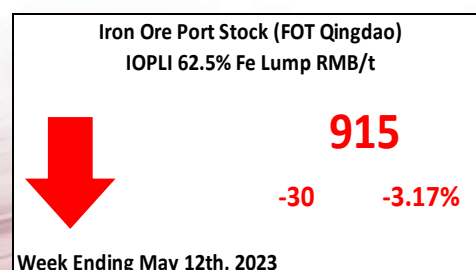
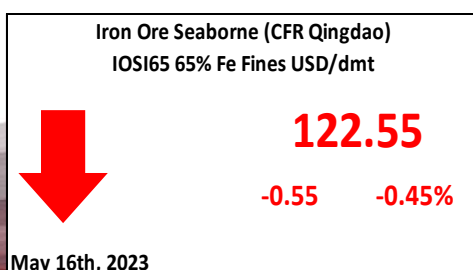
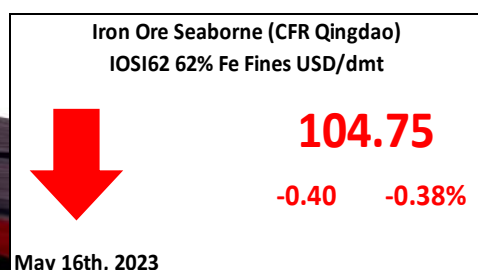
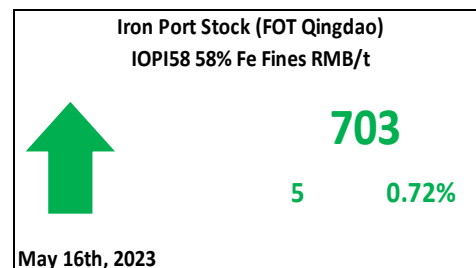
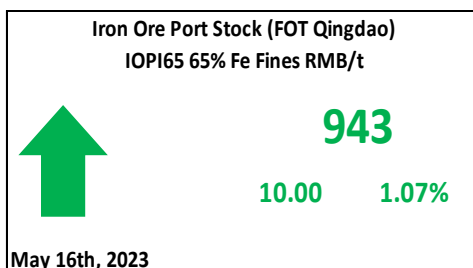
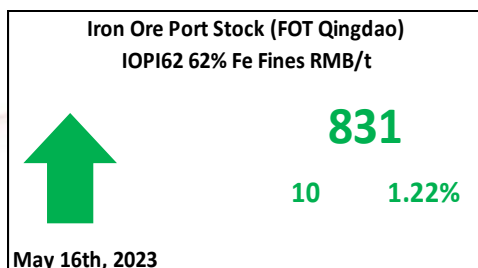


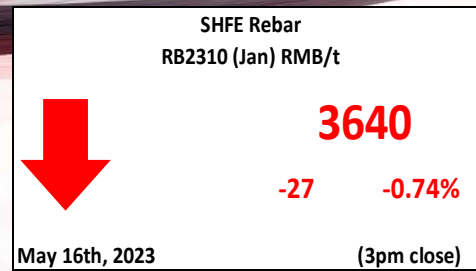
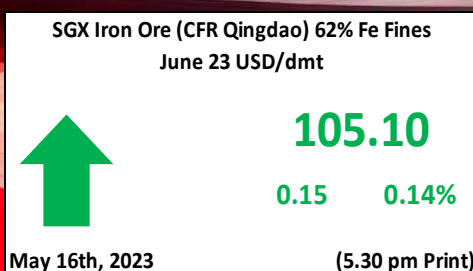
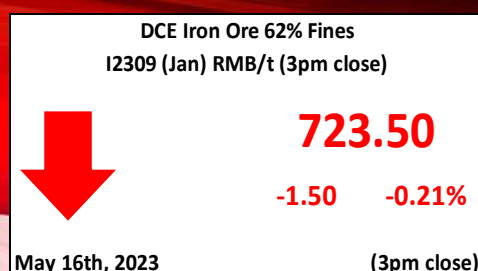


## MMi Dashboard

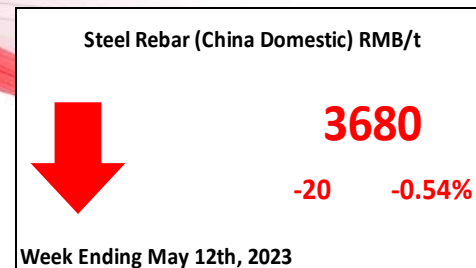
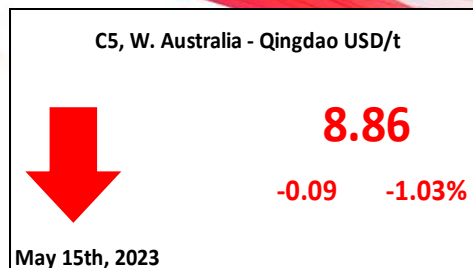
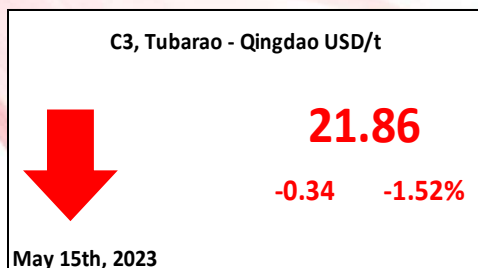
## Iron Ore Price Indices



