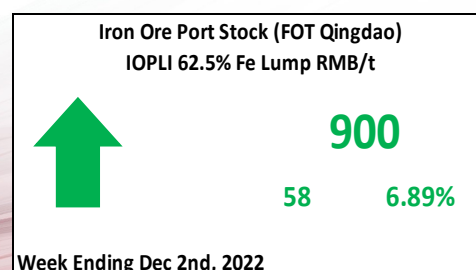
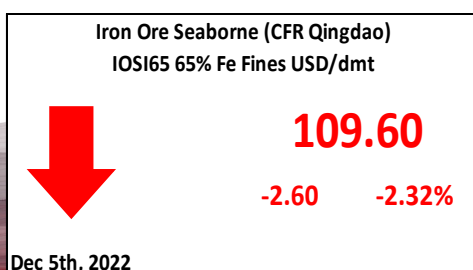
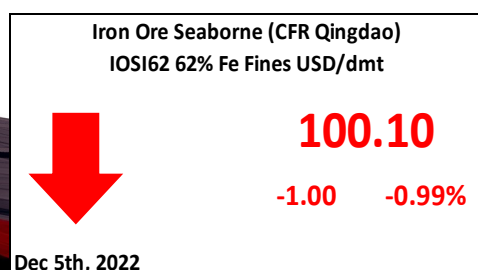
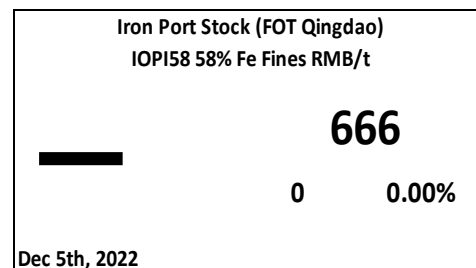
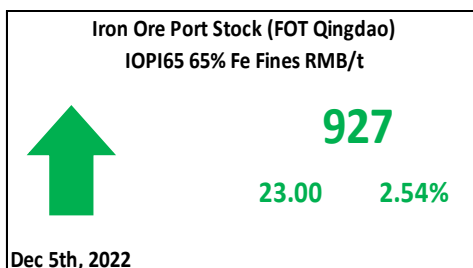
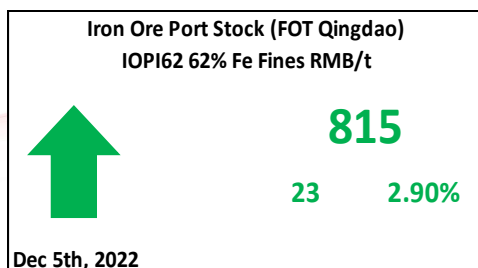


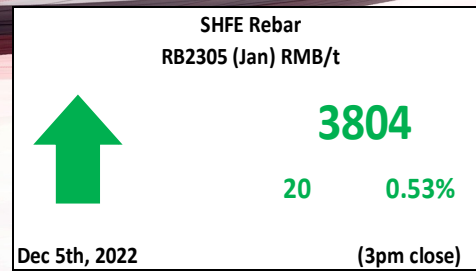
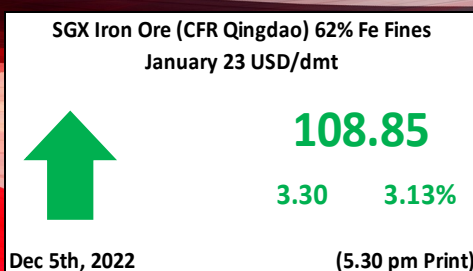
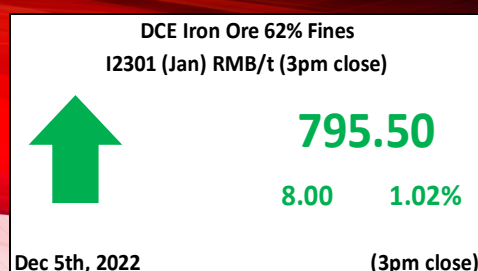


