



# MINERAL INDUSTRY SURVEYS

U. S. DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES  
WASHINGTON, D.C. 20241



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Iron Ore, Monthly

## IRON ORE IN DECEMBER 1987

U.S. mine production of iron ore was slightly lower than that in November (revised), according to the Bureau of Mines, U.S. Department of the Interior. Mine shipments, in contrast, rose 3%. Shipments from U.S. loading docks on the Great Lakes totaled 5.5 million long tons, the highest monthly tonnage since May, and were 77% greater than those of December 1986. U.S. imports of ore dropped 38% between November and December to 1.4 million tons, while exports, primarily to Canada, jumped 44%. The December statistics reflect last minute efforts by blast furnace operators in the Great Lakes region to build up ore stocks before the closure of the Soo Locks on January 15 and the lay-up of vessels for the winter. Consumption of ore and agglomerates rose 7% during the month to 5.8 million tons and was 47% greater than that of December 1986. On December 31, 49 blast furnaces were in operation, 3 less than on November 30 but 17 more than a year ago.

Both 1987 and 1986 were atypical years for the iron and steel sector because of the prolonged labor dispute between the United Steelworkers of America and the USS Division of USX Corp. Preliminary data for 1987 indicate that U.S. production of usable ore was 46.9 million tons, compared with only 38.8 million tons for 1986. This 21% increase reflected an upturn in pig iron production that began in mid-March and continued for the rest of the year. The 10% increase in pig iron production, in turn, resulted from:

- the settlement of the USX labor dispute on February 1, and the resumption of iron and steelmaking at all but three of the company's steel facilities;
- the rebuilding of steel inventories by customers and competitors of USX; and
- the strengthening of overall demand for steel products in the fourth quarter, with shipments to industrial construction companies and machinery manufacturers showing the greatest growth.

Mine shipments of pellets, concentrates, and direct-shipping ore increased 12% to 47.3 million tons. U.S. imports of iron ore dropped less than a percent to 16.6 million tons, while exports increased 12% to 5.0 million tons. Consumption of iron ore by the iron and steel industry rose to 60.1 million tons, about 9% more than in 1986. Stocks of iron ore on December 31 at mines, receiving and transfer docks, and consuming plants totaled 20.9 million tons, 1.2 million tons less than the total reported 1 year earlier.

On December 15, the shareholders of Cleveland-Cliffs Inc. voted down a proposal calling for the replacement of the company's board of directors. The vote of confidence ended a proxy fight begun last September when Cliffs bought back \$126

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million of Tilden Mine debt obligations. (See July 1987 MIS.) A number of shareholders were dissatisfied because the debt buyout was financed in part by the sale of 4 million shares of common stock at \$17 per share. The collapse of the stock market on October 19 only added to shareholders' anxieties. However, the proxy win effectively gave management approval to proceed with its previously announced restructuring and recapitalization plans.

Update: Since the special shareholders meeting, Cliffs has repaid loans totaling \$142 million, rearranged other credits, tendered offers for its stock, and undergone an extensive restructuring that included:

- the sale of its Presque Isle Power Plant and related coal handling facilities to Wisconsin Electric Power Co. for a net of \$119.1 million in cash (December 31, 1987),
- the signing of a letter of intent to develop the Cliffs Drive III magnetite ore body at Tilden (March 11, 1988),
- the sale of its hardwood lumber and veneer business to a timber products company in Oregon (April 11, 1988), and
- the spinoff of its oil and gas drilling subsidiary to shareholders (June 8, 1988).

