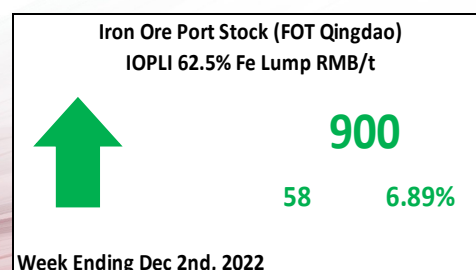
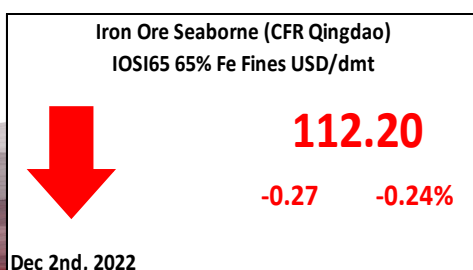
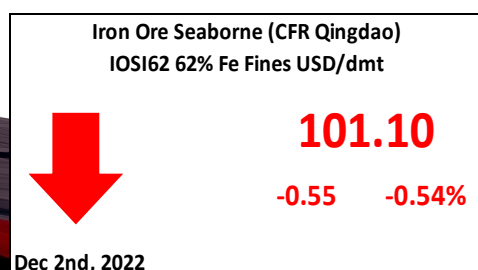
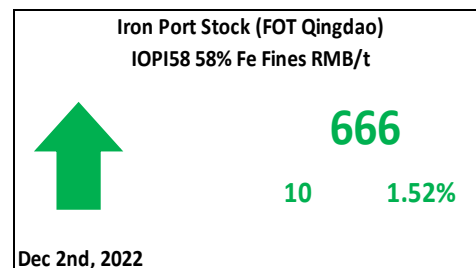
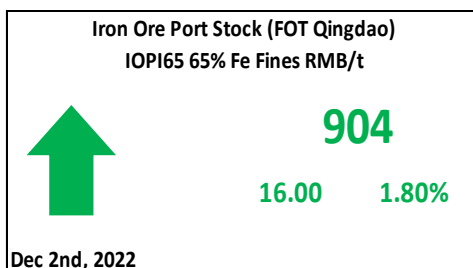
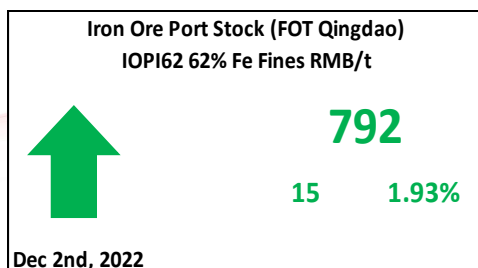


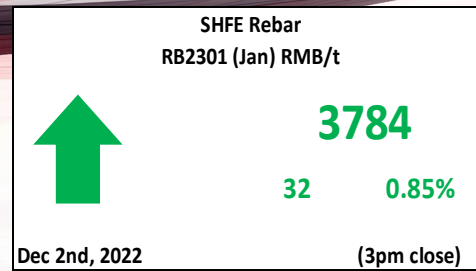
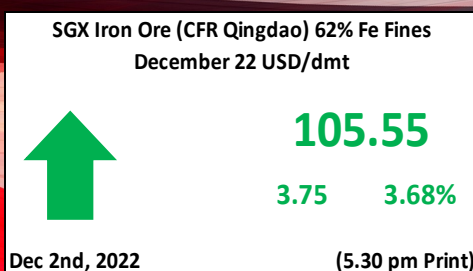
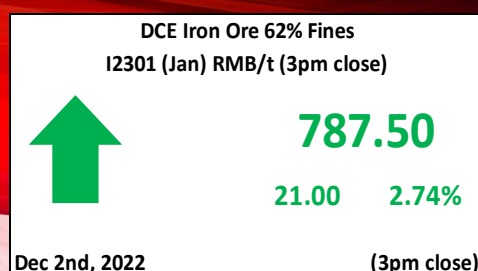


MMi Dashboard

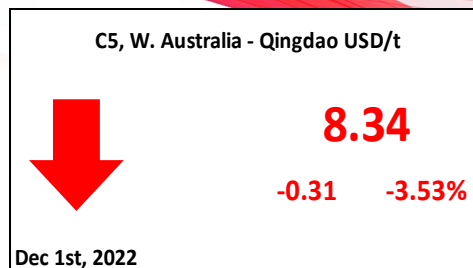
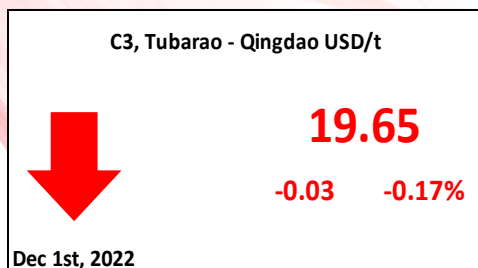
Iron Ore Price Indices



