2014 Minerals Yearbook

IRON AND STEEL [ADVANCE RELEASE]

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Iron and Steel

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The world steel industry continued to add more production capacity during the period from 2009 to 2014 despite continuing weak demand as the world economy recovered slowly from the economic downturn in 2008–9. By 2014, global overcapacity was an estimated 330 million metric tons (Mt) with an average utilization rate of less than 80%. North American steel plants managed to limit overcapacity, whereas substantial overcapacity developed in Central Asia, the European Union (EU), Russia, and South America. Overcapacity in China, estimated at 200 Mt, has reached the point where the Chinese Government has limited bank financing to add capacity and has required the closure of small, unprofitable, and polluting plants. Implementation by local governments that are concerned about economic development and social stability continues to be an issue. Similar problems of closures and planned closures took place in Belgium, France, Italy, and Serbia. Apparent consumption in China, the world's leading consumer of steel, increased steadily from 101 Mt in 1995 to a high of 766 Mt in 2013 and then decreased to 740 Mt in 2014 (World Steel Association, 2015a).

Production

Raw steel production in the United States was about 88.2 Mt in 2014, up slightly from that in 2013 (table 1). U.S. capacity utilization for raw steel production, which had dipped to a low of 41% in April 2009, rose steadily to a high of 80.2% in August 2014, ending at 74.6% in December 2014. The American Iron and Steel Institute (AISI) estimated raw steel production capacity in 2014 to be 114 Mt, up slightly from that in 2013. Production represented 77.5% of estimated capacity, up from 76.7% in 2013 (American Iron and Steel Institute, 2015, p. 73).

Integrated steel producers smelted iron ore to make liquid iron in blast furnaces and used basic oxygen furnaces (BOFs) to refine the liquid iron, with some steel scrap, to produce raw liquid steel. The BOF process was used to make 33.0 Mt of steel in the United States (American Iron and Steel Institute, 2015, p. 70). The use of this process decreased to 37.4% of total steel production in 2014 from 39.4% in 2013. Blast furnaces in the United States were operated by three companies at 11 locations in 2014. AK Steel and Severstal North America closed one blast furnace each, both in Dearborn, MI, during 2014 (Iron and Steel Technology, 2015b, p. 294).

Minimills and specialty mills are nonintegrated steel producers that use electric arc furnaces (EAFs) to melt low-cost raw materials (primarily scrap). They also employ continuous casting machines and hot-rolling mills that are often closely coupled to casting operations. Specialty mills include producers of electrical alloys, stainless, and tool steel; high-temperature alloys; forged ingots; and other low-volume steel products. About 58 companies operated about 109 EAF facilities in the United States during 2014 (Iron and Steel Technology, 2015a, p. 158). These mills produced 55.2 Mt of steel in 2014, 5% more than in 2013, and accounted for 62.6% of total steelmaking (American Iron and Steel Institute, 2015, p. 70).

Raw liquid steel is mostly cast into semifinished products in continuous casting machines. Only 1.5% of U.S. production was cast in ingot form in 2014 and subsequently rolled into semifinished forms, a slightly higher percentage than that of 2013. Continuous casting production was 86.8 Mt, or 98.5% of total steel production, slightly higher than in 2013 (American Iron and Steel Institute, 2015, p. 70).

Consumption and Shipments

Steel mill products are produced either by forging or by rolling into forms normally delivered for fabrication or use. Some companies purchase semifinished steel mill products from other steel companies and use them to produce finished steel products. The accumulated shipments of all companies less the shipments to other reporting companies are identified as net shipments to avoid double counting.

U.S. apparent steel consumption, an indicator of economic growth, which had decreased to a low of 63 Mt in 2009, after a high of 120 Mt in 2006, increased to 108 Mt in 2014 from 99 Mt in 2013. Net shipments of steel mill products by U.S. companies increased by 3% to 89.1 Mt compared with those of 2013 (American Iron and Steel Institute, 2015, p. 23). Compared with those in 2013, shipments of construction products, the leading single end-use market for steel, increased by 10.6% in 2014; automotive product shipments decreased slightly; shipments of agricultural products increased by 15%; shipments of industrial machinery, equipment, and tools increased by 9.8%; oil, gas, and petrochemical shipments increased by 10.1%; steel service center shipments decreased slightly; lumbering, mining, and quarrying industries shipments decreased by 17%; shipments of appliances increased by 8.3%; and shipments of containers, packaging, and shipping material decreased by 50% (American Iron and Steel Institute, 2015, p. 27).

