

IRON AND STEEL SCRAP

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Domestic survey data and tables were prepared by David Gibson, statistical assistant.

Iron and steel scrap is a vital raw material for 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 from the recovery of products that are no longer used or needed. The steel industry has been recycling steel scrap for more than 150 years. In 2001, domestic electric-arc-furnace (EAF) steel made primarily from recycled ferrous scrap in 60 minimills was about 47% of the total raw steel produced. Consistent with international usage and Federal Government policy, the U.S. Geological Survey (USGS) reports all data on iron and steel in metric units, unless otherwise noted.

Steel scrap recycling conserves raw materials, energy, and landfill space. The domestic steel industry recycles millions of metric tons per year of steel cans, automobiles, appliances, construction materials, and other steel products. In 2001, the industry's overall recycling rate was 68% (Rich Tavoletti, American Iron and Steel Institute, unpub. data, July 2002). 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 18 million). 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. Every metric ton of steel recycled saves about 1.3 metric tons (t) of iron ore, 700 kilograms (kg) of coal, and 60 kg of limestone that would otherwise be consumed to make the iron used in that steel.

In the United States, the primary source of obsolete steel is the automobile (Rich Tavoletti, American Iron and Steel Institute, unpub. data, July 2002). Of the ferrous metals used to make a typical 2001 U.S. family vehicle, 45% was recycled metal. About 16,000 car dismantlers and 3,000 scrap processors produced about 13.9 million metric tons (Mt) of iron and steel scrap for recycling in 2001—enough steel to produce over 14 million new cars. The recycling rate of automobile scrap steel was 102% in 2001 compared with 95% in 2000. A recycling rate greater than 100% is a result of the steel industry recycling more steel from automobiles than was used in the production of new vehicles.

The recycling rate of obsolete appliance scrap had increased from 20% in 1988 to 81% in 1997, decreased to 72% in 1998, and rebounded to 85% in 2001. During 2001, more than 1.65 Mt of steel was recovered from recycled appliances (Rich Tavoletti, American Iron and Steel Institute, unpub. data, July 2002). The typical appliance consists of about 75% steel, and from 25% to 100% of the steel used in appliances is recycled. The recycling rate of steel cans increased to 61% in 1997 from 15% in 1988, decreased to 56% in 1998, and rebounded to

about 58% in 2000 and 2001. The estimated rates of recycling of structural beams and plates in 2000 were 95% and that of reinforcement bar and other materials were 50%. By 2002, an estimated 25% of all new homes built in the United States will be framed in recycled steel.

Minimills in which EAFs are used consumed greater quantities of 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. Mills often used a feed mix that has equal proportions of DRI, pig iron, and scrap. Raw steel production in the U.S. steel industry decreased during 2001 by about 12%, while DRI production decreased by 92%.

Environment

The Department of Energy announced its decision to reexamine the issue of recycling metals with low levels of radioactivity back into the scrap stream because of the growing stockpile of these metals (American Metal Market, 2001a). Opponents of this proposed recycling, including the American Iron and Steel Institute and the Steel Manufacturers Association, were concerned about the public perception of the safety of steel and other metals products containing even small amounts of radioactive materials (American Metal Market, 2001b).

In addition to the radioactive materials, other potentially hazardous materials used in vehicles and durable goods are entering the recycling system (Wiener, 2001). An estimated 15.6 tons per year of mercury is released from scrapped cars (Worden, 2001). Steel airbag inflators are sealed units that may deploy and injure employees sorting scrap or working in steel-mill melt shops. Also, the propellant in the inflators, sodium azide, can be potentially hazardous to the environment. Substitution of mercury switches with pressure switches and ball bearing switches by vehicle manufacturers and removal of mercury switches and airbag inflators by dismantlers prior to shredding would ensure that injury to employees and the environment does not occur.

The U.S. Environmental Protection Agency (EPA) announced that it would develop a rule to require industrial facilities, including steel plants built between 1962 and 1977, to install technology to limit the release of pollutants such as sulfur dioxide, nitrogen oxide, and particulate matter (Bourge, 2001). Plants to be covered under this Clean Air Act rule would be those emitting more than 250 t of smog-causing agents that affect visibility in 156 national parks and wilderness areas. The EPA issued an opinion clarifying that drop out box slag (DOBS) generated at EAFs is not covered under the hazardous waste listing "K061" for EAF dust (Guerry, 2001). Prior to this opinion, most of the 73,000 t of DOBS generated each year had

been managed as a hazardous waste for a total cost to the industry of more than \$10 million per year. This ruling would substantially reduce compliance costs and liabilities for EAF steelmakers.

Brownfields are abandoned, idled, or underused industrial and commercial sites where expansion or redevelopment is complicated by real or perceived environmental contamination that can add cost, time, or uncertainty to a redevelopment project (Envirotools, 2001¹). There are about 130,000 to 450,000 contaminated commercial and industrial sites in the United States, and the cost of cleaning U.S. brownfields may be as much as \$650 billion. Legislation, supported by the steel and scrap industries, the Institute of Scrap Recycling Industries, and numerous other groups, designed to encourage development of brownfield sites as well as reform related Federal and State programs passed both houses of Congress during 2001. The legislation was expected to be signed into law during 2002.

Consumption

Domestic data for ferrous scrap were derived from voluntary monthly or annual surveys of U.S. scrap consuming operations by the USGS. About 50% of the known manufacturers of pig iron and raw steel responded to the surveys. Their responses represented about 55% of estimated total scrap consumption by this class of consumers. The remaining 45% of scrap consumption was estimated on the basis of prior reports. For manufacturers of steel castings, iron foundries, and miscellaneous users, about 37% of the surveyed establishments, which represented about 41% of estimated scrap consumption by these consumers, responded to the annual survey. Total consumption for these two classes of consumers was estimated by using statistical methods and prior reports. Actual survey data accounted for about 40% of total estimated scrap consumption by all classes of scrap consumers.

In 2001, brokers, dealers, and other outside sources supplied domestic consumers with 52 Mt of all types of ferrous scrap at an estimated delivered value of more than \$3.9 billion and exported 7.4 Mt (excluding used rails for rerolling and other uses and ships, boats, and other vessels for scrapping) valued at \$1.1 billion (tables 1, 8, 11). In 2000, domestic consumers received 54 Mt of scrap at an estimated delivered value of about \$5.2 billion; exports totaled 5.8 Mt valued at \$1.0 billion. This represented a tonnage decrease during 2001 of nearly 4% for received quantities and a tonnage increase of 28% for exported quantities. The value of received scrap grades decreased 25% and that of exported scrap grades increased about 10% during 2001.