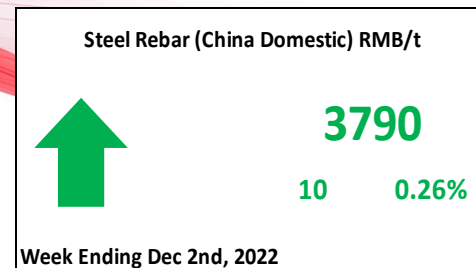
Exchange Traded Contracts



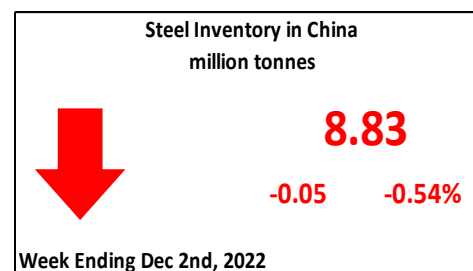
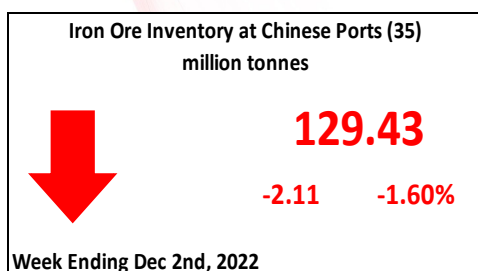
Freight Rates



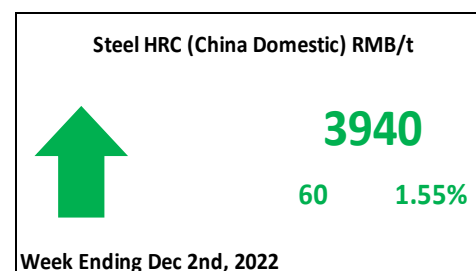
Steel Price



Inventory Levels



Steel Price



IRON ORE PORT STOCK INDEX (IOPI)

Dec 2nd, 2022		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne ¹						
Index	Fe Content	Price	Change	Change %	MTD	YTD	Low ²	High ²	Price	Change	Change %	MTD	YTD	Low ²	High ²
IOPI62	62% Fe Fines	792	15	1.9%	750	866	643	1083	104.18	3.02	3.0%	99.27	121.01	82.29	159.06
IOPI58	58% Fe Fines	666	10	1.5%	674	733	502	907	87.95	2.21	2.6%	89.80	102.71	72.36	134.15
IOPI65	65% Fe Fines	904	16	1.8%	882	1024	811	1265	119.45	3.31	2.8%	117.35	143.94	108.78	187.25

IRON ORE SEABORNE INDEX (IOSI)

MARKET COMMENTARY

Dec 2nd, 2022		CFR Qingdao, USD/dry tonne							DCE iron ore futures rose by 2.21% today, the main contract closed 787.5. The traders' willingness to ship is more. The steel mills are more active to purchase. The overall trading sentiment of the market is better than yesterday. PBF at Shandong port dealt 765-775 yuan/mt, increase 5-20 yuan/mt; PBF at Tangshan port dealt 783-800 yuan/mt, increase 8-15 yuan/mt. As of December 2, the inventory of 35 ports tracked by SMM totaled 129.43 million tons, 2.11 million tons lower than last week and 2.114 million tons lower than the same period last year. The port inventory has been accumulated periodically. The average daily port dredging volume of imported ore in this period increased by 153000 tons to 2.869 million tons on a weekly basis. This week, steel mills worried about the impact of rain and snow weather and epidemic situation, and successively opened winter reserves, greatly improving the enthusiasm of port dredging. SMM estimates that the impact of blast furnace maintenance next week will be 1.8819 million tons of molten iron, 20.5 million tons less than this week, and the demand for iron ore will rise again. It is suggested that we should continue to pay attention to the impact of the latest macro factors such as public health and geopolitics on
Index	Fe Content	Price	Change	Change %	MTD	YTD	Low ²	High ²	
IOSI62	62% Fe Fines	101.10	-0.55	-0.54%	100.37	123.37	83.90	159.45	
IOSI65	65% Fe Fines	112.20	-0.27	-0.24%	110.91	142.21	94.45	185.82	

IRON ORE PORT LUMP INDEX (IOPLI)

Week Ending Dec 2nd, 2022		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne ³						
Index	Fe Content	Price	W-o-W	Change %	MTD	YTD	Low ²	High ²	Price	W-o-W	Change %	MTD	YTD	Low ²	High ²
IOPLI62	62.5% Fe Lump	900	58	6.9%	867	1054	770	1405	112.54	7.37	7.00%	110.61	142.12	94.72	199.13