MMi Dashboard

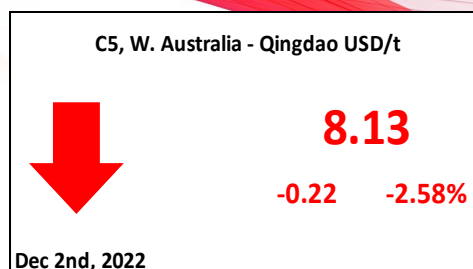
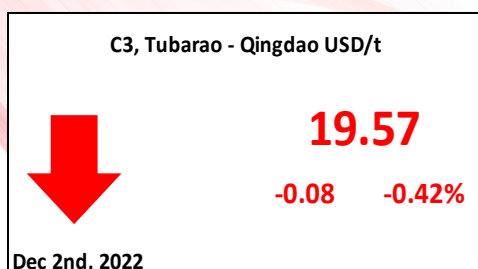
Iron Ore Price Indices



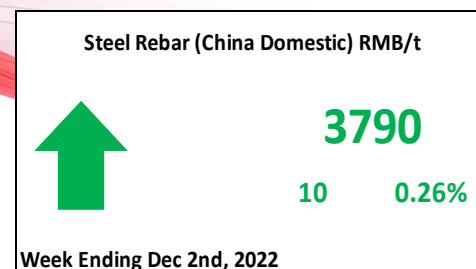
Exchange Traded Contracts



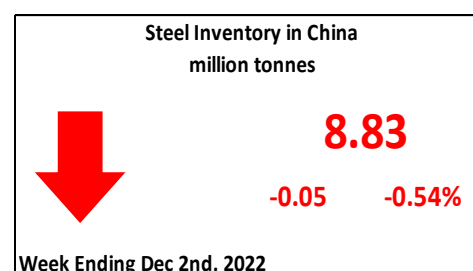
Freight Rates



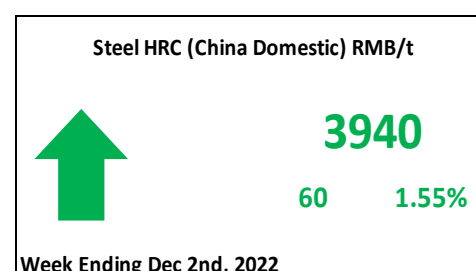
Steel Price



Inventory Levels



Steel Price



IRON ORE PORT STOCK INDEX (IOPI)

Dec 5th, 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	815	23	2.9%	750	865	643	1083	107.56	3.38	3.2%	99.37	120.95	82.29	159.06
IOPI58	58% Fe Fines	666	0	0.0%	674	733	527	907	88.15	0.20	0.2%	89.79	102.65	76.13	134.15
IOPI65	65% Fe Fines	927	23	2.5%	882	1024	811	1265	122.86	3.41	2.9%	117.41	143.85	108.78	187.25

IRON ORE SEABORNE INDEX (IOSI)

MARKET COMMENTARY

Dec 5th, 2022		CFR Qingdao, USD/dry tonne							DCE iron ore futures rose by 2.45% today, the main contract closed 795.5. The traders' willingness to ship is more. The steel mills are active to purchase. The overall trading sentiment of the market is better. PBF at Shandong port dealt 788-793 yuan/mt, increase 13.28 yuan/mt. PBF at Tangshan port dealt 808 yuan/mt, increase 23 yuan/mt. SMM's global iron ore shipments totaled 31.52 million tonnes, down 1.7 per cent from the previous month. Among them, Australia sent 15.32 million tons to China, an increase of 4.7% from the previous month; Brazil shipped 6.51 million tons, down 13.5% from the previous month; Brazil sent 3.86 million tons to China, an increase of 47.9% from the previous month. In terms of the inbound volume, China's iron ore volume reached 20.44 million tons, down 24.1% from the previous month, mainly due to port congestion caused by the epidemic. Demand end, this week steel blast furnace maintenance volume or again reduced, iron ore demand has a certain support. Due to the early Spring Festival, steel mills have replenished raw material inventory. Overall, the port sparse volume will still increase, port inventory or decline. In addition, the market sentiment is better, for the good real estate and the weekend around the
Index	Fe Content	Price	Change	Change %	MTD	YTD	Low ²	High ²	
IOSI62	62% Fe Fines	100.10	-1.00	-0.99%	100.37	123.27	83.90	159.45	
IOSI65	65% Fe Fines	109.60	-2.60	-2.32%	110.89	142.07	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

