



# 2017 Minerals Yearbook

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## IRON AND STEEL SCRAP [ADVANCE RELEASE]

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# IRON AND STEEL SCRAP

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In 2017, domestic consumers had net receipts of all types of ferrous scrap from brokers, dealers, and other outside sources of 44.9 million metric tons (Mt) at an estimated delivered value of \$11.9 billion and exported 15.0 Mt valued at \$4.87 billion (tables 1, 8, 11). The steel industry has been recycling steel scrap for more than 150 years using electric arc furnaces (EAFs), which accounted for 68.4% of the total raw steel produced in 2017. U.S. raw steel production increased by 4% to 81.6 Mt in 2017 compared with 78.5 Mt in 2016 (American Iron and Steel Institute, 2018, p. 71).

Iron and steel scrap is a vital raw material in the production of new steel and cast-iron products. The steelmaking and foundry industries in the United States are highly dependent upon the ready availability of scrap from manufacturing operations and the recovery of obsolete products. Steel scrap recycling conserves energy, landfill space, and raw materials. The remelting of scrap requires much less energy than the production of iron and steel products from iron ore. Each year, steel recycling saves the energy equivalent of the electrical power needed for 1 year by approximately one-fifth of the houses in the United States (about 20 million homes). Consumption of iron and steel scrap by remelting reduces the burden on landfill disposal facilities and prevents the accumulation of abandoned steel products in the environment (James Woods, Senior Director, Steel Recycling Institute, unpub. data, January 8, 2016).

In the United States, the primary source of obsolete steel is recycled automobiles. In 2017, the automotive recycling industry recycled about 14 Mt of steel from end-of-life vehicles using more than 350 car shredders, the equivalent of 12 million automobiles. More than 7,000 vehicle dismantlers resold parts processed in North America. By weight, the typical car consists of about 60% iron and steel. The steel used in the outer shell of car bodies is made of about 25% recycled steel. On average, each year, the steel industry recycles more than 18 Mt of steel from cars that are no longer fit for the road. This amount is equivalent to nearly 15 million new vehicles (James Woods, Senior Director, Steel Recycling Institute, unpub. data, January 8, 2016).

Minimills, in which EAFs are used, consumed direct-reduced iron (DRI) to improve steel quality, and integrated steelmakers continued to use small quantities of DRI in blast furnaces as a process coolant. Minimills commonly use a feed mix that has various proportions of DRI, pig iron, and scrap. Raw steel production by U.S. minimills increased to 55.8 Mt in 2017, a 6% increase from the revised amount in 2016 (American Iron and Steel Institute, 2018, p. 71). U.S. DRI production was 2.99 Mt, a 65% increase from 1.81 Mt in 2016 (Midrex Technologies, Inc., 2018, p. 9).

## Consumption

The U.S. Geological Survey derived domestic data for ferrous scrap from voluntary monthly and (or) or annual surveys of U.S. scrap-consuming operations. Survey data accounted for about 45% of total ferrous scrap consumption by all classes of scrap consumers. Total consumption for these classes of consumers included estimates based on statistical methods and prior reports plus actual survey responses.

In 2017, domestic consumers had net receipts of all types of ferrous scrap from brokers, dealers, and other outside sources of 44.9 Mt at an estimated delivered value of \$11.9 billion and exported 15.0 Mt valued at \$4.87 billion (tables 1, 8, 11). Total domestic consumption of ferrous scrap, based on reported and estimated data, was 50.2 Mt, a slight increase from that of 2016 (table 1). The total market for U.S.-produced scrap (net receipts plus exports minus imports) was 55.2 Mt in 2017, a 5% increase from 52.7 Mt in 2016 (table 1).

U.S. raw steel production increased to 81.6 Mt in 2017 compared with 78.5 Mt in 2016. The shares of raw steel produced by EAFs and basic oxygen furnaces were 68.4% and 31.6%, respectively. In 2017, continuous cast steel production represented 99.6% of total raw steel production, a slight increase from that of 2016. Raw steel production capability decreased slightly to 110 Mt in 2017 from 111 Mt in 2016. The capacity utilization index increased to 74% in 2017 from 70.5% in 2016 (American Iron and Steel Institute, 2018, p. 71, 73).

Steel mills accounted for 92.4% of all scrap received from brokers, dealers, and other outside sources; iron foundries received 6.9%, and steel foundries received less than 1% (table 1). Apparent total domestic consumption of ferrous scrap was 44.9 Mt as measured by net receipts (total external receipts minus shipments) and 5.52 Mt of home scrap production (table 2). Stocks of ferrous scrap at consumer plants increased slightly to 4.44 Mt in 2017 (table 1). The feedstock used by all iron and steel product manufacturers consisted of scrap, 69%; pig iron, 28%; and DRI, 3% (table 4). Total consumption of DRI was 1.89 Mt, 61% less than that of 2016 (table 1). Net shipments of all grades of steel mill products were about 82.5 Mt, up 5% from those in 2016 (American Iron and Steel Institute, 2018, p. 23).

## Prices

The average composite delivered price of No. 1 heavy-melting steel scrap in 2017, calculated from prices per long ton published monthly by American Metal Market, was \$264.94 per metric ton. The average monthly price ranged from a low of \$251.68 per metric ton in February to a high of

\$282.14 per metric ton in September, ending a 5-year decline after falling from an annual average high of \$410.99 in 2011 to \$195.84 in 2016 (table 8).

The average annual composite delivered price of No. 1 heavy-melting steel scrap, calculated from prices per long ton published weekly in the Iron Age Scrap Price Bulletin, was \$267.56 per metric ton; the average unit value ranged from a low of \$218.24 per metric ton in January to a high of \$290.51 per metric ton in March (Metal Bulletin Holdings LLC, 2017).

The average unit value of total ferrous scrap exports (excluding used rails for rerolling and other uses and ships, boats, and other vessels for scrapping) increased by about 16% to \$325 per metric ton compared with that of 2016 (table 11). The average unit value of total imports increased by approximately 30% to about \$321 per metric ton compared with that of 2016 (table 14).

### Foreign Trade

In 2017, U.S. net exports for all classes of ferrous scrap (including used rails for rerolling and other uses and ships, boats, and other vessels for scrapping) were 10.2 Mt valued at about \$3.36 billion (tables 1, 11, 14). This represented an increase of 18% in quantity and an increase of 30% in value compared with the 2016 net exports of 8.69 Mt valued at \$2.59 billion.