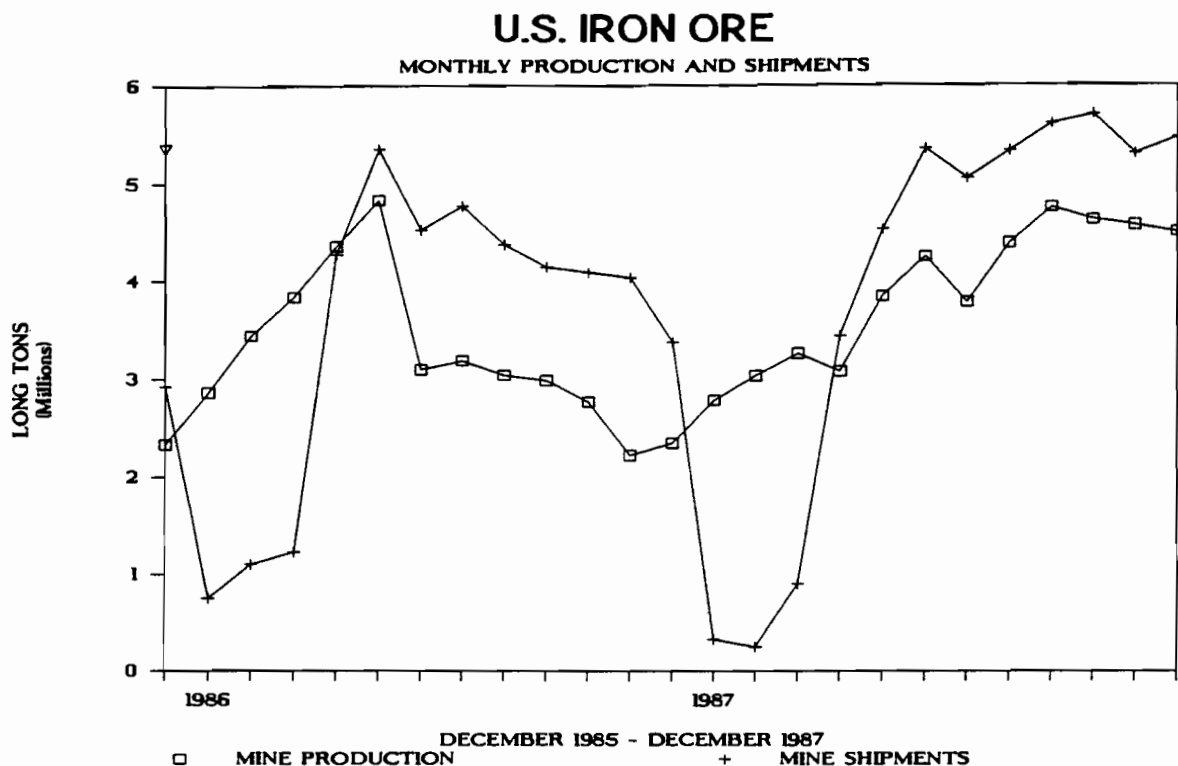


Table 1. - U.S. production and shipments of iron ore, by districts 1/  
(Exclusive of ore containing 5% or more manganese)  
(Thousand long tons)

Period	Lake	Other U.S.	Total 2/	
	Superior		1987	1986
Production:				
1986-----	37,564	1,262	--	38,825
1987:				
1st Quarter----	8,897	172	9,069	10,144
2nd Quarter----	<u>r/11,003</u>	170	<u>r/11,174</u>	<u>r/12,334</u>
3rd Quarter----	<u>r/12,778</u>	156	<u>r/12,935</u>	9,218
October-----	<u>r/4,546</u>	87	<u>r/4,633</u>	2,767
November-----	<u>r/4,518</u>	57	<u>r/4,575</u>	2,221
December-----	4,451	57	4,508	2,342
Shipments:				
1986 3/-----	39,737	1,591	--	41,327
1987:				
1st Quarter----	1,341	143	1,484	<u>r/3,088</u>
2nd Quarter----	<u>r/13,134</u>	191	<u>r/13,325</u>	14,158
3rd Quarter----	<u>r/15,784</u>	203	<u>r/15,987</u>	13,299
October-----	<u>r/5,636</u>	65	<u>r/5,701</u>	4,093
November-----	<u>r/5,232</u>	66	<u>r/5,298</u>	4,036
December-----	5,395	66	5,461	3,369

r/ Revised.

1/ Excludes byproduct ore, except where noted.

2/ Data may not add to totals shown because of independent rounding. Monthly and quarterly totals for 1986 include estimated data and do not reflect year-end revisions & additions.

3/ Includes byproduct ore.

Table 2. - U.S. mine production, shipments, and stocks of iron ore 1/  
(Exclusive of ore containing 5% or more manganese)  
(Thousand long tons)

District	Production December		Shipments December		Mine Stocks December 31	
	1987	1986	1987	1986	1987	1986
Lake Superior:						
Michigan-----	1,187	1,040	1,661	1,545	742	653
Minnesota-----	3,264	1,244	3,734	<u>r/1,788</u>	1,664	<u>r/2,088</u>
Other U.S.-----	57	58	66	36	210	249
Total <u>2/</u> -----	4,508	2,342	5,461	<u>r/3,369</u>	2,616	<u>r/2,989</u>

r/ Revised.

1/ Excludes byproduct ore.

2/ Data may not add to totals shown because of independent rounding.

Table 3. - U.S. exports of iron ore  
(Thousand long tons)

Period	Canada	Other	Total <u>1/</u>	
			1987	1986
1986-----	4,479	3	--	4,482
1987:				
1st Quarter-----	92	( <u>2/</u> )	92	157
2nd Quarter-----	1,873	( <u>2/</u> )	1,873	<u>r/1,339</u>
3rd Quarter-----	1,476	1	1,477	1,618
October-----	479	( <u>2/</u> )	480	529
November-----	447	--	447	369
December-----	644	( <u>2/</u> )	644	469

r/ Revised.