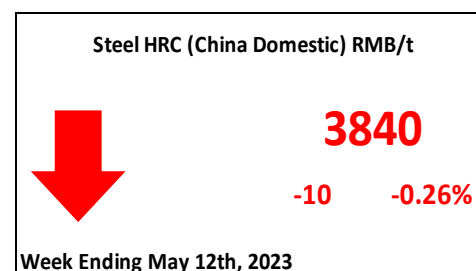
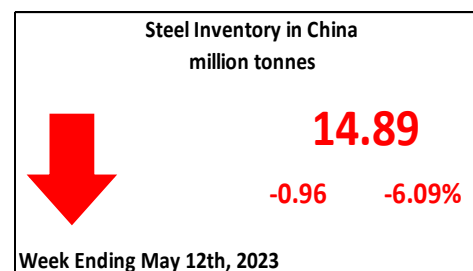
## Exchange Traded Contracts



## Freight Rates



## Inventory Levels



## Steel Price

## Steel Price

## IRON ORE PORT STOCK INDEX (IOPI)

May 16th, 2023		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne <sup>1</sup>						
Index	Fe Content	Price	Change	Change %	MTD	YTD	Low <sup>2</sup>	High <sup>2</sup>	Price	Change	Change %	MTD	YTD	Low <sup>2</sup>	High <sup>2</sup>
IOPI62	62% Fe Fines	831	10	1.2%	869	880	858	892	111.13	1.62	1.5%	120.06	120.58	117.93	122.93
IOPI58	58% Fe Fines	703	5	0.7%	813	798	761	793	94.44	0.90	1.0%	113.29	110.17	105.29	110.04
IOPI65	65% Fe Fines	943	10	1.1%	981	992	970	1003	126.63	1.65	1.3%	136.05	136.43	133.84	138.73

## IRON ORE SEABORNE INDEX (IOSI)

## MARKET COMMENTARY

May 16th, 2023		CFR Qingdao, USD/dry tonne							DCE iron ore futures rose by 1.12% today, the main contract closed at 723.5. The traders' willingness to ship is general. The steel mills are not active to purchase. The overall trading sentiment of the market is less. PBF at Shandong port deal 790 yuan/mt. PBF at Tangshan port deal 817-820 yuan/mt. Recently, the Bureau of Statistics released real estate data and believed that the overall real estate market is in a period of adjustment. The real estate market is expected to gradually stabilize in the next stage, and the mentality of the iron ore market has fluctuated slightly. According to SMM statistics, due to the decision of some steel mills to resume production of blast furnaces due to profit restoration, the impact of blast furnace maintenance this week has decreased by 64700 tons compared to last week's impact, and it is expected that the impact of blast furnace maintenance next week will decrease again. The demand for iron ore will improve, with some support for short-term ore prices. However, considering that mid-term terminal demand may still be weak and overseas shipments will recover, there is still room below the mid to long-term ore prices.							
Index	Fe Content	Price	Change	Change %	MTD	YTD	Low <sup>2</sup>	High <sup>2</sup>								
IOSI62	62% Fe Fines	104.75	-0.40	-0.38%	115.02	124.20	83.90	147.90								
IOSI65	65% Fe Fines	122.55	-0.55	-0.45%	125.07	139.97	94.45	171.85								

## IRON ORE PORT LUMP INDEX (IOPLI)

Week Ending May 12th, 2023		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne <sup>3</sup>						
Index	Fe Content	Price	W-o-W	Change %	MTD	YTD	Low <sup>2</sup>	High <sup>2</sup>	Price	W-o-W	Change %	MTD	YTD	Low <sup>2</sup>	High <sup>2</sup>
IOPLI62	62.5% Fe Lump	915	-30	-3.2%	926	1028	770	1330	118.16	-8.97	-7.05%	120.00	137.50	94.72	179.54

## IRON ORE DOMESTIC CONCENTRATE SPOT PRICE ASSESSMENTS AND COMPOSITE INDEX

Week Ending May 12th, 2023				RMB/tonne (excluding tax) <sup>3</sup>				USD/tonne (excluding tax) <sup>3</sup>			
Province	Region	Product	Basis	This week	Change %	Low <sup>2</sup>	High <sup>2</sup>	This week	Change %	Low <sup>2</sup>	High <sup>2</sup>
Hebei	Hanxing	66% Fe Concentrate	Dry	920	-8.7%	779	1645	132.84	-9.34%	110.31	255.69
Hebei	Qian'an	65% Fe Concentrate	Dry	1005	2.0%	780	1630	145.11	1.34%	110.51	251.57
Liaoning	Anshan	65% Fe Concentrate	Wet	715	-6.5%	620	1310	103.24	-7.17%	87.40	202.32
Shandong	Zibo	65% Fe Concentrate	Dry	922	-9.8%	800	1752	133.12	-10.39%	117.19	272.32

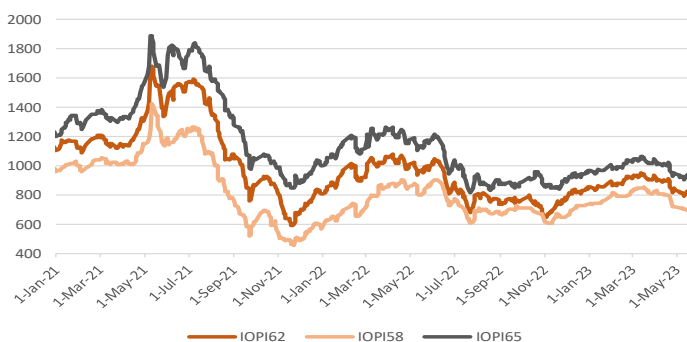
Week Ending May 12th, 2023

This week	Change %	Low <sup>2</sup>	High <sup>2</sup>
855.27	-3.73%	706.36	1511.22

