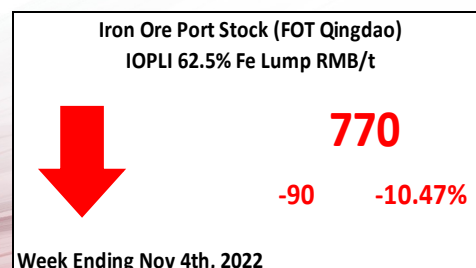
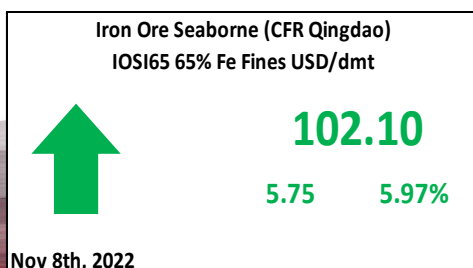
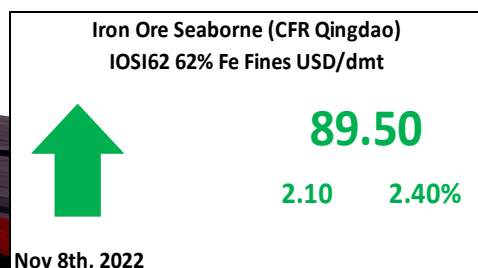
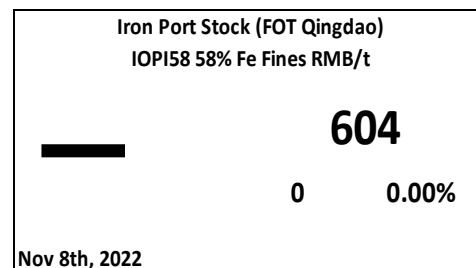
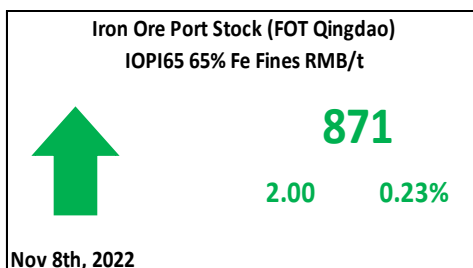
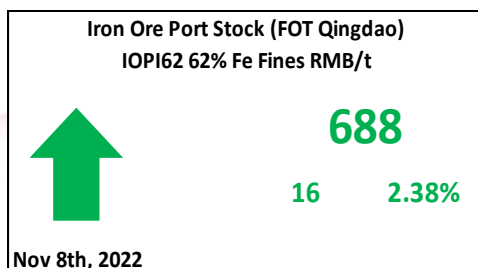


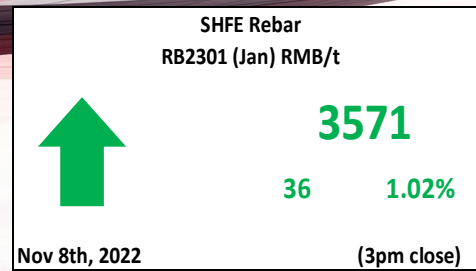
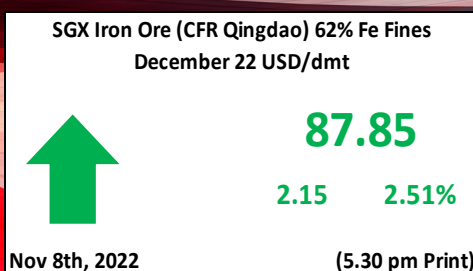
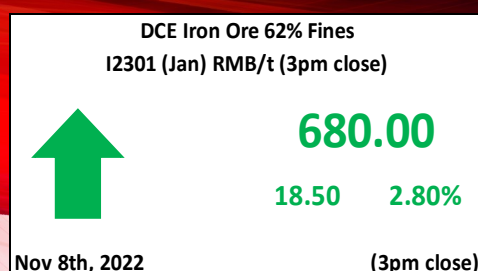


## MMi Dashboard

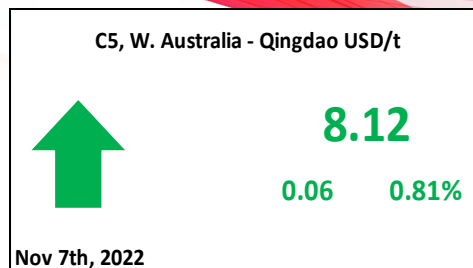
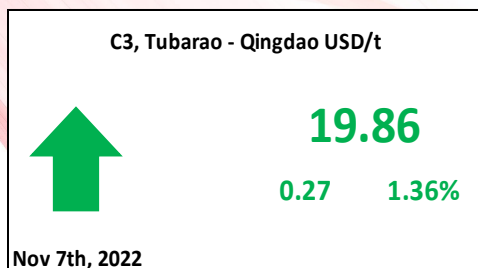
## Iron Ore Price Indices