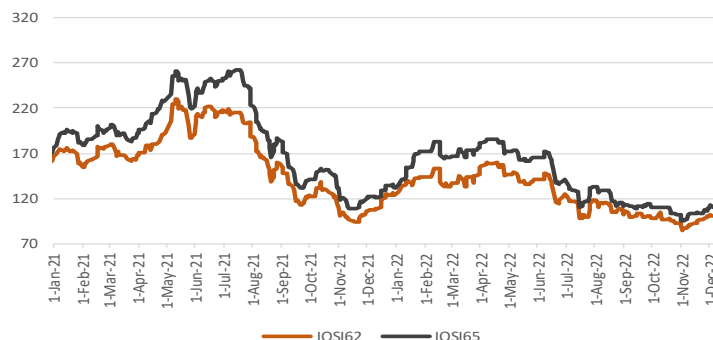
	This week	Change %	Low ²	High ²
China Mines Concentrate Composite Index RMB/WT	832.81	1.41%	706.36	1511.22

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 5th, 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	865	106.64	101.14	95.56	92.18	99.37	100.68	120.95
IOPI58	58% Fe Fines	685	697	683	635	674	675	733	94.05	93.56	89.34	82.39	89.79	90.71	102.65
IOPI65	65% Fe Fines	878	875	918	865	882	889	1024	120.31	117.19	120.08	112.37	117.41	119.26	143.85

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

FREIGHT RATES

Dec 5th, 2022		CFR Qingdao, USD/dry tonne							Dec 2nd, 2022				FREIGHT RATES - DRY BULK US\$/wet tonne			
Index	Fe Content	August	September	October	November	MTD	QTD	YTD	Route	Designation	Change	Change %	Low ²	High ²		
IOSI62	62% Fe Fines	110.64	101.12	95.80	93.05	100.37	102.20	123.27	W. Australia - Qingdao	C5	8.13	-0.22	-2.58%	3.57	16.77	
IOSI65	65% Fe Fines	112.53	111.57	106.70	102.40	110.89	113.48	142.07	Tubarao - Qingdao	C3	19.57	-0.08	-0.42%	6.70	36.40	

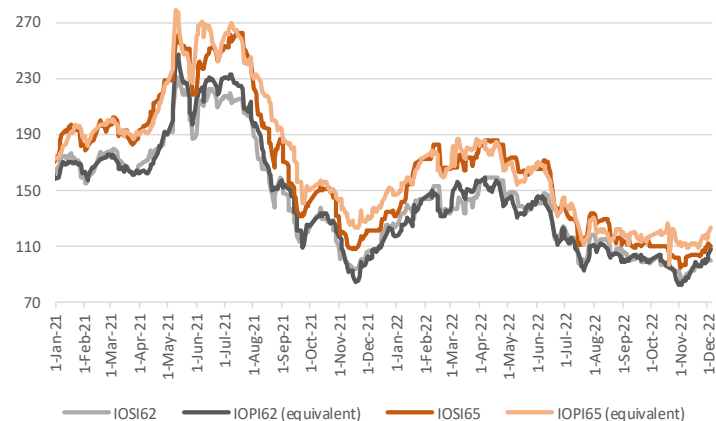
IRON ORE PORT LUMP INDEX MONTHLY, QUARTERLY AND YEAR-TO-DATE AVERAGES

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 5th, 2022		PORT STOCK INDEX (RMB/WT)		Dec 5th, 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	-149	-18.28%	IOSI65	65% Fe Fines	9.50	9.49%
IOPI65	65% Fe Fines	112	13.74%				

IRON ORE INDEX COMPARISONS (USD/DMT)



