

Mineral Industry Surveys

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IRON ORE IN MARCH 2023

Data are reported as gross weight unless otherwise noted and do not include iron metallics such as direct-reduced iron, hot-briquetted iron, iron nuggets, or pig iron.

U.S. mine production and shipments of iron ore in March 2023 were estimated to be 3.56 million metric tons (Mt) and 1.43 Mt, respectively (fig. 1, table 1). Average daily production of iron ore was 115,000 metric tons (t), 3% less than in February and a 17% increase from that in March 2022. Average daily shipments of iron ore were 46,100 t, more than triple the revised amount in February and more than triple those in March 2022.

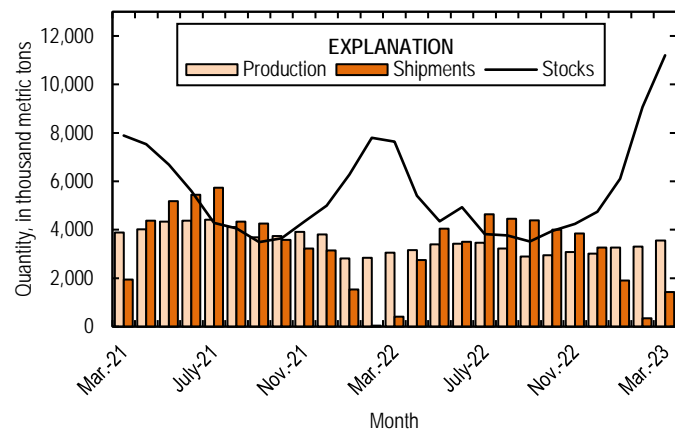


Figure 1. Monthly domestic production, shipments, and stocks of iron ore from March 2020 through March 2023.

Mine stocks were estimated to be 11.2 Mt at the end of March 2023, a 23% increase from those held at the end of February, and a 47% increase from those held at the end of March 2022 (fig. 1, table 1). Seasonal variations in shipping and stocking reflect closures of the Soo Locks, a primary transportation route for seaborne shipments.

U.S. exports of iron ore were 383,000 t in March 2023, a 35% decrease from those in February and a 22% decrease from those in March 2022 (fig. 2, tables 3, 6). U.S. imports of iron ore were 302,000 t in March 2023, a 29% decrease from those in February and nearly triple those in March 2022 (fig. 2, tables 4, 6).

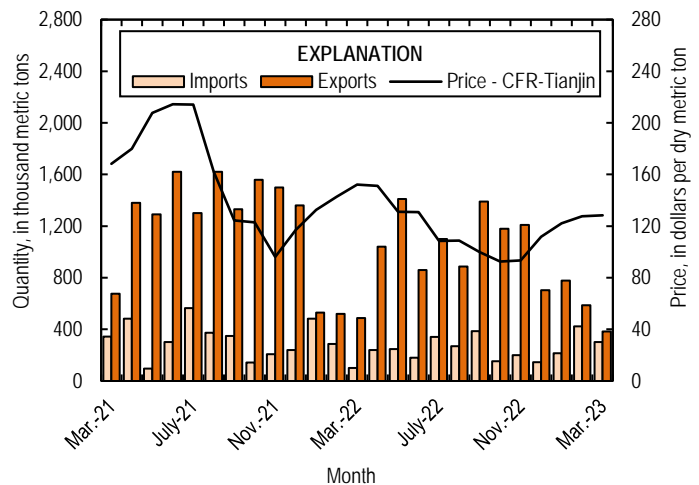


Figure 2. Monthly domestic imports and exports of iron ore and spot prices for imported iron ore fines, 62% iron content, cost and freight (CFR), at Tianjin Port, China, from March 2020 through March 2023. Source: U.S. Census Bureau and IndexMundi, undated.

The spot price for imported iron ore fines, 62% iron content, cost and freight, at Tianjin Port, China, was \$128.37 per dry metric ton in March 2023, essentially unchanged from \$127.60 per dry metric ton in February (fig. 2).

Industry News

In San Bernadino County, California, a Union Pacific train derailed on March 27, including 55 cars carrying iron ore and two locomotives. The crash site reported no injuries and no threat to the public or environment (Grant, 2023).