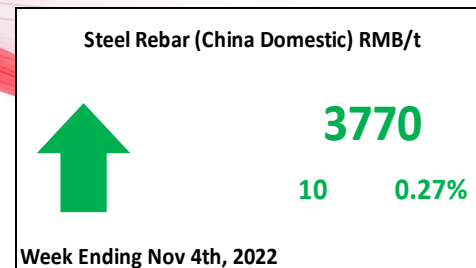
## Exchange Traded Contracts



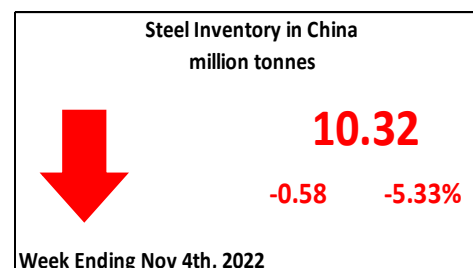
## Freight Rates



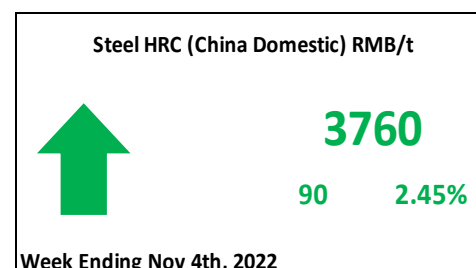
## Steel Price



## Inventory Levels



## Steel Price



## IRON ORE PORT STOCK INDEX (IOPI)

Nov 8th, 2022		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	688	16	2.4%	753	877	587	1083	87.99	2.51	2.9%	100.20	123.24	82.29	159.06
IOPI58	58% Fe Fines	604	0	0.0%	682	741	454	907	77.64	0.35	0.4%	91.31	104.35	64.78	134.15
IOPI65	65% Fe Fines	871	2	0.2%	886	1038	811	1265	112.39	0.77	0.7%	118.49	146.67	110.30	187.25

## IRON ORE SEABORNE INDEX (IOSI)

## MARKET COMMENTARY

Nov 8th, 2022		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	89.50	2.10	2.40%	101.59	125.74	83.90	159.45
IOSI65	65% Fe Fines	102.10	5.75	5.97%	112.39	145.39	94.45	185.82

DCE iron ore futures rose by 2.64% today, the main contract closed 680. The traders' willingness to ship is general. The steel mills are purchase on demand. The overall trading sentiment of the market is general. PBF at Shandong port dealt 672-683 yuan/mt, increase 5-15 yuan/mt. Recently, the National Development and Reform Commission released the opinion of strengthening support for the development of private investment and supporting private investment to participate in the construction of 102 major projects. The news gave the market some confidence, and the futures market rose in the end. The raw material inventory of steel mills is low this year. In the medium term, the demand for iron ore from winter storage of steel mills will boost or support the ore price. However, in the short term, according to SMM's calculation, the impact of hot metal maintenance on the blast furnace this week was 195.59 tons, an increase of 186,700 tons compared with last week's maintenance, and the demand weakened again. In the short term, the price of iron ore mainly fluctuates.

## IRON ORE PORT LUMP INDEX (IOPLI)

Week Ending Nov 4th, 2022		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	770	-90	-10.5%	874	1074	730	1405	94.72	-12.46	-11.62%	112.25	145.71	94.72	199.13

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

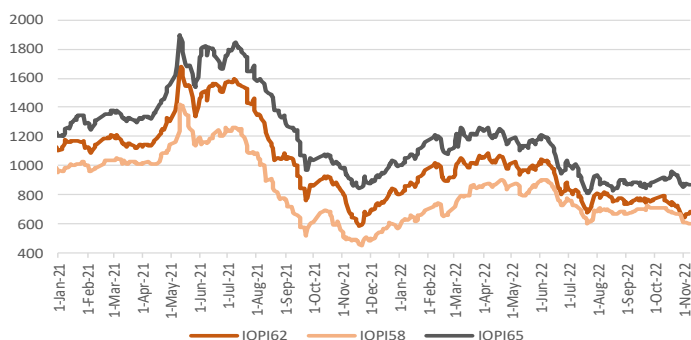
Week Ending Nov 4th, 2022				RMB/tonne (excluding tax) <sup>3</sup>				USD/tonne (excluding tax) <sup>3</sup>			
Province	Region	Product	Basis	This week	Change %	Low <sup>2</sup>	High <sup>2</sup>	This week	Change %	Low <sup>2</sup>	High <sup>2</sup>
Hebei	Hanxing	66% Fe Concentrate	Dry	835	-6.0%	779	1645	115.63	-6.82%	110.31	255.69
Hebei	Qian'an	65% Fe Concentrate	Dry	850	-8.6%	780	1630	117.70	-9.43%	110.51	251.57
Liaoning	Anshan	65% Fe Concentrate	Wet	705	-1.4%	620	1310	97.63	-2.29%	87.40	202.32
Shandong	Zibo	65% Fe Concentrate	Dry	858	-5.8%	800	1752	118.81	-6.67%	118.81	272.32