IRON ORE DOMESTIC CONCENTRATE SPOT PRICE ASSESSMENTS AND COMPOSITE INDEX

Week Ending Dec 2nd, 2022				RMB/tonne (excluding tax) ³				USD/tonne (excluding tax) ³			
Province	Region	Product	Basis	This week	Change %	Low ²	High ²	This week	Change %	Low ²	High ²
Hebei	Hanxing	66% Fe Concentrate	Dry	911	-0.1%	779	1645	127.54	-0.22%	110.31	255.69
Hebei	Qian'an	65% Fe Concentrate	Dry	960	3.2%	780	1630	134.40	3.11%	110.51	251.57
Liaoning	Anshan	65% Fe Concentrate	Wet	700	0.0%	620	1310	98.00	-0.11%	87.40	202.32
Shandong	Zibo	65% Fe Concentrate	Dry	934	-0.1%	800	1752	130.76	-0.22%	117.19	272.32

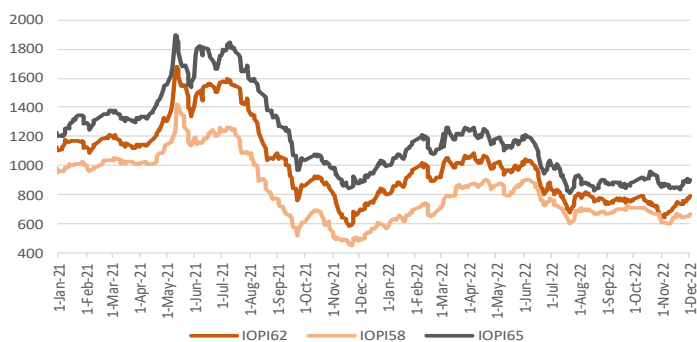
Week Ending Dec 2nd, 2022

This week	Change %	Low ²	High ²
832.81	1.41%	706.36	1511.22

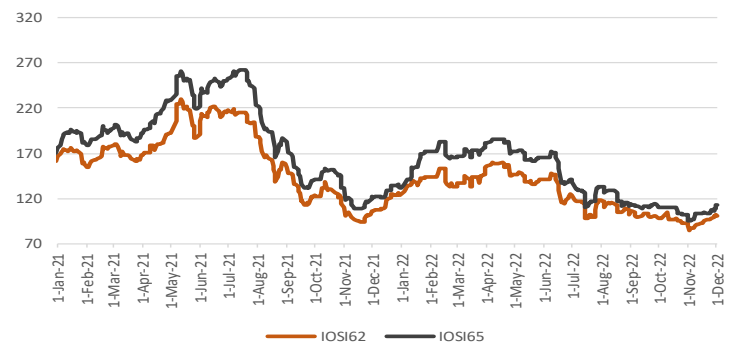
China Mines Concentrate Composite Index RMB/WT

¹ Exchange rate applied: RMB/USD = 6.7522 ² Last 12 months
³ Weekly exchange rate applied: RMB/USD = 7.13488

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

Dec 2nd, 2022		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne						
Index	Fe Content	August	September	October	November	MTD	QTD	YTD	August	September	October	November	MTD	QTD	YTD
IOPI62	62% Fe Fines	781	759	736	714	750	754	866	106.64	101.14	95.56	92.18	99.27	100.62	121.01
IOPI58	58% Fe Fines	685	697	683	635	674	675	733	94.05	93.56	89.34	82.39	89.80	90.73	102.71
IOPI65	65% Fe Fines	878	875	918	865	882	888	1024	120.31	117.19	120.08	112.37	117.35	119.22	143.94

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

FREIGHT RATES

Dec 2nd, 2022		CFR Qingdao, USD/dry tonne							Dec 1st, 2022						
Index	Fe Content	August	September	October	November	MTD	QTD	YTD	FREIGHT RATES - DRY BULK US\$/wet tonne						
Route	Designation	Change	Change %	Low ²	High ²										
IOSI62	62% Fe Fines	110.64	101.12	95.80	93.05	100.37	102.22	123.37	W. Australia - Qingdao	C5	8.34	-0.31	-3.53%	3.57	16.77
IOSI65	65% Fe Fines	112.53	111.57	106.70	102.40	110.91	113.52	142.21	Tubarao - Qingdao	C3	19.65	-0.03	-0.17%	6.70	36.40

