. Pig iron and raw steel was produced by three companies operating integrated steel mills in nine locations. Fifty-one companies produced raw steel at 99 minimills. Combined production capacity was about 110 million tons. Indiana accounted for 27% of total raw steel production, followed by Ohio, 12%; Michigan, 6%; 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 construction, 43%; transportation (predominantly automotive), 27%; machinery and equipment, 10%; energy, 7%; appliances, 5%; and other, 8%.

| <u>Salient Statistics—United States:</u> | <u>2014</u> | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>2018^e</u> |
|---|--------------------|--------------------|--------------------|--------------------|--------------------------------|
| Pig iron production ² | 29.4 | 25.4 | 22.3 | 22.4 | 24 |
| Raw steel production | 88.2 | 78.8 | 78.5 | 81.6 | 87 |
| Basic oxygen furnaces, percent | 37.4 | 37.3 | 33.0 | 31.6 | 33 |
| Electric arc furnaces, percent | 62.6 | 62.7 | 67.0 | 68.4 | 67 |
| Continuously cast steel, percent | 98.5 | 99.0 | 99.6 | 99.6 | 98 |
| Shipments, steel mill products | 89.1 | 78.5 | 78.5 | 82.5 | 86 |
| Imports: | | | | | |
| Steel mill products | 40.2 | 35.2 | 30.0 | 34.6 | 32 |
| Semifinished products | 9.6 | 6.6 | 6.1 | 7.8 | 8 |
| Exports, steel mill products | 10.9 | 9.0 | 8.4 | 9.6 | 8 |
| Consumption, apparent (steel) ³ | 107 | 100 | 95 | 99 | 103 |
| Producer price index for steel mill products (1982=100) ⁴ | 200.2 | 177.1 | 167.8 | 187.4 | 207 |
| Stocks, service centers, yearend ⁵ | 9.0 | 7.5 | 6.6 | 6.9 | 6.8 |
| Total employment, average, number: | | | | | |
| Blast furnaces and steel mills ⁴ | 91,000 | 87,000 | 83,900 | 80,600 | 81,000 |
| Iron and steel foundries ⁴ | 67,600 | 64,900 | 65,000 | 65,000 | 64,000 |
| Net import reliance ⁶ as a percentage of apparent consumption | 30 | 22 | 24 | 25 | 24 |

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

Import Sources (2014–17): Canada, 15%; Brazil, 13%; Republic of Korea, 11%; and other, 61%.

| <u>Tariff:</u> | <u>Item</u> | <u>Number</u> | <u>Normal Trade Relations</u> <u>12–31–18</u> |
|-----------------------|---------------------------|----------------------|--|
| Carbon steel: | | | |
| | Semifinished | 7207.00.0000 | Free. |
| | Flat, hot-rolled | 7208.00.0000 | Free. |
| | Flat, cold-rolled | 7209.00.0000 | Free. |
| | Galvanized | 7210.00.0000 | Free. |
| | Bars and rods, hot-rolled | 7213.00.0000 | Free. |
| | Structural shapes | 7216.00.0000 | Free. |
| Stainless steel: | | | |
| | Semifinished | 7218.00.0000 | Free. |
| | Flat-rolled sheets | 7219.00.0000 | Free. |
| | Bars and rods | 7222.00.0000 | Free. |

Depletion Allowance: Not applicable.

Government Stockpile: None.

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Events, Trends, and Issues: In March 2018, the President of the United States issued a proclamation imposing a 25% tariff on steel imports from most countries of origin under the authority of Section 232 of the Trade Expansion Act of 1962 (83 FR 11625). Additional orders were issued during the year which modified the list of countries subject to the tariff and quotas. As of December, a 50% tariff was applicable to Turkey and the 25% tariff was applicable to all countries of origin, except Argentina, Australia, Brazil, and the Republic of Korea. Requests could be made for certain steel products to become eligible for relief from the quotas and tariff. The Producer Price Index series, published by the Bureau of Labor Statistics, indicated that the prices of steel products in the United States increased by about 10% during the second half of 2018.

Global raw steel production was forecast by one organization to increase by 3.9% in 2018 and 1.4% in 2019, spurred by investments in industrialized nations and economic improvement in emerging economies. China, which accounts for more than one-half of global raw steel production, increased steel consumption during the first half of 2018, owing to improvements in the global economy and the Chinese real estate market. The country's increased environmental enforcement and the impacts of U.S. tariffs were expected to slow steel output through 2019. The growth of the global economy was expected to slow, resulting in decreased demand in global steel. Steel consumption in developed economies was expected to increase by 1.0% in 2018 and 1.2% in 2019. In the United States, steel consumption increased owing to fiscal stimulus, tax and regulatory changes, and increased investment, partially as the result of moderate growth in the automotive and construction sectors.

World Production:

| | Pig iron | | Raw steel | |
|-----------------------|-------------|-------------------------|-------------|-------------------------|
| | <u>2017</u> | <u>2018^e</u> | <u>2017</u> | <u>2018^e</u> |
| United States | 22 | 24 | 82 | 87 |
| Brazil | 28 | 29 | 34 | 35 |
| Canada | 6 | 7 | 14 | 15 |
| China | 711 | 723 | 832 | 890 |
| France | 11 | 12 | 16 | 17 |
| Germany | 28 | 29 | 43 | 44 |
| India | 66 | 69 | 101 | 110 |
| Japan | 78 | 82 | 105 | 110 |
| Korea, Republic of | 47 | 49 | 71 | 75 |
| Russia | 52 | 53 | 70 | 71 |
| Taiwan | 14 | 15 | 22 | 23 |
| Turkey | 11 | 11 | 38 | 38 |
| Ukraine | 20 | 21 | 21 | 22 |
| Other countries | <u>78</u> | <u>74</u> | <u>240</u> | <u>230</u> |
| World total (rounded) | 1,170 | 1,200 | 1,690 | 1,800 |

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 and Steel Scrap and Iron Ore.

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

³Defined as steel shipments + imports of steel mill products – exports + adjustments for industry stock changes – imports of semifinished steel products.

⁴Source: U.S. Department of Labor, Bureau of Labor Statistics.

⁵Steel mill products. Source: Metals Service Center Institute.

⁶Defined as imports – exports + adjustments for industry stock changes.