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



IRON ORE BRAND SPOT PRICE ASSESSMENTS

Dec 5th, 2022				Dec 5th, 2022			
PORT STOCK INDEX (RMB/WT)				SEABORNE INDEX (USD/DMT)			
	Price	Change	Diff to IOPI62		Price	Change	Diff to IOSI62
Roy Hill	758	23	-57	Roy Hill	95.60	-1.00	-4.50
SIMEC Fines	686	23	-129	SIMEC Fines	92.10	-1.00	-8.00
PB Fines	784	23	-31	PB Fines	96.35	-1.00	-3.75
Newman Fines	783	23	-32	Newman Fines	99.25	-1.00	-0.85
MAC Fines	765	23	-50	MAC Fines	96.35	-1.00	-3.75
Jimblebar Blended Fines	679	23	-136	Jimblebar Blended Fines	88.75	-1.00	-11.35
Carajas Fines	995	23	180	Carajas Fines	129.65	-1.00	29.55
Brazilian SSF	778	24	-37	Brazilian SSF	103.85	-1.00	3.75
Brazilian Blend Fines	797	23	-18	Brazilian Blend Fines	105.50	-1.00	5.40
RTX Fines	698	23	-117	RTX Fines	90.00	-1.00	-10.10
West Pilbara Fines	727	23	-88	West Pilbara Fines	94.35	-1.00	-5.75

Dec 5th, 2022			
PORT STOCK INDEX (RMB/WT)			
	Price	Change	Diff to IOPI58
SSF	666	0	0
FMG Blended Fines	674	0	8
Robe River	675	0	9
Western Fines	677	0	11
Atlas Fines	672	0	6
Yandi	660	0	-6

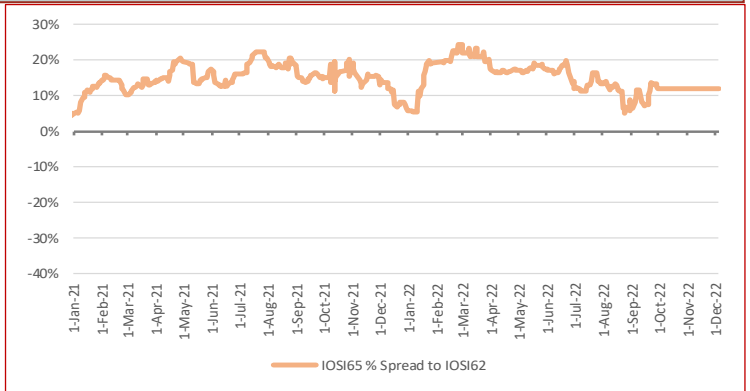
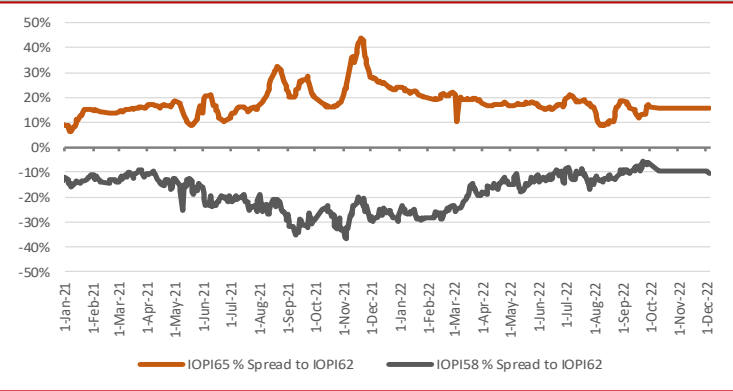
IRON ORE INDEX NORMALISATION DIFFERENTIALS