Prices

The U.S. Bureau of Labor Statistics (2015) producer price index for steel mill products increased slightly to 200.2 in 2014 from 195.0 in 2013 (1982 base = 100) (table 1). The average monthly price of hot-rolled steel sheet fluctuated within a narrow range from a high of $447 per metric ton in January 2014 to a low of $599 per metric ton in December 2014 (American Metal Market, 2014).

Foreign Trade

Export shipments of steel mill products by AISI reporting companies decreased to 10.9 Mt from 11.5 Mt in 2013 (table 4). Canada received the largest amount of U.S. exported steel products, 5.8 Mt, 5% less than that in 2013 (table 4). Mexico was again the second-ranked export receiving country, 3.8 Mt, 3% more than that in 2013. Domestic imports of steel mill products increased by 37.9% to 40.2 Mt from 29.2 Mt in 2013 (table 4). Brazil, Canada, China, the EU, Japan, Mexico, the Republic of Korea, Russia, and Turkey were major sources of steel mill product imports in 2014 (table 4).

Imports of semifinished steel (table 6) by steel companies are taken into consideration in evaluating apparent consumption (supply) of steel mill products in the United States and the share of the market represented by imported steel. To avoid double counting the imported semifinished steel and the products produced from it, the amount of semifinished steel consumed by companies that also produced raw steel is subtracted from domestic consumption. Between 1993 and 2014, semifinished steel imports ranged between 2.5 and 9.6 million metric tons per year (Mt/yr). Prior to 1993, the amount was less than 0.2 Mt/yr. Taking the imported semifinished steel into consideration, the share of the U.S. steel market represented by imported steel was an estimated 37% in 2014 compared with 30% in 2013.

World Review

World production of pig iron totaled about 1.19 billion metric tons (Gt), slightly more than that in 2013 (table 9). China continued to be the leading producer of pig iron in the world, producing 712 Mt, slightly more than that of 2013, followed by Japan (83.9 Mt), India (55.2 Mt), Russia (51.5 Mt), the Republic of Korea (46.9 Mt), the United States (29.4 Mt), Germany (27.4 Mt), Brazil (27.0 Mt), and Ukraine (24.8 Mt). Russia and Ukraine were the only major pig iron producers in the Commonwealth of Independent States (CIS), where production in 2014 decreased by 5% from that in 2013. In South America, the only major pig iron producer was Brazil. Germany was the leading producer in the EU, producing about 27.4 Mt, slightly more than that in 2013.

World capacity for direct-reduced iron (DRI) production in 2014 was estimated to be about 108 Mt/yr (Midrex Technologies, Inc., 2015, p. 11). DRI production worldwide increased by 6.6% to 71.3 Mt in 2014 from 66.9 Mt in 2013 (table 9). The leading producer of DRI was India (20.4 Mt), followed by, in descending order of tonnage, Iran (14.6 Mt), Saudi Arabia (6.46 Mt), Mexico (5.98 Mt), and Russia (5.20 Mt). In 2014, additional DRI capacity of almost 16 Mt/yr was under construction in China, Egypt, India, Russia, the United States, and Venezuela. The leading technology, according to declining order of production, was the Midrex process, followed by coal-based and HYL/Energiron.

World production of raw steel was 1.67 Gt, 3% more than that in 2013 (table 10). Steel production during 2014 increased in North America (1.8%), decreased in the CIS (2.5%), and decreased in the EU (1.0%). Positive growth also took place in India (6.5%) and China (5.6%). As in previous years, production varied widely among major regions of the world. China produced 49% of world total crude steel in 2014. Countries in Asia produced about 68% of the world's steel; the EU, 10%; North America, 7%; and the CIS, 6%.

According to the World Steel Association (2015b), China was the top steel producer in the world during 2014 (823 Mt), with its leading steelmaker, Hebei Iron & Steel Group Co. Ltd. (47.1 Mt), placing third behind the world's leading steelmakers—ArcelorMittal (98.1 Mt) and Nippon Steel and Sumitomo Metal Corp. (49.3 Mt). Japan was the world's second-ranked steel producer (111 Mt), followed by the United States (88.2 Mt), India (86.5 Mt), Russia (71.5 Mt), and the Republic of Korea (71.0 Mt). These six countries accounted for 75% of world production. Russia and Ukraine remained the leading producers in the CIS. China ranked first in the world for total exports of steel during 2014 (92.9 Mt), followed by Japan (41.3 Mt) and the EU (37.1 Mt). The United States ranked first in the world for total imports of steel in 2014 (41.4 Mt), followed by the EU (32.4 Mt). Increases in steel production during 2014 took place in Africa (3.1%), Asia (3.9%), the CIS (2.7%), the EU (1.0%), and North America (1.8%). Steel production decreases during 2014 took place in South America (3.3%) and Africa (4.7%).