Week Ending Nov 4th, 2022

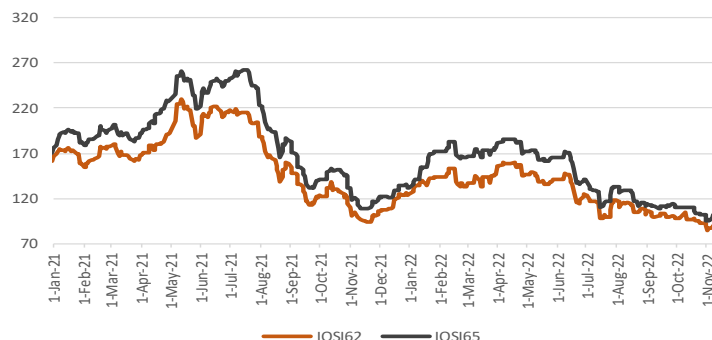
	This week	Change %	Low <sup>2</sup>	High <sup>2</sup>
China Mines Concentrate Composite Index RMB/WT	811.20	-3.78%	706.36	1511.22

<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 = 7.22146

## 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

Nov 8th, 2022		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne						
Index	Fe Content	July	August	September	October	MTD	QTD	YTD	June	August	September	October	MTD	QTD	YTD
IOPI62	62% Fe Fines	770	781	759	736	753	757	877	106.01	106.64	101.14	95.56	100.20	101.60	123.24
IOPI58	58% Fe Fines	682	685	697	683	682	682	741	94.43	94.05	93.56	89.34	91.31	92.06	104.35
IOPI65	65% Fe Fines	915	878	875	918	886	893	1038	126.73	120.31	117.19	120.08	118.49	120.48	146.67

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

## FREIGHT RATES

Nov 8th, 2022		CFR Qingdao, USD/dry tonne							Nov 7th, 2022						
Index	Fe Content	July	August	September	October	MTD	QTD	YTD	FREIGHT RATES - DRY BULK US\$/wet tonne						
									Route	Designation	Change	Change %	Low <sup>2</sup>	High <sup>2</sup>	
IOSI62	62% Fe Fines	110.07	110.64	101.12	95.80	101.59	103.54	125.74	W. Australia - Qingdao	C5	8.12	0.06	0.81%	3.57	16.77
IOSI65	65% Fe Fines	124.60	112.53	111.57	106.70	112.39	115.20	145.39	Tubarao - Qingdao	C3	19.86	0.27	1.36%	6.70	36.40

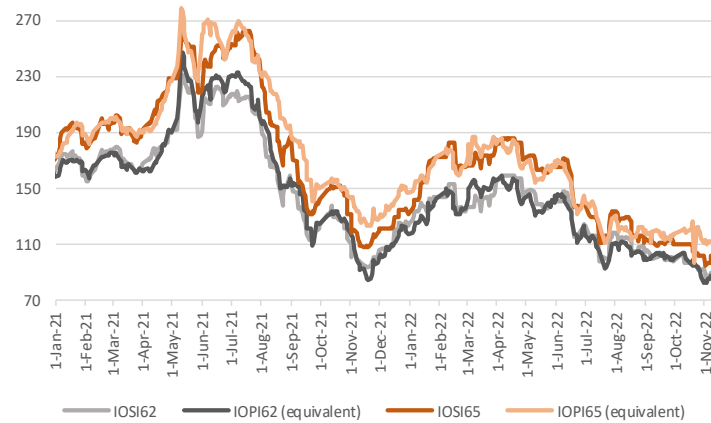
## IRON ORE PORT LUMP INDEX MONTHLY, QUARTERLY AND YEAR-TO-DATE AVERAGES

Week Ending Nov 4th, 2022		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne <sup>1</sup>						
Index	Fe Content	July	August	September	October	MTD	QTD	YTD	July	August	September	October	MTD	QTD	YTD
IOPLI62	62.5% Fe Lump	906	900	873	877	874	883	1074	120.36	118.50	112.75	109.81	112.25	114.50	145.71