### World Review

Iron and steel scrap is an essential raw material for the steel and foundry industries. Because scrap comes from such sources as discarded cars, consumer durables, industrial machinery, manufacturing operations, and old buildings, the relatively mature industrialized economies were generally the leading exporters of scrap to lesser developed steelmaking countries.

The United States exported more iron and steel scrap in 2017 than any other country (15.0 Mt), followed by the United Kingdom (9.40 Mt), Japan (8.21 Mt), Germany (8.17 Mt), France (6.18 Mt), and the Netherlands (5.57 Mt). The leading importing nations were Turkey (21.0 Mt), the Republic of Korea (6.18 Mt), India (5.37 Mt), Italy (5.21 Mt), and Belgium and the United States (4.64 Mt each) (World Steel Association, 2018, p. 105–108).

World capacity (operating, under construction, and under contract) for DRI production in 2017 was estimated to be about 128 million metric tons per year (Mt/yr), including about 16 Mt/yr of idled capacity. DRI production worldwide was estimated to have increased by 20% to 87.1 Mt in 2017 from 72.8 Mt in 2016. The leading producer of DRI was India (22.3 Mt), followed by Iran (20.6 Mt), Russia (7.0 Mt), Mexico (6.0 Mt), and Saudi Arabia (5.7 Mt). In 2017, additional DRI capacity of about 12 Mt/yr was under construction in Algeria, Iran, the United States, and Venezuela. The leading technology was, according to declining order of production, the Midrex process, followed by coal-based and HYL/Energiron (Midrex Technologies Inc., 2018, p. 2–7, 12–15).

### Outlook

World apparent steel consumption (ASC) is forecast to be 1,622 Mt in 2017 and 1,648 Mt in 2018, after consumption in 2016 was 1,516 Mt. China's ASC is expected to increase to 766 Mt in 2018 from 681 Mt in 2016. The ASC in India is expected to increase to 92.1 Mt in 2018 from 83.5 Mt in 2016. Increases in ASC are also anticipated in the Commonwealth of Independent States (to 53.0 Mt from 49.4 Mt), the European Union (to 164.3 Mt from 158.2 Mt), Japan (to 64.5 Mt from 62.2 Mt), and the United States (to 97.3 Mt from 91.8 Mt) (World Steel Association, 2017).

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### GENERAL SOURCES OF INFORMATION

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- Iron Ore. Mineral Industry Surveys, monthly.
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#### Other

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- Directory of Iron and Steel Plants. Association of Iron and Steel Engineers.
- Iron and Steel. Ch. in Mineral Facts and Problems, U.S. Bureau of Mines Bulletin 675, 1985.
- Iron and Steel Technology. American Institute of Mining, Metallurgical, and Petroleum Engineers—Association for Iron and Steel Technology.

TABLE 1  
SALIENT U.S. IRON AND STEEL SCRAP, PIG IRON, AND DIRECT-REDUCED IRON STATISTICS<sup>1</sup>

(Thousand metric tons and thousand dollars)

	2013	2014	2015	2016	2017
<b>Manufacturers of pig iron and raw steel and castings:<sup>2</sup></b>					
Ferrous scrap consumption	52,100	51,800	46,100	44,900	45,600
Pig iron consumption	31,800	25,900	22,200	20,700	19,800
Direct-reduced iron consumption	4,490	4,790	4,130	4,780	1,890
Net receipts of ferrous scrap <sup>3</sup>	45,200	46,600	41,400	40,400	41,500
Home scrap production <sup>4</sup>	6,780	5,360	4,990	4,820	4,380
Ending stocks of ferrous scrap, December 31	3,620	3,760	3,890	4,040	4,140
<b>Manufacturers of steel castings:<sup>5</sup></b>					
Ferrous scrap consumption	538 <sup>r</sup>	541 <sup>r</sup>	468 <sup>r</sup>	406 <sup>r</sup>	409
Pig iron consumption	8 <sup>r</sup>	9 <sup>r</sup>	9 <sup>r</sup>	8 <sup>r</sup>	8
Direct-reduced iron consumption	1	--	--	1	--
Net receipts of ferrous scrap <sup>3</sup>	395 <sup>r</sup>	406 <sup>r</sup>	350 <sup>r</sup>	300 <sup>r</sup>	300
Home scrap production <sup>4</sup>	142	138	125	109 <sup>r</sup>	109
Ending stocks of ferrous scrap, December 31	68 <sup>r</sup>	62 <sup>r</sup>	68 <sup>r</sup>	65 <sup>r</sup>	68
<b>Iron foundries and miscellaneous users:<sup>5</sup></b>					
Ferrous scrap consumption	5,660	5,560	4,430	4,210 <sup>r</sup>	4,130
Pig iron consumption	2,250 <sup>r</sup>	2,100	633	615 <sup>r</sup>	634
Direct-reduced iron consumption	3	3	3	3	3
Net receipts of ferrous scrap <sup>3</sup>	4,100 <sup>r</sup>	3,960	3,280 <sup>r</sup>	3,190 <sup>r</sup>	3,100
Home scrap production <sup>4</sup>	1,540	1,620	1,160	1,010	1,030
Ending stocks of ferrous scrap, December 31	282	256	240	234 <sup>r</sup>	232
<b>Total, all manufacturing types:</b>					
Ferrous scrap consumption	58,300 <sup>r</sup>	57,900 <sup>r</sup>	51,000 <sup>r</sup>	49,500 <sup>r</sup>	50,200
Pig iron consumption	34,000 <sup>r</sup>	28,000 <sup>r</sup>	22,800 <sup>r</sup>	21,300 <sup>r</sup>	20,500
Direct-reduced iron consumption	4,490	4,800	4,130	4,780	1,890
Net receipts of ferrous scrap <sup>3</sup>	49,700 <sup>r</sup>	51,000 <sup>r</sup>	45,000 <sup>r</sup>	43,900 <sup>r</sup>	44,900
Home scrap production <sup>4</sup>	8,460	7,120	6,270	5,940 <sup>r</sup>	5,520
<b>Ending stocks, December 31:</b>					
Ferrous scrap at consumer plants	3,970 <sup>r</sup>	4,070 <sup>r</sup>	4,200 <sup>r</sup>	4,340 <sup>r</sup>	4,440
Pig iron at consumer and supplier plants	427 <sup>r</sup>	442 <sup>r</sup>	672 <sup>r</sup>	440 <sup>r</sup>	497
Direct-reduced iron at consumer plants	107	217	216	237	265
<b>Exports:<sup>6</sup></b>					
<b>Ferrous scrap (includes tinplate and terneplate):<sup>7</sup></b>					
Quantity	18,500	15,300	12,800	12,600	15,000
Value	7,570,000	6,150,000	4,010,000	3,550,000	4,860,000
<b>Pig iron, all grades:</b>					
Quantity	18	7	17	16 <sup>r</sup>	37
Value	4,440	2,290	5,450	4,120 <sup>r</sup>	12,200
<b>Direct-reduced iron, steelmaking grade:</b>					
Quantity	(8)	1	20	178 <sup>r</sup>	640
Value	29	132	548	21,600	155,000
<b>Imports for consumption:<sup>6</sup></b>					
<b>Ferrous scrap (includes tinplate and terneplate):<sup>7</sup></b>					
Quantity	3,930	4,220	3,510	3,860	4,630
Value	1,470,000	1,710,000	955,000	949,000	1,490,000
<b>Pig iron, all grades:</b>					
Quantity	4,120	4,600	4,530	3,870	5,130
Value	1,640,000	1,850,000	1,290,000	948,000	1,770,000
<b>Direct-reduced iron, steelmaking grade:</b>					
Quantity	2,240	2,390	1,860	1,600	1,790
Value	775,000	854,000	483,000	334,000	563,000