China Mines Concentrate Composite Index RMB/WT

<sup>1</sup> Exchange rate applied: RMB/USD = 6.7522    <sup>2</sup> Last 12 months  
<sup>3</sup> Weekly exchange rate applied: RMB/USD = 6.87528

## IRON ORE PORT INDEX, FOT QINGDAO (RMB/WT)



## IRON ORE SEABORNE INDEX, CFR QINGDAO (USD/DMT)



## IRON ORE PORT STOCK INDEX MONTHLY, QUARTERLY AND YEAR-TO-DATE AVERAGES

May 16th, 2023		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne						
Index	Fe Content	December	January	February	March	MTD	QTD	YTD	December	January	February	March	MTD	QTD	YTD
IOPI62	62% Fe Fines	822	856	892	924	869	881	880	109.43	117.00	121.64	124.91	120.06	120.90	120.58
IOPI58	58% Fe Fines	711	751	799	832	813	792	798	95.17	103.34	109.79	113.41	113.29	109.35	110.17
IOPI65	65% Fe Fines	935	968	1003	1036	981	993	992	124.90	132.80	137.36	140.49	136.05	136.72	136.43

## IRON ORE SEABORNE INDEX MONTHLY, QUARTERLY AND YEAR-TO-DATE AVERAGES

## FREIGHT RATES

May 16th, 2023		CFR Qingdao, USD/dry tonne							May 15th, 2023							
Index	Fe Content	December	January	February	March	MTD	QTD	YTD	Route		Designation	Change	Change %	Low <sup>2</sup>	High <sup>2</sup>	
IOSI62	62% Fe Fines	108.92	119.76	127.73	134.77	112.14	114.57	124.20	W. Australia - Qingdao		C5	8.86	-0.09	-1.03%	3.57	16.77
IOSI65	65% Fe Fines	116.83	132.39	138.06	145.14	122.86	125.03	139.97	Tubarao - Qingdao		C3	21.86	-0.34	-1.52%	6.70	36.40

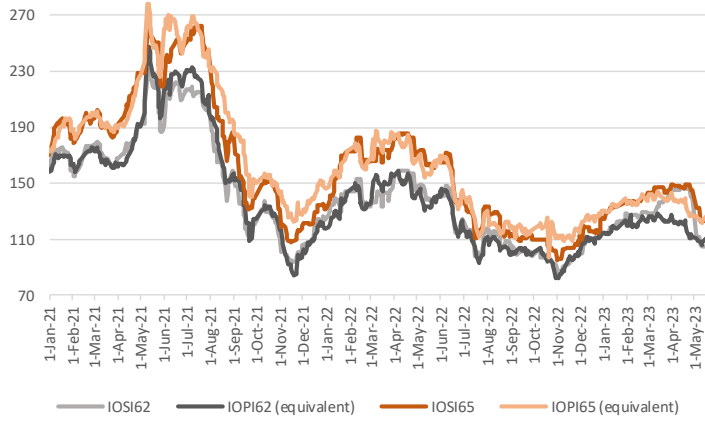
## IRON ORE PORT LUMP INDEX MONTHLY, QUARTERLY AND YEAR-TO-DATE AVERAGES

Week Ending May 12th, 2023		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne <sup>1</sup>						
Index	Fe Content	December	January	February	March	MTD	QTD	YTD	December	January	February	March	MTD	QTD	YTD
IOPLI62	62.5% Fe Lump	922	964	988	1012	925	924	1032	117.06	126.47	129.95	131.15	119.39	120.04	137.99

## IRON ORE INDEX PREMIUMS/DISCOUNTS

May 16th, 2023		PORT STOCK INDEX (RMB/WT)		May 16th, 2023		SEABORNE INDEX (USD/DMT)	
Index	Fe Content	Spread to IOPI62	% Spread to IOPI62	Index	Fe Content	Spread to IOSI62	% Spread to IOSI62
IOPI58	58% Fe Fines	-128	-15.40%	IOSI65	65% Fe Fines	17.80	16.99%
IOPI65	65% Fe Fines	112	13.48%				

## IRON ORE INDEX COMPARISONS (USD/DMT)



## CHINA DOMESTIC COMPOSITE MINES INDEX (RMB/Wet Tonne, including VAT)



## IRON ORE BRAND SPOT PRICE ASSESSMENTS

May 16th, 2023				May 16th, 2023			
PORT STOCK INDEX (RMB/WT)				SEABORNE INDEX (USD/DMT)			
	Price	Change	Diff to IOPI62		Price	Change	Diff to IOSI62
Roy Hill	774	10	-57	Roy Hill	100.25	-0.40	-4.50
SIMEC Fines	702	10	-129	SIMEC Fines	96.75	-0.40	-8.00
PB Fines	800	10	-31	PB Fines	101.00	-0.40	-3.75
Newman Fines	799	10	-32	Newman Fines	103.90	-0.40	-0.85
MAC Fines	781	10	-50	MAC Fines	101.00	-0.40	-3.75
Jimblebar Blended Fines	696	11	-135	Jimblebar Blended Fines	93.40	-0.40	-11.35
Carajas Fines	1011	10	180	Carajas Fines	134.30	-0.40	29.55
Brazilian SSF	794	10	-37	Brazilian SSF	108.50	-0.40	3.75
Brazilian Blend Fines	813	10	-18	Brazilian Blend Fines	110.15	-0.40	5.40
RTX Fines	714	10	-117	RTX Fines	94.65	-0.40	-10.10
West Pilbara Fines	742	10	-89	West Pilbara Fines	99.00	-0.40	-5.75