## IRON ORE INDEX PREMIUMS/DISCOUNTS

Nov 8th, 2022		PORT STOCK INDEX (RMB/WT)		Nov 8th, 2022		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	-84	-12.21%	IOSI65	65% Fe Fines	12.60	14.08%
IOPI65	65% Fe Fines	183	26.60%				

## IRON ORE INDEX COMPARISONS (USD/DMT)



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



## IRON ORE BRAND SPOT PRICE ASSESSMENTS

Nov 8th, 2022				Nov 8th, 2022			
PORT STOCK INDEX (RMB/WT)				SEABORNE INDEX (USD/DMT)			
	Price	Change	Diff to IOPI62		Price	Change	Diff to IOSI62
Roy Hill	631	16	-57	Roy Hill	85.00	2.10	-4.50
SIMEC Fines	556	16	-132	SIMEC Fines	81.50	2.10	-8.00
PB Fines	659	16	-29	PB Fines	85.75	2.10	-3.75
Newman Fines	655	16	-33	Newman Fines	88.65	2.10	-0.85
MAC Fines	637	16	-51	MAC Fines	85.75	2.10	-3.75
Jimblebar Blended Fines	551	16	-137	Jimblebar Blended Fines	78.15	2.10	-11.35
Carajas Fines	868	16	180	Carajas Fines	119.05	2.10	29.55
Brazilian SSF	648	16	-40	Brazilian SSF	93.25	2.10	3.75
Brazilian Blend Fines	672	16	-16	Brazilian Blend Fines	94.90	2.10	5.40
RTX Fines	570	16	-118	RTX Fines	79.40	2.10	-10.10
West Pilbara Fines	600	16	-88	West Pilbara Fines	83.75	2.10	-5.75

Nov 8th, 2022			
PORT STOCK INDEX (RMB/WT)			
	Price	Change	Diff to IOPI58
SSF	604	0	0
FMG Blended Fines	611	0	7
Robe River	612	0	8
Western Fines	614	0	10
Atlas Fines	609	0	5
Yandi	598	0	-6

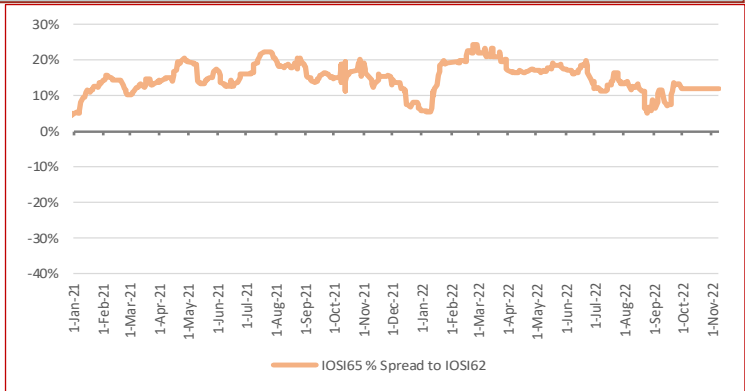
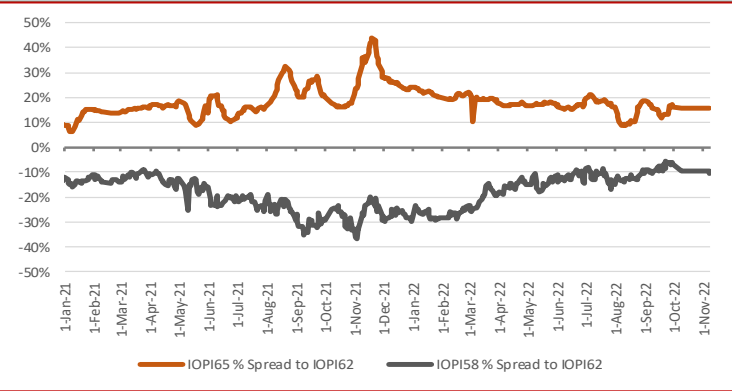
## IRON ORE INDEX NORMALISATION DIFFERENTIALS