Outlook

The expansion or contraction of gross domestic product (GDP), the broadest measure of a nation's economic activity, 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 for 2015, 2016, and 2017 is 2.8%, 3.3%, and 3.2%, respectively, after 2.6% in 2014 (World Bank, The, 2015). The International Monetary Fund (2015) projection of GDP growth is 3.3% for 2015 and 3.8% for 2016. The U.S. Federal Reserve's September 2015 projections for GDP rate of growth for the United States are 2.1% for 2015, 2.3% for 2016, and 2.2% for 2017 (Board of Governors of the Federal Reserve System, 2015). The 2014 rate of GDP growth for China was 7.4% and is projected to be 6.8% in 2015 and 6.3% in 2016. The rate of GDP growth for India was 7.3% in 2014 and is projected to be 7.5% in 2015 and 2016 (International Monetary Fund, 2015).

MEPS (International) Ltd. forecast total world steel production in 2015 to be 1.62 Gt, down slightly from that in 2014 (World Steel News, 2015). MEPS also forecast an increase to 1.64 Gt in 2016.

World apparent steel consumption (ASC) is forecast to be 1,513 Mt and 1,523 Mt in 2015 and 2016, respectively, after consumption in 2014 was 1,540 Mt. (World Steel Association, 2015c). China's ASC is expected to decrease to 672 Mt in 2016 from 711 Mt in 2014. The ASC in India is expected to increase to 87.6 Mt in 2016 from 75.9 Mt in 2014. The ASC in the United States is expected to decrease to 105 Mt in 2016 from 107 Mt in 2014. The EU's ASC is expected to increase to 153 Mt in 2016 from 148 Mt in 2014. In Japan, the 2015 ASC is expected to decrease to 66 Mt in 2016 from 68 Mt in 2014. The ASC of the CIS is expected to decrease to 49.9 Mt in 2016 from 56.1 Mt in 2014.

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TABLE 1
SALIENT IRON AND STEEL STATISTICS[1]

(Thousand metric tons unless otherwise noted)

	2010	2011	2012	2013	2014
United States:					
Pig iron:					
Production[2]	26,800	30,200	32,100	30,300	29,400
Exports[3]	2,220	51	94	18	7
Imports for consumption[3]	3,780	4,190	4,270	4,120	4,600
Direct-reduced iron:					
Production[4]	--	--	--	--	1,300
Exports[3]	1	4	(5)	(5)	1
Imports for consumption[3]	1,640	1,800	2,470	2,240	2,390
Raw steel production:[6]					
Carbon steel	73,600	79,100	81,900	80,700	81,400
Stainless steel	2,200	2,070	1,980	2,030	2,390
All other alloy steel	4,680	5,220	4,770	4,110	4,420
Total	80,500	86,400	88,700	86,900	88,200
Capability utilization, percentage	70.4	74.4	75.2	76.7	77.5
Steel mill products:					
Net shipments[2]	75,700	83,300	87,000	86,600	89,100
Exports[2]	11,000	12,200	12,500	11,500	10,900
Imports[2]	21,700	25,900	30,400	29,200	40,200
Producer price index (1982 = 100.0)[7]	191.7	216.2	208.0	195.0	200.2
World production:[8]					
Pig iron	1,040,000	1,110,000	1,130,000 r	1,180,000	1,190,000
Direct-reduced iron[4]	69,200	68,600 r	68,200	66,900	71,300
Raw steel	1,430,000	1,520,000	1,510,000 r	1,620,000	1,670,000

[r]Revised. -- Zero.
[1]Data are rounded to no more than three significant digits, except producers price index; may not add to totals shown.
[2]Source: American Iron and Steel Institute (AISI).
[3]Source: U.S. Census Bureau.
[4]Sources: Midrex Technologies, Inc., governments, and companies.
[5]Less than ½ unit.
[6]Raw steel is defined by AISI as steel in the first solid state after melting, suitable for rolling.
[7]Source: U.S. Bureau of Labor Statistics.
[8]Sources: U.S. Geological Survey and the World Steel Association.

TABLE 2
MATERIALS CONSUMED IN BLAST FURNACES AND
PIG IRON PRODUCED[1]

(Thousand metric tons)

Material	2013	2014
Iron oxides:[2]		
Pellets	38,200	37,500
Sinter[3]	5,420	5,360
Total	43,600	42,900
Scrap[4]	1,970	2,840
Coke[2]	8,130	10,000
Pig iron, produced	30,300	29,400

[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Source: American Iron and Steel Institute.
[3]Includes sintered ore and pellet fines, dust, mill scale, and other revert iron-bearing materials; also includes some nodules.
[4]Mainly briquetted turnings and borings, shredded scrap, and so forth; scrap produced at blast furnaces and remelt not included.