Raw steel production was 90.1 Mt in 2001 compared with 101.8 Mt in 2000 (American Iron and Steel Institute, 2001, p. 75). The shares of raw steel produced by electric and basic oxygen furnaces were 47% and 53%, respectively. In 2001, continuous cast steel production represented 97% of total raw steel production, about the same as in 2000. Raw steel production capability was 114 Mt compared with 118 Mt in 2000.

¹References that include a section twist (§) are found in the Internet References Cited section.

Steel mills accounted for 83% of all scrap received from brokers, dealers, and other outside sources; iron foundries and miscellaneous users received 14%; and steel foundries received 3% (table 2). Apparent total domestic consumption of ferrous scrap was 52 Mt of net receipts (total receipts minus shipments) and 18 Mt of home scrap (table 1). Stocks of ferrous scrap at consumers' plants decreased by more than 7% to 4.9 Mt (table 1). Total domestic consumption was nearly 71 Mt, a 4% decrease since 2000 (table 1). The total market for U.S.-produced scrap (net receipts plus exports minus imports) was 56.6 Mt compared with 56.5 Mt in 2000. Feedstock used in electric furnaces by all iron and steel product manufacturers comprised scrap, 92%; pig iron, 5%; and DRI, 3% (table 4). Consumption of DRI was 21% less than that of 2000.

Net shipments of all grades of steel mill products were 89.7 Mt, which was a decrease of 9.3% from the 98.9 Mt shipped in 2000 (American Iron and Steel Institute, 2001, p. 27). Imports of steel mill products decreased to 27.3 Mt from 34.4 Mt in 2000. Exports of steel mill products decreased to 5.6 Mt from 5.9 Mt in 2000 (American Iron and Steel Institute, 2001, p. 45).

The U.S. apparent supply of steel mill products decreased to 107 Mt from 120 Mt in 2000. As a share of the U.S. market, imports of steel mill products decreased to 26% from 29% in 2000. Pig iron production decreased to 42.1 Mt from 47.9 Mt in 2000 (American Iron and Steel Institute, 2001, p. 80). As reported by the U.S. Census Bureau, the most recent data available, iron castings shipments totaled an estimated 9.9 Mt for 1999 and 9.9 Mt (revised) for 1998. Steel castings shipments (including investment castings) totaled 1.2 Mt in 1999, the same as in 1998.

Transportation

CSX Transportation (CSXT), the largest railroad east of the Mississippi River, has been operating 6,400 kilometers of track since its partial acquisition of Conrail, Inc. in June 1999. The railroad system is the main form of transportation of ferrous scrap in the United States. After CSXT and Norfolk Southern Corp. agreed to split Conrail in 1997, customers, such as the steel scrap industry, experienced considerable deterioration of service based mostly on the railroads' difficulty in integrating the computer systems of the merged railroads. By April 2001, CSXT reported that the company's performance is better now than at any time since the company was formed in 1980, as measured by average train velocity and ontime destination arrival (Bagsarian, 2001).

Prices

The average composite delivered price of No. 1 heavy-melting steel scrap, calculated from prices per long ton published monthly by American Metal Market, was \$74.90 per metric ton. The price ranged from a high of \$83.49 per metric ton in January to a low of \$63.94 per metric ton in November (table 8). The average composite delivered price of No. 1 heavy-melting steel scrap, calculated from prices per long ton published weekly in Iron Age Scrap Price Bulletin, was \$73.84 per metric ton; the price had ranged from a high of \$81.98 per metric ton in January to a low of \$63.65 per metric ton in

November.

On the basis of weekly quotations by Iron Age Scrap Price Bulletin for 18-8 (18% chromium, 8% nickel) stainless steel scrap (bundles and solids) delivered to consumers in the Pittsburgh, PA, area, the average price decreased by 23% to \$637 per metric ton from \$823 per metric ton in 2000.

The unit value of total ferrous scrap exports (excluding used rails for rerolling and other uses, and ships, boats, and other vessels for scrapping) decreased by nearly 13% to about \$152 per metric ton compared with that of 2000 (table 11). The unit value of total imports, about \$104 per metric ton, was nearly 10% less than that of 2000 (table 14).

Foreign Trade

Foreign trade valuation continued to be reported on a free-alongside-ship (f.a.s.) basis for exports and on a Customs value basis for imports. In 2001, the U.S. trade surplus for all classes of ferrous scrap (including used rails for rerolling and other uses and ships, boats, and other vessels for scrapping) was 4.7 Mt valued at \$852 million (U.S. Census Bureau, unpub. data, 2001). This represented an increase of 114% in quantity and an increase of 43% in value compared with the 2000 surplus of 2.2 Mt and \$597 million.

Total U.S. exports of carbon steel and cast-iron scrap (excluding used rails for rerolling and other uses; ships, boats, and other vessels for scrapping; stainless steel; and alloy steel) went to 65 countries (10 more than in 2000) and totaled 6.4 Mt (a 42% increase) valued at 653 million (a 24% increase) for an average of \$101 per metric ton (U.S. Census Bureau, unpub. data, 2001). The largest tonnages went to China, 2.32 million; the Republic of Korea, 1.4 million; Canada, 0.9 million; Mexico, 709,000; and Malaysia, 374,000. These countries received 88% of the total quantity valued at \$565 million, which was 87% of the total value.

Total U.S. exports of stainless steel scrap went to 43 countries (the same as in 2000) and consisted of 443,000 t (a 6% decrease) valued at \$272 million (a 13% decrease) for an average of \$613 per metric ton (a 7% decrease) (U.S. Census Bureau, unpub. data, 2001). The largest tonnages went to Taiwan, 155,000; the Republic of Korea, 124,000; Canada, 36,000; China, 29,000; and Japan, 26,000. These countries received 83% of the total quantity valued at \$222 million, which was 82% of the total value.

U.S. exports of alloy steel scrap (excluding stainless steel) were shipped to 47 countries (1 more than in 2000) and consisted of 611,000 t (a 25% decrease) valued at \$212 million (a 25% increase) for an average of \$345 per ton (a 67% increase) (U.S. Census Bureau, unpub. data, 2001). The largest tonnages went to China, 232,000; Canada, 171,000; and Mexico, 115,000. These countries received 85% of the total quantity valued at \$169 million, which was 80% of the total value.