Vale S.A.'s (Brazil) pilot project to replace coal with biomass in the production of iron ore pellets achieved successful results on an industrial scale in March. The facility, located in Minas Gerais State, produced 15,000 t of pellets using lower-emission biocarbon, a process that uses biomass carbonization to replace anthracite coal, with the aim to permanently replace all coal in its plants by 2030 (Nogueira, 2023).

Vale also announced the Gelado project, which aimed to recover 140 Mt of tailings from the Carajas tailings dam (Brazil) using electric dredges. The tailings would serve as the feedstock for a 5 million-metric-ton-per-year (Mt/yr) iron ore pelletizing plant. The \$485 million project was expected to increase

production capacity to 10 Mt/yr of iron ore concentrates, or 8.3 Mt of pellets, by 2026 as part of its goal to cut emissions from its suppliers and clients by 15% in the next 12 years (Duraó, 2023).

In March, –BHP Group Ltd., acting on behalf of Fortescue Metals Group, Rio Tinto Group, and Vale S.A., signed an agreement with Shadong Port Group to settle spot trading of iron ore in Chinese yuan renminbi this year. The agreement would apply to all iron ore to be received by the port from all companies, roughly one-fourth of all iron ore imported by China (Xuanmin, 2023).

As part of key policy meetings in March, China announced that it projected a 5% growth target as part of its economic and policy agenda for 2023. The country plans to centralize iron ore purchases under the China Mineral Resources Group, a state-run entity tasked with purchasing steel-making raw materials. China’s Ministry of Industry and Information Technology also announced it would increase the share of steel scrap used in steelmaking to 25%, or 265 Mt, compared with 19% in 2022. The key changes were forecast to significantly decrease prices of iron ore to around \$90 from \$100 per ton in the second half of 2023. Additionally, the World Steel Association reported decreases in production in February led by Russia (8.6%), Japan (5.3%), and the United States (5.3%) (Shan, 2023).

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TABLE 1
U.S. PRODUCTION, SHIPMENTS, AND STOCKS OF IRON ORE^{1,2}

(Thousand metric tons, usable ore)

Period	Production		Shipments ³		Stocks
	Monthly	Year to date	Monthly	Year to date	End of Month
2022:					
March	3,050	8,700	410	1,980	7,640
April	3,160	11,900	2,750	4,730	5,410
May	3,400	15,300	4,050	8,780	4,350
June	3,430	18,700	3,500	12,300	4,930
July	3,460	22,100	4,640	16,900	3,820
August	3,230	25,400	4,460	21,400	3,770
September	2,900	28,300	4,390	25,800	3,510
October	2,950	31,200	4,000	29,800	3,950
November	3,080	34,300	3,840	33,600	4,240
December	3,010	37,300	3,270	36,900	4,740
2023:					
January	3,270	3,270	1,900	1,900	6,110
February	3,310	6,580	350 ^r	2,250 ^r	9,070 ^r
March	3,560	10,100	1,430	3,680	11,200

^rRevised.

¹Data are rounded to no more than three significant digits.

²Data are estimated based on publicly reported data, employment hours, and historical ratios. Excludes byproduct ores and iron metallics.

³Includes rail and vessel.

TABLE 2
U.S. PRODUCTION OF PIG IRON AND RAW STEEL¹

(Thousand metric tons)

Period	Pig iron production ²		Raw steel production	
	Monthly	Year to date	Monthly	Year to date
2022:				
March	1,890	5,560	6,870	20,200
April	1,910	7,470	6,950	27,200
May	1,960	9,430	7,120	34,300
June	1,860	11,300	6,760	41,000
July	1,900	13,200	6,910	47,900
August	1,900	15,100	6,910	54,900
September	1,800	16,900	6,550	61,400
October	1,820	18,700	6,610	68,000
November	1,700	20,400	6,200	74,200
December	1,740	22,200	6,330	80,500
2023:				
January	1,800	1,800	6,550	6,550
February	1,770 ^r	3,570 ^r	6,120	12,700
March ³	1,800	5,370	6,800	19,500

^rRevised.

¹Data are rounded to no more than three significant digits.

