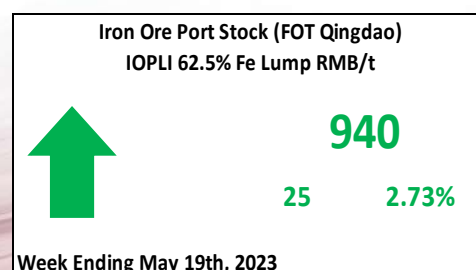
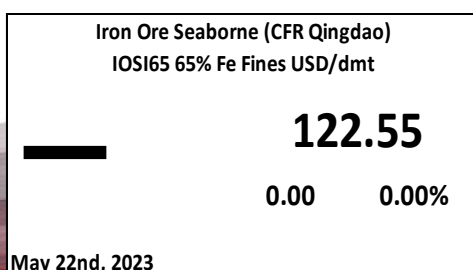
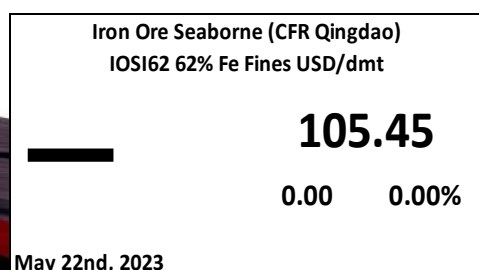
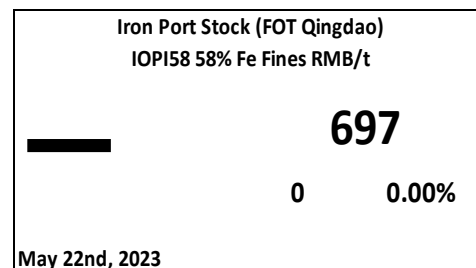
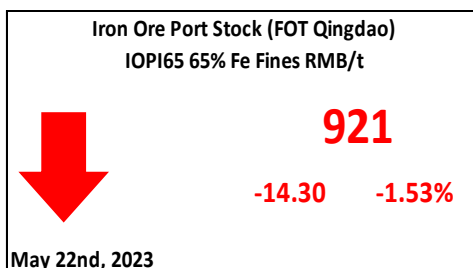
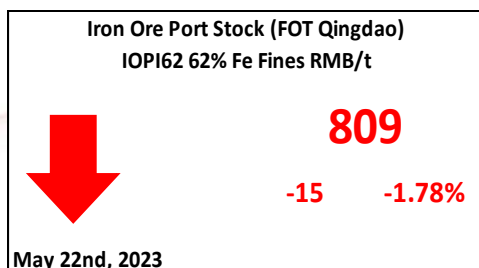


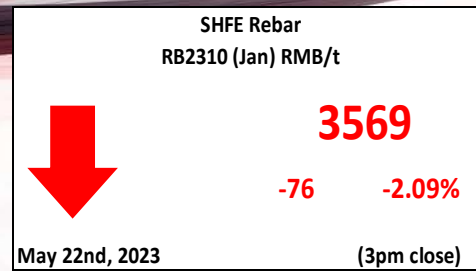
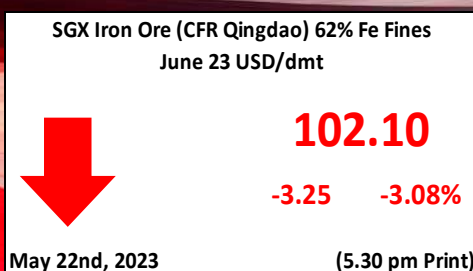
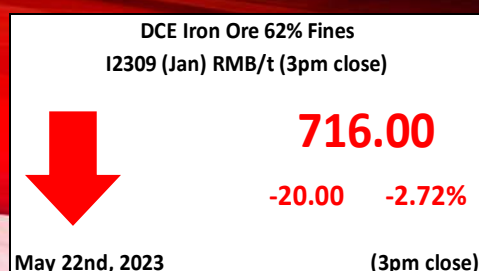