May 16th, 2023			
PORT STOCK INDEX (RMB/WT)			
	Price	Change	Diff to IOPI58
SSF	703	5	0
FMG Blended Fines	712	5	9
Robe River	712	5	9
Western Fines	715	5	12
Atlas Fines	709	5	6
Yandi	696	5	-7

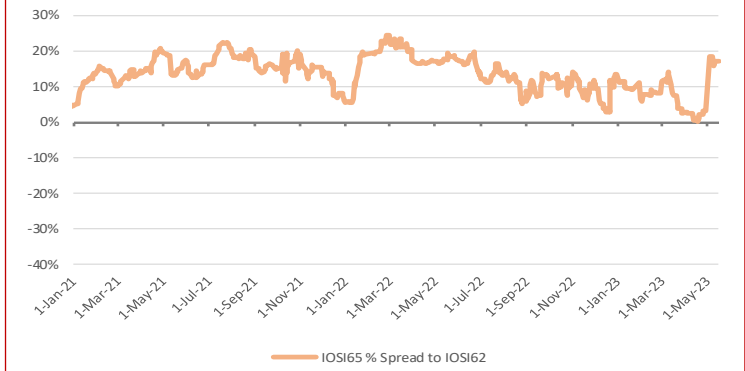
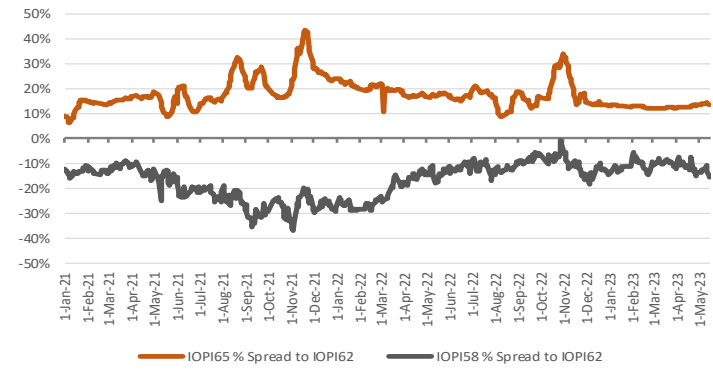
## IRON ORE INDEX NORMALISATION DIFFERENTIALS

Port Stock Index Product Differentials (RMB/wet tonne)				Seaborne Index Product Differentials (USD/dry tonne)			
	Applicable range	Value	Change		Applicable range	Value	Change
1% Fe	High Grade Fe 60 - 63%	5.00	0.00	1% Fe	High Grade Fe 60 - 63%	1.50	0.00
	High Grade Fe 63 - 64%	5.00	0.00		High Grade Fe 63 - 64%	6.00	0.00
	High Grade Fe 64 - 65%	5.00	0.00		High Grade Fe 64 - 65%	6.00	0.00
	High Grade Fe 65 - 65.5%	5.00	0.00		High Grade Fe 65 - 65.5%	6.00	0.00
1% Alumina	Low Grade Fe	21.00	0.00	1% Alumina	High Fe Grade Al <2.25%	1.00	0.00
	High Fe Grade Al <2.25%	40.00	8.00		High Fe Grade Al 2.25-4%	2.25	0.00
	High Fe Grade Al 2.25-4%	5.00	0.00				
	Low Fe Grade Al <2.25%	25.00	0.00				
1% Silica	Low Fe Grade Al 2.25-4%	21.00	-2.00	1% Silica	High Fe Grade Si <4%	4.25	0.00
	High Fe Grade Si <4%	29.00	1.00		High Fe Grade Si 4 - 6.5%	3.50	0.00
	High Fe Grade Si 4-6.5%	5.00	0.00				
0.01% Phosphorus	Low Fe Grade	19.00	0.00	0.01% Phosphorus	High Fe Grade 0.09%<P<0.115%	2.00	0.00
	High Fe Grade 0.09%<P<0.115%	14.00	0.00		High Fe Grade 0.115%<P<0.15%	9.00	0.00
	High Fe Grade 0.115%<P<0.15%	14.00	0.00		Low Fe Grade 0.09%<P<0.1%	5.00	0.00

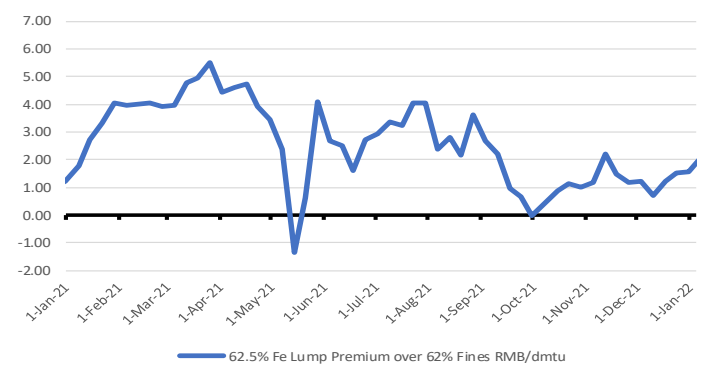
## Port Stock Price Differentials to Qingdao Port for PB Fines (RMB/wet tonne)