See footnotes at end of table.

TABLE 1—Continued  
SALIENT U.S. IRON AND STEEL SCRAP, PIG IRON, AND DIRECT-REDUCED IRON STATISTICS<sup>1</sup>

(Thousand metric tons and thousand dollars)

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<sup>1</sup>Revised. -- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes manufacturers of raw steel that also produce steel castings.

<sup>3</sup>Net receipts of scrap is defined as receipts from brokers, dealers, and other outside sources plus receipts from other company-owned plants minus shipments.

<sup>4</sup>Includes recirculating scrap that results from current operations and obsolete home scrap.

<sup>5</sup>Some consumers in the “Manufacturers of steel castings” category also produce iron castings; some consumers in the “Iron foundries and miscellaneous users” category also produce steel castings.

<sup>6</sup>Data from U.S. Census Bureau. Export valuation is free alongside ship, and import valuation is customs value.

<sup>7</sup>Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping.

<sup>8</sup>Less than ½ unit.

TABLE 2  
U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS OF IRON AND STEEL SCRAP IN 2017, BY GRADE<sup>1</sup>

(Thousand metric tons)

Grade	Receipts of scrap		Production of home scrap		Consumption of purchased and home scrap	Shipments of scrap	Ending stocks, December 31
	From brokers, dealers, and other outside sources	From other company-owned plants	Recirculating scrap from current operations	Obsolete scrap <sup>2</sup>			
Manufacturers of pig iron and raw steel and castings:							
Carbon steel:							
Low-phosphorus plate and punchings	496	--	W	--	521	--	132
Cut structural and plate	3,370	89	380	--	3,820	W	329
No. 1 heavy-melting steel	2,990	170	443	W	3,620	23	175
No. 2 heavy-melting steel	4,040	176	349	--	4,560	1	210
No. 1 and electric furnace bundles	2,150	W	W	--	2,170	7	185
No. 2 and all other bundles	727	W	W	--	766	W	33
Electric furnace, 1 foot and under (not bundles)	W	--	W	--	W	W	--
Railroad rails	217	W	222	--	222	--	14
Turnings and borings	2,150	33	22	--	2,190	--	165
Slag scrap	460	W	796	--	867	W	93
Shredded or fragmented	12,400	1,020	W	--	13,300	19	1,700
No. 1 busheling	4,880	48	239	W	5,180	--	325
Steel cans, postconsumer	72	--	W	--	103	--	2
All other carbon steel scrap	2,340	148	887	W	3,310	63	381
Stainless steel scrap	902	68	329	W	1,350	4	55
Alloy steel (except stainless)	327	3	196	--	526	W	173
Ingot mold and stool scrap	W	--	W	W	36	W	2
Machinery and cupola cast iron	W	--	--	--	W	--	W
Cast-iron borings	146	--	W	--	150	W	4
Motor blocks	W	--	--	--	W	--	--
Other iron scrap	1,220	62	312	--	1,540	52	79
Other mixed scrap	743	592	W	--	1,330	59	77
Total	39,700	2,450	4,280	97	45,600	677	4,140
Manufacturers of steel castings:							
Carbon steel:							
Low-phosphorus plate and punchings	128	W	44	W	179	--	31
Cut structural and plate	16	--	W	W	19	--	--
No. 1 heavy-melting steel	7	--	--	--	7	--	1
No. 2 heavy-melting steel	W	--	W	W	W	--	--
No. 1 and electric furnace bundles	W	--	--	--	W	--	W
No. 2 and all other bundles	--	--	--	--	--	--	--
Electric furnace, 1 foot and under (not bundles)	4	--	W	--	7	--	--
Railroad rails	W	--	W	--	W	--	W
Turnings and borings	23	W	3	--	28	--	W
Slag scrap	W	--	W	--	W	W	W
Shredded or fragmented	20	--	--	--	20	--	W
No. 1 busheling	33	--	W	--	36	--	1
Steel cans, postconsumer	--	W	--	--	W	--	--
All other carbon steel scrap	6	W	11	--	17	--	--

See footnotes at end of table.