## MMi Dashboard

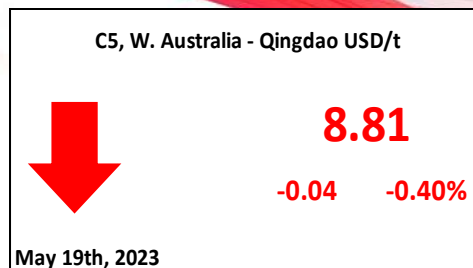
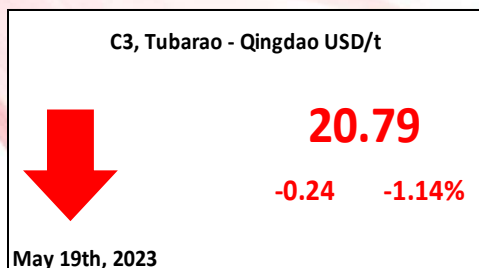
## Iron Ore Price Indices



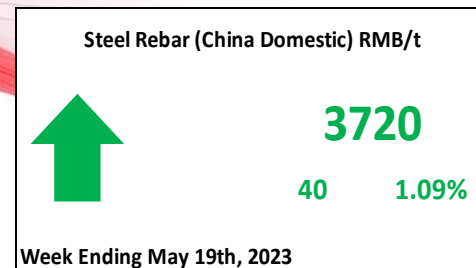
## Exchange Traded Contracts



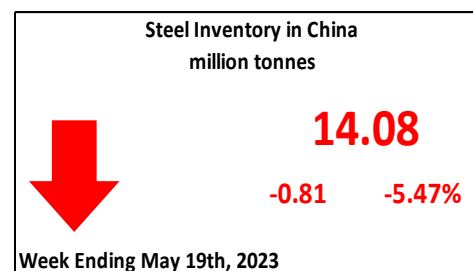
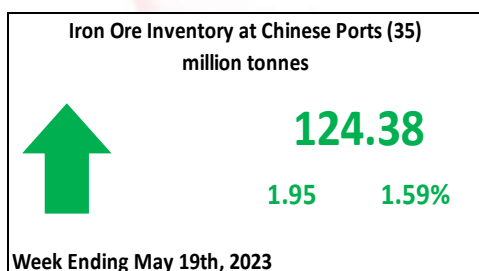
## Freight Rates



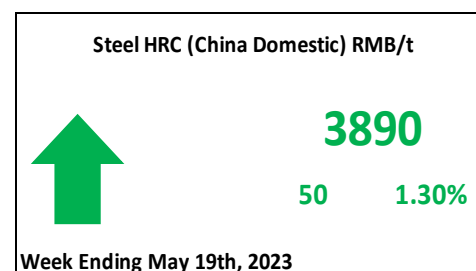
## Steel Price



## Inventory Levels



## Steel Price



## IRON ORE PORT STOCK INDEX (IOPI)

May 22nd, 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	809	-15	-1.8%	869	880	858	892	107.12	-1.71	-1.6%	120.06	120.58	117.93	122.93
IOPI58	58% Fe Fines	697	0	0.0%	813	798	761	793	92.73	0.26	0.3%	113.29	110.17	105.29	110.04
IOPI65	65% Fe Fines	921	-14	-1.5%	981	992	970	1003	122.40	-1.61	-1.3%	136.05	136.43	133.84	138.73

## IRON ORE SEABORNE INDEX (IOSI)

## MARKET COMMENTARY

May 22nd, 2023		CFR Qingdao, USD/dry tonne						
Index	Fe Content	Price	Change	Change %	MTD	YTD	Low <sup>2</sup>	High <sup>2</sup>
IOSI62	62% Fe Fines	105.45	0.00	0.00%	114.83	123.99	83.90	147.90
IOSI65	65% Fe Fines	122.55	0.00	0.00%	125.02	139.77	94.45	171.85

DCE iron ore futures market falling sharply trends by 2.65%, the main contract I2309 closed 716. some traders were negative to sell, some steel mills tended to be wait-and-see, and purchasing enthusiasm is not high. total transactions remained insipid. PBF at Shandong port dealt 75-785 yuan/mt; decreased 10-20 yuan/mt from last Friday. PBF at Tangshan port dealt 805-815 yuan/mt; decreased 15-30 yuan/mt from last Friday. SSF at Tangshan port dealt 660 yuan/mt; decreased 10 yuan/mt from last Friday. Today, the People's Bank of China announced that the market quoted interest rates for one-year and five-year loans will remain unchanged at 3.65% and 4.30%. The market's expectations for interest rate cuts have fallen short, leading to a weakening market mentality and a significant decline in trading volume. According to SMM shipping data, the total global shipping volume for this period was 30.79 million tons, an increase of 4.4% month on month. At the same time, the arrival volume of this period also increased by 3.22 million tons to 25.18 million tons. Iron ore supply has increased, and it is expected that ore prices may continue to fluctuate weakly tomorrow due to weaker support for ore prices.

