

IRON AND STEEL SCRAP¹

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

Domestic Production and Use: Total value of 1998 domestic purchases (receipts of ferrous scrap by all domestic consumers from brokers, dealers, and other outside sources) and exports was estimated at \$7.5 billion, down nearly 10% from that of 1997. Manufacturers of pig iron, raw steel, and steel castings accounted for nearly 80% of scrap consumption by the domestic steel industry, using scrap together with pig iron to produce steel products for the construction, transportation, oil and gas, machinery, container, appliance, and various other consumer industries. The ferrous castings industry consumed most of the remainder to produce cast iron and steel products, such as motor blocks, pipe, and machinery parts. Relatively small quantities were used for producing ferroalloys, for the precipitation of copper, and by the chemical industry; these uses totaled less than 1 million tons.

Raw steel production in 1998 was an estimated 101 million tons, nearly 3% more than that produced in 1997. Net shipments of steel mill products were estimated at about 98 million tons compared with 96.0 million tons for 1997. The domestic ferrous castings industry shipped an estimated 11 million tons of all types of iron castings in 1998 and an estimated 1.2 million tons of steel castings, including investment castings.

| Salient Statistics—United States: | 1994 | 1995 | 1996 | 1997 | 1998^e |
|--|-------------|-------------|-------------|-------------|-------------------------|
| Production: Home scrap | 20 | 20 | 20 | 20 | 22 |
| Purchased scrap ² | 58 | 59 | 57 | 59 | 54 |
| Imports for consumption ³ | 1.9 | 2.3 | 2.9 | 3 | 4 |
| Exports ³ | 9.0 | 10.5 | 9.1 | 9 | 7 |
| Consumption: Reported | 70 | 72 | 71 | 73 | 69 |
| Price, average, dollars per metric ton delivered: | | | | | |
| No. 1 Heavy Melting composite price, Iron Age | | | | | |
| Average: Pittsburgh, Philadelphia, Chicago | 124.58 | 131.29 | 126.0 | 126.02 | 120 |
| Stocks, consumer, yearend | 4.1 | 4.2 | 5.2 | 5.5 | 4.7 |
| Employment, dealers, brokers, processors, ⁴ number | 37,000 | 37,000 | 37,000 | 37,000 | 37,000 |
| Net import reliance ⁵ as a percent of apparent consumption | E | E | E | E | E |

Recycling: All iron and steel scrap is recycled material that is a vital raw material for the production of new steel and cast iron products. The steel and foundry industries in the United States have been structured to recycle scrap, and, as a result, are highly dependent upon scrap. The steel industry in North America has been recycling steel scrap for over 200 years. The automotive recycling industry alone recycles more than 11 million vehicles annually through more than 200 car shredders, supplies 37% of all ferrous scrap to scrap recyclers, and employs more than 40,000 people in more than 7,000 businesses. In the United States alone, about 69 million tons of steel apparently was recycled in steel mills and foundries in 1998. Recycling of scrap plays an important role in the conservation of energy because the remelting of scrap requires much less energy than the production of iron or steel products from iron ore. Also, 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. Recycled scrap consists of approximately 32% home scrap (new recirculating scrap from current operations), 23% prompt scrap (produced in steel-product manufacturing plants), and 45% obsolete (old) scrap.

Import Sources (1994-97): Canada, 79%; Venezuela, 7%; Mexico, 6%; United Kingdom, 5%; and other, 3%.

| Tariff: Item | Number | Normal Trade Relations (NTR) 12/31/98 | Non-NTR⁶ 12/31/98 |
|---------------------------------|---------------|--|---|
| Iron and steel waste and scrap: | | | |
| No. 1 bundles | 7204.41.0020 | Free | 74¢/t. |
| No. 1 Heavy Melting | 7204.49.0020 | Free | 74¢/t. |
| No. 2 Heavy Melting | 7204.49.0040 | Free | 74¢/t. |
| Shredded | 7204.49.0070 | Free | 74¢/t. |

Depletion Allowance: Not applicable.

Government Stockpile: None.

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Events, Trends, and Issues: Scrap prices in the United States declined steadily throughout 1998 from the high levels of 1997. Composite prices published by Iron Age Scrap Price Bulletin for No. 1 Heavy Melting steel scrap delivered to purchasers in Chicago, Philadelphia, and Pittsburgh averaged about \$119 per metric ton. As reported by Iron Age Scrap Price Bulletin, the average price for nickel-bearing stainless steel scrap delivered to purchasers in Pittsburgh was about \$668 per metric ton in 1998, which was significantly lower than the 1997 average price of \$805 per metric ton. Exports of ferrous scrap declined from about 9 million tons in 1997 to 7 million tons in 1998, having an estimated value of about \$1.3 billion.

The Asian financial crisis resulted in reduced consumption of U.S. steel products, and ferrous scrap consumption declined. Consumption of domestic scrap was also adversely affected by increasing imports into the United States of excess-capacity low-cost finished and semi-finished steel from Asia, Russia, and Brazil. U.S. imports of steel mill products set a new record high during August that was 78% above that of August 1997. Monthly imports during April through August 1998 were the highest in U.S. history. The domestic scrap supply beyond 1998 is difficult to predict. However, by late 1998, scrap collectors and distributors were beginning to refuse to trade at depressed price levels, and processing equipment was being temporarily idled with the hope that by yearend prices would stop falling.

In the United States, the primary source of obsolete steel scrap is the automobile. The recycling rates of automobiles, appliances, steel cans, and construction steel are about 98%, 80%, 60%, and 90%, respectively. The recycling rates of appliance, can, and construction steel are expected to increase not only in the United States, but also in emerging industrial countries. As environmental regulations increase, recycling becomes more profitable and convenient, and public interest in recycling continues to increase.

The problem of accidental meltings of radioactive sources continues to be a concern of steelmakers as radioactive scrap arrives with increasing frequency at their truck and rail gates. Materials causing the most concern are shielded radioactive devices used by about 6,000 licensees, designed for measuring and controlling the thickness, density, and other characteristics of materials during industrial and other processes. In addition to potential health risks, radioactive scrap threatens the economic survival of steel companies when mill shutdown costs for decontamination, disposing and storing radioactive electric furnace dust, and shutdown of steel production, can be as much as \$500,000 per day. One mini-mill reported a clean-up cost of about \$23 million. Monitoring of incoming ferrous scrap has prevented hundreds of accidental meltings of radioactive materials. Nevertheless, during the period 1983 to June 30, 1997, 18 meltings of radioactive material were reported by United States steel mills. In April 1998, the Nuclear Regulatory Commission (NRC) directed its staff to develop a proposed rule that would require a registration program for licensees possessing radioactive devices.

World Mine Production, Reserves, and Reserve Base: Not applicable.

World Resources: Not applicable.

Substitutes: Nearly 1.7 million tons of direct-reduced iron was used in the United States in 1998 as a substitute for iron and steel scrap.

^eEstimated. E Net exporter.

¹See also Iron Ore and Iron and Steel.

²Receipts - shipments by consumers + exports - imports.

³Includes used rails for rerolling and other uses, and ships, boats, and other vessels for scrapping.

⁴Estimated, based on 1992 Census of Wholesale Trade.

⁵Defined as imports - exports + adjustments for Government and industry stock changes.

⁶See Appendix B.