TABLE 2—Continued  
 U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS OF IRON AND STEEL SCRAP IN 2017, BY GRADE<sup>1</sup>

(Thousand metric tons)

Grade	Receipts of scrap		Production of home scrap		Consumption of purchased and home scrap	Shipments of scrap	Ending stocks, December 31
	From brokers, dealers, and other outside sources	From other company-owned plants	Recirculating scrap from current operations	Obsolete scrap <sup>2</sup>			
Manufacturers of steel castings:—Continued							
Stainless steel scrap	23	1	8	W	35	1	28
Alloy steel (except stainless)	17	2	14	--	34	--	2
Ingot mold and stool scrap	W	--	W	--	W	--	W
Machinery and cupola cast iron	--	--	--	--	--	--	--
Cast-iron borings	--	--	W	W	W	--	W
Motor blocks	--	--	--	--	--	--	--
Other iron scrap	--	--	--	W	1	W	--
Other mixed scrap	W	--	--	--	W	--	W
Total	291	12	104	5	409	3	68
Iron foundries and miscellaneous users:							
Carbon steel:							
Low-phosphorus plate and punchings	207	1	7	W	212	1	8
Cut structural and plate	512	2	88	9	613	1	20
No. 1 heavy-melting steel	29	W	W	--	126	--	1
No. 2 heavy-melting steel	82	--	W	--	82	--	4
No. 1 and electric furnace bundles	52	--	W	--	52	--	1
No. 2 and all other bundles	46	--	W	--	45	W	3
Electric furnace, 1 foot and under (not bundles)	77	--	--	--	77	--	1
Railroad rails	42	--	W	--	42	--	2
Turnings and borings	W	--	10	W	45	6	17
Slag scrap	--	--	W	W	W	W	W
Shredded or fragmented	666	--	22	W	690	--	35
No. 1 busheling	373	--	4	--	371	1	20
Steel cans, postconsumer	W	--	--	W	W	W	W
All other carbon steel scrap	62	--	56	--	117	1	5
Stainless steel scrap	2	--	1	W	2	1	1
Alloy steel (except stainless)	5	W	1	--	6	W	1
Ingot mold and stool scrap	W	W	W	--	19	W	W
Machinery and cupola cast iron	335	W	103	51	478	8	34
Cast-iron borings	104	23	9	--	135	1	1
Motor blocks	129	--	W	--	338	W	1
Other iron scrap	206	28	358	--	587	16	59
Other mixed scrap	33	8	42	W	81	1	6
Total	3,020	118	970	61	4,130	41	232

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes ingot molds, stools, and scrap from old equipment and buildings.

TABLE 3  
U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS OF PIG IRON  
AND DIRECT-REDUCED IRON IN 2017<sup>1</sup>

(Thousand metric tons)

	Receipts	Production	Consumption	Shipments	Stocks, December 31
<b>Manufacturers of pig iron, raw steel, and castings:</b>					
Pig iron	5,600 <sup>2</sup>	14,300	19,800	W	414
Direct-reduced iron (DRI)	1,920	--	1,890	W	263
<b>Manufacturers of steel castings:</b>					
Pig iron	8	44	8	W	45
DRI	W	1	--	--	W
<b>Iron foundries and miscellaneous users:</b>					
Pig iron	631	1	634	1	38
DRI	W	--	3	--	W
<b>Total, all manufacturing types:</b>					
Pig iron	6,240	14,300	20,500	6	497
DRI	1,920	1	1,890	(3)	265

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes 1.943 million metric tons purchased by electric furnace steel producers.

<sup>3</sup>Withheld to avoid disclosing company proprietary data.

TABLE 4  
U.S. CONSUMPTION OF IRON AND STEEL SCRAP, PIG IRON, AND DIRECT-REDUCED IRON (DRI) IN 2017,  
BY TYPE OF FURNACE OR OTHER USE<sup>1</sup>

(Thousand metric tons)

	Manufacturers of pig iron and raw steel and castings			Manufacturers of steel castings			Iron foundries and miscellaneous users			Total, all manufacturing types		
	Scrap	Pig iron	DRI	Scrap	Pig iron	DRI	Scrap	Pig iron	DRI	Scrap	Pig iron	DRI
Blast furnace	1,610	--	54	--	--	--	--	--	--	1,610	--	54
Basic oxygen process	4,330	17,000	--	--	--	--	--	--	--	4,330	17,000	--
Electric furnace	39,600	2,830	1,830	408	8	--	2,680	474	3	42,700	3,310	1,830
Cupola furnace	59	--	--	--	--	--	1,450	160	--	1,510	160	--
Other <sup>2</sup>	--	--	--	1	--	--	--	--	--	1	--	1
Total	45,600	19,800	1,890	409	8	--	4,130	634	3	50,200	20,500	1,890

-- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes air furnaces.



TABLE 5  
IRON AND STEEL SCRAP SUPPLY AVAILABLE FOR CONSUMPTION IN 2017, BY REGION AND STATE<sup>1,2</sup>

(Thousand metric tons)

Region and State	Receipts of scrap		Production of home scrap			New supply available for consumption
	From brokers, dealers, and other outside sources	From other company-owned plants	Recirculating scrap resulting from current operations	Obsolete scrap <sup>3</sup>	Shipments of scrap <sup>4</sup>	
<b>New England and Middle Atlantic:</b>						
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	17	--	6	W	W	22
New Jersey and New York	820	(5)	31	W	W	850
Pennsylvania	3,140	87	591	W	W	3,890
<b>Total</b>	<b>3,980</b>	<b>87</b>	<b>627</b>	<b>81</b>	<b>11</b>	<b>4,770</b>
<b>North Central:</b>						
Illinois	1,220	51	95	35	13	1,380
Indiana	3,730	255	495	W	W	4,480
Iowa, Nebraska, South Dakota	2,210	46	81	W	W	2,330
Kansas and Missouri	16	5	19	W	W	40
Michigan	2,200	18	732	(5)	479	2,470
Minnesota	263	12	124	--	(5)	398
Ohio	5,560	202	1,140	15	120	6,800
Wisconsin	800	2	400	4	5	1,200
<b>Total</b>	<b>16,000</b>	<b>591</b>	<b>3,090</b>	<b>54</b>	<b>617</b>	<b>19,100</b>
<b>South Atlantic:</b>						
Florida and Georgia	W	--	W	--	W	599
Maryland	W	--	W	--	--	1
North Carolina and South Carolina	2,970	5	262	W	W	3,240
Virginia and West Virginia	1,310	96	W	W	5	1,450
<b>Total</b>	<b>4,860</b>	<b>101</b>	<b>336</b>	<b>W</b>	<b>W</b>	<b>5,290</b>
<b>South Central:</b>						
Alabama and Mississippi	5,020	W	372	W	W	5,750
Arkansas, Louisiana, Oklahoma	4,130	W	384	W	--	4,690
Kentucky and Tennessee	2,690	318	205	W	W	3,200
Texas	3,020	W	101	W	W	3,510
<b>Total</b>	<b>14,900</b>	<b>1,240</b>	<b>1,060</b>	<b>W</b>	<b>W</b>	<b>17,100</b>
<b>Mountain and Pacific:</b>						
Arizona, Colorado, Idaho, Montana, Utah	1,800	W	W	--	W	1,970
California, Oregon, Washington	1,500	W	W	1	W	2,090
<b>Total</b>	<b>3,300</b>	<b>559</b>	<b>242</b>	<b>1</b>	<b>44</b>	<b>4,060</b>
<b>Grand total</b>	<b>43,000</b>	<b>2,580</b>	<b>5,350</b>	<b>163</b>	<b>721</b>	<b>50,400</b>

W Withheld to avoid disclosing company proprietary data; included in "Total" or "Grand total." -- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Supply available for consumption is a net figure calculated by adding production to receipts and deducting scrap shipped during the year. The difference in stock levels at the beginning and end of the year is not taken into consideration.