²Pig iron data are estimated based on historical ratios.

³Pig iron data production reported by the American Iron and Steel Institute for the reported month.

Source: American Iron and Steel Institute, U.S. Geological Survey estimates.

TABLE 3
U.S. EXPORTS OF IRON ORE, BY COUNTRY OR LOCALITY AND TYPE ^{1,2}

Country or locality and type of product	2022			2023		
	January-March	March		January-March		
	Quantity (thousand metric tons)	Quantity (thousand metric tons)	Value ³ (thousand dollars)	Quantity (thousand metric tons)	Value ³ (thousand dollars)	Value ³ (dollars per ton)
Canada	648	161	13,600	862	77,000	89.28
China	300	146	18,400	448	51,600	115.27
Japan	52	26	2,490	26	2,490	95.92
United Kingdom	49	50	1,750	99	3,470	35.09
Other	492 ^r	(4)	126	312	27,500	88.13
Total	1,540	383	36,300	1,750	162,000	92.77
Concentrates	468	146	18,500	449	51,900	115.49
Fine ores	1 ^r	(4)	50	(4)	127	357.03
Pellets	983	187	16,000	1,200	107,000	88.92
Other	88	50	1,770	99	3,560	35.94
Total	1,540	383	36,300	1,750	162,000	92.77

^rRevised.

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

²All countries with quantities less than 5,000 metric tons for the month included in "Other."

³Free alongside ship (FAS) value.

⁴Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE, BY COUNTRY OR LOCALITY AND TYPE^{1,2}

Country or locality of origin and type of product	2022		2023			
	January–March	March		January–March		
	Quantity (thousand metric tons)	Quantity (thousand metric tons)	Value ³ (thousand dollars)	Quantity (thousand metric tons)	Value ³ (thousand dollars)	Value ³ (dollars per ton)
Brazil	398	263	44,800	591	98,300	166.26
Canada	234	6	1,260	168	29,100	173.14
Sweden	77	33	5,130	119	19,700	165.77
Other	162 ⁴	(4)	53	61	5,840	95.69
Total	870	302	51,200	939	153,000	162.84
Concentrates	61	--	--	61	5,590	91.59
Fine Ores	28	(4)	53	1	321	321.00
Pellets	781	302	51,200	877	147,000	167.62
Other	(4)	--	--	--	--	--
Total	870	302	51,200	939	153,000	162.84

¹Revised. -- Zero.

²Data are rounded to no more than three significant digits; may not add to totals shown.

³All countries with quantities less than 5,000 metric tons for the month included in "Other."

⁴Customs value. Excludes international freight and insurance charges.

⁵Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE, BY CUSTOMS DISTRICT^{1,2}

(Thousand metric tons)

Customs district (code no.)	Pellets			Total, all products		
	January–March		March	January–March		March
	2022	2023	2023	2022	2023	2023
Houston-Galveston, TX (53)	29	54	12	29	54	12
New Orleans, LA (20)	753	823	291	840	884	291
Other	-- ^r	(3)	(3)	1 ^r	1	(3)
Total	781	877	302	870	939	302

^rRevised. -- Zero.

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

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

³Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 6
U.S. IRON ORE TRADE SUMMARY¹

(Thousand metric tons and thousand dollars)

Period	Exports		Imports	
	Quantity	Value ²	Quantity	Value ³
2022:				
January–March	1,540	161,000	871 ^r	190,000
March	489	45,900	101	19,800
April	1,040	85,600	239	41,500
May	1,410	127,000	248	47,500
June	860	92,100	181	36,700
July	1,100	124,000	342	64,400
August	888	92,400	270	57,200
September	1,390	140,000	387	84,500
October	1,180	115,000	154	34,300
November	1,210	122,000	199	31,900
December	704	72,300	145	25,400
January–December	11,300	1,130,000	3,040	613,000
2023:				
January	779	68,400	214	32,400
February	586	57,400	423	69,300
March	383	36,300	302	51,200
January–March	1,750	162,000	939	153,000

^rRevised.

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

²Free alongside ship (FAS) value.

³Customs value. Excludes international freight and insurance charges.

Source: U.S. Census Bureau.