

# Mineral Industry Surveys

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## IRON ORE IN APRIL 2016

U.S. mine production and shipments of iron ore in April 2016 were 2.74 million metric tons (Mt) and 4.29 Mt, respectively (fig. 1, table 1). Average daily production of iron ore was 91,400 metric tons (t), slightly less than that of March and 30% less than that of April 2015. Average daily shipments of iron ore were 143,000 t, more than triple those in March, and 19% greater than those in April 2015. Increased shipments in April were the result of seasonal conditions on the Great Lakes that limited shipping from January through mid-March. Mine stocks at the end of April 2016 were 12% less than those held at the end of March and 24% less than those held at the end of April 2015.

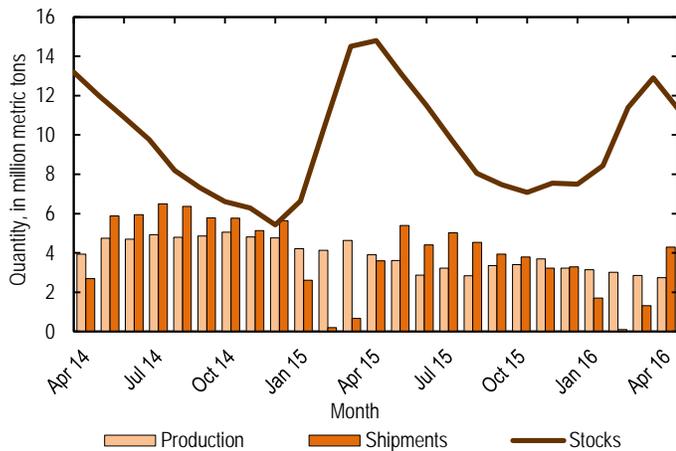


Figure 1. Monthly domestic production, shipments, and stocks of iron ore from April 2014 through April 2016. Source: U.S. Geological Survey

As of April 2016, five open-pit mines and collocated pellet plants, one tailings reclamation operation, and two iron metallica facilities were operating. One iron ore mine was expected to reopen by May 15, 2016, and another was expected to reopen later in the year. Three facilities remained idled indefinitely. One iron metallica plant and its dedicated iron ore mine were expected to remain idle through May 2017.

Monthly iron ore data are reported as gross weight unless otherwise noted and do not include iron metallica such as pig iron, direct-reduced iron, hot-briquetted iron, or iron nuggets. Data for iron metallica can be found in the Iron Ore chapter in the U. S. Geological Survey Minerals Yearbook, volume I, Metals and minerals.

U.S. exports of iron ore totaled 584,000 t in April 2016, more than triple those in March and 18% greater than those in April 2015. U.S. imports of iron ore totaled 260,000 t in April 2016, 28% less than those in March and 41% greater than those in April 2015 (fig. 2). U.S. imports and exports were affected during the winter months, when the closure of the Soo Locks and freezing on the Great Lakes caused imports and exports to decline from levels seen during the rest of the year.

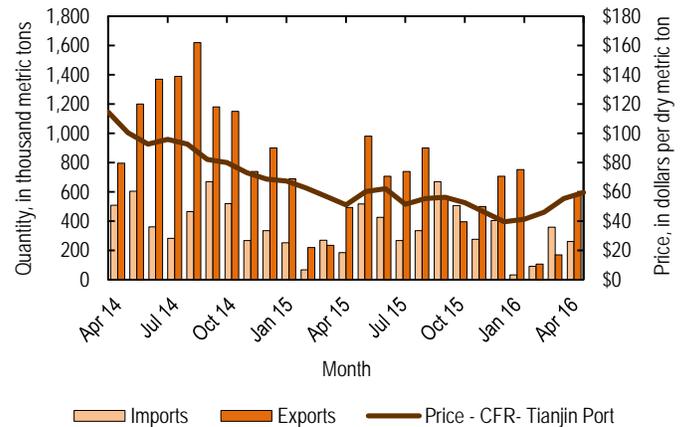


Figure 2. Monthly domestic imports and exports of iron ore and spot prices for iron ore import fines, 62% iron content CFR, at Tianjin Port, from April 2014 through April 2016. Source: U.S. Census Bureau and Index Mundi, undated.