<sup>3</sup>Includes ingot molds, stools, and scrap from old equipment, buildings, and so forth.

<sup>4</sup>Includes scrap shipped, transferred, or otherwise disposed of during the year.

<sup>5</sup>Less than ½ unit.

TABLE 6  
U.S. CONSUMPTION OF IRON AND STEEL SCRAP AND PIG IRON IN 2017, BY REGION AND STATE<sup>1, 2, 3</sup>

(Thousand metric tons)

Region and State	Manufacturers of pig iron and raw steel and castings		Manufacturers of steel castings		Iron foundries and miscellaneous users		Total, all manufacturing types	
	Scrap	Pig iron	Scrap	Pig iron	Scrap	Pig iron	Scrap	Pig iron
New England and Middle Atlantic:								
Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont	785	--	1	--	88	5	875	5
Pennsylvania	3,560	2,000	138	(4)	173	17	3,870	2,010
Total	4,350	2,000	139	(4)	261	22	4,750	2,020
North Central:								
Illinois	1,150	71	5	--	238	53	1,390	124
Indiana	4,210	8,840	21	(4)	263	56	4,490	8,900
Iowa, Kansas, Minnesota, Missouri, Nebraska, South Dakota, Wisconsin	3,080	37	44	(4)	826	203	3,960	240
Michigan	1,950	4,130	27	--	522	15	2,500	4,150
Ohio	6,370	3,220	66	1	440	54	6,880	3,270
Total	16,800	16,300	163	1	2,290	379	19,200	16,700
South Atlantic:								
Maryland, Virginia, West Virginia	W	--	W	(4)	W	W	1,470	1
Florida, Georgia, North Carolina, South Carolina	W	146	(4)	--	W	W	3,750	305
Total	4,750	146	1	(4)	469	161	5,220	306
South Central:								
Alabama, Kentucky, Mississippi, Tennessee	W	W	W	(4)	W	W	8,870	892
Arkansas, Louisiana, Oklahoma	W	W	W	--	W	W	4,670	527
Texas	3,210	W	37	7	119	17	3,370	47
Total	15,900	1,390	72	7	888	69	16,900	1,470
Mountain and Pacific:								
Arizona, Colorado, Idaho, Montana, Utah	W	10	1	(4)	W	W	2,000	W
California, Oregon, Washington	W	--	33	(4)	W	W	2,080	W
Total	3,810	10	34	(4)	227	3	4,080	13
Grand total	45,600	19,800	409	8	4,130	634	50,200	20,500

W Withheld to avoid disclosing company proprietary data; included in "Total" or "Grand total." -- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes recirculating scrap resulting from current operations and home-generated obsolete scrap.

<sup>3</sup>Includes molten pig iron used for ingot molds and direct castings.

<sup>4</sup>Less than ½ unit.

TABLE 7

U.S. CONSUMER STOCKS OF IRON AND STEEL SCRAP AND PIG IRON, DECEMBER 31, 2017, BY REGION AND STATE<sup>1</sup>

(Thousand metric tons)

Region and State	Scrap					Total scrap	Pig iron
	Carbon steel <sup>2</sup>	Stainless steel	Alloy steel <sup>3</sup>	Cast iron <sup>4</sup>	Other grades of scrap		
New England and Middle Atlantic:							
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	(5)	W	--	(5)	W	(5)	(5)
New Jersey and New York	51	W	--	1	W	52	1
Pennsylvania	149	17	17	8	7	198	44
Total	200	17	17	9	7	250	45
North Central:							
Illinois	87	W	W	2	W	92	15
Indiana	367	3	5	6	W	384	148
Iowa, Kansas, Missouri, Nebraska, South Dakota	64	W	W	W	W	69	4
Michigan	59	(5)	W	--	W	67	2
Minnesota and Wisconsin	37	W	W	W	W	64	6
Ohio	343	34	29	52	W	457	59
Total	957	40	36	59	21	1,130	234
South Atlantic:							
Maryland, Virginia, West Virginia	57	--	(5)	W	W	72	W
Florida, Georgia, North Carolina, South Carolina	432	(5)	(5)	W	W	456	W
Total	489	(5)	(5)	22	17	528	37
South Central:							
Alabama, Kentucky, Mississippi, Tennessee	397	W	W	20	9	448	127
Arkansas, Louisiana, Oklahoma	750	W	121	(5)	W	872	37
Texas	978	5	W	11	W	994	11
Total	2,130	27	122	31	9	2,310	175
Mountain and Pacific:							
Arizona, Colorado, Idaho, Montana, Utah	47	(5)	(5)	W	W	107	W
California, Oregon, Washington	79	(5)	1	W	W	122	W
Total	126	1	2	70	30	228	5
Grand total	3,900	85	177	192	83	4,450	497

W Withheld to avoid disclosing company proprietary data; included in "Total or "Grand total." -- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.<sup>2</sup>Does not include rerolling rails.<sup>3</sup>Does not include stainless steel.<sup>4</sup>Includes borings.<sup>5</sup>Less than ½ unit.

TABLE 8  
 U.S. AVERAGE MONTHLY PRICE AND COMPOSITE PRICE FOR NO. 1  
 HEAVY-MELTING STEEL, WITH ANNUAL AVERAGES<sup>1</sup>

(Dollars per metric ton)

Period	Chicago, IL	Philadelphia, PA	Pittsburgh, PA	Composite price
2016, average	200.40	188.48	198.64	195.84
2017:				
January	243.84	263.82	275.58	261.08
February	257.45	235.23	262.37	251.68
March	279.43	265.52	285.84	276.93
April	261.80	243.10	273.61	259.50
May	255.89	244.26	282.73	260.96
June	251.87	246.05	277.37	258.43
July	250.97	255.50	275.58	260.68
August	259.10	272.50	292.69	274.76
September	260.81	290.34	295.26	282.14
October	236.65	267.07	275.13	259.62
November	231.29	260.81	270.66	254.25
December	254.91	284.44	298.21	279.19
Average	253.67	260.72	280.42	264.94

<sup>1</sup>Calculated by the U.S. Geological Survey from prices published in American Metal Market.