World Review

Iron and steel scrap is an important raw material for the steel and foundry industries. Because scrap comes from such sources as old buildings, industrial machinery, discarded cars and

consumer durables, and manufacturing operations, the relatively mature industrialized economies are generally the main exporters of scrap to lesser developed steelmaking countries.

Germany exported the most iron and steel scrap in 2001 (International Iron and Steel Institute, 2001, p. 102), followed by Russia, the United States, Ukraine, the United Kingdom, France, Netherlands, and Japan. The five most significant importing nations were, in decreasing order of importance, Turkey, the Republic of Korea, Spain, Belgium, and China (International Iron and Steel Institute, 2001, p. 104).

Outlook

In July 2001, the International Iron and Steel Institute (IISI) forecast an increase in world consumption of finished steel products of 2.2% during 2001-03 for a total of 811 Mt in 2003 (International Iron and Steel Institute, 2002§). Consumption was expected to increase during 2001-03 in China, 11.5%; South America, 7.1%; Commonwealth of Independent States, 6.3%; North America, 6.3%; and European Union, 2.1%. The IISI believed during late 2001 that there were signs that most regional economies, including that of the United States, were beginning to recover, and a strong U.S. recovery was projected for 2003.

Although during the past 35 years, tens of millions of tons of inefficient steelmaking capacity had been eliminated in the United States, a majority of observers believed that by the end of 2001 global overcapacity remained the basic cause of the depression of the world and U.S. steelmaking industries (American Metal Market, 2002), with estimates between 116 Mt and 272 Mt of overcapacity. Because of the close interdependence of the steelmaking and ferrous scrap industries, the world and U.S. scrap industries were not expected to thrive until capacity was reduced significantly, causing steelmaking to rebound from its depressed state.

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

(Thousand metric tons, unless otherwise specified)

	1997	1998	1999	2000	2001
Manufacturers of pig iron and raw steel and castings: 2/					
Ferrous scrap consumption	57,000 r/	58,000	56,000	59,000	57,000
Pig iron consumption	51,000	49,000	48,000	49,000	47,000
Direct-reduced iron consumption	1,300	1,600 r/	2,200	2,300	1,800
Net receipts of ferrous scrap 3/	43,000	44,000	43,000 r/	45,000	43,000
Home scrap production 4/	14,000	14,000	13,000	14,000	13,000
Ending stocks of ferrous scrap, December 31	4,900	4,700	4,800	4,700	4,300
Manufacturers of steel castings: 5/					
Ferrous scrap consumption	1,800	2,000	1,900	2,200	2,200
Pig iron consumption	13	14	11	11	32
Net receipts of ferrous scrap 3/	1,200	1,300	1,200	1,200	1,400
Home scrap production 4/	660	710	690	980	820
Ending stocks of ferrous scrap, December 31	77	83	230	150	160
Iron foundries and miscellaneous users: 5/					
Ferrous scrap consumption	13,000	13,000	13,000	13,000	12,000
Pig iron consumption	1,200	1,200	1,200 r/	1,200	1,100
Direct-reduced iron consumption	13	12	13	16	13
Net receipts of ferrous scrap 3/	8,200	7,900	7,700	7,800	7,600
Home scrap production 4/	5,200	5,100	5,000	4,800	4,300
Ending stocks of ferrous scrap, December 31	470	440	430	430	440
Totals, all manufacturing types:					
Ferrous scrap consumption	73,000	73,000	71,000	74,000	71,000
Pig iron consumption	52,000	50,000	49,000	50,000	48,000
Direct-reduced iron consumption	1,300	1,600 r/	2,200	2,300	1,800
Net receipts of ferrous scrap 3/	52,000	53,000	51,000	54,000	52,000
Home scrap production 4/	20,000	20,000	19,000	20,000	18,000
Ending stocks, December 31:					
Ferrous scrap at consumer plants	5,500	5,300 r/	5,500	5,300	4,900
Pig iron at consumer and supplier plants	510	570 r/	720	800	790
Direct-reduced iron at consumer plants	160	290 r/	310	290	320
Exports: 6/					
Ferrous scrap (includes tinplate and terneplate) 7/	8,930	5,570	5,520	5,760	7,440
Value thousands	\$1,350,000	\$805,000	\$738,000	\$1,000,000	\$1,130,000
Pig iron (all grades)	86	87	83	72	44
Value thousands	\$12,300	\$11,700	\$11,100	\$9,620	\$5,580
Direct-reduced iron (steelmaking grade)	8	5	3	2	1
Value thousands	\$852	\$487	\$302	\$241	\$83
Imports for consumption: 6/					
Ferrous scrap (includes tinplate and terneplate) 7/	2,870	3,060	3,670	3,350	2,630
Value thousands	\$384,000	\$402,000	\$383,000	\$385,000	\$274,000
Pig iron (all grades)	3,150	5,150	4,990	4,970	4,370
Value thousands	\$465,000	\$722,000	\$527,000	\$601,000	\$479,000
Direct-reduced iron (steelmaking grade)	987	939	950	1,090	1,650
Value thousands	\$127,000	\$118,000	\$86,500	\$119,000	\$145,000

r/ Revised.

1/ Data are rounded to no more than two significant digits, except trade data, which are rounded to no more than three significant digits; may not add to totals shown.

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

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

4/ Home scrap production includes recirculating scrap that results from current operations and obsolete home scrap.

5/ 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.

6/ Data from U.S. Census Bureau. Export valuation is free-alongside-ship (f.a.s.) value, and import valuation is Customs value.

