IRON ORE1

(Data in million metric tons of usable ore² unless noted)

<u>Domestic Production and Use:</u> In 2005, 95% of the usable ore produced, having an estimated value of \$2.3 billion, was shipped from mines in Michigan and Minnesota. Ten iron ore operations with 10 mines, 8 concentration plants, and 8 pelletizing plants were in operation during the year. The mines included 10 open pits and no underground operations. Virtually all ore was concentrated before shipment. Eight mines operated by three companies accounted for greater than 99% of production. The United States produced 4% of the world's iron ore output and also consumed about 4%.

Salient Statistics—United States:	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005^e</u>
Production, usable	46.2	51.6	48.6	54.7	55.0
Shipments	50.6	51.5	46.1	54.9	52.1
Imports for consumption	10.7	12.5	12.6	11.8	13.0
Exports	5.6	6.8	6.8	8.4	11.0
Consumption:					
Reported (ore and total agglomerate) ³	67.3	59.7	61.6	64.5	62.0
Apparent⁴	62.0	57.0	55.2	^e 58.0	57.0
Price, ⁵ U.S. dollars per metric ton	23.87	26.04	32.30	37.92	44.00
Stocks, mine, dock, and consuming					
plant, yearend, excluding byproduct ore⁴	18.0	18.3	17.5	^e 17.6	18.0
Employment, mine, concentrating and					
pelletizing plant, quarterly average, number	5,020	4,740	4,670	4,410	4,400
Net import reliance ⁶ as a percentage of					
apparent consumption (iron in ore)	26	10	12	6	4

Recycling: None (see Iron and Steel Scrap section).

Import Sources (2001-04): Canada, 48%; Brazil, 42%; Chile, 3%; Australia, 3%; and other, 4%.

Tariff: Item	Number	Normal Trade Relations 12-31-05		
Concentrates	2601.11.0030	Free.		
Coarse ores	2601.11.0060	Free.		
Fine ores	2601.11.0090	Free.		
Pellets	2601.12.0030	Free.		
Briquettes	2601.12.0060	Free.		
Sinter	2601.12.0090	Free.		

Depletion Allowance: 15% (Domestic), 14% (Foreign).

Government Stockpile: None.

Events, Trends, and Issues: Worldwide price increases of greater than 70% in 2005 have resulted from the current imbalance in supply and demand. Major iron-ore-mining companies are reinvesting these windfall profits in exploration and mine development. Increased capacity within the next few years is expected to bring supply back in line with the increasing demand. Iron ore demand growth continues to be dominated by China. In 2005, it is estimated that China increased production of mostly lower grade ores by about 19%. Estimates of Chinese imports of higher grade ores, mostly from Australia and Brazil, show an increase of one-third compared with that of 2004.

International iron ore trade and production of iron ore and pig iron—the key indicators of iron ore consumption—plainly show that iron ore consumption in China is the major factor upon which the growth of the international iron ore industry will depend. China's increasing activity in overseas joint ventures, spiraling imports of iron ore, and continued high domestic production of low-grade ores indicate that iron ore consumption will continue to grow.

In December 2003, a major Chinese steel company purchased a minority interest in an insolvent iron ore producer in northeastern Minnesota. Pellet production continued throughout 2004 with China accepting trade for most of their portion of the production from the majority partner's Canadian affiliate. In 2005, it appears that production increases of the order of 20% in comparison with those of 2004 will be attained by the joint-venture operation.

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With increased prices and interest by Chinese importers, several small miners are investigating the possibility of opening or reopening lower grade iron ore deposits in Alaska, Arizona, Missouri, Nevada, New Mexico, Tennessee, and Utah.

Research and development testing on a value-added iron product was completed in Minnesota in 2004. The Mesabi Nugget project determined that iron ore pellets produced in Minnesota could be converted to direct-reduced iron nuggets of 96% to 98% iron content using noncoking coals and that the overall process would emit lower levels of pollutants. Permitting activities for a plant to be built either in Minnesota or Indiana progressed during 2005.

U.S. iron ore producers continued to make mine and plant improvements to take advantage of increased profits and an improved steel market. Plant recoveries are being enhanced, pellet plant capacity increased, and alternative fuel systems with reduced air emissions developed at pelletizing plants.

Offsetting some of these operational improvements are increased operating costs, which are negatively impacting U.S. iron ore operations. Fuel costs are substantially higher than projected in the very fuel-intensive iron ore industry. Overall iron ore production may also be affected by a worldwide shortage of heavy-equipment tires, which could impact mining equipment availability. Tire shortages have been exacerbated by recent expansions in the mining industry and increased demand for large tires by China.

<u>World Mine Production, Reserves, and Reserve Base</u>: The iron ore reserve estimates for Australia and Brazil and the reserve base estimate for Brazil have been revised based on new information from those countries.

				Crude ore		Iron content	
	Mine pro	Mine production		Reserve		Reserve	
	2004	2005 ^e	Reserves	base	Reserves	base	
United States	55	55	6,900	15,000	2,100	4,600	
Australia	231	280	15,000	40,000	8,900	25,000	
Brazil	255	300	23,000	61,000	16,000	41,000	
Canada	28	30	1,700	3,900	1,100	2,500	
China	310	370	21,000	46,000	7,000	15,000	
India	121	140	6,600	9,800	4,200	6,200	
Iran	17	17	1,800	2,500	1,000	1,500	
Kazakhstan	20	19	8,300	19,000	3,300	7,400	
Mauritania	11	11	700	1,500	400	1,000	
Mexico	12	12	700	1,500	400	900	
Russia	97	95	25,000	56,000	14,000	31,000	
South Africa	39	40	1,000	2,300	650	1,500	
Sweden	22	23	3,500	7,800	2,200	5,000	
Ukraine	66	69	30,000	68,000	9,000	20,000	
Venezuela	22	22	4,000	6,000	2,400	3,600	
Other countries	37	40	11,000	30,000	6,200	17,000	
World total (rounded)	1,340	1,520	160,000	370,000	79,000	180,000	

<u>World Resources</u>: World resources are estimated to exceed 800 billion tons of crude ore containing more than 230 billion tons of iron. U.S. resources are estimated to be about 110 billion tons of ore containing about 27 billion tons of iron. U.S. resources are mainly low-grade taconite-type ores from the Lake Superior district that require beneficiation and agglomeration for commercial use.

<u>Substitutes</u>: Iron ore, used directly or converted to pellets, briquettes, or concentrates, is the only source of primary iron. In some operations, ferrous scrap constitutes as much as 7% of the blast furnace feedstock. Scrap is extensively used in steelmaking and in iron and steel foundries, but availability of scrap has become an issue during the past 2 years. Price increases for iron ore of greater than 70% during the past year have reduced the margin between iron ore and scrap prices and, therefore, the relative attractiveness of scrap.

^eEstimated

¹See also Iron and Steel and Iron and Steel Scrap.

²Agglomerates, concentrates, direct-shipping ore, and byproduct ore for consumption.

³Includes weight of lime, flue dust, and other additives used in producing sinter for blast furnaces.

⁴Information regarding consumer stocks at receiving docks and plants was no longer available after 2003 (these stock changes were estimated).

⁵Estimated from reported value of ore at mines.

⁶Defined as imports – exports + adjustments for Government and industry stock changes.

⁷See Appendix C for definitions.