TABLE 3
DISTRIBUTION OF SHIPMENTS OF STEEL MILL PRODUCTS, BY STEEL TYPE, PRODUCT, AND MARKET[1]

	Quantity (thousand metric tons)		Percentage	
	2013	2014	2013	2014
Shipments by steel type:				
Carbon steel	81,200	83,600	93.82	93.78
Alloy steel	3,140	3,270	3.62	3.67
Stainless steel	2,220	2,270	2.56	2.55
Total	86,600	89,100	100.00	100.00
Steel mill products:				
Ingots, blooms, billets, and slabs	972	1,110	1.12	1.25
Wire rods	2,190	2,150	2.53	2.42
Structural shapes, heavy	5,580	5,570	6.44	6.25
Plates, cut lengths	6,330	6,550	7.31	7.35
Plates, in coils	3,100	2,970	3.58	3.33
Rails	846	902	0.98	1.01
Railroad accessories	241	276	0.28	0.31
Bars, hot-rolled	4,380	4,830	5.06	5.42
Bars, light-shaped	1,760	1,870	2.04	2.10
Bars, reinforcing	6,560	7,000	7.57	7.85
Bars, cold finished	1,260	1,190	1.45	1.33
Pipe and tubing, standard pipe	645	771	0.75	0.87
Pipe and tubing, oil country goods	2,500	2,680	2.89	3.01
Pipe and tubing, line pipe	476	540	0.55	0.61
Pipe and tubing, mechanical tubing	624	630	0.72	0.71
Pipe and tubing, pressure tubing	35	34	0.04	0.04
Pipe and tubing, stainless	12	12	0.01	0.01
Pipe and tubing, structural	53	51	0.06	0.06
Pipe for piling	1	--	0.00	--
Wire	376	363	0.43	0.41
Tin mill products, blackplate	57	30	0.07	0.03
Tin mill products, tinplate	1,370	1,300	1.59	1.46
Tin mill products, tin free steel	347	333	0.40	0.37
Tin mill products, tin coated sheets	91	88	0.11	0.10
Sheets, hot-rolled	19,600	20,600	22.59	23.14
Sheets, cold-rolled	10,400	10,200	12.07	11.45
Sheets and strip, hot dip galvanized	13,300	14,000	15.41	15.74
Sheets and strip, electrogalvanized	1,390	1,230	1.60	1.38
Sheets and strip, other metallic coated	1,440	1,260	1.66	1.41
Strip, hot-rolled	40	40	0.05	0.04
Strip, cold-rolled	558	494	0.64	0.55
Total	86,600	89,100	100.00	100.00
Shipments by markets:				
Service centers and distributors	23,300	23,100	26.86	25.89
Construction	18,900	20,900	21.83	23.45
Automotive	13,100	13,000	15.12	14.61
Machinery	852	1,000	0.98	1.12
Containers	1,970	1,930	2.28	2.17
All others	28,500	29,200	32.93	32.76
Total	86,600	89,100	100.00	100.00

-- Zero.

[1]Data are rounded to no more than three significant digits, except percentages; may not add to totals shown.

Source: American Iron and Steel Institute.

TABLE 4
U.S. IMPORTS AND EXPORTS OF STEEL MILL PRODUCTS,
BY COUNTRY[1]

(Thousand metric tons)

Country	2013		2014	
	Imports	Exports	Imports	Exports
Argentina	269	6	198	9
Australia	--	17	--	17
Brazil	3,780	82	4,560	94
Canada	4,970	6,090	5,490	5,790
China	1,730	88	2,900	101
European Union[2]	3,150	279	5,010	247
Germany	1,020	53	1,190	54
India	664	--	1,010	--
Japan	2,270	19	2,440	17
Korea, Republic of	3,460	45	4,970	37
Mexico	2,900	3,660	3,370	3,780
Russia	1,680	--	4,260	--
South Africa	69	5	175	3
Sweden	245	4	288	4
Taiwan	691	20	1,090	12
Turkey	1,090	--	2,000	--
Ukraine	119	--	110	--
Venezuela	--	38	--	56
Other	1,070	1,100	1,190	699
Total	29,200	11,500	40,200	10,900

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Excluding Germany and Sweden.

Source: American Iron and Steel Institute.