1/ Data may not add to totals shown because of independent rounding.

2/ Less than one-half unit.

Source: Bureau of the Census.

Table 4. - Canada: Shipments of iron ore  
(Thousand dry long tons)

Period	Newfound- land	Quebec	Ontario	British Columbia	1987 Total <u>1/</u>	1986 Total <u>1/</u>
1986 p/-----	19,158	12,992	3,314	63	--	<u>2/</u> 35,525
1987:						
1st Quarter---	2,249	2,977	848	6	6,081	5,648
2nd Quarter---	4,580	4,565	838	6	9,989	10,579
3rd Quarter---	5,185	3,548	710	6	9,449	9,411
October-----	2,198	1,265	274	2	3,739	3,583
November-----	2,132	1,409	218	2	3,761	3,939
December-----	2,024	1,856	296	3	4,179	<u>r/</u> 3,506

p/ Preliminary. r/ Revised.

1/ Data may not add to totals shown because of independent rounding.

2/ Includes annual revisions, not shown by month.

Source: Energy, Mines, and Resources Canada.

Table 5. - U.S. imports for consumption of iron ore, by country  
(Exclusive of ore containing 10% or more manganese)

Country of origin	December 1987		Year to date 1987			Year to date 1986 (thousand long tons)
	Thousand long tons	Value <u>1/</u> (thousand dollars)	Thousand long tons	Value <u>1/</u> (thousand dollars)	Value <u>1/</u> (dollars per ton)	
Australia-----	55	1,198	191	5,141	26.87	10
Brazil-----	178	3,106	3,640	64,820	17.81	3,693
Canada-----	637	21,010	7,854	246,181	31.34	<u>r/</u> 8,696
Chile-----	121	3,165	626	12,601	20.13	93
Liberia-----	27	320	979	13,707	14.01	<u>r/</u> 1,487
Mauritania-----	74	1,062	406	6,403	15.77	65
Peru-----	--	--	83	1,691	20.40	91
Spain-----	--	--	1	27	51.76	--
Sweden-----	38	1,000	137	3,334	24.37	104
Venezuela <u>2/</u> ----	268	5,743	2,580	52,889	20.50	2,309
Other-----	--	--	87	1,988	22.93	<u>r/</u> 194
Total <u>3/</u> ----	1,397	36,604	16,583	408,783	24.65	<u>r/</u> 16,743

r/ Revised.

1/ Customs value. Excludes international freight, insurance, and other c.i.f. charges.

2/ Data for Venezuela originally included some shipments of direct-reduced iron (DRI). December 1987 figures exclude 18,080 tons of DRI valued at \$1,849,584. Year-to-date 1986 figures exclude 83,000 tons of DRI valued at \$8,340,609.

3/ Data may not add to totals shown because of independent rounding.

Source: Bureau of the Census data reported under item 601.24 of the Tariff Schedules of the United States.

Table 6. - U.S. consumption and stocks of iron ore and agglomerates  
at consuming plants and production of pig iron  
(Thousand long tons)

State or Region	Consumption			Stocks	
	December	Year to date		December 31	
	1987	1987	1986	1987	1986
Alabama, Kentucky, Tennessee, Texas, and Missouri-----	349	3,893	4,148	1,025	1,388
California, Colorado, and Utah-	NA	NA	1,059	NA	138
Delaware, Maryland, and West Virginia-----	666	7,443	6,271	1,994	2,064
Illinois and Indiana-----	2,500	24,266	21,095	7,457	7,471
Michigan and Minnesota-----	400	5,396	5,467	1,890	2,095
New York, Ohio, Pennsylvania, New Jersey, and Rhode Island-	1,851	19,089	17,241	3,938	4,007
Total <u>1</u> /-----	5,765	60,087	55,283	16,304	17,163

Stocks at U.S. receiving/transfer docks-----	2,024	1,987
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Consuming Sector	Consumption by process			Pig iron produced		
	December	Year to date		December	Year to date <u>2</u> /	
	1987	1987	1986	1987	1987	1986
Blast furnaces-----	5,194	53,751	47,772	3,971	43,158	39,243
Steel furnaces-----	16	142	95	--	--	--
Agglomerating plants <u>3</u> /--	554	6,171	7,307	--	--	--
Miscellaneous <u>4</u> /-----	2	23	108	--	--	--
Total <u>1</u> /-----	5,765	60,087	55,283	3,971	43,158	39,243

NA Not available.

1/ Data may not add to totals shown because of independent rounding.

2/ Includes revisions for previous months.

3/ Iron ore and iron ore concentrates consumed in agglomerating plants not located at the mine site.

4/ Sold to nonreporting companies or used for purposes not listed.

Source: American Iron Ore Association (consumption of iron ore).  
American Iron and Steel Institute (production of pig iron).