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

TABLE 2
U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS
OF IRON AND STEEL SCRAP IN 2001, BY GRADE 1/

(Thousand metric tons)

Grade	Receipts of scrap		Production of home scrap			Shipments of scrap	Ending stocks, December 31
	From brokers, dealers and other outside sources	From other own-company plants	Recirculating scrap from current operations	Obsolete scrap 2/	Consumption of purchased and home scrap		
Manufacturers of pig iron and raw steel and castings:							
Carbon steel:							
Low-phosphorus plate and punchings	280	(3/)	(3/)	--	280	13	19
Cut structural and plate	3,900	120	720	51	4,600	63	300
No. 1 heavy melting steel	5,000	310	3,700	9	9,100	110	620
No. 2 heavy melting steel	5,200	56	520	1	5,800	2	420
No. 1 and electric furnace bundles	5,300	290	1,700	--	6,800	400	290
No. 2 and all other bundles	890	16	2	--	910	2	45
Electric furnace, 1 foot and under (not bundles)	--	--	160	--	100	68	--
Railroad rails	260	20	43	--	300	15	11
Turnings and borings	2,100	43	69	--	2,200	6	110
Slag scrap	760	180	1,500	--	2,100	400	140
Shredded or fragmentized	8,800	750	340	--	10,000	37	500
No. 1 busheling	5,100	130	130	--	5,200	110	310
Steel cans (post consumer)	210	2	44	--	270	--	82
All other carbon steel scrap	2,100	63	2,500	3	4,300	310	390
Stainless steel scrap	720	3	360	--	1,100	1	48
Alloy steel (except stainless)	280	8	490	(3/)	740	13	46
Ingot mold and stool scrap	11	--	130	79	81	130	24
Machinery and cupola cast iron	93	--	4	--	94	1	9
Cast-iron borings	230	--	(3/)	--	230	(3/)	11
Motor blocks	9	--	--	--	9	--	1
Other iron scrap	300	51	430	--	730	130	370
Other mixed scrap	1,000	19	410	--	1,500	29	560
Total	43,000	2,100	13,000	140	57,000	1,800	4,300
Manufacturers of steel castings:							
Carbon steel:							
Low-phosphorus plate and punchings	340	2	82	(3/)	440	1	32
Cut structural and plate	120	--	9	10	130	10	14
No. 1 heavy melting steel	67	--	29	--	96	--	6
No. 2 heavy melting steel	12	--	--	--	12	--	1
No. 1 and electric furnace bundles	11	--	--	--	11	--	(3/)
No. 2 and all other bundles	--	--	--	--	--	--	--
Electric furnace, 1 foot and under (not bundles)	7	5	3	(3/)	15	--	1
Railroad rails	21	--	58	--	78	(3/)	2
Turnings and borings	33	1	3	18	37	18	(3/)
Slag scrap	1	--	3	--	4	--	(3/)
Shredded or fragmentized	120	--	--	--	120	--	2
No. 1 busheling	80	--	6	--	88	(3/)	6
Steel cans (post consumer)	1	--	--	--	1	--	--
All other carbon steel scrap	73	2	180	9	250	15	8
Stainless steel scrap	460	(3/)	230	28	690	29	66
Alloy steel (except stainless)	54	1	38	(3/)	92	(3/)	7
Ingot mold and stool scrap	10	--	43	--	33	19	6
Machinery and cupola cast iron	--	--	--	--	--	--	(3/)
Cast-iron borings	--	--	(3/)	--	(3/)	--	(3/)
Motor blocks	1	--	--	--	1	--	(3/)
Other iron scrap	16	--	61	--	77	1	2
Other mixed scrap	32	--	1	14	46	1	3
Total	1,500	11	740	79	2,200	93	160

See footnotes at end of table.

TABLE 2--Continued
U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS
OF IRON AND STEEL SCRAP IN 2001, BY GRADE 1/

(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 own- company plants	Recirculating scrap from current operations	Obsolete scrap 2/			
Iron foundries and miscellaneous users:							
Carbon steel:							
Low-phosphorus plate and punchings	790	5	120	(3/)	920	(3/)	20
Cut structural and plate	1,300	29	110	13	1,500	(3/)	120
No. 1 heavy melting steel	250	3	13	(3/)	270	2	9
No. 2 heavy melting steel	140	1	--	--	140	--	3
No. 1 and electric furnace bundles	89	140	32	--	260	--	12
No. 2 and all other bundles	99	--	1	--	99	1	3
Electric furnace, 1 foot and under (not bundles)	150	--	2	(3/)	150	1	3
Railroad rails	110	--	18	(3/)	130	--	6
Turnings and borings	84	65	3	--	160	4	2
Slag scrap	20	--	5	--	25	4	1
Shredded or fragmentized	1,700	84	(3/)	--	1,800	--	58
No. 1 busheling	660	62	56	--	730	50	21
Steel cans (post consumer)	14	--	--	--	14	--	(3/)
All other carbon steel scrap	150	(3/)	42	--	190	(3/)	14
Stainless steel scrap	9	--	4	--	14	(3/)	6
Alloy steel (except stainless)	5	--	1	--	5	--	1
Ingot mold and stool scrap	61	--	3	--	63	--	10
Machinery and cupola cast iron	740	(3/)	250	(3/)	1,000	(3/)	54
Cast-iron borings	190	84	20	1	300	5	4
Motor blocks	270	10	650	--	930	3	15
Other iron scrap	230	4	2,800	--	3,000	6	66
Other mixed scrap	130	4	110	(3/)	240	(3/)	12
Total	7,200	490	4,200	14	12,000	76	440
Totals for all manufacturing types:							
Carbon steel:							
Low-phosphorus plate and punchings	1,400	7	200	(3/)	1,600	14	71
Cut structural and plate	5,400	150	840	74	6,200	73	440
No. 1 heavy melting steel	5,300	310	3,700	9	9,400	110	640
No. 2 heavy melting steel	5,300	57	520	1	6,000	2	420
No. 1 and electric furnace bundles	5,400	430	1,800	--	7,100	400	300
No. 2 and all other bundles	990	16	3	--	1,000	4	49
Electric furnace, 1 foot and under (not bundles)	160	5	170	(3/)	270	69	3
Railroad rails	390	20	120	(3/)	510	15	19
Turnings and borings	2,200	110	75	18	2,400	28	110
Slag scrap	780	180	1,500	--	2,100	400	150
Shredded or fragmentized	11,000	830	340	--	12,000	37	560
No. 1 busheling	5,900	200	190	--	6,000	160	340
Steel cans (post consumer)	220	2	44	--	280	--	82
All other carbon steel scrap	2,300	65	2,700	13	4,800	330	420
Stainless steel scrap	1,200	3	590	28	1,800	30	120
Alloy steel (except stainless)	340	9	530	(3/)	830	14	54
Ingot mold and stool scrap	83	--	180	79	180	150	40
Machinery and cupola cast iron	840	(3/)	260	(3/)	1,100	1	62
Cast-iron borings	420	84	21	1	520	5	15
Motor blocks	280	10	650	--	940	3	15
Other iron scrap	550	55	3,300	--	3,800	140	440
Other mixed scrap	1,200	23	520	14	1,800	30	580
Total	51,000	2,600	18,000	240	71,000	2,000	4,900

-- Zero.