TABLE 9  
U.S. EXPORTS OF IRON AND STEEL SCRAP, BY COUNTRY OR LOCALITY<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Country or locality	2016		2017	
	Quantity	Value <sup>3</sup>	Quantity	Value <sup>3</sup>
Argentina	1	604	(4)	133
Australia	1	209	(4)	98
Austria	1	1,120	2	1,550
Bangladesh	296	63,900	648	180,000
Belgium	9	10,800	68	5,020
Brazil	22	5,910	(4)	8
British Indian Ocean Territories	(4)	58	1	555
Canada	717	131,000	916	201,000
China	889	661,000	1,010	803,000
Dominican Republic	2	554	(4)	230
Ecuador	40	9,210	151	42,100
Egypt	120	29,300	400	118,000
Finland	(4)	24	1	390
France	1	929	(4)	336
Germany	3	2,900	28	4,420
Greece	203	42,100	182	52,200
Guatemala	--	--	27	8,480
Hong Kong	42	30,100	66	45,500
India	1,100	316,000	724	262,000
Indonesia	60	17,300	138	46,000
Italy	2	1,720	110	33,700
Japan	54	35,200	87	45,500
Korea, Republic of	853	212,000	534	173,000
Kuwait	442	104,000	426	124,000
Malaysia	35	12,000	230	64,100
Mexico	1,480	340,000	1,660	412,000
Morocco	--	--	12	2,620
Netherlands	8	6,530 <sup>r</sup>	56	6,510
Oman	(4)	92	4	103
Pakistan	452	167,000	693	260,000
Panama	(4)	164	1	17
Peru	394	85,800	444	125,000
Philippines	1	427	10	6,880
Portugal	--	--	7	1,170
Saudi Arabia	50	10,600	43	13,400
Singapore	1	647	2	947
Spain	1	1,050	28	8,590
Suriname	(4)	3	1	240
Sweden	3	3,780	2	1,510
Switzerland	(4)	22	1	221
Taiwan	1,340 <sup>r</sup>	368,000 <sup>r</sup>	1,370	434,000
Thailand	429 <sup>r</sup>	96,300 <sup>r</sup>	539	152,000
Tunisia	--	--	12	4,410
Turkey	3,180	687,000	3,640	1,020,000
United Arab Emirates	15	5,250	21	6,930
United Kingdom	2	1,280	2	2,030
Vietnam	370	82,400	658	184,000
Other	4 <sup>r</sup>	1,610 <sup>r</sup>	3	1,530
Total <sup>5</sup>	12,600	3,550,000	15,000	4,860,000

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping.

<sup>3</sup>Export valuation is free alongside ship.

<sup>4</sup>Less than ½ unit.

<sup>5</sup>The United States exported scrap to 75 countries and (or) localities in 2016 and to 90 countries and (or) localities in 2017.

Source: U.S. Census Bureau.

TABLE 10  
U.S. EXPORTS OF IRON AND STEEL SCRAP,  
BY CUSTOMS DISTRICT<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Customs district	2016		2017	
	Quantity	Value <sup>3</sup>	Quantity	Value <sup>3</sup>
Baltimore, MD	341	106,000	290	114,000
Boston, MA	876	198,000	999	277,000
Buffalo, NY	191	35,600	178	48,500
Charleston, SC	68	40,500	147	69,200
Chicago, IL	1	517	3	1,850
Cleveland, OH	1	597	1	615
Columbia-Snake, OR	568	126,000	574	165,000
Detroit, MI	188	40,100	267	56,100
Duluth, MN	7	3,330	15	5,750
El Paso, TX	92	21,100	105	28,400
Great Falls, MT	11	2,620	19	5,130
Honolulu, HI	103	20,500	124	32,700
Houston-Galveston, TX	343 <sup>r</sup>	130,000	439	171,000
Laredo, TX	448	109,000	748	198,000
Los Angeles, CA	2,150	751,000 <sup>r</sup>	2,630	1,030,000
Miami, FL	316	97,300	367	130,000
Mobile, AL	54	13,900	4	2,950
New Orleans, LA	35	14,600	107	36,300
New York, NY	2,090	597,000	2,310	821,000
Nogales, AZ	(4)	99	1	230
Norfolk, VA	211	121,000	237	132,000
Ogdensburg, NY	14	1,850 <sup>r</sup>	27	6,990
Pembina, ND	94	20,800	192	49,200
Philadelphia, PA	913	201,000	929	249,000
Portland, ME	135	28,000	108	26,300
Providence, RI	536	118,000	662	185,000
San Diego, CA	284	58,300	364	66,400
San Francisco, CA	1,360	328,000	1,570	470,000
San Juan, PR	106	25,100	99	26,400
Savannah, GA	136	76,600	262	89,600
Seattle, WA	540	161,000	725	246,000
St. Albans, VT	64	6,990	46	11,100
Tampa, FL	282	77,200	279	94,000
Wilmington, NC	4	3,660	3	4,080
Other	76	10,600 <sup>r</sup>	119	11,400
Total	12,600	3,550,000	15,000	4,860,000

<sup>r</sup>Revised.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping.

<sup>3</sup>Export valuation is free alongside ship.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 11  
U.S. EXPORTS OF IRON AND STEEL SCRAP, BY GRADE<sup>1</sup>

(Thousand metric tons and thousand dollars)

Grade	2016		2017	
	Quantity	Value <sup>2</sup>	Quantity	Value <sup>2</sup>
No. 1 heavy-melting scrap	3,670	833,000	4,350	1,190,000
No. 2 heavy-melting scrap	529	120,000	683	184,000
No. 1 bundles	90	20,800	224	26,200
No. 2 bundles	5	982	2	309
Shredded steel scrap	4,350	975,000 <sup>r</sup>	5,330	1,530,000
Borings, shovelings, and turnings	6	1,330	10	1,910
Cut plate and structural	563	145,000	517	147,000
Tinned iron or steel	61	16,400	76	24,200
Remelting scrap ingots	8	5,830	4	2,310
Stainless steel scrap	654	442,000	488	425,000
Other alloy steel scrap	765	354,000	704	337,000
Other steel scrap <sup>3</sup>	1,780	572,000 <sup>r</sup>	1,990	724,000
Iron scrap	159	58,700	581	263,000
Total	12,600	3,550,000	15,000	4,860,000
Ships, boats, and other vessels for scrapping	3	435	3	403
Used rails for rerolling and other uses <sup>4</sup>	17 <sup>r</sup>	18,600	8	12,800
Grand total	12,700	3,560,000 <sup>r</sup>	15,000	4,870,000

<sup>r</sup>Revised.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Export valuation is free alongside ship.