## IRON ORE PORT LUMP INDEX (IOPLI)

Week Ending May 19th, 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	940	25	2.7%	927	1027	770	1330	120.37	2.20	1.86%	120.06	137.53	94.72	179.54

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

Week Ending May 19th, 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	927	0.8%	779	1645	132.72	-0.09%	110.31	255.69
Hebei	Qian'an	65% Fe Concentrate	Dry	1010	0.5%	780	1630	144.60	-0.35%	110.51	251.57
Liaoning	Anshan	65% Fe Concentrate	Wet	715	0.0%	620	1310	102.37	-0.84%	87.40	202.32
Shandong	Zibo	65% Fe Concentrate	Dry	930	0.9%	800	1752	133.15	0.02%	117.19	272.32

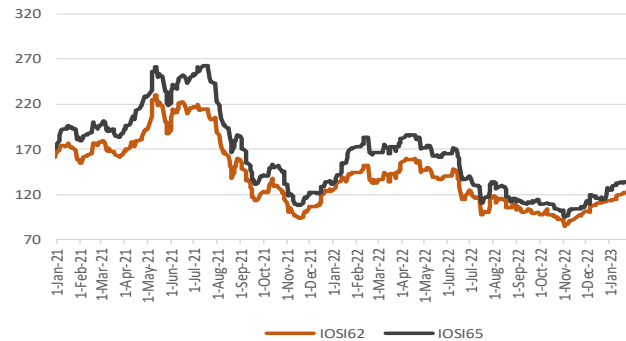
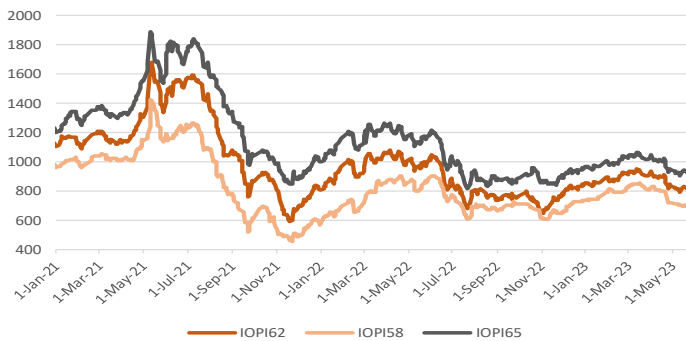
Week Ending May 19th, 2023

	This week	Change %	Low <sup>2</sup>	High <sup>2</sup>
China Mines Concentrate Composite Index RMB/WT	862.62	0.86%	706.36	1511.22

<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 22nd, 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 22nd, 2023		CFR Qingdao, USD/dry tonne							May 19th, 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	114.41	123.99	W. Australia - Qingdao		C5	8.81	-0.04	-0.40%	3.57	16.77
IOSI65	65% Fe Fines	116.83	132.39	138.06	145.14	122.86	124.99	139.77	Tubarao - Qingdao		C3	20.79	-0.24	-1.14%	6.70	36.40

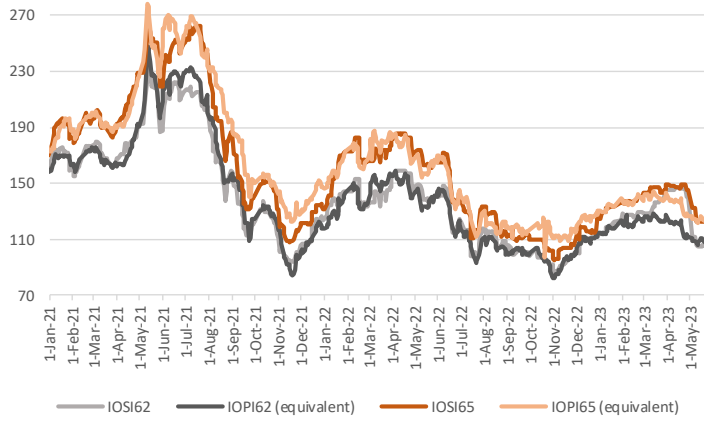
## IRON ORE PORT LUMP INDEX MONTHLY, QUARTERLY AND YEAR-TO-DATE AVERAGES

Week Ending May 19th, 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	120.09	137.99