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%	9.00	0.00	1% Fe	High Grade Fe 60 - 63%	1.00	0.25
	High Grade Fe 63 - 64%	5.00	0.00		High Grade Fe 63 - 64%	2.50	-0.25
	High Grade Fe 64 - 65%	5.00	0.00		High Grade Fe 64 - 65%	2.50	-0.25
	High Grade Fe 65 - 65.5%	5.00	0.00		High Grade Fe 65 - 65.5%	2.50	-0.25
1% Alumina	Low Grade Fe	15.00	-1.00	1% Alumina	High Fe Grade Al <2.25%	2.75	0.00
	High Fe Grade Al <2.25%	48.00	-2.00		High Fe Grade Al 2.25-4%	0.25	0.00
	High Fe Grade Al 2.25-4%	9.00	0.00				
	Low Fe Grade Al <2.25%	43.00	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	0.00		High Fe Grade Si 4 - 6.5%	0.25	0.00
0.01% Phosphorus	High Fe Grade Si 4-6.5%	22.00	-1.00	0.01% Phosphorus	High Fe Grade 0.09%<P<0.115%	2.75	-0.25
	Low Fe Grade	5.00	0.00		High Fe Grade 0.115%<P<0.15%	2.25	-0.25
	High Fe Grade 0.09%<P<0.115%	5.00	0.00		Low Fe Grade 0.09%<P<0.1%	7.00	2.00

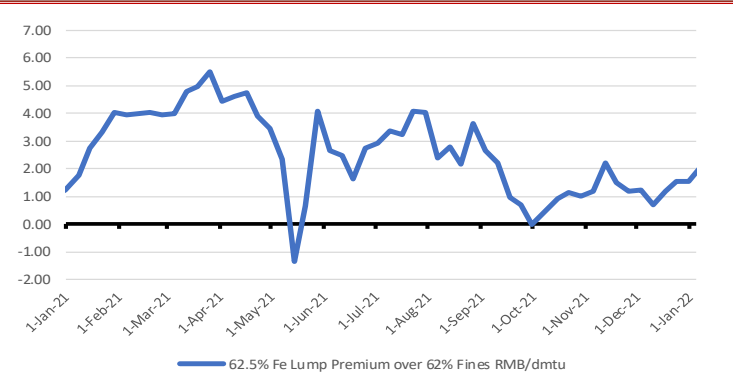
Port Stock Price Differentials to Qingdao Port for PB Fines (RMB/wet tonne)

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

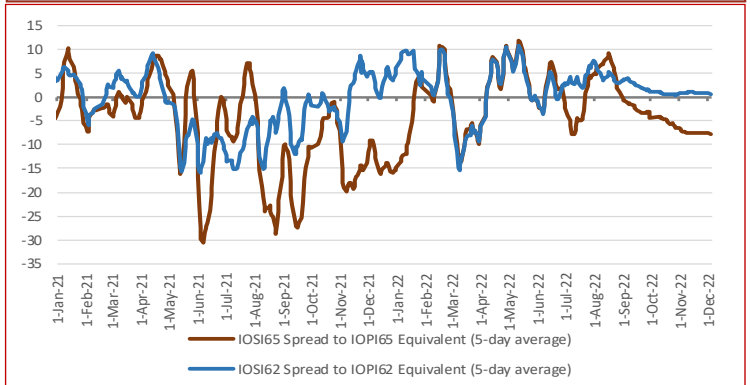
IRON ORE INDEX PREMIUMS/DISCOUNTS



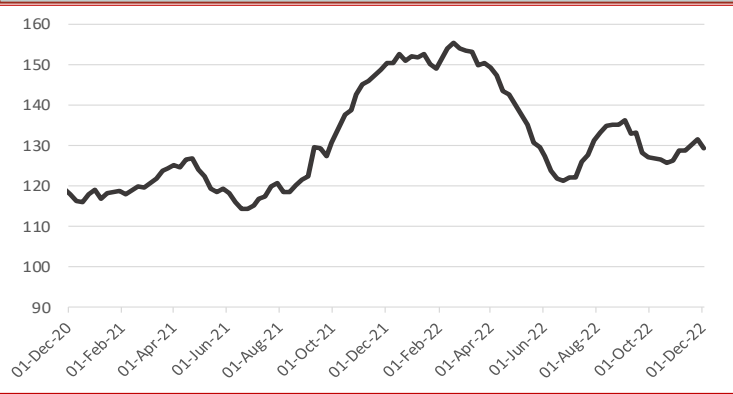
WEEKLY IRON ORE PORT STOCK LUMP PREMIUM (RMB/DMTU)