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%	6.00	0.00	1% Fe	High Grade Fe 60 - 63%	2.25	0.00
	High Grade Fe 63 - 64%	14.00	-5.00		High Grade Fe 63 - 64%	3.00	0.00
	High Grade Fe 64 - 65%	14.00	-5.00		High Grade Fe 64 - 65%	3.00	0.00
	High Grade Fe 65 - 65.5%	14.00	-5.00		High Grade Fe 65 - 65.5%	3.00	0.00
1% Alumina	Low Grade Fe	17.00	1.00	1% Alumina	High Fe Grade Al <2.25%	0.50	0.00
	High Fe Grade Al <2.25%	73.00	-4.00		High Fe Grade Al 2.25-4%	2.00	0.00
	High Fe Grade Al 2.25-4%	5.00	0.00				
	Low Fe Grade Al <2.25%	16.00	-5.00				
1% Silica	Low Fe Grade Al 2.25-4%	17.00	3.00	1% Silica	High Fe Grade Si <4%	2.25	0.00
	High Fe Grade Si <4%	35.00	0.00		High Fe Grade Si 4 - 6.5%	1.25	0.00
0.01% Phosphorus	High Fe Grade Si 4-6.5%	5.00	0.00	0.01% Phosphorus	High Fe Grade 0.09%<P<0.115%	1.75	0.00
	Low Fe Grade	12.00	2.00		High Fe Grade 0.115%<P<0.15%	4.25	0.00
	High Fe Grade 0.09%<P<0.115%	5.00	0.00		Low Fe Grade 0.09%<P<0.1%	5.00	0.00

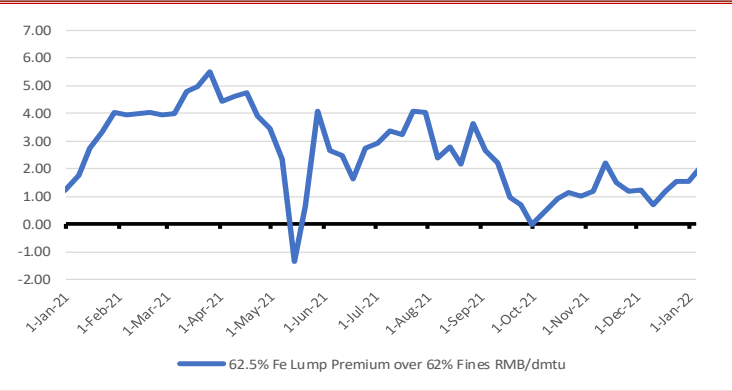
## Port Stock Price Differentials to Qingdao Port for PB Fines (RMB/wet tonne)

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	-10.00	0.00	Jingtang	-20.00	0.00	Majishan	0.00	0.00	Taicang	-30.00	0.00
Dalian	0.00	0.00	Lanqiao	0.00	0.00	Qingdao	0.00	0.00	Tianjin	-10.00	0.00

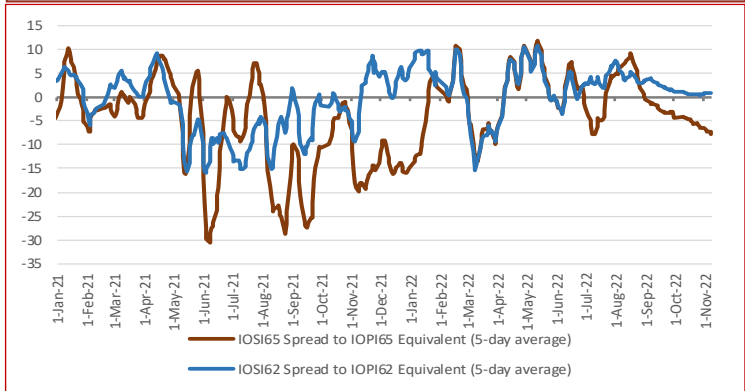
IRON ORE INDEX PREMIUMS/DISCOUNTS



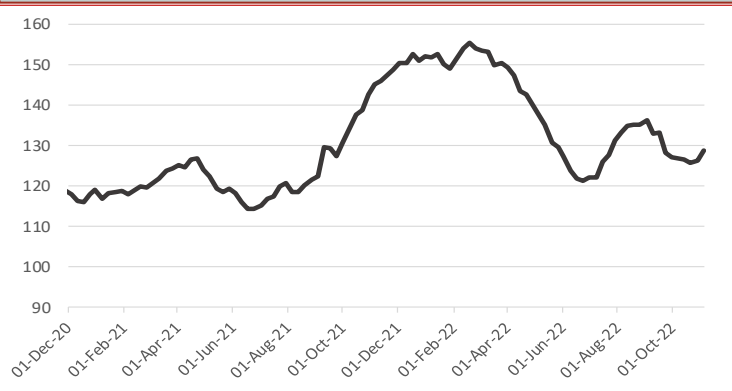
WEEKLY IRON ORE PORT STOCK LUMP PREMIUM (RMB/DMTU)