1/ Data are rounded to no more than two significant digits; may not add to totals shown.

2/ Obsolete home scrap includes ingot molds, stools, and scrap from old equipment, buildings, etc.

3/ Less than 1/2 unit.

TABLE 3
U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS OF PIG IRON AND
DIRECT-REDUCED IRON (DRI) IN 2001 1/

(Thousand metric tons)

	Receipts	Production	Consumption	Shipments	Stocks, December 31
Manufacturers of pig iron, raw steel, and castings:					
Pig iron	9,600 2/	39,000	47,000	550	640
DRI	1,800 3/	W	1,800	--	320
Manufacturers of steel castings:					
Pig iron	30	(4/)	32	(5/)	6
DRI	(5/)	--	(5/)	--	(5/)
Iron foundries and miscellaneous users:					
Pig iron	1,100	(4/)	1,100	22	150
DRI	12	1	13	--	(5/)
Totals for all manufacturing types:					
Pig iron	11,000	39,000	48,000	580	790
DRI	1,800	W	1,800	--	320

W Withheld to avoid disclosing company proprietary data. -- Zero.

1/ Data are rounded to no more than two significant digits; may not add to totals shown.

2/ Includes 1,500,000 metric tons purchased by electric furnace steel producers.

3/ Includes 1,000,000 metric tons purchased by integrated steel producers.

4/ Withheld to avoid disclosing company proprietary data; included in "Total."

5/ Less than 1/2 unit.

TABLE 4
U.S. CONSUMPTION OF IRON AND STEEL SCRAP, PIG IRON, AND DIRECT-REDUCED IRON (DRI) IN 2001,
BY TYPE OF FURNACE OR OTHER USE 1/

(Thousand metric tons)

	Manufacturers of pig iron and raw steel and castings			Manufacturers of steel castings			Iron foundries and miscellaneous users			Totals for all manufacturing types		
	Scrap	Pig iron	DRI	Scrap	Pig iron	DRI	Scrap	Pig iron	DRI	Scrap	Pig iron	DRI
Blast furnace	1,500	--	280	--	--	--	--	--	--	1,500	--	280
Basic oxygen process	14,000	45,000	130	--	--	--	--	--	--	14,000	45,000	130
Electric furnace	41,000	2,000	1,400	2,100	31	(2/)	4,700	630	2	48,000	2,700	1,400
Cupola furnace	110	(2/)	--	100	1	--	7,200	500	11	7,400	500	11
Other (including air furnaces)	W	--	--	2	--	--	W	W	--	W	W	--
Direct castings 3/	--	36	--	--	--	--	--	--	--	--	36	--
Total	57,000	47,000	1,800	2,200	32	(2/)	12,000	1,100	13	71,000	48,000	1,800

W Withheld to avoid disclosing company proprietary data; included with "Electric furnace." -- Zero.

1/ Data are rounded to no more than two significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

3/ Includes ingot molds and stools.

TABLE 5
IRON AND STEEL SCRAP SUPPLY AVAILABLE FOR CONSUMPTION IN 2001, BY REGION AND STATE 1/ 2/

(Thousand metric tons)

Region and State	Receipts of scrap		Production of home scrap		Shipments of scrap 4/	New supply available for consumption
	From brokers, dealers, and other outside sources	From other own company plants	Recirculating scrap resulting from current operations	Obsolete scrap 3/		
New England and Middle Atlantic:						
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	48	--	26	(5/)	(5/)	74
New Jersey and New York	1,700	3	100	(5/)	1	1,800
Pennsylvania	3,700	100	2,300	75	37	6,100
Total	5,500	100	2,400	75	38	8,000
North Central:						
Illinois	3,300	80	1,000	2	92	4,300
Indiana	4,200	130	4,900	35	600	8,600
Iowa, Nebraska, South Dakota	1,800	3	210	--	(6/)	2,000
Kansas and Missouri	800	2	230	65	84	1,000
Michigan	3,100	440	2,100	(5/)	360	5,300
Minnesota	410	170	85	--	(6/)	650
Ohio	6,500	770	2,100	22	650	8,700
Wisconsin	1,500	3	970	(5/)	6	2,500
Total	22,000	1,600	12,000	120	1,800	33,000
South Atlantic:						
Delaware and Maryland	620	(5/)	430	--	(6/)	1,000
Florida and Georgia	930	--	150	--	(5/)	1,100
North Carolina and South Carolina	2,600	(6/)	250	--	(6/)	2,800
Virginia and West Virginia	1,500	(6/)	540	(6/)	(6/)	2,100
Total	5,600	130	1,400	(6/)	84	7,100
South Central:						
Alabama and Mississippi	3,600	(6/)	860	(6/)	14	4,400
Arkansas, Louisiana, Oklahoma	4,200	(6/)	430	(6/)	(6/)	4,800
Kentucky and Tennessee	3,100	9	400	--	(6/)	3,500
Texas	3,100	590	500	2	10	4,200
Total	14,000	720	2,200	16	70	17,000
Mountain and Pacific:						
Arizona, Colorado, Idaho, Montana, Utah	2,200	(5/)	520	(6/)	(6/)	2,700
California, Oregon, Washington	2,300	W	250	1	(6/)	2,600
Total	4,500	W	770	(6/)	3	5,300
Grand total	51,000	2,600	18,000	240	2,000	70,000

W Withheld to avoid disclosing company proprietary data. -- Zero.

1/ Supply available for consumption is a net figure computed 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.

2/ Data are rounded to no more than two significant digits; may not add to totals shown.

3/ Obsolete scrap includes ingot molds, stools and scrap from old equipment, buildings, etc.

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

5/ Less than 1/2 unit.

6/ Withheld to avoid disclosing company proprietary data; included in "Total" or "Grand total."