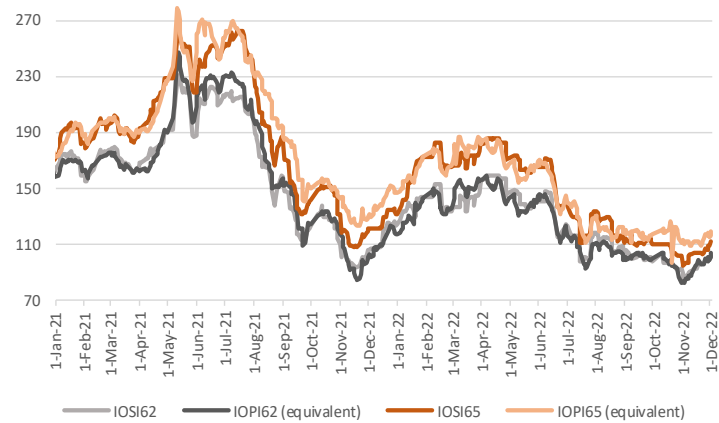
IRON ORE PORT LUMP INDEX MONTHLY, QUARTERLY AND YEAR-TO-DATE AVERAGES

Week Ending Dec 2nd, 2022		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne ¹						
Index	Fe Content	August	September	October	November	MTD	QTD	YTD	September	October	October	November	MTD	QTD	YTD
IOPLI62	62.5% Fe Lump	900	873	877	811	867	876	1054	118.50	112.75	109.81	100.83	110.61	112.83	142.12

IRON ORE INDEX PREMIUMS/DISCOUNTS

Dec 2nd, 2022				PORT STOCK INDEX (RMB/WT)				Dec 2nd, 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	-126	-15.91%	IOSI65	65% Fe Fines	11.10	10.98%								
IOPI65	65% Fe Fines	112	14.14%												

IRON ORE INDEX COMPARISONS (USD/DMT)



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



IRON ORE BRAND SPOT PRICE ASSESSMENTS

Dec 2nd, 2022				Dec 2nd, 2022			
PORT STOCK INDEX (RMB/WT)				SEABORNE INDEX (USD/DMT)			
	Price	Change	Diff to IOPI62		Price	Change	Diff to IOSI62
Roy Hill	735	15	-57	Roy Hill	96.60	-0.55	-4.50
SIMEC Fines	663	16	-129	SIMEC Fines	93.10	-0.55	-8.00
PB Fines	761	15	-31	PB Fines	97.35	-0.55	-3.75
Newman Fines	760	15	-32	Newman Fines	100.25	-0.53	-0.85
MAC Fines	742	15	-50	MAC Fines	97.35	-0.55	-3.75
Jimblebar Blended Fines	656	15	-136	Jimblebar Blended Fines	89.75	-0.53	-11.35
Carajas Fines	972	15	180	Carajas Fines	130.65	-0.55	29.55
Brazilian SSF	754	15	-38	Brazilian SSF	104.85	-0.55	3.75
Brazilian Blend Fines	774	14	-18	Brazilian Blend Fines	106.50	-0.53	5.40
RTX Fines	675	15	-117	RTX Fines	91.00	-0.53	-10.10
West Pilbara Fines	704	15	-88	West Pilbara Fines	95.35	-0.55	-5.75

Dec 2nd, 2022			
PORT STOCK INDEX (RMB/WT)			
	Price	Change	Diff to IOPI58
SSF	666	10	0
FMG Blended Fines	674	10	8
Robe River	675	10	9
Western Fines	677	10	11
Atlas Fines	672	10	6
Yandi	660	10	-6

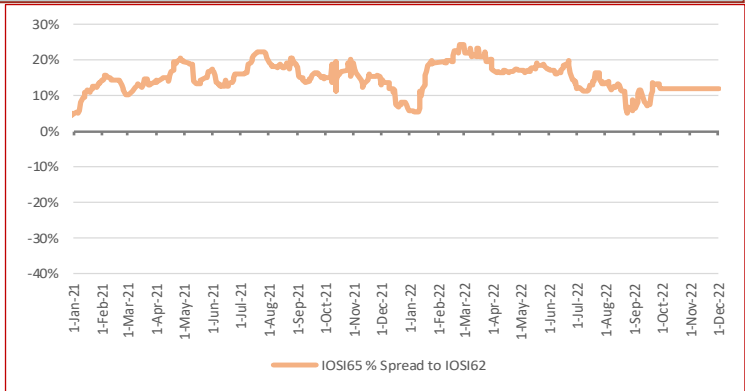
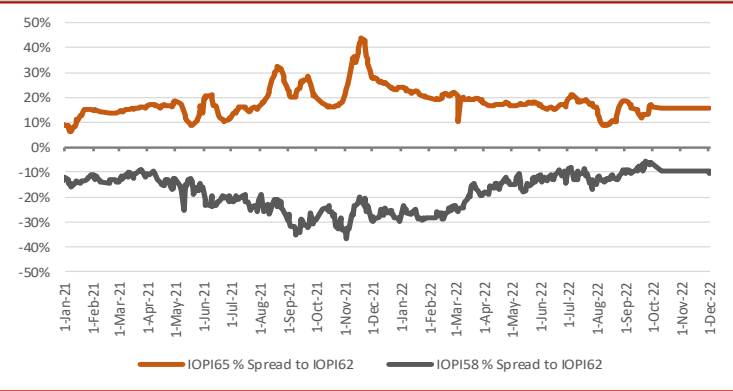
IRON ORE INDEX NORMALISATION DIFFERENTIALS