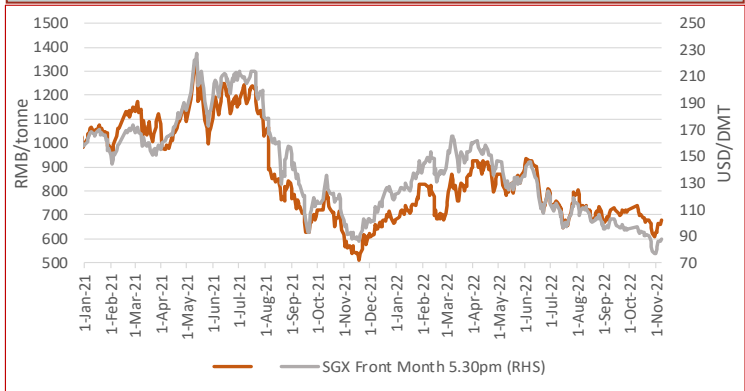
IRON ORE SEABORNE TO PORT STOCK PRICE SPREADS (USD/DMT)



TOTAL IRON ORE INVENTORIES AT CHINA PORTS (MILLION TONNES)



FUTURE TRADING—FRONT MONTH CLOSING PRICE



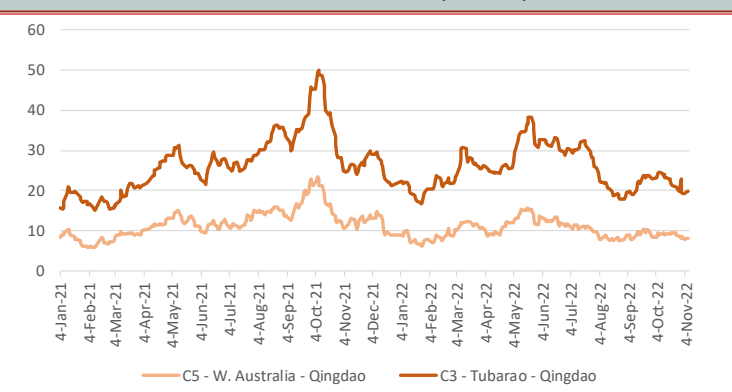
IRON ORE PORT INVENTORIES (MILLION TONNES)

Week Ending Nov 4th, 2022				
Province	This week	Change %	Low <sup>2</sup>	High <sup>2</sup>
Jingtang	12.75	5.02%	9.84	19.20
Qingdao	23.56	-0.84%	9.41	26.24
Caofeidian	12.02	8.29%	9.05	16.29
Tianjin	10.35	3.19%	7.14	12.97
Rizhao	17.67	0.40%	9.44	19.26
<b>Total (35 Ports)</b>	<b>128.73</b>	<b>2.03%</b>	<b>98.80</b>	<b>155.39</b>

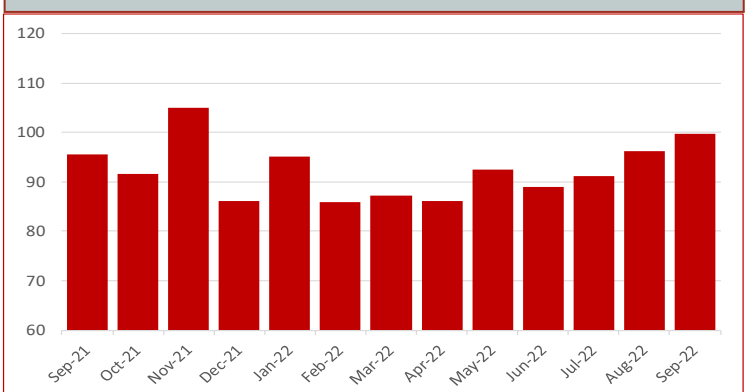
IRON ORE FUTURES CONTRACTS

Closing Date	DCE (RMB/WMT)			SGX (USD/DMT)		
	Nov 8th, 3pm close			Nov 8th, 5:30pm		
Contract	I2301	Change	Change %	Dec. 22	Change	Change %
Closing Price	680.00	18.50	2.80%	87.85	2.15	2.51%
Vol traded ('000 lots)	81.83	-10.54	-11.41%	4.52	-0.58	-11.45%
Open positions ('000 lots)	73.12	0.25	0.34%	29.50	0.64	2.22%
Day Low	660.0	6.00	0.92%	85.45	1.65	1.97%
Day High	683.0	7.00	1.04%	88.60	0.40	0.45%

DRY BULK FREIGHT RATES (USD/MT)



TOTAL CHINA IRON ORE IMPORT VOLUMES (MILLION TONNES)