TABLE 6
U.S. CONSUMPTION OF IRON AND STEEL SCRAP AND PIG IRON IN 2001, BY REGION AND STATE 1/ 2/ 3/

(Thousand metric tons)

Region and State	Manufacturers of pig iron and raw steel and castings		Manufacturers of steel castings		Iron foundries and miscellaneous users		Totals for 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	1,500	24	20	(4/)	400	17	1,900	41
Pennsylvania	5,800	2,300	150	1	480	64	6,400	2,400
Total	7,300	2,300	170	1	870	81	8,300	2,400
North Central:								
Illinois	3,800	2,700	140	2	540	21	4,400	2,700
Indiana	8,000	16,000	72	1	1,000	130	9,000	16,000
Iowa, Kansas, Minnesota, Missouri, Nebraska, South Dakota, Wisconsin	3,100	130	730	3	2,100	330	6,000	460
Michigan	2,700	4,800	31	(4/)	2,400	170	5,200	5,000
Ohio	7,000	10,000	380	2	1,100	110	8,500	11,000
Total	25,000	34,000	1,400	8	7,200	760	33,000	35,000
South Atlantic:								
Delaware, Maryland, Virginia, West Virginia	2,700	W	W	W	480	21	3,200	4,300
Florida, Georgia, North Carolina, South Carolina	3,500	W	W	W	470	37	3,900	84
Total	6,200	4,300	3	1	950	58	7,100	4,400
South Central:								
Alabama, Kentucky, Mississippi, Tennessee	5,300	W	490	W	2,100	W	7,900	3,900
Arkansas, Louisiana, Oklahoma	4,600	W	25	W	120	W	4,800	570
Texas	3,800	41	86	W	350	40	4,200	100
Total	14,000	4,400	600	22	2,500	210	17,000	4,600
Mountain and Pacific:								
Arizona, Colorado, Idaho, Montana, Utah	2,600	W	7	(4/)	130	W	2,800	1,500
California, Oregon, Washington	2,200	W	84	(4/)	230	W	2,500	19
Total	4,800	1,500	92	(4/)	360	13	5,300	1,500
Grand total	57,000	47,000	2,200	32	12,000	1,100	71,000	48,000

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

1/ Includes recirculating scrap resulting from current operations and home-generated obsolete scrap.

2/ Includes molten pig iron used for ingot molds and direct castings.

3/ Data are rounded to no more than two significant digits; may not add to totals shown.

4/ Less than 1/2 unit.

TABLE 7
U.S. CONSUMER STOCKS OF IRON AND STEEL SCRAP AND PIG IRON, DECEMBER 31, 2001, BY REGION AND STATE 1/

(Thousand metric tons)

Region and State	Carbon steel 2/	Stainless steel	Alloy steel 3/	Cast iron 4/	Other grades of scrap	Total scrap	Pig iron
New England and Middle Atlantic:							
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	1	(5/)	(5/)	(5/)	W	1	(5/)
New Jersey and New York	69	2	2	5	W	77	1
Pennsylvania	320	35	20	25	5	400	7
Total	380	37	22	30	5	480	8
North Central:							
Illinois	270	(5/)	W	16	4	290	24
Indiana	460	5	W	120	20	610	210
Iowa, Kansas, Missouri, Nebraska, South Dakota	170	(5/)	(5/)	9	W	180	97
Michigan	150	5	1	17	4	180	77
Minnesota and Wisconsin	43	17	1	13	(5/)	74	6
Ohio	400	26	18	30	(5/)	470	27
Total	1,500	54	22	210	29	1,800	440
South Atlantic:							
Delaware, Maryland, Virginia, West Virginia	190	(5/)	W	17	17	220	56
Florida, Georgia, North Carolina, South Carolina	190	(5/)	W	22	5	210	22
Total	370	(5/)	3	39	22	440	78
South Central:							
Alabama, Kentucky, Mississippi, Tennessee	580	W	W	270	W	1,400	130
Arkansas, Louisiana, Oklahoma	320	W	W	2	W	330	100
Texas	200	W	W	3	W	210	26
Total	1,100	29	3	280	500	1,900	250
Mountain and Pacific:							
Arizona, Colorado, Idaho, Montana, Utah	150	(5/)	W	5	--	150	W
California, Oregon, Washington	91	1	W	16	23	130	W
Total	240	1	5	21	23	290	5
Grand total	3,600	120	54	570	580	4,900	790

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

1/ Data are rounded to no more than two significant digits; may not add to totals shown.

2/ Excludes rerolling rails.

3/ Excludes stainless steel.

4/ Includes borings.

5/ Less than 1/2 unit.

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

(Dollars per metric ton)

Period	Chicago	Philadelphia	Pittsburgh	Composite price
2001:				
January	82.23	82.81	85.42	83.49
February	73.32	74.80	74.42	74.18
March	73.32	74.80	78.56	75.56
April	73.32	74.80	81.90	76.67
May	72.07	72.11	82.18	75.46
June	71.35	75.78	85.00	77.38
July	74.73	75.78	85.13	78.55
August	75.29	75.78	85.13	78.74
September	75.29	75.78	85.13	78.74
October	71.39	71.50	73.49	72.13
November	66.43	65.45	59.94	63.94
December	66.43	65.94	59.54	63.97
Annual average:				
2001	72.93	73.78	77.99	74.90
2000	94.60	90.94	102.11	95.88

1/ 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 1/ 2/

(Thousand metric tons and thousand dollars)

Country	2000		2001	
	Quantity	Value	Quantity	Value
Belgium	16	11,200	6	4,370
Brazil	2	1,680	3	1,150
Canada	1,280	159,000	1,090	125,000
China	1,080	216,000	2,570	419,000
Colombia	5	690	(3/)	274
France	1	322	10	1,200
Germany	5	2,090	19	12,900
Greece	--	--	32	2,830
Hong Kong	45	13,800	47	19,200
India	61	18,100	160	30,100
Indonesia	10	2,590	38	4,710
Israel	3	1,230	6	2,840
Italy	7	3,350	10	5,170
Japan	73	47,100	48	28,300
Korea, Republic of	1,440	142,000	1,500	190,000
Malaysia	95	9,450	375	36,100
Mexico	1,010	109,000	821	79,800
Netherlands	16	11,100	15	8,840
Philippines	18	10,500	14	7,550
Saudi Arabia	33	2,960	(3/)	392
Singapore	3	2,300	4	957
South Africa	13	9,110	1	1,150
Spain	81	118,000	12	624
Sweden	5	148	(3/)	142
Taiwan	297	82,600	297	103,000
Thailand	134	16,000	34	3,670
Turkey	--	--	276	23,600
United Kingdom	8	3,220	16	5,650
Venezuela	1	463	2	954
Vietnam	3	1,290	5	1,750
Other	20 r/	6,810 r/	31	6,840
Total	5,760	1,000,000	7,440	1,130,000

r/ Revised. -- Zero

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

2/ Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping. Export valuation is free-alongside-ship (f.a.s.) value.