<sup>3</sup>Includes tinplate and terneplate.

<sup>4</sup>Includes mixed (used plus new) rails. More information can be found in table 15.

Source: U.S. Census Bureau.

TABLE 12  
U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP,  
BY COUNTRY OR LOCALITY<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Country or locality	2016		2017	
	Quantity	Value <sup>3</sup>	Quantity	Value <sup>3</sup>
Bahamas, The	2	273	7	774
Belgium	(4)	189	(4)	37
Brazil	1	591	4	6,220
British Virgin Islands	2	170	(4)	34
Canada	2,800	656,000	3,170	967,000
Cayman Islands	(4)	6	1	308
China	2	746	1	950
Colombia	(4)	121	1	825
Costa Rica	1	208	(4)	174
Curacao	(4)	8	1	171
Czechia	1	1,020	1	1,230
Ecuador	(4)	50	1	862
France	1	581	1	346
Germany	25 <sup>r</sup>	5,780	5	7,480
India	1	502	(4)	29
Japan	1	652	69	24,200
Mexico	229	95,900	399	176,000
Netherlands	180	39,700	212	60,600
Russia	(4)	29	2	3,490
Spain	(4)	100	16	4,910
Sweden	259	60,500	207	62,800
Taiwan	(4)	264	1	1,050
United Kingdom	355	83,200	510	161,000
Venezuela	(4)	93	19	2,760
Other	4 <sup>r</sup>	1,820 <sup>r</sup>	4	3,470
Total <sup>5</sup>	3,860	949,000	4,630	1,490,000

<sup>r</sup>Revised.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping.

<sup>3</sup>Import valuation is customs values.

<sup>4</sup>Less than ½ unit.

<sup>5</sup>The United States imported scrap from 54 countries and (or) localities in 2016 and 61 countries and (or) localities in 2017.

Source: U.S. Census Bureau.



TABLE 13  
U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP,  
BY CUSTOMS DISTRICT<sup>1, 2</sup>

(Thousand metric tons and thousand dollars)

Customs district	2016		2017	
	Quantity	Value <sup>3</sup>	Quantity	Value <sup>3</sup>
Baltimore, MD	1	234	(4)	243
Buffalo, NY	453	147,000	541	236,000
Charleston, SC	276	62,100	337	95,700
Chicago, IL	(4)	28	1	435
Cleveland, OH	19	1,120	34	1,490
Columbia-Snake, OR	--	--	6	1,320
Detroit, MI	1,370	334,000	1,520	502,000
Duluth, MN	96	20,800	84	21,100
El Paso, TX	29	9,860	54	19,600
Great Falls, MT	29	5,920	28	6,720
Houston-Galveston, TX	2	2,470	14	15,100
Laredo, TX	136	60,000	212	97,300
Los Angeles, CA	1	847	1	1,370
Miami, FL	4	816	8	1,360
Mobile, AL	162	44,000	301	120,000
New Orleans, LA	416	98,900	526	161,000
New York, NY	1	1,010	1	881
Nogales, AZ	8	2,500	10	3,030
Norfolk, VA	(4)	101	--	--
Ogdensburg, NY	18	5,330 <sup>r</sup>	13	7,910
Pembina, ND	160	33,100	96	27,700
Philadelphia, PA	1	375	2	691
Portland, ME	5	1,710	3	1,820
San Diego, CA	21	7,460	76	23,500
San Juan, PR	2	275	(4)	57
Savannah, GA	(4)	499	1	1,500
Seattle, WA	610	100,000	740	134,000
St. Albans, VT	39	7,450	25	5,680
Tampa, FL	(4)	125	(4)	121
Other	3	279	(4)	377
Total	3,860	949,000	4,630	1,490,000

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping.

<sup>3</sup>Import valuation is customs values.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 14  
U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP, BY CLASS<sup>1</sup>

(Thousand metric tons and thousand dollars)

Class	2016		2017	
	Quantity	Value <sup>2</sup>	Quantity	Value <sup>2</sup>
No. 1 heavy-melting scrap	147	28,200	151	36,100
No. 2 heavy-melting scrap	95	19,300	113	24,800
No. 1 bundles	1,030	243,000	1,320	436,000
No. 2 bundles	69	15,200	60	14,800
Shredded steel scrap	716	146,000	848	211,000
Borings, shoveling, and turnings	46	7,550	66	13,800
Cut plate and structural	186	37,600	193	48,700
Tinned iron or steel	89	16,700	92	27,600
Remelting scrap ingots	(3)	80	1	618
Stainless steel scrap	263	182,000	282	279,000
Other alloy steel scrap	608	137,000	627	170,000
Other steel scrap <sup>4</sup>	468	89,100	735	193,000
Iron scrap	144	27,100 <sup>r</sup>	145	33,000
Total	3,860	949,000	4,630	1,490,000
Ships, boats, and other vessels for scrapping	(3)	509	51	7,610
Used rails for rerolling and other uses <sup>5</sup>	95	22,800	50	16,500
Grand total	3,960	972,000	4,730	1,510,000

<sup>r</sup>Revised.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Import valuation is customs value.

<sup>3</sup>Less than ½ unit.

<sup>4</sup>Includes tinplate and terneplate.

<sup>5</sup>Includes mixed (used plus new) rails. More information can be found in table 16.

Source: U.S. Census Bureau.