STEEL SPOT MARKET PRICES—CHINA

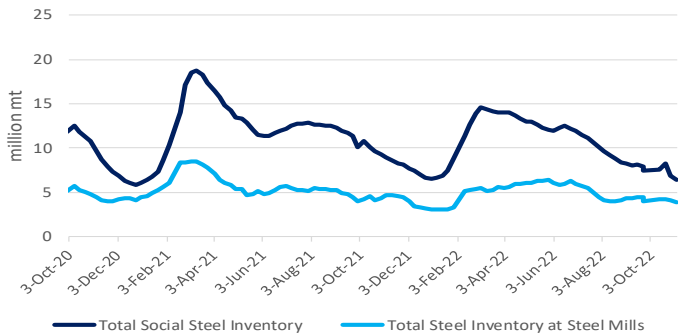
Product	2022/11/4	Change	Change %
ReBar HRB400 φ18mm	3,770	10	0.27%
Wirerod Q300 φ6.5mm	4,230	80	1.93%
HRC Q235/SS400 5.5mm*1500*C	3,760	90	2.45%
CRC SPCC/ST12 1.0mm*1250*2500	4,340	-50	-1.14%
Medium & Heavy Plate Q235B 20mm	3,880	-20	-0.51%
GI ST02Z 1.0mm*1000*C	4,570	-50	-1.08%
Colour Coated Plate	7,500	0	0.00%

CHINESE STEEL MILL PROFITABILITY

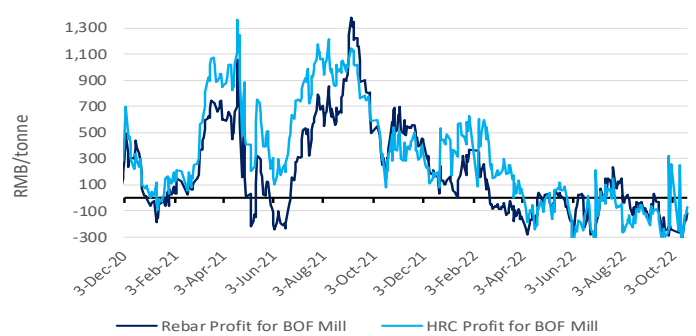
SMM Tracking of Steel Mill P&L - Rebar and Hot-rolled Coil (RMB/tonne)			
Category	Price	Change (WoW)	Note
MMi (Fe 62%), USD/mt excluding tax	87.20	-9	Mmi CFR Equivalent index for 1st Feb
Coke	2,960	-110	2nd grade met coke, Tangshan, incl. tax
Steel Scrap	2,610	-100	steel scrap (6mm) in Zhangjiagang, ext. tax
Billet Cost	3,382	-138	Q234, incl. tax
Rebar cost - Blast furnace	3,856	-156	calculated based on theoretical weight, incl. tax
Rebar profit - Blast furnace	-116	126	based on Shanghai prices, incl. tax
Hot-rolled coil cost - Blast furnace	3,822	-158	based on actual weight, incl. tax
Hot-rolled coil profit - Blast furnace	-72	238	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