Port	Value	Change	Port	Value	Change	Port	Value	Change	Port	Value	Change
Bayuquan	-100.00	0.00	Fangcheng	-25.00	0.00	Lanshan	0.00	0.00	Rizhao	0.00	0.00
Beilun	0.00	0.00	Jiangyin	-30.00	0.00	Lianyungang	0.00	0.00	Shekou	0.00	0.00
Caofeidian	-20.00	0.00	Jingtang	-20.00	0.00	Majishan	0.00	0.00	Taichang	-30.00	0.00
Dalian	0.00	0.00	Lanqiao	0.00	0.00	Qingdao	0.00	0.00	Tianjin	-15.00	0.00

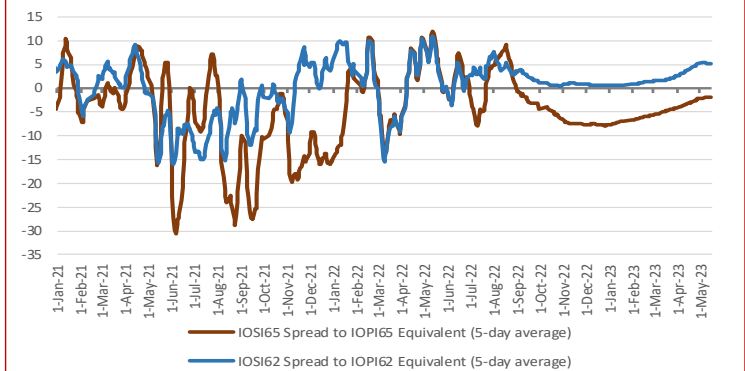
IRON ORE INDEX PREMIUMS/DISCOUNTS



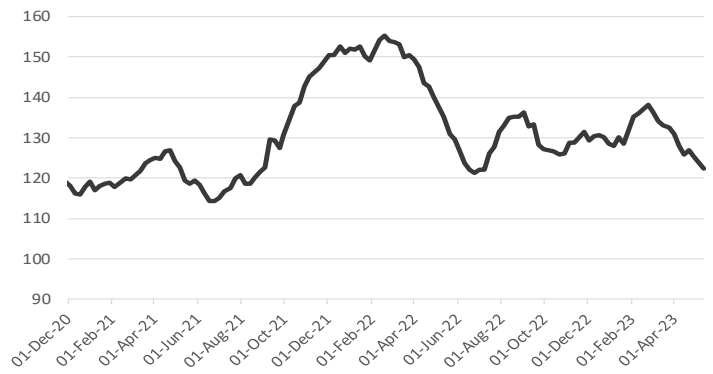
WEEKLY IRON ORE PORT STOCK LUMP PREMIUM (RMB/DMTU)



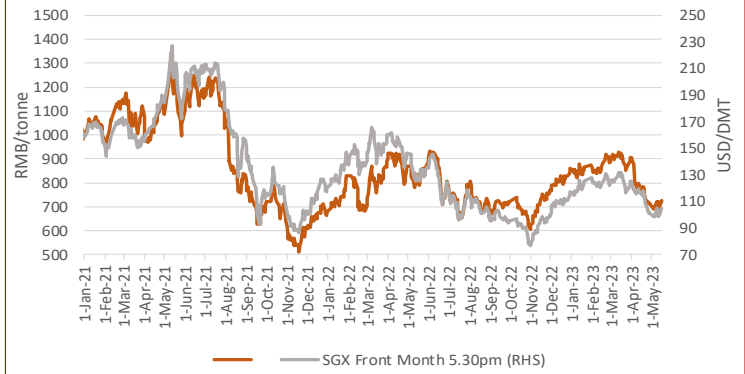
IRON ORE SEABORNE TO PORT STOCK PRICE SPREADS (USD/DMT)



TOTAL IRON ORE INVENTORIES AT CHINA PORTS (MILLION TONNES)



FUTURE TRADING—FRONT MONTH CLOSING PRICE



IRON ORE PORT INVENTORIES (MILLION TONNES)

Week Ending May 12th, 2023				
Province	This week	Change %	Low <sup>2</sup>	High <sup>2</sup>
Jingtang	11.50	-6.28%	9.84	19.20
Qingdao	24.85	-0.80%	9.41	26.24
Caofeidian	11.23	-11.51%	9.05	16.29
Tianjin	8.33	-11.19%	7.14	12.97
Rizhao	17.11	5.36%	9.44	19.26
<b>Total (35 Ports)</b>	<b>122.43</b>	<b>-2.18%</b>	<b>98.80</b>	<b>155.39</b>