TABLE 15  
U.S. EXPORTS OF USED RAILS FOR REROLLING AND OTHER USES,  
BY COUNTRY OR LOCALITY<sup>1</sup>

Country or locality	2016		2017	
	Quantity (metric tons)	Value <sup>2</sup> (thousands)	Quantity (metric tons)	Value <sup>2</sup> (thousands)
Argentina	18	\$57	9	\$13
Aruba	1	3	4	13
Australia	1,240	1,700	2,140	2,860
Bahamas, The	1	5	5	13
Barbados	1	10	--	--
Belgium	21	66	--	--
Bermuda	1	15	2	39
Brazil	714	489	3	30
Cayman Islands	1	10	72	613
Chile	255	230	416	404
China	116	242	111	933
Colombia	42	108	381	396
Costa Rica	18	32	(3)	3
Dominican Republic	225	234	455	595
Finland	1	10	--	--
France	15	21	(3)	5
Germany	10	35	(3)	3
Guatemala	--	--	53	215
Guyana	22	61	30	27
Honduras	--	--	31	51
India	(3)	5	20	26
Indonesia	(3)	22	4	8
Jamaica	--	--	127	168
Japan	9	191	10	130
Kuwait	63	265	--	--
Macau	2	91	--	--
Malaysia	--	--	1	6
Mexico	12,900	14,300	4,220	5,610
Netherlands	(3)	12	(3)	133
New Zealand	2	23	3	36
Nicaragua	--	--	5	18
Oman	18	27	--	--
Panama	111	92	1	8
Peru	7	5	--	--
Saint Kitts and Nevis	21	40	3	92
Singapore	1	14	(3)	17
South Africa	2	53	--	--
Taiwan	146	82	239	93
Thailand	1	24	(3)	3
Turks and Caicos Islands	--	--	1	3
United Arab Emirates	5	32	(3)	5
United Kingdom	3	20	51	130
Venezuela	10	5	32	43
Other	1	19 <sup>r</sup>	1	26
Total	16,000	18,600	8,430	12,800

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Export valuation is free alongside ship.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 16  
U.S. IMPORTS FOR CONSUMPTION OF USED RAILS FOR REROLLING  
AND OTHER USES, BY COUNTRY OR LOCALITY<sup>1</sup>

Country or locality	2016		2017	
	Quantity (metric tons)	Value <sup>2</sup> (thousands)	Quantity (metric tons)	Value <sup>2</sup> (thousands)
Austria	8	\$20	--	--
Belgium	23	39	--	--
Brazil	--	--	4	\$16
Canada	91,900	20,200	47,300	14,400
China	3,360	2,240	1,880	1,480
Czechia	8	9	--	--
Germany	11	28	121	235
India	1	7	38	109
Italy	--	--	124	106
Japan	45	81	36	36
Luxembourg	--	--	10	12
Mexico	15	27	7	19
Netherlands	--	--	39	62
New Zealand	1	4	--	--
Spain	52	107	--	--
Switzerland	--	--	1	2
Taiwan	3	8	(3)	4
Turkey	--	--	3	14
United Kingdom	1	4	1	3
Total	95,400	22,800	49,600	16,500

-- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Import valuation is customs value.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 17  
U.S. EXPORTS FOR CONSUMPTION OF STEELMAKING-GRADE DIRECT-REDUCED IRON,  
BY COUNTRY OR LOCALITY<sup>1</sup>

Country or locality	2016		2017	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Austria	--	--	204,000	\$54,400
Canada	1,420	\$58	173	14
China	45,300	78	27,500	41
Germany	22,700	136	--	--
Italy	--	--	58	7
Malaysia	426	4	--	--
Mexico	--	--	229,000	55,000
Russia	10,600	27	23	3
Singapore	1,000	4	--	--
Slovenia	89,600	21,300	163,000	41,800
Taiwan	6,700	19	--	--
Uruguay	--	--	16,700	4,150
Total	178,000	21,600	640,000	155,000

-- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 18  
U.S. IMPORTS FOR CONSUMPTION OF STEELMAKING-GRADE DIRECT-REDUCED IRON,  
BY COUNTRY OR LOCALITY<sup>1</sup>

Country or locality	2016		2017	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Brazil	19,700	\$5,860	22,100	\$8,360
Canada	324	81	--	--
Russia	96,500	19,200	116,000	30,200
Trinidad and Tobago	1,470,000	305,000	1,560,000	501,000
Ukraine	14,000	3,850	23,800	6,970
Venezuela	--	--	65,000	16,200
Total	1,600,000	334,000	1,790,000	563,000

-- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 19  
U.S. EXPORTS OF PIG IRON, BY COUNTRY OR LOCALITY<sup>1,2</sup>

Country or locality	2016		2017	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Belgium	14	\$3	52	\$11
Canada	9,610	2,690	21,200	8,320
China	19	6	582	233
Colombia	--	--	76	42
Germany	46	22	147	55
India	--	--	4,330	1,040
Italy	140	12	10	75
Marshall Islands	--	--	2,470	57
Mexico	4,660 <sup>r</sup>	1,060 <sup>r</sup>	4,920	1,790
Pakistan	--	--	1,270	170
Singapore	175	51	12	12
Trinidad and Tobago	--	--	398	149
United Arab Emirates	1,220	108 <sup>r</sup>	715	63
United Kingdom	64	25	208	75
Uruguay	144	51	52	17
Other	169 <sup>r</sup>	89 <sup>r</sup>	141	85
Total	16,300 <sup>r</sup>	4,120 <sup>r</sup>	36,600	12,200

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes the following grades of pig iron: less than or equal to 0.5% phosphorus content, greater than 0.5% phosphorus content, and alloy grade. Export valuation is free alongside ship value.

Source: U.S. Census Bureau, as adjusted by the U.S. Geological Survey.

TABLE 20  
U.S. IMPORTS FOR CONSUMPTION OF PIG IRON, BY COUNTRY OR LOCALITY<sup>1,2</sup>

Country or locality	2016		2017	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Argentina	--	--	24,600	\$9,260
Brazil	705,000	\$166,000	921,000	305,000
Canada	45,500	14,100	40,400	15,100
China	83	44	585	305
Denmark	339	409	649	750
Germany	5,020	1,550	6,030	2,590
India	3	4	72,000	25,300
Japan	1	2	9	4
Latvia	52,500	15,800	--	--
Russia	2,220,000	538,000	2,780,000	956,000
South Africa	95,500	28,300	134,000	48,400
Switzerland	54,400	10,500	--	--
Ukraine	685,000	173,000	1,140,000	403,000
Total	3,870,000	948,000	5,130,000	1,770,000

-- Zero.

<sup>1</sup>Table includes data available through May 30, 2019. Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes the following grades of pig iron: less than or equal to 0.5% phosphorus content, greater than 0.5% phosphorus content, and alloy grade. Import valuation is customs value.

Source: U.S. Census Bureau.