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%	9.00	-1.00	1% Fe	High Grade Fe 60 - 63%	0.75	0.00
	High Grade Fe 63 - 64%	5.00	0.00		High Grade Fe 63 - 64%	2.75	0.00
	High Grade Fe 64 - 65%	5.00	0.00		High Grade Fe 64 - 65%	2.75	0.00
	High Grade Fe 65 - 65.5%	5.00	0.00		High Grade Fe 65 - 65.5%	2.75	0.00
1% Alumina	Low Grade Fe	16.00	-2.00	1% Alumina	High Fe Grade Al <2.25%	2.75	0.00
	High Fe Grade Al <2.25%	50.00	-2.00		High Fe Grade Al 2.25-4%	0.25	-0.25
	High Fe Grade Al 2.25-4%	9.00	0.00				
	Low Fe Grade Al <2.25%	38.00	5.00				
1% Silica	Low Fe Grade Al 2.25-4%	5.00	0.00	1% Silica	High Fe Grade Si <4%	2.75	0.00
	High Fe Grade Si <4%	18.00	-1.00		High Fe Grade Si 4 - 6.5%	0.25	0.00
0.01% Phosphorus	High Fe Grade Si 4-6.5%	23.00	-4.00	0.01% Phosphorus	High Fe Grade 0.09%<P<0.115%	3.00	0.00
	Low Fe Grade	5.00	0.00		High Fe Grade 0.115%<P<0.15%	2.50	-0.25
	High Fe Grade 0.09%<P<0.115%	5.00	0.00				
	High Fe Grade 0.115%<P<0.15%	5.00	0.00				
	Low Fe Grade 0.09%<P<0.1%	5.00	0.00				

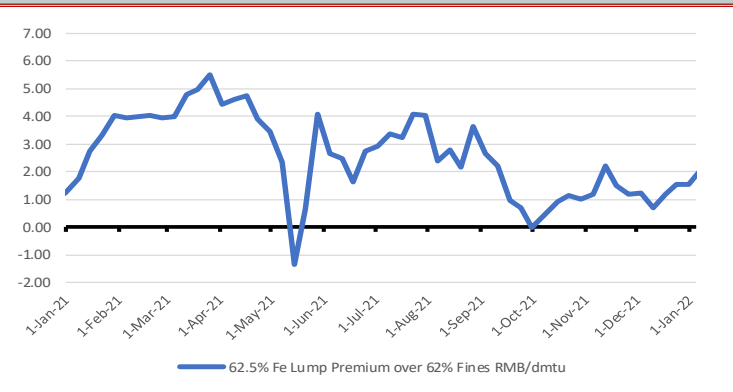
Port Stock Price Differentials to Qingdao Port for PB Fines (RMB/wet tonne)

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	Taichang	-30.00	0.00
Dalian	0.00	0.00	Lanqiao	0.00	0.00	Qingdao	0.00	0.00	Tianjin	-10.00	0.00