## IRON ORE INDEX PREMIUMS/DISCOUNTS

May 22nd, 2023		PORT STOCK INDEX (RMB/WT)		May 22nd, 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	-112	-13.88%	IOSI65	65% Fe Fines	17.10	16.22%
IOPI65	65% Fe Fines	111	13.76%				

## IRON ORE INDEX COMPARISONS (USD/DMT)



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



## IRON ORE BRAND SPOT PRICE ASSESSMENTS

May 22nd, 2023				May 22nd, 2023			
PORT STOCK INDEX (RMB/WT)				SEABORNE INDEX (USD/DMT)			
	Price	Change	Diff to IOPI62		Price	Change	Diff to IOSI62
Roy Hill	752	-15	-57	Roy Hill	100.95	0.00	-4.50
SIMEC Fines	680	-15	-129	SIMEC Fines	97.45	0.00	-8.00
PB Fines	778	-15	-31	PB Fines	101.70	0.00	-3.75
Newman Fines	777	-15	-32	Newman Fines	104.60	0.00	-0.85
MAC Fines	759	-15	-50	MAC Fines	101.70	0.00	-3.75
Jimblebar Blended Fines	673	-15	-136	Jimblebar Blended Fines	94.10	0.00	-11.35
Carajas Fines	989	-15	180	Carajas Fines	135.00	0.00	29.55
Brazilian SSF	772	-15	-37	Brazilian SSF	109.20	0.00	3.75
Brazilian Blend Fines	791	-15	-18	Brazilian Blend Fines	110.85	0.00	5.40
RTX Fines	692	-15	-117	RTX Fines	95.35	0.00	-10.10
West Pilbara Fines	720	-15	-89	West Pilbara Fines	99.70	0.00	-5.75

May 22nd, 2023			
PORT STOCK INDEX (RMB/WT)			
	Price	Change	Diff to IOPI58
SSF	697	0	0
FMG Blended Fines	706	0	9
Robe River	706	0	9
Western Fines	709	0	12
Atlas Fines	703	0	6
Yandi	690	0	-7

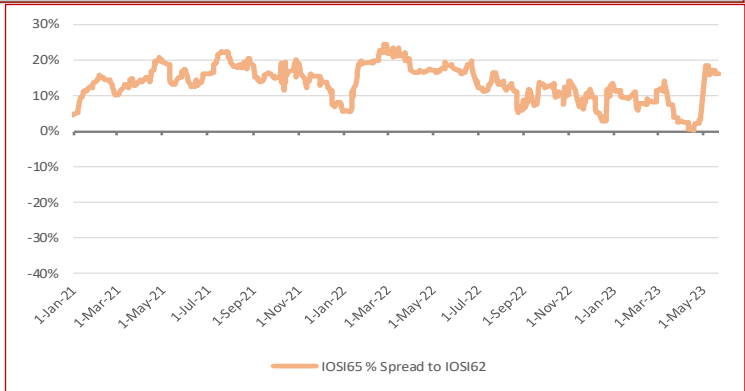
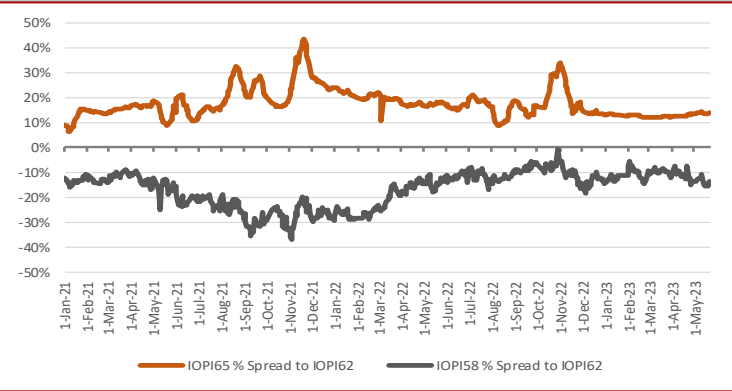
## IRON ORE INDEX NORMALISATION DIFFERENTIALS