Table 7. - U.S. imports for consumption of iron ore, by customs district  
(Exclusive of ore containing 10% or more manganese)  
(Thousand long tons)

Customs district	December 1987	Year to date	
		1987	1986
Baltimore-----	426	5,881	5,567
Buffalo-----	--	(1/)	(1/)
Charleston, SC-----	--	317	240
Chicago-----	59	1,976	1,537
Cleveland-----	178	1,466	1,707
Detroit-----	121	627	382
Honolulu-----	--	--	10
Houston-----	--	9	42
Los Angeles-----	--	--	(1/)
Milwaukee-----	--	--	13
Mobile-----	74	1,046	2,434
New Orleans-----	114	1,506	1,569
New York-----	--	(1/)	(1/)
Philadelphia-----	425	3,749	<u>r/</u> 3,237
San Juan, PR-----	--	1	4
Wilmington, NC-----	--	(1/)	1
Other-----	(1/)	6	<u>r/</u> (1/)
Total <u>2/</u> -----	1,397	16,583	<u>r/</u> 16,743

r/ Revised.

1/ Less than one-half unit.

2/ Data may not add to totals shown because of independent rounding.

Table 8.--World iron in ore production capacity  
1984, 1985, and 1986  
(Million short tons iron content)

	1984 <u>e/</u>	1985 <u>e/</u>	1986 <u>e/</u>
North America:			
United States-----	69	67	64
Canada-----	40	35	35
Mexico-----	8	8	8
Total-----	117	110	107
South America:			
Brazil-----	101	108	115
Venezuela-----	17	18	18
Other-----	15	15	15
Total-----	133	141	148
Europe:			
France-----	9	9	9
Sweden-----	14	15	16
U.S.S.R.-----	182	184	188
Other-----	21	21	23
Total-----	226	229	236
Africa:			
Liberia-----	15	13	11
South Africa, Republic of--	25	25	25
Other-----	13	13	13
Total-----	53	51	49
Asia:			
China-----	42	48	55
India-----	35	40	46
Other-----	8	8	9
Total-----	85	96	110
Oceania:			
Australia-----	87	86	86
New Zealand-----	3	3	3
Total-----	90	89	89
World total (rounded)-----	704	716	739

e/ Estimated.



Table 9.--Iron ore supply-demand relationships and prices, 1976-86  
(Million short tons iron content)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
WORLD PRODUCTION											
Mine production:											
United States-----	55.4	38.6	56.8	60.2	49.2	52.1	25.4	27.1	37.1	35.1	27.9
Rest of World-----	508.4	491.6	475.3	512.6	517.0	494.3	r/467.5	r/439.3	r/492.9	r/510.8	524.7
Total-----	563.8	530.2	532.1	572.8	566.2	546.4	r/492.9	r/466.4	r/530.0	r/545.9	552.6
COMPONENTS AND DISTRIBUTION OF U.S. SUPPLY											
Components of U.S. supply:											
Primary Production-Domestic											
Mines-----	55.4	38.6	56.8	60.2	49.2	52.1	25.4	27.1	37.1	35.1	27.9
Imports-----	30.8	26.3	23.7	23.8	17.7	19.7	10.1	9.4	12.1	11.1	12.0
Industry stocks-January 1-----	47.7	52.1	41.7	38.4	39.2	37.8	39.2	33.8	24.0	23.0	21.2
Total U.S. supply-----	133.9	117.0	122.2	122.4	106.1	109.6	74.7	70.3	73.2	69.2	61.1
Distribution of U.S. supply:											
Industry stocks-December 31--	52.1	41.7	38.4	39.2	37.8	39.2	33.8	1/24.0	23.0	21.2	16.1
Exports-----	2.0	1.5	2.9	3.6	4.0	4.0	2.3	2.7	3.6	3.6	3.2
Demand-----	79.8	73.8	80.9	79.6	64.3	66.4	38.6	43.6	46.6	44.4	41.8
U.S. DEMAND PATTERN											
Blast furnaces-----	78.1	72.5	79.4	77.8	62.8	65.1	37.8	43.0	45.6	43.4	40.8
Steel furnaces-----	1.2	0.8	1.0	1.2	0.9	0.8	0.2	0.1	0.3	0.3	0.3
Other-----	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.7	0.7	0.7
Total U.S. demand-----	79.8	73.8	80.9	79.6	64.3	66.4	38.6	43.6	46.6	44.4	41.8
PRICES											
Avg. Annual-Actual-F.O.B. Mines (Dollars per short ton)-----	35.2	38.1	41.5	46.7	51.8	56.7	58.3	60.6	61.0	58.5	49.6

r/ Revised.

1/ Not directly comparable to prior stock data, due to changes in reporting of byproduct ore in 1983. Prior data unchanged for proprietary reasons.