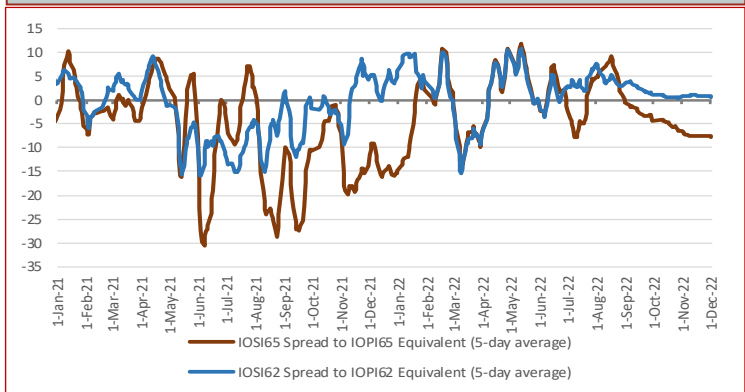
IRON ORE INDEX PREMIUMS/DISCOUNTS



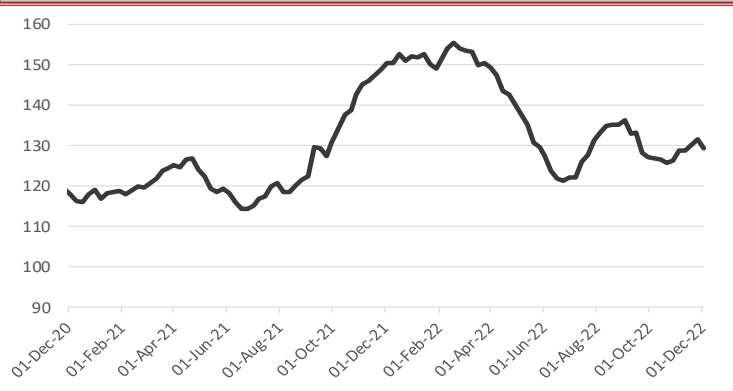
WEEKLY IRON ORE PORT STOCK LUMP PREMIUM (RMB/DMTU)



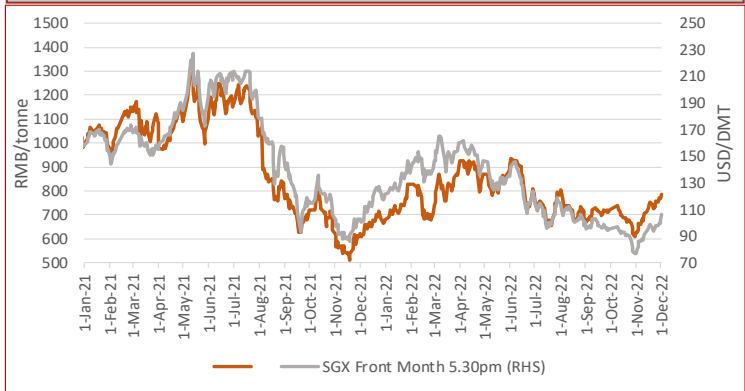
IRON ORE SEABORNE TO PORT STOCK PRICE SPREADS (USD/DMT)



TOTAL IRON ORE INVENTORIES AT CHINA PORTS (MILLION TONNES)



FUTURE TRADING—FRONT MONTH CLOSING PRICE



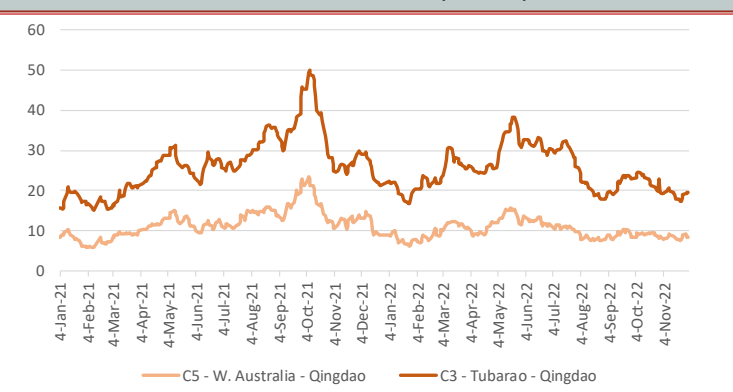
IRON ORE PORT INVENTORIES (MILLION TONNES)

Week Ending Dec 2nd, 2022				
Province	This week	Change %	Low ²	High ²
Jingtang	13.27	-0.52%	9.84	19.20
Qingdao	25.15	0.40%	9.41	26.24
Caofeidian	11.48	2.04%	9.05	16.29
Tianjin	8.68	-5.45%	7.14	12.97
Rizhao	17.58	-4.30%	9.44	19.26
Total (35 Ports)	129.43	-1.60%	98.80	155.39

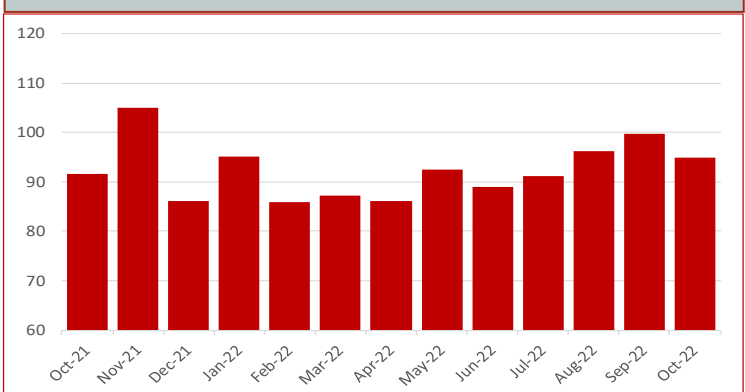
IRON ORE FUTURES CONTRACTS

Closing Date	DCE (RMB/WMT)			SGX (USD/DMT)		
	Dec 2nd, 3pm close			Dec 2nd, 5:30pm		
Contract	I2301	Change	Change %	Dec. 22	Change	Change %
Closing Price	787.50	21.00	2.74%	105.55	3.75	3.68%
Vol traded ('000 lots)	56.88	-3.92	-6.45%	1.87	-0.46	-19.94%
Open positions ('000 lots)	53.95	-2.13	-3.81%	25.76	-0.51	-1.94%
Day Low	764.0	2.50	0.33%	102.25	1.45	1.44%
Day High	792.5	13.00	1.67%	106.65	0.70	0.66%