TABLE 5
U.S. EXPORTS OF IRON AND STEEL PRODUCTS[1]

(Thousand metric tons)

	2013	2014
Steel mill products:		
Ingots, blooms, billets, and slabs	443	289
Wire rods	144 r	138
Structural shapes, heavy	1,010	765
Steel piling	19	13
Plates, cut lengths	1,200	1,330
Plates, in coils	644	568
Rails, standard	107	122
Rails, other	85	65
Railroad accessories	44	41
Bars, hot-rolled	552	577
Bars, light-shaped	101	88
Bars, concrete reinforcing	494	483
Bars, cold-finished	150	158
Tool steel	99	98
Pipe and tubing, standard pipe	74	89
Pipe and tubing, oil country goods	397	492
Pipe and tubing, line pipe	526	296
Pipe and tubing, mechanical tubing	103	99
Pipe and tubing, stainless	45	46
Pipe and tubing, nonclassified	372	351
Pipe and tubing, structural	259	232
Pipe for piling	17	20
Wire	163	164
Tin mill products, blackplate	4	7
Tin mill products, tinplate	125	130
Tin mill products, tin free steel	12	13
Sheets, hot-rolled	941	895
Sheets, cold-rolled	896	870
Sheets and strip, hot-dip galvanized	1,200	1,250
Sheets and strip, electrogalvanized	351	338
Sheets and strip, other metallic coated	266	289
Sheets and strip, electrical	102	88
Strip, hot-rolled	257	207
Strip, cold-rolled	306	318
Total	11,500	10,900
Fabricated steel products:		
Structural shapes, fabricated	440	414
Rails, used	4	2
Railroad products	152	201
Wire rope	18	21
Wire, stranded products	39	37
Wire, other products	114	147
Springs	190	176
Nails and staples	24	26
Fasteners	431	474
Chains and parts	44	49
Grinding balls	135	144
Pipe and tube fittings	44	40
Other[2]	240	328
Total	1,880	2,060
Grand total	13,400	13,000
Cast iron and steel products:		
Cast steel pipe fittings	23	23
Cast iron pipe and fittings	90	136
Cast steel rolls	1	(3)

See footnotes at end of table.

TABLE 5—Continued
U.S. EXPORTS OF IRON AND STEEL PRODUCTS[1]

	2013	2014
Cast iron and steel products—Continued:		
Cast grinding balls[4]	47	54
Granules, shot and grit[5]	36	41
Other castings	86	88
Total	283	342

[r]Revised.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes shapes cold formed, sashes and frames, fence and sign post, architectural and ornamental work, and conduit.
[3]Less than ½ unit.
[4]Cast grinding balls [Harmonized Tariff Schedule of the United States (HTS) code 7325.91.000].
[5]Granule, shot and grit (HTS code 7205.10.000).

Sources: American Iron and Steel Institute and the U.S. International Trade Commission.

TABLE 6
U.S. IMPORTS OF IRON AND STEEL PRODUCTS[1]

(Thousand metric tons)

	2013	2014
Steel mill products:		
Ingots, blooms, billets, and slabs	6,640	9,610
Wire rods	797	1,470
Structural shapes-heavy	519	829
Steel piling	115	134
Plates, cut lengths	923	1,690
Plates, in coils	1,070	2,020
Rails and railroad accessories	345	338
Bars, hot-rolled	1,620	1,490
Bars, light-shaped	150	179
Bars, reinforcing	1,100	1,310
Bars, cold-finished	287	348
Tool steel	137	159
Pipe and tubing, standard pipe	793	823
Pipe and tubing, oil country goods	2,990	3,640
Pipe and tubing, line pipe	2,150	2,140
Pipe and tubing, mechanical tubing	532	678
Pipe and tubing, pressure tubing	56	68
Pipe and tubing, stainless	118	144
Pipe and tubing, nonclassified	17	23
Pipe and tubing, structural	382	467
Pipe for piling	15	15
Wire	647	736
Tin mill products, blackplate	39	74
Tin mill products, tinplate	487	633
Tin mill products, tin free steel	156	166
Sheets, hot-rolled	2,710	3,940
Sheets, cold-rolled	1,430	2,680
Sheets and strip, hot-dip galvanized	1,880	3,010
Sheets and strip, electrogalvanized	104	141
Sheets and strip, other metallic coated	653	926
Sheets and strip, electrical	86	67
Strip, hot-rolled	75	100
Strip, cold-rolled	168	175
Total	29,200	40,200
Fabricated steel products:		
Structural shapes, fabricated	828	897
Rails, used	86	73
Railroad products	169	238
Wire rope	133	141
Wire-stranded products	262	295
Wire, other products	178	188
Springs	345	391
Nails and staples	560	598
Fasteners	1,080	1,140
Chains and parts	127	143
Grinding balls	85	109
Pipe and tube fittings	396	428
Other[2]	492	516
Total	4,740	5,160
Grand total	33,900	45,400
Cast iron and steel products:		
Cast steel pipe fittings	140	142
Cast iron pipe and fittings	35	45
Cast steel rolls	13	13

See footnotes at end of table.