### Industry News

Essar Steel Algoma Inc. and Cliffs Natural Resources Inc. reached an agreement whereby Cliffs will resume supplying iron ore pellets to Essar's steel mills for the remainder of 2016 and reinstate the original contract for 2017. The original dispute was owing to the price of iron ore supplied by Cliffs and the

court-supervised restructuring of Essar as it filed for creditor protection in November 2015 (Essar Steel Algoma Inc., 2016).

ArcelorMittal USA reached a tentative contract agreement with the United Steelworkers of America, a labor union representing iron and steel industry employees in the United States. The previous contract expired in August 2015 and included 310 hourly employees at the Minorca Mine, which produces iron ore in Minnesota. The new contract, if ratified in a vote by union members, will be in effect through September 1, 2018. U.S. Steel Corp. ratified a 3-year contract earlier in 2016 and Cliffs Natural Resources remains in negotiations (Myers, 2016).

U.S. Steel Corp. officials have no plans to reopen its 6-million-metric-ton-per-year Keetac Mine in Keewatin, MN. The Keetac Mine would only restart if steelmaking operations at U.S. Steel's Granite City Works facility, which has been idled since December, reopened or the company secured a contract with another steelmaker. The steelmaker was able to meet demand with pellet production from its Minntac Mine (Myers, 2016).

BHP Billiton Ltd. and Rio Tinto plc announced plans to cut production. BHP Billiton anticipated a reduction of 10 Mt, owing to bad weather and the start of its 2-year rail upgrade and maintenance program, forecasting a 260-Mt annual production total in 2016. Rio Tinto reduced production plans for 2017 from 350 Mt to between 330 and 340 Mt, owing to problems with its autonomous train project (Chambers, 2016).

BHP Billiton was considering withdrawing from ownership in mines in which it did not maintain operational control, following the disaster at Samarco Mine in Brazil. Samarco Mineração S.A., a joint venture between Vale S.A. and BHP Billiton, experienced a dam burst at a tailings pond in late 2015, which released mud into nearby waterways, killing 17 people and creating an environmental disaster. Neither company, however, was responsible for operations at the pit. The change would primarily affect the company's assets in Latin America (Fitzgerald, 2016).

The World Steel Association, in its Short Range Outlook, predicted that global steel demand would decrease by 0.8% to

1,488 Mt in 2016 and increase by 0.4% to 1,494 Mt, in 2017. In 2015, steel consumption decreased by 3.0%, led by decreases in Brazil (17%), the United States (11%), Russia (8.4%), Japan (7.0%), and China (5.4%). Annual steel consumption in China was expected to decrease by 46.2 Mt from 2015 through 2017; however, global steel consumption was expected to decrease by only 6.5 Mt during the same period owing to increases in other major countries (World Steel Association, 2016.) Changes in steel demand, primarily in major developed countries such as Brazil, China, and the United States, are directly reflected in demand for iron ore.

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TABLE 1  
U.S. PRODUCTION, SHIPMENTS, AND STOCKS OF IRON ORE<sup>1,2</sup>  
(Exclusive of ore containing 5% or more of manganese)

(Thousand metric tons)

Period	Production		Shipments <sup>3</sup>		Stocks
	Monthly	Year to date	Monthly	Year to date	End of Month
2015:					
April	3,910	16,900	3,600	7,080	14,800
May	3,620	20,500	5,400	12,500	13,100
June	2,870	23,400	4,400	16,900	11,500
July	3,220	26,600	5,020	21,900	9,740
August	2,840	29,400	4,540	26,400	8,040
September	3,360	32,800	3,940	30,400	7,460
October	3,400	36,200	3,790	34,200	7,070
November	3,700	39,900	3,230	37,400	7,550
December	3,230	43,100	3,290	40,700	7,490
2016:					
January	3,150	3,150	1,700	1,700	8,440
February	3,020	6,160	106	1,810	11,400
March	2,850	9,010	1,310	3,120	12,900
April	2,740	11,800	4,290	7,410	11,300

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>Excludes byproduct ores and iron metallics.

<sup>3</sup>Includes rail and vessel.