The United States exported scrap to 88 countries in 2000 and 76 countries in 2001.

3/ Less than 1/2 unit.

Source: U.S. Census Bureau.

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

(Thousand metric tons and thousand dollars)

Customs district	2000		2001	
	Quantity	Value	Quantity	Value
Boston, MA	336	32,500	591	53,100
Buffalo, NY	129	30,800	96	22,200
Columbia-Snake	105	22,700	66	14,900
Detroit, MI	220	35,000	167	23,500
Honolulu, HI	96	12,800	97	13,100
Houston-Galveston, TX	73	49,200	63	31,000
Laredo, TX	361	41,100	196	21,200
Los Angeles, CA	1,230	231,000	1,650	274,000
New Orleans, LA	47	34,700	145	81,600
New York, NY	357	109,000	920	136,000
Nogales, AZ	47	5,580	63	6,770
Norfolk, VA	84	20,700	164	33,100
Pembina, ND	272	26,900	310	26,500
Philadelphia, PA	1	178	61	6,610
Portland, ME	69	7,640	67	6,400
Providence, RI	240	24,500	484	44,300
San Francisco, CA	847	125,000	995	134,000
San Juan, PR	69	4,830	24	1,680
Seattle, WA	303	53,100	483	68,900
St. Albans, VT	66	12,200	21	4,860
Tampa, FL	64	6,990	106	10,300
Other	749 r/	114,000 r/	674	113,000
Total	5,760	1,000,000	7,440	1,130,000

r/ Revised.

1/ Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping. Export valuation is free alongside ship.

2/ Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 11
U.S. EXPORTS OF IRON AND STEEL SCRAP, BY GRADE 1/ 2/

(Thousand metric tons and thousand dollars)

Grade	2000		2001	
	Quantity	Value	Quantity	Value
No. 1 heavy melting scrap	778	77,200	1,120	102,000
No. 2 heavy melting scrap	181	17,400	266	22,700
No. 1 bundles	52	5,120	23	2,540
No. 2 bundles	31	2,800	235	21,000
Shredded steel scrap	1,350	140,000	2,380	225,000
Borings, shovelings and turnings	214	15,700	157	10,100
Cut plate and structural	156	17,200	414	39,300
Tinned iron or steel	123	28,600	89	22,000
Remelting scrap ingots	3	1,600	5	4,650
Stainless steel scrap	468	310,000	438	270,000
Other alloy steel scrap	809	168,000	601	207,000
Other steel scrap 3/	939	132,000	1,020	102,000
Iron scrap	658	85,000	683	98,700
Total	5,760	1,000,000	7,440	1,130,000
Ships, boats, other vessels for scrapping	11	153	49	2,750
Used rails for rerolling and other uses 4/	40	15,600	36	14,400
Grand total	5,810	1,020,000	7,530	1,150,000

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

2/ Export valuation is free-alongside-ship (f.a.s.) value.

3/ Includes tinplate and terneplate.

4/ Includes mixed (used plus new) rails. See table 15 for details.

Source: U.S. Census Bureau.

TABLE 12
U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP,
BY COUNTRY 1/ 2/

(Thousand metric tons and thousand dollars)

Country	2000		2001	
	Quantity	Value	Quantity	Value
Bahamas, The	2	87	8	399
Belgium	53	10,200	11	6,550
Brazil	3	2,850	1	281
Canada	1,870	196,000	1,690	162,000
China	(3/)	54	3	1,100
Denmark	--	--	57	5,120
Dominican Republic	32	3,630	27	2,680
Egypt	2	1,480	2	1,260
Finland	32	3,500	(3/)	30
France	1	173	(3/)	10
Germany	31	4,010	1	278
Jamaica	6	686	4	364
Japan	140	8,920	45	2,080
Mexico	63	29,200	51	18,800
Netherlands	129	13,800	27	2,480
Norway	15	1,420	(3/)	5
Panama	1	168	(3/)	11
Russia	91	8,920	34	2,700
Singapore	8	2,800	1	997
Sweden	200	21,000	197	19,000
United Kingdom	652	71,300	464	45,800
Venezuela	8	1,920	1	632
Other	15 r/	3,050 r/	5	1,650
Total	3,350	385,000	2,630	274,000

r/ Revised. -- Zero.

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

2/ Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping. Import valuation is Customs value. The United States imported scrap from 49 countries in 2001 and 52 countries in 2000.

3/ Less than 1/2 unit.

Source: U.S. Census Bureau.

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

(Thousand metric tons and thousand dollars)

Customs district	2000		2001	
	Quantity	Value	Quantity	Value
Buffalo, NY	151	23,900	143	22,200
Charleston, SC	245	25,600	628	60,400
Chicago, IL	79	5,170	27	2,330
Cleveland, OH	38	3,580	19	1,390
Detroit, MI	1,110	113,000	1,070	94,000
El Paso, TX	7	2,090	11	2,360
Laredo, TX	59	24,300	25	10,900
Los Angeles, CA	59	798	26	485
Mobile, AL	21	2,670	2	194
New Orleans, LA	1,150	128,000	214	26,100
Ogdensburg, NY	31	5,110	43	6,280
Pembina, ND	21	5,970	10	3,410
Philadelphia, PA	27	3,610	(3/)	291
San Diego, CA	8	5,220	11	4,000
Seattle, WA	338	26,700	305	24,800
Tampa, FL	(3/)	78	12	968
Wilmington, NC	--	--	70	5,740
Other	18	8,340	21	8,140
Total	3,350	385,000	2,630	274,000

-- Zero.

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

2/ Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping. Import valuation is Customs value.