TABLE 6—Continued
U.S. IMPORTS OF IRON AND STEEL PRODUCTS[1]

(Thousand metric tons)

	2013	2014
Cast iron and steel products—Continued:		
Cast grinding balls[3]	9	12
Granules, shot and grit[4]	24	23
Other castings	270	288
Total	491	523

[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes shapes cold formed, sashes and frames, fence and sign post, architectural and ornamental work, and conduit.
[3]Cast grinding balls [Harmonized Tariff Schedule of the United States (HTS) code 7325.91.000].
[4]Granule, shot and grit (HTS code 7205.10.000).

Sources: American Iron and Steel Institute and the U.S. International Trade Commission.

TABLE 7
U.S. IMPORTS OF STAINLESS STEEL[1]

(Metric tons)

Product	2013	2014
Semifinished	124,000	144,000
Plate	161,000	105,000
Sheet and strip	338,000	428,000
Bars and shapes	126,000	152,000
Wire and wire rods	68,900	80,000
Pipe and tube	118,000	144,000
Total	935,000	1,050,000

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

Source: American Iron and Steel Institute.

TABLE 8
COAL AND COKE AT COKE PLANTS[1, 2]

(Thousand metric tons)

	2013	2014
Coal, consumption	19,500	18,500
Coke:[3]		
Production	13,900	NA
Exports	762	NA
Imports	125	NA
Consumption, apparent	13,000	NA

NA Not available.
[1]Data are rounded to no more than three significant digits.
[2]Includes furnace and merchant coke plants.
[3]Coke production and consumption do not include breeze.

Source: U.S. Energy Information Administration, Quarterly Coal Report, DOE/EIA-0121(2015/02Q).

TABLE 9

PIG IRON AND DIRECT-REDUCED IRON: WORLD PRODUCTION, BY COUNTRY[1, 2, 3, 4]

(Thousand metric tons)

Country[5]	2010	2011	2012	2013	2014
Algeria	696	360	350	360 e	360 e
Argentina:					
Direct-reduced iron	1,566	1,650	1,606	1,466	1,663
Pig iron	2,532	2,795	2,078	2,650	2,766
Australia	6,259	5,369	3,480	3,435	3,282
Austria	5,621	5,815	5,751	6,152	6,029
Belgium	4,688	4,725	4,072	4,343	4,388
Bosnia and Herzegovina	621	685	750	759	860
Brazil	30,878 r	33,243 r	30,745 r	30,000 r	27,016
Burma[e]	2	2	2	2	2
Canada:					
Direct-reduced iron	600	262	319	1,250 e	1,550
Pig iron	7,666	7,323	7,654	6,079	6,728
Chile	635	1,072	1,065	775	584
China[6]	597,330	640,510	657,900	708,970	711,600
Colombia	327	295	345	300	234
Czech Republic	3,987	4,137	3,936	4,041	4,152
Egypt:					
Direct-reduced iron[e]	2,965	2,932	3,068	3,432	2,882
Pig iron	600	600	550	600 e	550 e
Finland[e]	10,033 [7]	12,145 [7]	12,000	12,000	12,000
France	10,137	9,700 e	9,531	10,276	10,866
Germany:					
Direct-reduced iron[e]	450	380	560	500 r	570
Pig iron	28,560	27,943	27,048	26,910	27,379
Hungary	1,325	1,317	1,229	628	801
India:					
Direct-reduced iron	24,831	21,252	19,677	14,637	20,366
Pig iron	39,560	43,624	47,969	50,256	55,166
Indonesia, direct-reduced iron[e]	1,360	1,230	520	760 r	120
Iran:[e]					
Direct-reduced iron	9,400	10,400	11,600	14,500	14,551
Pig iron	2,500	2,500	3,000	2,010	2,782
Italy	8,549	9,800	9,418	6,935	6,371
Japan	82,283	81,028	81,405	83,849	83,872
Kazakhstan	2,984	3,141	2,707	2,850 e	3,185
Korea, North[e]	900	900	900	900	900
Korea, Republic of	31,228	42,213	41,734	40,855	46,909
Libya, direct-reduced iron	1,270	165	508	950	998
Malaysia, direct-reduced iron	2,390	2,876	2,329	2,500 e	2,400
Mexico:					
Direct-reduced iron	5,368	5,854	5,587	6,134	5,976
Pig iron	4,707	4,607 r	4,611 r	4,911 r	5,116
Morocco[e]	15	15	15	15	15
Netherlands[8]	5,799	5,943	5,909	5,685	5,868
New Zealand[e]	667	659	669	680	670
Norway[e]	100	100	100	100	102
Oman, direct-reduced iron	--	1,110	1,460	1,470	1,450
Pakistan[e]	483	433	249	216	217
Paraguay	81 e	42	67	69 r	71
Poland	3,638	3,975	3,944	4,011	4,637
Portugal[e]	100	100	100	100	100
Qatar, direct-reduced iron	2,157	2,230	2,420	2,390	2,549
Romania	1,726	1,595	1,450	1,600	1,631

See footnotes at end of table.