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%	14.00	1.00	1% Fe	High Grade Fe 60 - 63%	2.25	0.00
	High Grade Fe 63 - 64%	5.00	0.00		High Grade Fe 63 - 64%	7.50	0.00
	High Grade Fe 64 - 65%	5.00	0.00		High Grade Fe 64 - 65%	7.50	0.00
	High Grade Fe 65 - 65.5%	5.00	0.00		High Grade Fe 65 - 65.5%	7.50	0.00
1% Alumina	Low Grade Fe	26.00	3.00	1% Alumina	High Fe Grade Al <2.25%	1.75	0.00
	High Fe Grade Al <2.25%	48.00	0.00		High Fe Grade Al 2.25-4%	2.25	0.00
	High Fe Grade Al 2.25-4%	6.00	-1.00				
	Low Fe Grade Al <2.25%	15.00	-3.00				
1% Silica	Low Fe Grade Al 2.25-4%	16.00	0.00	1% Silica	High Fe Grade Si <4%	4.25	0.00
	High Fe Grade Si <4%	24.00	-1.00		High Fe Grade Si 4 - 6.5%	4.25	0.00
	High Fe Grade Si 4-6.5%	5.00	0.00				
0.01% Phosphorus	Low Fe Grade	20.00	1.00	0.01% Phosphorus	High Fe Grade 0.09%<P<0.115%	2.75	0.00
	High Fe Grade 0.09%<P<0.115%	16.00	0.00		High Fe Grade 0.115%<P<0.15%	9.50	0.00
	High Fe Grade 0.115%<P<0.15%	16.00	0.00		Low Fe Grade 0.09<P<0.1%	5.00	0.00

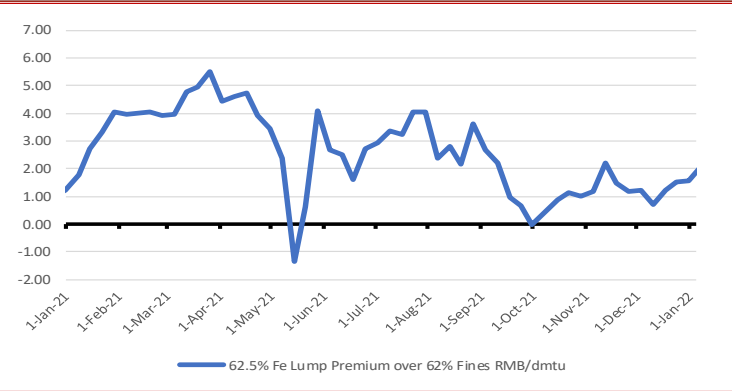
## Port Stock Price Differentials to Qingdao Port for PB Fines (RMB/wet tonne)

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	-30.00	-10.00	Jingtang	-30.00	-10.00	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

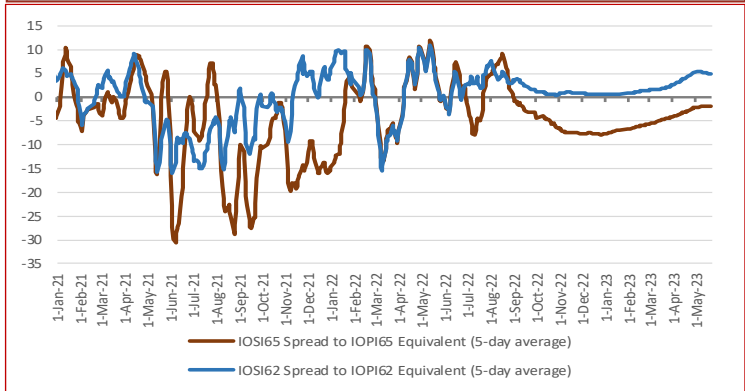
IRON ORE INDEX PREMIUMS/DISCOUNTS



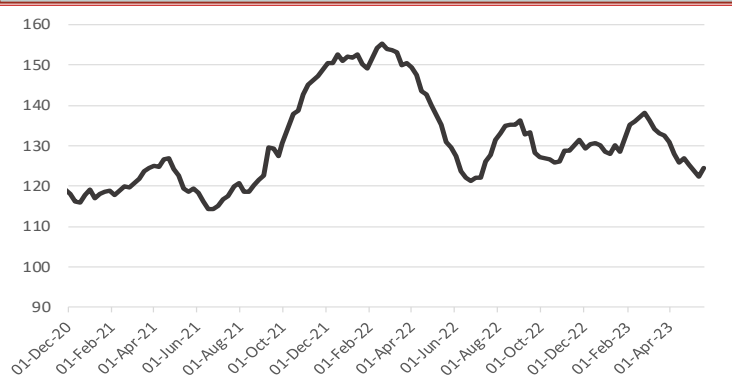
WEEKLY IRON ORE PORT STOCK LUMP PREMIUM (RMB/DMTU)