DRY BULK FREIGHT RATES (USD/MT)



TOTAL CHINA IRON ORE IMPORT VOLUMES (MILLION TONNES)



STEEL SPOT MARKET PRICES—CHINA

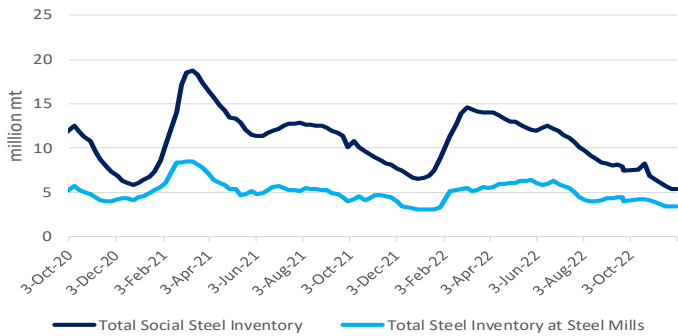
Product	2022/12/2	Change	Change %
ReBar HRB400 φ18mm	3,790	10	0.26%
Wirerod Q300 φ6.5mm	4,260	-30	-0.70%
HRC Q235/SS400 5.5mm*1500*C	3,940	60	1.55%
CRC SPCC/ST12 1.0mm*1250*2500	4,370	30	0.69%
Medium & Heavy Plate Q235B 20mm	3,920	30	0.77%
GI ST02Z 1.0mm*1000*C	4,640	10	0.22%
Colour Coated Plate	7,450	-50	-0.67%

CHINESE STEEL MILL PROFITABILITY

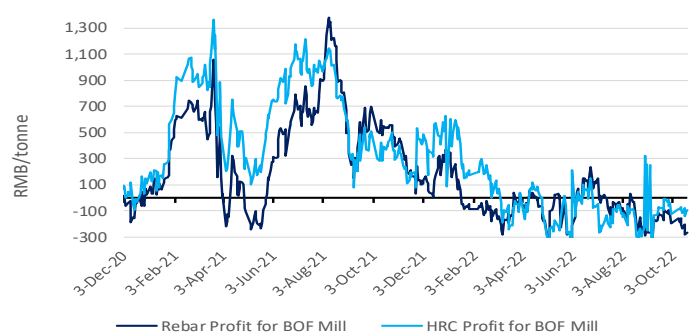
SMM Tracking of Steel Mill P&L - Rebar and Hot-rolled Coil (RMB/tonne)			
Category	Price	Change (WoW)	Note
MMi (Fe 62%), USD/mt excluding tax	101.65	5	Mmi CFR Equivalent index for 1st Feb
Coke	2,850	0	2nd grade met coke, Tangshan, incl. tax
Steel Scrap	2,910	0	steel scrap (6mm) in Zhangjiagang, ext. tax
Billet Cost	3,562	56	Q234, incl. tax
Rebar cost - Blast furnace	4,059	64	calculated based on theoretical weight, incl. tax
Rebar profit - Blast furnace	-269	-64	based on Shanghai prices, incl. tax
Hot-rolled coil cost - Blast furnace	4,022	62	based on actual weight, incl. tax
Hot-rolled coil profit - Blast furnace	92	181	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