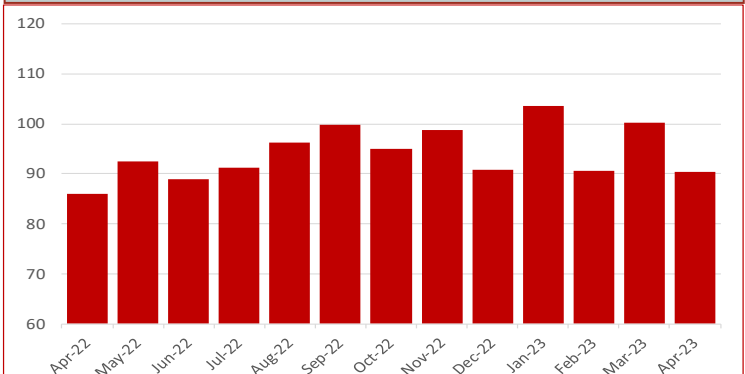
IRON ORE FUTURES CONTRACTS

Closing Date	DCE (RMB/WMT)			SGX (USD/DMT)		
	May 16th, 3pm close			May 16th, 5:30pm		
Contract	12309	Change	Change %	Jun. 23	Change	Change %
Closing Price	723.50	-1.50	-0.21%	105.10	0.15	0.14%
Vol traded ('000 lots)	76.34	-16.49	-17.76%	7.47	2.50	50.44%
Open positions ('000 lots)	81.26	1.99	2.51%	26.25	0.02	0.06%
Day Low	718.5	19.00	2.72%	103.20	3.80	3.82%
Day High	733.5	6.50	0.89%	106.05	0.65	0.62%

DRY BULK FREIGHT RATES (USD/MT)



TOTAL CHINA IRON ORE IMPORT VOLUMES (MILLION TONNES)



STEEL SPOT MARKET PRICES—CHINA

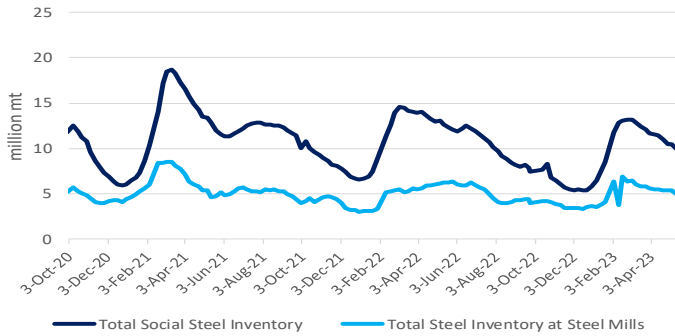
Product	2023/5/12	Change	Change %
ReBar HRB400 φ18mm	3,680	-20	-0.54%
Wirerod Q300 φ6.5mm	3,940	20	0.51%
HRC Q235/SS400 5.5mm*1500*C	3,840	-10	-0.26%
CRC SPCC/ST12 1.0mm*1250*2500	4,460	-10	-0.22%
Medium & Heavy Plate Q235B 20mm	4,090	-90	-2.15%
GI ST02Z 1.0mm*1000*C	4,840	-40	-0.82%
Colour Coated Plate	7,100	-100	-1.39%

CHINESE STEEL MILL PROFITABILITY

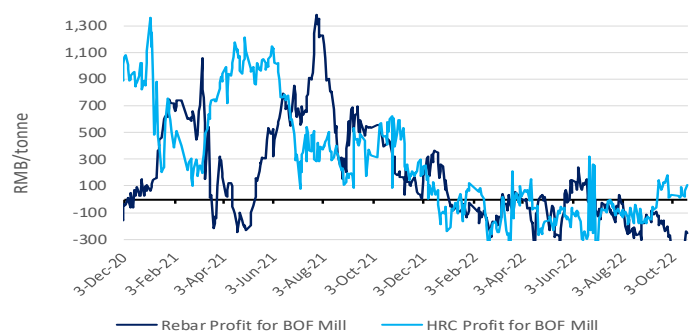
SMM Tracking of Steel Mill P&L - Rebar and Hot-rolled Coil (RMB/tonne)			
Category	Price	Change (WoW)	Note
MMi (Fe 62%), USD/mt excluding tax	105.15	-6	Mmi CFR Equivalent index for 1st Feb
Coke	2,310	-200	2nd grade met coke, Tangshan, incl. tax
Steel Scrap	2,770	-100	steel scrap (6mm) in Zhangjiagang, excl. tax
Billet Cost	3,132	-182	Q234, incl. tax
Rebar cost - Blast furnace	3,574	-206	calculated based on theoretical weight, incl. tax
Rebar profit - Blast furnace	26	66	based on Shanghai prices, incl. tax
Hot-rolled coil cost - Blast furnace	3,590	-203	based on actual weight, incl. tax
Hot-rolled coil profit - Blast furnace	260	93	based on Shanghai prices, incl. tax

Note: 1. Costs in the table are calculated based on today's market prices and factored our management, sales, financial and depreciations fees.  
2. The cost refers to average cost in the industry based on SMM's survey of small, medium and large mills in China