TABLE 9—Continued

PIG IRON AND DIRECT-REDUCED IRON: WORLD PRODUCTION, BY COUNTRY[1, 2, 3, 4]

(Thousand metric tons)

Country[5]	2010	2011	2012	2013	2014
Russia:[e]					
Direct-reduced iron	4,700	4,900	5,200	5,200	5,200
Pig iron	48,000	48,000	50,500	51,000	51,474 [7]
Saudi Arabia, direct-reduced iron[e]	5,500	5,800	5,700	6,000	6,460
Serbia	1,265	1,226	312 [9]	365 [e]	550
Slovakia	3,649	3,346	3,519	3,617	3,838
South Africa:					
Direct-reduced iron	1,120	1,414	1,493	1,410 [e]	1,560
Pig iron	5,429	4,604	4,599	4,930 [e]	4,690
Spain	3,572	3,540	3,081	3,949	3,958
Sweden	3,447	3,240	5,253	2,896 [r]	3,078
Taiwan	9,358	12,940	11,800	13,400 [e]	14,440
Trinidad and Tobago, direct-reduced iron	1,752	1,706 [r]	1,684	1,750	1,633
Turkey[e]	7,677 [7]	8,200	8,600	9,200	9,364
Ukraine	27,361	28,881	28,514	29,089	24,787
United Kingdom	7,235	6,600	7,252	9,512	9,705
United States	26,800	30,200	32,100	30,300	29,400
Venezuela, direct-reduced iron	3,793	4,470	4,472	2,571	1,402
Total	1,110,000	1,180,000	1,200,000 [r]	1,250,000 [r]	1,260,000
Of which:					
Direct-reduced iron[10]	69,200	68,600 [r]	68,200	66,900	71,300
Pig iron[11]	1,040,000	1,110,000	1,130,000 [r]	1,180,000	1,190,000

[e]Estimated. [r]Revised. -- Zero.

[1]World totals, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

[2]Production is pig iron unless otherwise specified.

[3]Direct-reduced iron is obtained from ore by reduction of oxides to metal without melting.

[4]Does not include ferroalloy production except where otherwise noted. Includes data available through April 28, 2016.

[5]Vietnam may have produced limited quantities of pig iron during 2010–14, but output is not reported and available information is inadequate to make reliable estimates of output levels.

[6]Figures reported by State Statistical Bureau that the Government of China considers to be official statistical data.

[7]Reported figure.

[8]Includes blast furnace ferroalloys.

[9]Smederevo plant closed July 31, 2012.

[10]Listed separately.

[11]Includes unspecified pig iron and direct-reduced iron.

TABLE 10
RAW STEEL: WORLD PRODUCTION, BY COUNTRY[1, 2, 3]

(Thousand metric tons)