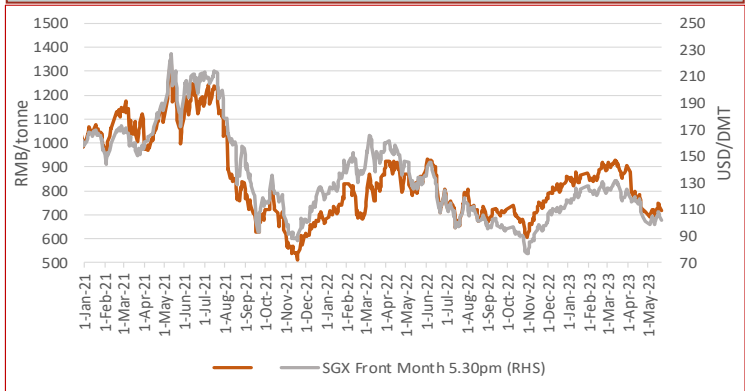
IRON ORE SEABORNE TO PORT STOCK PRICE SPREADS (USD/DMT)



TOTAL IRON ORE INVENTORIES AT CHINA PORTS (MILLION TONNES)



FUTURE TRADING—FRONT MONTH CLOSING PRICE



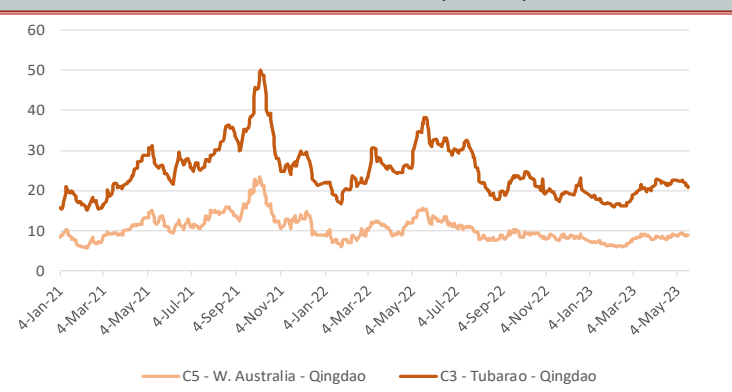
IRON ORE PORT INVENTORIES (MILLION TONNES)

Week Ending May 19th, 2023				
Province	This week	Change %	Low <sup>2</sup>	High <sup>2</sup>
Jingtang	11.44	-0.52%	9.84	19.20
Qingdao	25.15	1.21%	9.41	26.24
Caofeidian	10.97	-2.32%	9.05	16.29
Tianjin	8.53	2.40%	7.14	12.97
Rizhao	17.40	1.69%	9.44	19.26
<b>Total (35 Ports)</b>	<b>124.38</b>	<b>1.59%</b>	<b>98.80</b>	<b>155.39</b>

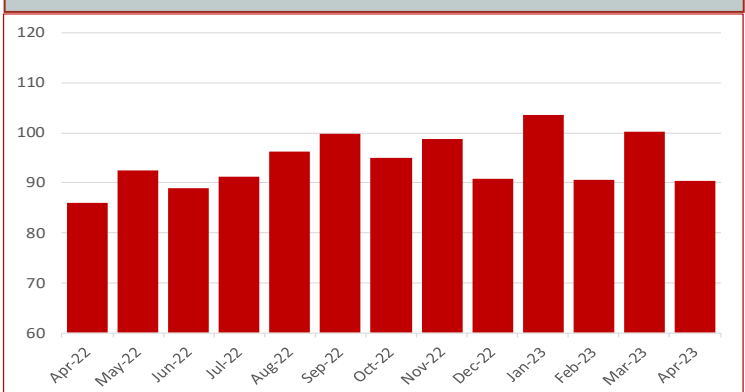
IRON ORE FUTURES CONTRACTS

Closing Date	DCE (RMB/WMT)			SGX (USD/DMT)		
	May 22nd, 3pm close			May 22nd, 5:30pm		
Contract	12309	Change	Change %	Jun. 23	Change	Change %
Closing Price	716.00	-20.00	-2.72%	102.10	-3.25	-3.08%
Vol traded ('000 lots)	94.38	3.90	4.31%	4.95	0.94	23.53%
Open positions ('000 lots)	78.45	-3.20	-3.92%	26.65	-0.02	-0.08%
Day Low	715.0	-9.50	-1.31%	101.80	-1.50	-1.45%
Day High	745.0	-0.50	-0.07%	106.10	-0.80	-0.75%