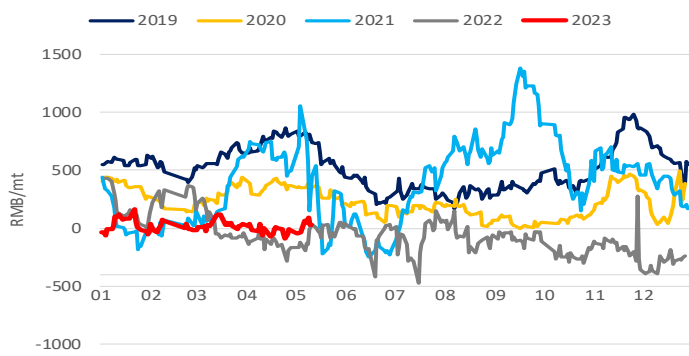
CHINESE STEEL INVENTORIES



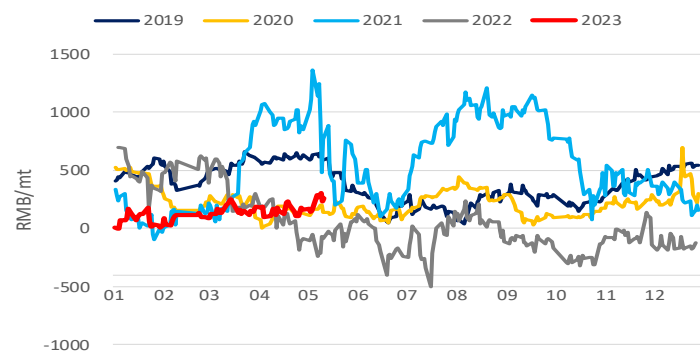
CHINESE STEEL MILL PROFITABILITY



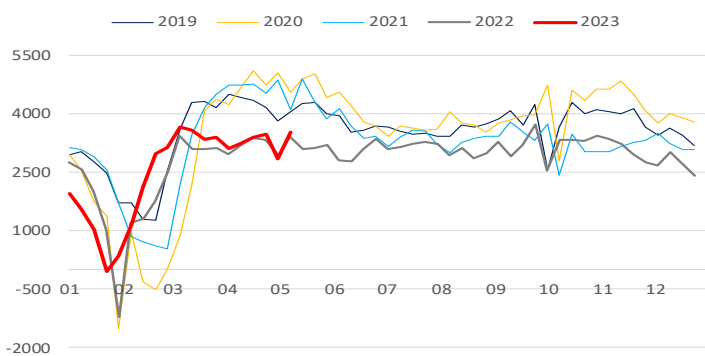
CHINESE STEEL MILL PROFITABILITY—Rebar



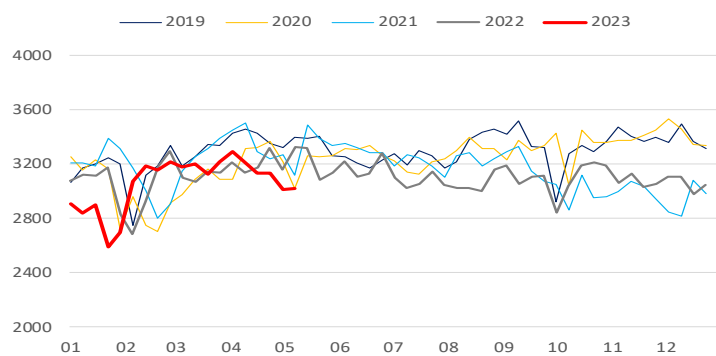
CHINESE STEEL MILL PROFITABILITY—Hot-rolled Coil



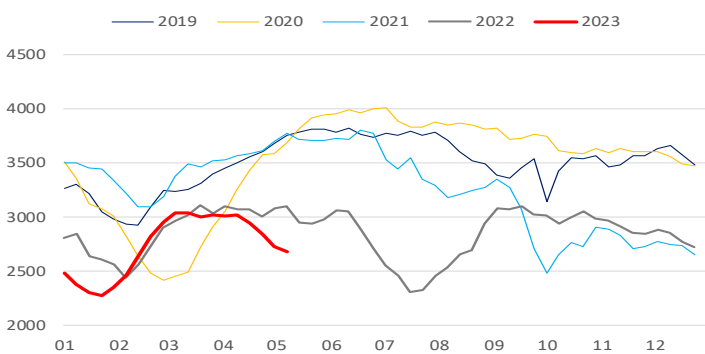
CHINESE STEEL CONSUMPTION—Rebar



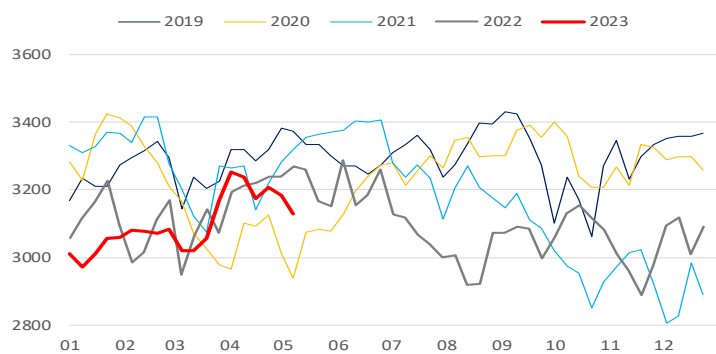
CHINESE STEEL CONSUMPTION—Hot-rolled Coil