Country[4]	2010	2011	2012	2013	2014
Albania	390 e	464	382	401	400
Algeria	696	440	500	440	415
Argentina	5,138	5,655	4,995	5,188	5,488
Australia	7,140	6,538	4,904	4,640	4,607
Austria	7,206	7,474	7,421	7,400 e	7,876
Azerbaijan	129	234	268	223 r	288
Belarus	2,672	2,779	2,869	2,395	2,513
Belgium	7,973	8,026	7,386	7,093	7,331
Bosnia and Herzegovina, ingot production	591	649	700	722	793
Brazil[5]	32,928 r	35,220 r	34,524 r	34,163 r	33,897
Bulgaria	740	834	633	522	612
Burma[e]	25	25	25	25	25
Canada	13,003	12,891	13,507	12,400 e	12,730
Chile[5]	1,011	1,615	1,683	1,321	1,079
China[6]	637,230	685,280	716,540	779,040	822,698
Colombia	1,209	1,290	1,324	1,297	1,208
Croatia	103	163	1	135 r	167
Cuba	280 r	282 r	279 r	267 r	258
Czech Republic	5,180	5,583	5,072	5,171	5,360
Ecuador	368	525	479	562	662
Egypt	6,700	6,486	6,600	6,754	6,495
El Salvador	64	100	72	72 e	121
Ethiopia, all from scrap[e]	150	130	130	130	130
Finland	4,029	3,989	3,759	3,517	3,807
France	15,416	15,800	15,607	15,685	16,143
Germany	43,830	44,284	42,661	42,641	42,943
Greece	1,839	1,993	2,000	2,000 e	1,022
Guatemala	274	294	334	385 r	395
Hungary	1,678	1,733	1,543	883 r	1,152
India	68,976	73,471	77,561	81,213	86,530
Indonesia	3,700	3,600	2,300	2,644 r	4,428
Iran[e]	12,000	13,000	14,500	15,400	16,331
Israel[e]	430	430	430	430	430
Italy	25,751	28,700	27,227	24,058	23,714
Japan	109,599	107,601	107,232	110,571	110,666
Jordan[e]	150	150	100	100	100
Kazakhstan	3,338	3,699	2,607	2,800 e	3,681
Kenya[e]	260	290	290	290	410
Korea, North[e]	1,300	1,300	1,300	1,300	1,300
Korea, Republic of	58,914	68,519	39,321	81,213	71,036
Latvia[e]	655	515	800	NA	NA
Libya	825	100	300	715	968
Luxembourg	2,563	2,521	2,232	2,090 r	2,193
Macedonia	291	386	225	146	145
Malaysia	5,693	5,941	5,612	5,700 e	5,700
Mexico	16,870 r	18,110 r	18,073 r	18,420	18,995
Moldova	242	321	317	190	344
Montenegro	48	61	28	20 e	30
Morocco	455	460	475	558	502
Netherlands	6,651	6,900	6,867	6,713	6,964
New Zealand	853	844	912	900 e	881
Norway	514	620	590	605	600
Pakistan	415 r	358 r	198 r	165 r	142
Paraguay[e]	59	30	44 [7]	45	47
Peru	880	877	981	1,090	1,078

See footnotes at end of table.

TABLE 10—Continued
RAW STEEL: WORLD PRODUCTION, BY COUNTRY[1, 2, 3]

(Thousand metric tons)

Country[4]	2010	2011	2012	2013	2014
Philippines	1,050	1,200	1,260 r	1,308 r	1,196
Poland	7,996	8,777	8,543	8,198	8,558
Portugal	1,351	1,942 r	1,960 r	2,050 r	2,070
Qatar	1,705	1,821	2,100	2,236	3,047
Romania	3,896	3,811	3,417	3,071	3,158
Russia	66,800	68,100	68,500 e	69,400	71,461
Saudi Arabia[e]	5,000	5,300	5,200	5,400	6,291
Serbia	1,254	1,324	346 [8]	396	583
Singapore[e]	728	650	700	700	700
Slovakia	4,580	4,236	4,250	4,000 e	4,705
Slovenia	566	706	600	600 e	615
South Africa	7,617	7,546	6,938	7,200 e	6,550
Spain	16,343	15,591	15,600 e	15,600 e	14,249
Sweden	4,844	4,866	4,326	4,404	4,539
Switzerland	1,320	1,400	1,500 e	1,500 e	1,475
Syria	63	63	10	10 e	5
Taiwan	18,975	21,927	19,927	21,466	23,121
Thailand	4,145 r	4,238 r	3,728 r	3,579 r	4,095
Trinidad and Tobago	572	604	624	616	483
Tunisia	115	119	180	180 e	109
Turkey	29,030	34,103	35,885	34,650	34,035
Uganda[e]	59	65	60	60	60
Ukraine	33,559	35,332	32,912	33,160	27,170
United Arab Emirates[e]	500	2,000	2,800	2,878 [7]	2,390
United Kingdom	9,709	9,478	9,819	11,855	12,120
United States	80,500	86,400	88,700	86,900	88,200
Uruguay	65	81	78	90	94
Uzbekistan	731	733	736	740 e	730
Venezuela	2,207	2,300	2,360	2,250	1,485
Vietnam	4,314	4,900 r	4,298 r	5,774 r	5,847
Zimbabwe[e]	14	15	15	15	15
Total	1,430,000	1,520,000	1,510,000 r	1,620,000	1,670,000

[e]Estimated. [r]Revised. NA Not available.

[1]World totals, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

[2]Steel formed in solid state after melting, suitable for further processing or sale; for some countries, includes material reported as "liquid steel," presumably measured in the molten state prior to cooling in any specific form.

[3]Includes data available through February 10, 2016.

[4]In addition to the countries listed, Hong Kong, Mauritania, Mozambique, and Sri Lanka are known to have steelmaking plants, but available information is inadequate to make reliable estimates of output levels.

[5]Does not include castings.

[6]Figures reported by the State Statistical Bureau that the Government of China considers as official statistical data.

[7]Reported figure.

[8]Smederevo plant closed July 31, 2012.