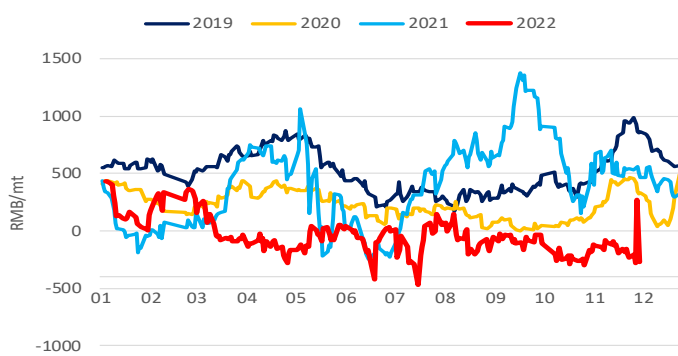
CHINESE STEEL INVENTORIES



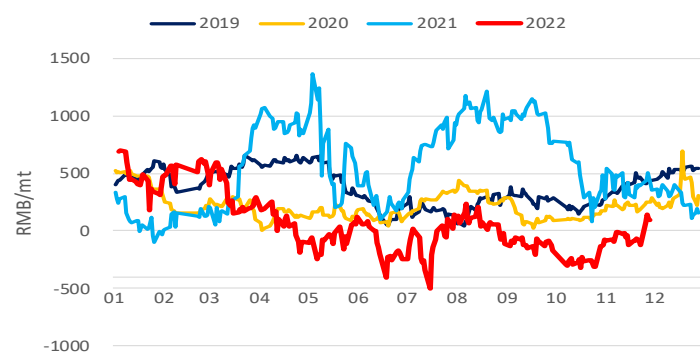
CHINESE STEEL MILL PROFITABILITY



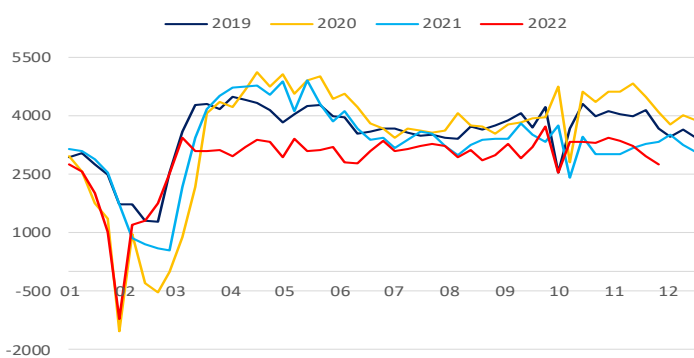
CHINESE STEEL MILL PROFITABILITY—Rebar



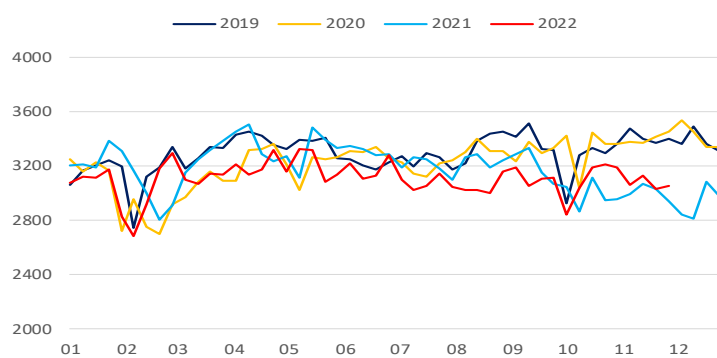
CHINESE STEEL MILL PROFITABILITY—Hot-rolled Coil



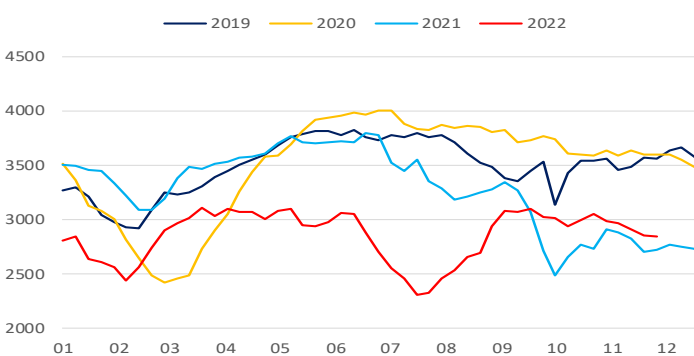
CHINESE STEEL CONSUMPTION—Rebar



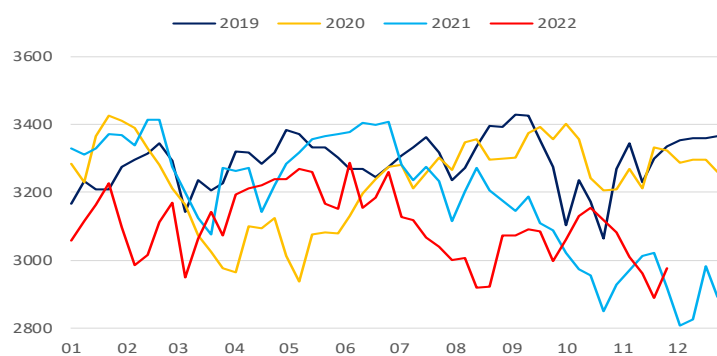
CHINESE STEEL CONSUMPTION—Hot-rolled Coil



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	<p>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.</p> <p>For more details on MMi's iron ore methodology please download the guide published on our website at: www.mmiprices.com</p> <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		
Data Exclusions*																									
	62%	58%	65%																						
Port Index	0	0	0																						
Seaborne index	0		0																						
Lump Index 62.5	0																								
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																					

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					
Dec 2nd, 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%
Dec 2nd, 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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