TABLE 2  
U.S. PRODUCTION OF PIG IRON AND RAW STEEL, BY TYPE OF FURNACE<sup>1</sup>

(Thousand metric tons)

Period	Pig iron production, blast furnace		Raw steel production			
	Monthly	Year to date	Basic oxygen furnace		Electric furnace	
			Monthly	Year to date	Monthly	Year to date
2015:						
April	2,330	9,790	1,990	8,340	4,080	16,500
May	2,530	12,300	2,180	10,500	4,310	20,800
June	2,670	15,000	2,340	12,900	4,180	25,000
July	2,830	17,800	2,460	15,300	4,200	29,200
August	2,690	20,500	2,330	17,600	4,240	33,400
September	2,390	22,900	2,090	19,700	4,170	37,600
October	2,270	25,200	1,990	21,700	4,270	41,900
November	2,120	27,300	1,780	23,500	3,710	45,600
December	2,110	29,400	1,930	25,400	3,860	49,400
2016:						
January	2,200	2,200	1,910	1,910	4,250	4,250
February	2,260	4,460	2,010	3,920	4,170	8,420
March	2,380	6,840	2,040	5,960	4,390	12,800
April	2,150	8,980	1,860	7,820	4,460	17,300

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

Source: American Iron and Steel Institute.

TABLE 3  
U.S. EXPORTS OF IRON ORE, BY COUNTRY AND TYPE <sup>1,2</sup>  
(Exclusive of ore containing 20% or more manganese)

Country and type of product	2015			2016		
	January–April Thousand metric tons	April		January–April Thousand metric tons	January–April	
		Thousand metric tons	Value <sup>3</sup> (thousand dollars)		Value <sup>3</sup> (thousand dollars)	Value <sup>3</sup> (dollars per ton)
Canada	1,320	584	\$39,500	1,610	\$124,000	\$77.15
Other	314	(4)	78	1	300	300.00
<b>Total</b>	<b>1,640</b>	<b>584</b>	<b>39,600</b>	<b>1,610</b>	<b>125,000</b>	<b>77.29</b>
Concentrates	34	(4)	13	(4)	75	18.75
Fine ores	16	(4)	14	(4)	63	15.75
Pellets	1,330	584	39,500	1,610	124,000	77.15
Other	254	(4)	51	1	172	172.00
<b>Total</b>	<b>1,640</b>	<b>584</b>	<b>39,600</b>	<b>1,610</b>	<b>125,000</b>	<b>77.29</b>

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

<sup>2</sup>All countries with less than 5,000 metric tons of exports per month included in "Other."

<sup>3</sup>Free alongside ship (FAS) value.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE, BY COUNTRY AND TYPE <sup>1,2</sup>  
(Exclusive of ore containing 20% or more manganese)

Country of origin and type of product	2015			2016		
	January–April Thousand metric tons	April		January–April Thousand metric tons	January–April	
		Thousand metric tons	Value <sup>3</sup> (thousand dollars)		Value <sup>3</sup> (thousand dollars)	Value <sup>3</sup> (dollars per ton)
Brazil	186	95	\$6,490	434	\$33,700	\$77.59
Canada	499	90	5,800	152	8,920	58.69
Sweden	(4)	75	5,780	75	5,780	77.12
Other	91	(4)	22	80	11,200	140.05
<b>Total</b>	<b>774</b>	<b>260</b>	<b>18,100</b>	<b>741</b>	<b>59,600</b>	<b>80.41</b>
Concentrates	31	53	1,830	145	6,780	46.77
Pellets	682	207	16,200	546	43,400	79.50
Other	62	(4)	42	50	9,390	187.82
<b>Total</b>	<b>774</b>	<b>260</b>	<b>18,100</b>	<b>741</b>	<b>59,600</b>	<b>80.41</b>

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

<sup>2</sup>All countries with less than 5,000 metric tons of imports per month included in "Other."

<sup>3</sup>Customs value. Excludes international freight and insurance charges.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE,  
BY CUSTOMS DISTRICT<sup>1,2</sup>

(Exclusive of ore containing 20% or more manganese)

(Thousand metric tons)

Customs district (code no.)	Pellets			Total, all products		
	January–April		April	January–April		April
	2015	2016	2016	2015	2016	2016
Chicago, IL (39)	--	--	--	--	115	53
New Orleans, LA (20)	258	546	207	340	624	207
Other	425	--	--	436	3	1
Total	682	546	207	774	741	260

-- Zero.

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

<sup>2</sup>Customs Districts with less than 5,000 metric tons of imports per month included in "Other."

Source: U.S. Census Bureau.