DRY BULK FREIGHT RATES (USD/MT)



TOTAL CHINA IRON ORE IMPORT VOLUMES (MILLION TONNES)



STEEL SPOT MARKET PRICES—CHINA

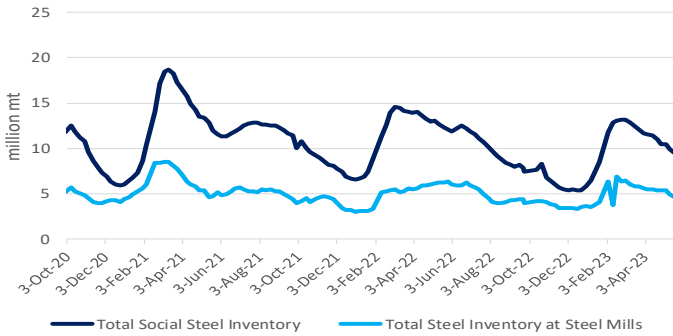
Product	2023/5/19	Change	Change %
ReBar HRB400 φ18mm	3,720	40	1.09%
Wirerod Q300 φ6.5mm	3,980	40	1.02%
HRC Q235/SS400 5.5mm*1500*C	3,890	50	1.30%
CRC SPCC/ST12 1.0mm*1250*2500	4,460	0	0.00%
Medium & Heavy Plate Q235B 20mm	4,070	-20	-0.49%
GI ST02Z 1.0mm*1000*C	4,820	-20	-0.41%
Colour Coated Plate	7,050	-50	-0.70%

CHINESE STEEL MILL PROFITABILITY

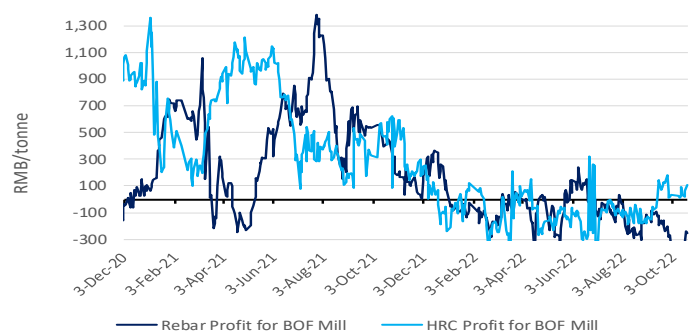
SMM Tracking of Steel Mill P&L - Rebar and Hot-rolled Coil (RMB/tonne)			
Category	Price	Change (WoW)	Note
MMi (Fe 62%), USD/mt excluding tax	105.45	0	Mmi CFR Equivalent index for 1st Feb
Coke	2,260	-50	2nd grade met coke, Tangshan, incl. tax
Steel Scrap	2,770	0	steel scrap (6mm) in Zhangjiagang, excl. tax
Billet Cost	3,162	29	Q234, incl. tax
Rebar cost - Blast furnace	3,607	33	calculated based on theoretical weight, incl. tax
Rebar profit - Blast furnace	3	-23	based on Shanghai prices, incl. tax
Hot-rolled coil cost - Blast furnace	3,624	34	based on actual weight, incl. tax
Hot-rolled coil profit - Blast furnace	256	-4	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