3/ Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 14
U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP, BY CLASS 1/ 2/

(Thousand metric tons and thousand dollars)

Class	2000		2001	
	Quantity	Value	Quantity	Value
No. 1 heavy melting scrap	23	2,020	13	1,080
No. 2 heavy melting scrap	5	417	--	--
No. 1 bundles	248	25,000	247	23,800
No. 2 bundles	35	4,140	(3/)	3
Shredded steel scrap	885	92,100	775	70,800
Borings, shovelings and turnings	76	5,640	107	11,300
Cut plate and structural	113	13,300	50	4,820
Tinned iron or steel	15	1,660	6	1,040
Remelting scrap ingots	34	5,590	3	247
Stainless steel scrap	56	35,500	100	29,800
Other alloy steel scrap	377	44,900	199	25,100
Other steel scrap 4/	1,020	119,000	815	83,500
Iron scrap	466	35,300	319	22,600
Total	3,350	385,000	2,630	274,000
Ships, boats, other vessels for scrapping	--	--	(3/)	15
Used rails for rerolling and other uses 5/	271	34,100	175	23,700
Grand total	3,630	419,000	2,810	298,000

-- Zero.

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

2/ Import valuation is customs value.

3/ Less than 1/2 unit.

4/ Includes tinplate and terneplate.

5/ Includes mixed (used plus new) rails. See table 16 for details.

Source: U.S. Census Bureau.

TABLE 15
U.S. EXPORTS OF USED RAILS FOR REROLLING AND OTHER USES, BY COUNTRY 1/ 2/

Country	2000		2001	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Bahamas, The	405	\$360	55	\$115
Belgium	131	173	6	10
Belize	--	--	147	29
Canada	12,800	2,740	18,100	5,620
Chile	2,310	1,140	140	261
Dominican Republic	207	191	498	309
Egypt	6	8	2,190	1,140
Honduras	17	49	3,620	787
Mexico	23,000	9,540	7,890	2,910
Netherlands	289	142	9	4
Panama	--	--	323	427
Russia	--	--	258	506
Taiwan	128	24	765	193
United Kingdom	204	137	1,180	510
Venezuela	412	319	419	353
Other	464 r/	827 r/	417	1,200
Total	40,400	15,600	36,100	14,400

r/ Revised. -- Zero.

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

2/ Exports contain mixed (used plus new) rails totaling 17,000 metric tons valued at \$10,600,000 in 2001 and 7,590 metric tons valued at \$8,580,000 in 2000. Export valuation is free-alongside-ship (f.a.s.) value.

Source: U.S. Census Bureau.

TABLE 16
U.S. IMPORTS FOR CONSUMPTION OF USED RAILS FOR REROLLING AND
OTHER USES, BY COUNTRY 1/ 2/

Country	2000		2001	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Canada	21,100	\$4,120	61,900	\$8,650
France	49	26	390	119
Germany	8	20	4	10
Honduras	--	--	463	57
Japan	301	226	2,050	643
Luxembourg	19	21	10	8
Netherlands	--	--	18	4
New Zealand	5	5	--	--
Poland	10,300	1,500	--	--
Romania	9,570	951	--	--
Russia	217,000	25,600	110,000	14,100
Ukraine	13,200	1,660	--	--
United Kingdom	3	13	7	13
Venezuela	--	--	16	5
Other	8 r/	22 r/	4	6
Total	271,000	34,100	175,000	23,700

r/ Revised. -- Zero.

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

2/ Import valuation is Customs value.

Source: U.S. Census Bureau.

TABLE 17
U.S. EXPORTS OF DIRECT-REDUCED IRON (DRI), BY COUNTRY 1/ 2/

Country	2000		2001	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Australia	53	\$6	--	--
Canada	86	9	--	--
Italy	28	3	--	--
Japan	26	3	--	--
Mexico	1,440	181	685	\$72
Taiwan	137	14	--	--
Thailand	--	--	31	3
United Kingdom	62	11	--	--
Other	139	15	82	8
Total	1,970	241	798	83

-- Zero.

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

2/ Data are for steelmaking-grade DRI only.

Source: U.S. Census Bureau.

TABLE 18
U.S. IMPORTS FOR CONSUMPTION OF DIRECT-REDUCED IRON (DRI),
BY COUNTRY 1/ 2/

Country	2000		2001	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Brazil	--	--	3,140	\$553
Canada	12,400	\$2,180	23	4
Norway	450	48	--	--
Sweden	--	--	19,000	943
Switzerland	--	--	30,700	2,580
Trinidad and Tobago	64,000	6,560	209,000	19,900
Ukraine	--	--	34,000	2,680
Venezuela	1,010,000	110,000	1,350,000	118,000
Total	1,090,000	119,000	1,650,000	145,000

-- Zero.

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

2/ Data are for steelmaking-grade DRI only.

Source: U.S. Census Bureau.

TABLE 19
U.S. EXPORTS OF PIG IRON, BY COUNTRY 1/ 2/

Country	2000		2001	
	Quantity metric tons)	Value (thousands)	Quantity metric tons)	Value (thousands)
Australia	1,400	\$123	64	\$6
Belgium	596	52	--	--
Canada	4,270	761	15,100	2,140
Chile	--	--	160	14
China	186	39	35	16
Colombia	--	--	171	31
Korea, Republic of	839	74	164	14
Malaysia	1,140	100	--	--
Mexico	58,700	8,020	16,100	2,250
Philippines	101	9	--	--
Saudi Arabia	540	47	--	--
Singapore	355	31	--	--
South Africa	1,730	152	4,950	435
Spain	1,260	111	--	--
Sweden	42	4	6,580	579
Taiwan	338	30	9	4
United Kingdom	432	38	30	3
Other	193 r/	34 r/	310	83
Total	72,100	9,620	43,700	5,580

r/ Revised. -- Zero.

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

2/ 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 (f.a.s.) value.

Source: U.S. Census Bureau.

TABLE 20
U.S. IMPORTS FOR CONSUMPTION OF PIG IRON, BY COUNTRY 1/ 2/

Country	2000		2001	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Brazil	3,080,000	\$374,000	3,410,000	\$367,000
Canada	109,000	18,300	125,000	19,400
China	41,100	4,740	--	--
Japan	5	10	1	2
Latvia	--	--	57,000	5,810
Poland	12,400	1,640	--	--
Russia	423,000	45,200	523,000	57,600
South Africa	144,000 r/	17,900 r/	90,200	11,800
Switzerland	16,000	2,210	--	--
Turkey	44,000	5,520	--	--
Ukraine	1,070,000	129,000	164,000	18,000
Venezuela	23,000	2,370	--	--
Other	5,030 r/	624 r/	--	--
Total	4,970,000	601,000	4,370,000	479,000

r/ Revised. -- Zero.

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

2/ 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.