CHINESE STEEL PRODUCTION—Rebar



CHINESE STEEL PRODUCTION—Hot-rolled Coil



## IRON ORE INDEX SPECIFICATIONS, COMPILATION RATIONALE AND DATA EXCLUSIONS

Iron Ore Index Specifications (Port and Seaborne)					Iron Ore Index Compilation Rationale and Data Exclusions
	<b>65% Fe Fines</b>	<b>62% Fe Fines</b>	<b>58% Fe Fines</b>	<b>62.5% Fe Lump</b>	MMi iron ore indices are compiled from data provided by companies that are part of the iron ore supply chain and involved in spot market transactions. The indices are calculated using detailed transaction-level data submitted to MMi by these companies. This data is normalised to the appropriate specifications and screened to remove outliers before volume-weighted average prices are calculated from the remaining core set of data.  For more details on MMi's iron ore methodology please download the guide published on our website at: <a href="http://www.mmiprices.com">www.mmiprices.com</a>
Fe %	65.00	62.00	58.00	62.50	
Alumina %	1.40	2.25	2.25	1.50	
Silica%	1.50	4.00	5.50	3.50	
Phosphorus %	0.06	0.09	0.05	0.08	
Sulphur %	0.01	0.02	0.02	0.02	
Moisture %	8.00	8.00	9.00	4.00	
Sizing	Granular size below 10mm for at least 90% of cargo; maximum of 40% below 150 micron		Size below 6.3mm max 15% Size above 31.15mm max 25%		
Pricing Point	Qingdao Port (FOT and CFR respectively)		FOT Qingdao Port		
Timing (Seaborne)	Loading within 4 weeks, Delivery within 8 weeks		Delivery within 2 weeks		
Payment Terms	L/C at sight		L/C at sight or CAD		

Data Exclusions*			
Port Index	62%	58%	65%
Seaborne index	0	0	0
Lump Index 62.5	0		

\* Number of price submissions for iron ore indices that were excluded from index calculations today as they were anomalous and could not be verified

## IRON ORE DOMESTIC CONCENTRATE INDEX CALCULATION METHODOLOGY

The compilation method for price index generally refers to the compilation method of CPI price index and other price indices, breakdown the price data and calculate the average value according to a certain method, taking the vertical axis as the regional composite index (average of different grade index) and the horizontal axis as the grade composite index (average of different regional index), a total composite index for domestic ore can be output ultimately. The process system is also adopted in the calculation i.e. each sub-index can be obtained as well.

## AVERAGE IRON ORE SPECIFICATIONS APPLIED FOR BRAND PRICE ASSESSMENTS

PORT STOCK BRANDS						SEABORNE BRANDS					
May 16th, 2023	Specifications applied for 62% brand assessments						Specifications applied for 62% brand assessments				
	Fe	Alumina	Silica	Phos	Moisture		Fe	Alumina	Silica	Phos	Moisture
Roy Hill	60.88%	2.35%	4.45%	0.055%	9.26%	Roy Hill	60.70%	2.30%	4.90%	0.055%	8.00%
SIMEC Fines	60.00%	2.30%	6.30%	0.060%	6.00%	SIMEC Fines	60.00%	2.30%	6.30%	0.060%	6.00%
PB Fines	61.64%	2.31%	3.87%	0.099%	9.45%	PB Fines 62%	62.00%	2.60%	4.30%	0.090%	9.50%
Newman Fines	62.49%	2.31%	3.98%	0.090%	7.72%	Newman Fines	62.30%	2.40%	4.30%	0.095%	8.00%
MAC Fines	60.43%	2.38%	4.64%	0.078%	7.57%	MAC Fines	60.80%	2.35%	4.40%	0.075%	7.80%
Jimblebar Blended Fines	60.87%	2.95%	4.53%	0.111%	7.32%	Jimblebar Blended Fines	60.50%	3.10%	4.80%	0.120%	7.80%
Carajas Fines	64.90%	1.39%	1.82%	0.080%	7.78%	Carajas Fines	65.10%	1.50%	1.70%	0.080%	8.50%
Brazilian SSF	62.00%	1.00%	6.50%	0.040%	6.00%	Brazilian SSF	62.00%	1.00%	6.50%	0.040%	6.00%
Brazilian Blend Fines	62.56%	1.58%	4.79%	0.091%	8.72%	Brazilian Blend Fines	63.00%	1.50%	5.00%	0.070%	7.00%
RTX Fines	61.00%	3.10%	4.50%	0.135%	7.50%	RTX Fines	61.00%	3.10%	4.50%	0.135%	7.50%
West Pilbara Fines	60.10%	2.30%	4.70%	0.075%	8.50%	West Pilbara Fines	60.10%	2.30%	4.70%	0.075%	8.50%
May 16th, 2023	Specifications applied for 58% brand assessments										
	Fe	Alumina	Silica	Phos	Moisture						
SSF	56.49%	3.20%	6.19%	0.065%	9.18%						
FMG Blended Fines	58.20%	2.43%	5.54%	0.057%	8.29%						
Robe River	56.44%	3.16%	5.73%	0.042%	8.44%						
Western Fines	57.88%	2.87%	7.50%	0.062%	7.45%						
Atlas Fines	58.00%	1.85%	5.50%	0.090%	9.00%						
Yandi	56.87%	1.58%	6.41%	0.042%	9.53%						

## BLOOMBERG TICKERS

PORT STOCK INDICES				SEABORNE INDICES	
	FOT Qingdao (RMB/wet tonne)		CFR Qingdao Equivalent (USD/dry tonne)		CFR Qingdao (USD/DMT)
IOPI62	IRCNQ001		IRCNQ004		IRCN0034
IOPI58	IRCNQ002		IRCNQ005		IRCN0035
IOPI65	IRCNQ003		IRCNQ006		
IOPLI62	IRCN0036		IRCN0037		

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