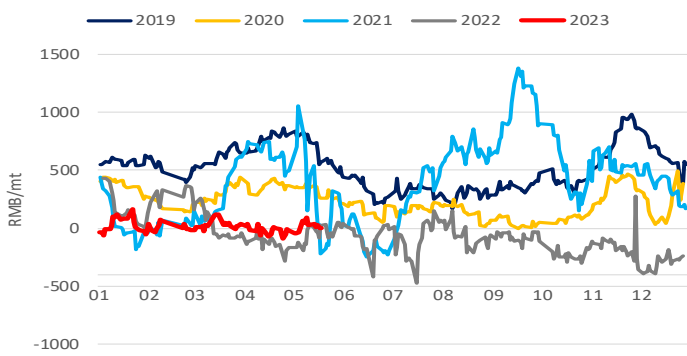
CHINESE STEEL INVENTORIES



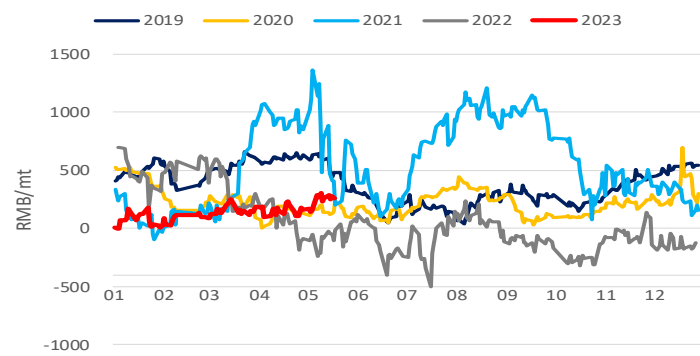
CHINESE STEEL MILL PROFITABILITY



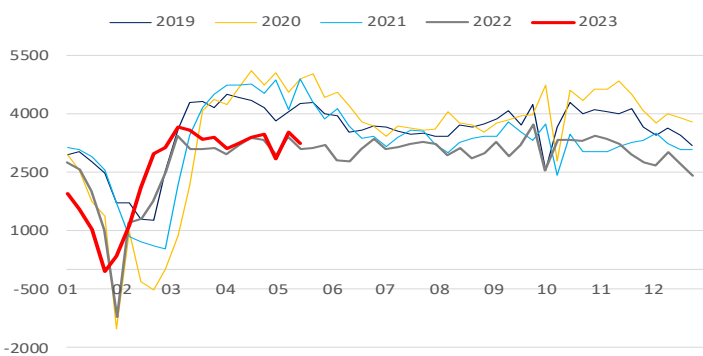
CHINESE STEEL MILL PROFITABILITY—Rebar



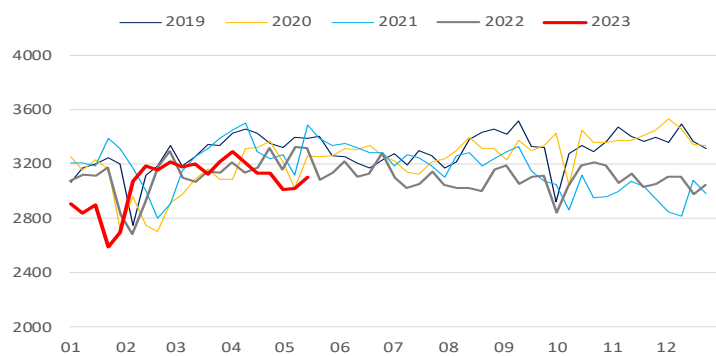
CHINESE STEEL MILL PROFITABILITY—Hot-rolled Coil



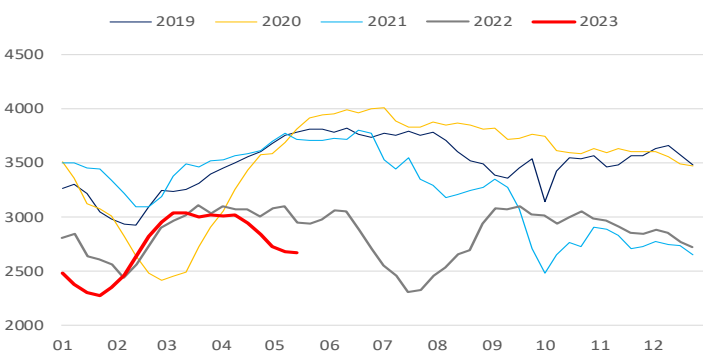
CHINESE STEEL CONSUMPTION—Rebar



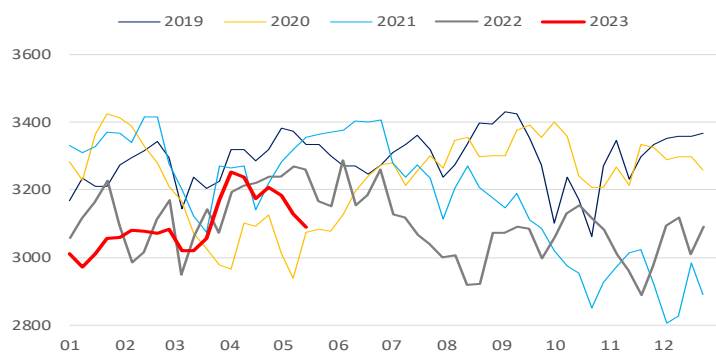
CHINESE STEEL CONSUMPTION—Hot-rolled Coil



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 22nd, 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 22nd, 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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