

## IRON AND STEEL SCRAP<sup>1</sup>

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

**Domestic Production and Use:** Total value of domestic purchases (receipts of ferrous scrap by all domestic consumers from brokers, dealers, and other outside sources) and exports was estimated to be \$20.7 billion in 2007, up by about 37% from that of 2006. U.S. apparent steel consumption, an indicator of economic growth, decreased to about 113 million metric tons in 2007. Manufacturers of pig iron, raw steel, and steel castings accounted for 83% of scrap consumption by the domestic steel industry, using scrap together with pig iron and direct-reduced iron to produce steel products for the appliance, construction, container, machinery, oil and gas, transportation, and various other consumer industries. The ferrous castings industry consumed most of the remaining 17% to produce cast iron and steel products, such as motor blocks, pipe, and machinery parts. Relatively small quantities of scrap were used for producing ferroalloys, for the precipitation of copper, and by the chemical industry; these uses collectively totaled less than 1 million ton.

During 2007, raw steel production was an estimated 100 million tons, about 4% more than that of 2006; annual steel mill capability utilization was about the same as that of 2006. Net shipments of steel mill products were estimated to have been about 97 million tons compared with 102 million tons for 2006. The domestic ferrous castings industry shipped an estimated 11.7 million tons of all types of iron castings in 2007 and an estimated 1.1 million tons of steel castings.

<b>Salient Statistics—United States:</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007<sup>e</sup></b>
Production:					
Home scrap	17	14	15	13	13
Purchased scrap <sup>2</sup>	56	59	58	58	58
Imports for consumption <sup>3</sup>	4	5	4	5	5
Exports <sup>3</sup>	11	12	13	15	15
Consumption, reported	65	67	66	66	66
Price, average, dollars per metric ton delivered,					
No. 1 Heavy Melting composite price, Iron Age					
Average, Pittsburgh, Philadelphia, Chicago	108.00	205.00	188.51	214	249
Stocks, consumer, yearend	4.4	5.4	5.1	4.7	4.7
Employment, dealers, brokers, processors, number <sup>4</sup>	30,000	30,000	30,000	30,000	30,000
Net import reliance <sup>5</sup> as a percentage of reported consumption	E	E	E	E	E

**Recycling:** Recycled iron and steel scrap 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 more than 200 years. The automotive recycling industry recycled through more than 200 car shredders more than 14 million tons of steel from end-of-life vehicles, the equivalent of nearly 13.5 million automobiles. More than 12,000 vehicle dismantlers throughout North America resell parts. In the United States alone, an estimated 66 million tons of steel was recycled in steel mills and foundries in 2007. 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 48% post-consumer (old, obsolete) scrap, 29% prompt scrap (produced in steel-product manufacturing plants), and 23% home scrap (recirculating scrap from current operations).

**Import Sources (2003-06):** Canada, 64%; United Kingdom, 16%; Sweden, 6%; Netherlands, 4%; and other, 10%.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations 12-31-07</b>
Iron and steel waste and scrap:		
No. 1 Bundles	7204.41.0020	Free.
No. 1 Heavy Melting	7204.49.0020	Free.
No. 2 Heavy Melting	7204.49.0040	Free.
Shredded	7204.49.0070	Free.

**Depletion Allowance:** Not applicable.

**Government Stockpile:** None.

## IRON AND STEEL SCRAP

**Events, Trends, and Issues:** Hot-rolled steel prices increased during early 2007 to a peak in April, after which they decreased to early 2007 levels. Prices during 2007 were lower than those in 2006. The producer price index for steel mill products continued to rise unevenly to 190.3 in April 2007 from 98.3 in February 2002. Steel mill capability utilization peaked at 97.3% in September 2004, before decreasing to 75.0 in December 2006, and then fluctuating around 85% during most of 2007.

Scrap prices fluctuated widely between about \$194 and \$243 per metric ton in 2006. Composite prices published by Iron Age Scrap Price Bulletin for No. 1 Heavy Melting steel scrap delivered to purchasers in Chicago, IL, and Philadelphia and Pittsburgh, PA, averaged about \$252 per metric ton during the first 10 months of 2007. As reported by Iron Age Scrap Price Bulletin, the average price for nickel-bearing stainless steel scrap delivered to purchasers in Pittsburgh was about \$2,913 per ton in 2007, which was higher than the 2006 average price of \$2,009 per ton. The prices fluctuated widely between \$1,287 and \$4,188 per ton in 2007. Exports of ferrous scrap increased to an estimated 16.2 million tons from 14.9 million tons during 2006, mainly to Turkey, China, the Republic of Korea, Canada, and Taiwan, in descending order. Export scrap value increased from \$4.2 billion in 2006 to an estimated \$6.8 billion in 2007.

In the United States, the primary source of old steel scrap was the automobile. The recycling rate for automobiles in 2006, the latest year for which statistics were available, was about 104%. A recycling rate greater than 100% is a result of the steel industry recycling more steel from automobiles than was used in the domestic production of new vehicles. The recycling rates for appliances and steel cans in 2006 were 90% and 63%, respectively. Recycling rates for construction materials in 2006 were about 98% for plates and beams and 65% for rebar and other materials. The recycling rates for appliance, can, and construction steel are expected to increase in the United States, but also in emerging industrial countries at a greater rate. As environmental regulations increase, recycling becomes more profitable and convenient, and public interest in recycling continues to increase.

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

**World Resources:** Not applicable.

**Substitutes:** About 1.7 million tons of direct-reduced iron was used in the United States in 2007 as a substitute for iron and steel scrap, up from 1.5 million tons in 2006.

<sup>6</sup>Estimated. E Net exporter.

<sup>1</sup>See also Iron Ore and Iron and Steel.

<sup>2</sup>Receipts – shipments by consumers + exports – imports.

<sup>3</sup>Includes used rails for rerolling and other uses, and ships, boats, and other vessels for scrapping.

<sup>4</sup>Estimated, based on 1992 Census of Wholesale Trade for 2001, and 2002 Census of Wholesale Trade for 2002 through 2005.

<sup>5</sup>Defined as imports – exports + adjustments for Government and industry stock changes.