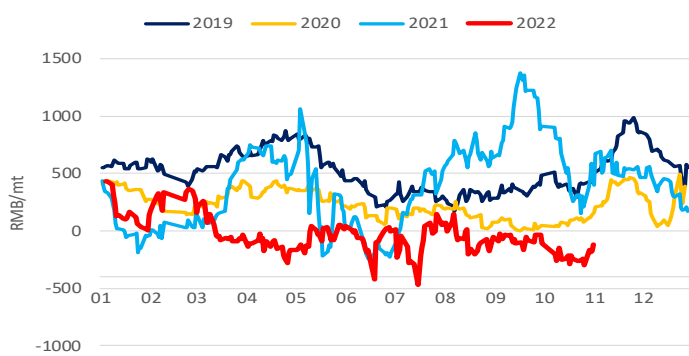
CHINESE STEEL INVENTORIES



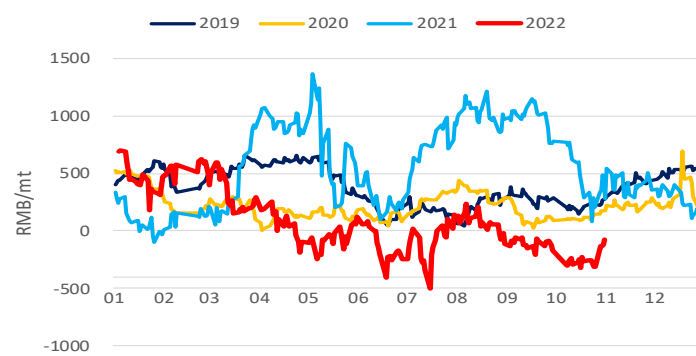
CHINESE STEEL MILL PROFITABILITY



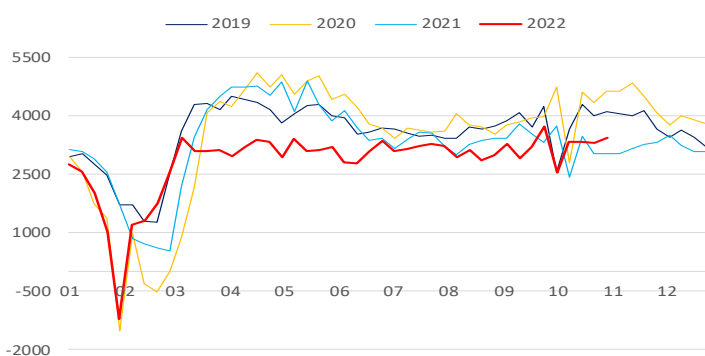
CHINESE STEEL MILL PROFITABILITY—Rebar



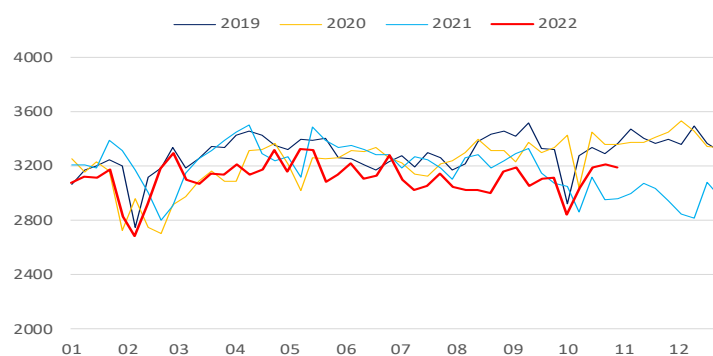
CHINESE STEEL MILL PROFITABILITY—Hot-rolled Coil



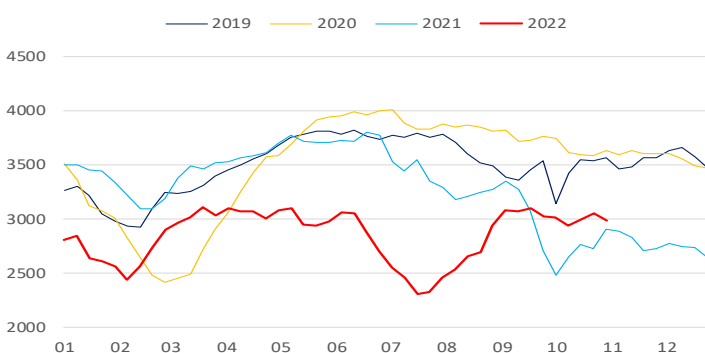
CHINESE STEEL CONSUMPTION—Rebar



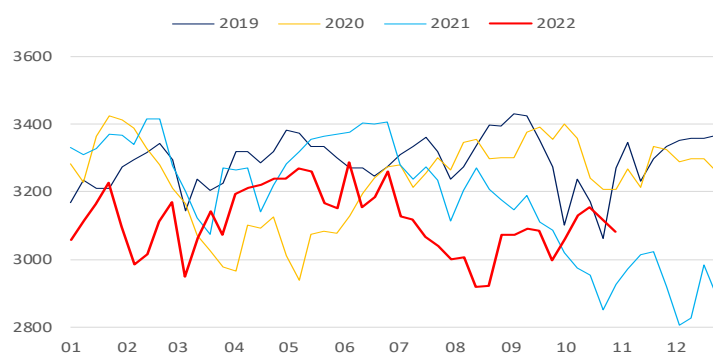
CHINESE STEEL CONSUMPTION—Hot-rolled Coil



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																				
	65% Fe Fines	62% Fe Fines	58% Fe Fines	62.5% Fe Lump																					
Fe %	65.00	62.00	58.00	62.50	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>																				
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%	<table border="1"> <thead> <tr> <th colspan="4">Data Exclusions*</th> </tr> <tr> <th></th> <th>62%</th> <th>58%</th> <th>65%</th> </tr> </thead> <tbody> <tr> <td>Port Index</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Seaborne index</td> <td>0</td> <td></td> <td>0</td> </tr> <tr> <td>Lump Index 62.5</td> <td>0</td> <td></td> <td></td> </tr> </tbody> </table> <p>* Number of price submissions for iron ore indices that were excluded from index calculations today as they were anomalous and could not be verified</p>	Data Exclusions*					62%	58%	65%	Port Index	0	0	0	Seaborne index	0		0	Lump Index 62.5	0		
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	62%	58%	65%																						
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Lump Index 62.5	0																								
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																					

## 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					
Nov 8th, 2022	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%
Nov 8th, 2022	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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