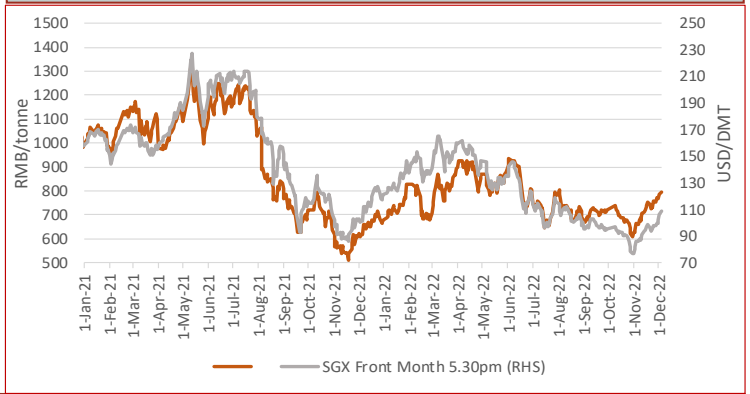
IRON ORE SEABORNE TO PORT STOCK PRICE SPREADS (USD/DMT)



TOTAL IRON ORE INVENTORIES AT CHINA PORTS (MILLION TONNES)



FUTURE TRADING—FRONT MONTH CLOSING PRICE



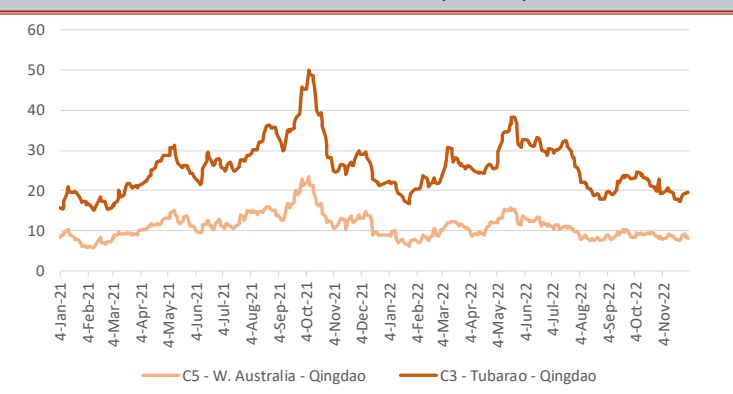
IRON ORE PORT INVENTORIES (MILLION TONNES)

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

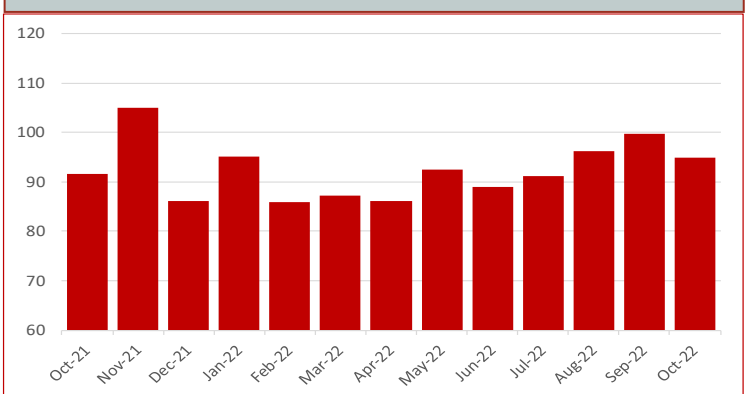
IRON ORE FUTURES CONTRACTS

Closing Date	DCE (RMB/WMT)			SGX (USD/DMT)		
	Dec 5th, 3pm close			Dec 5th, 5:30pm		
Contract	I2301	Change	Change %	Jan. 23	Change	Change %
Closing Price	795.50	8.00	1.02%	108.85	3.30	3.13%
Vol traded ('000 lots)	53.23	-3.65	-6.41%	7.57	5.71	305.90%
Open positions ('000 lots)	49.06	-4.89	-9.06%	30.15	4.39	17.04%
Day Low	782.0	18.00	2.36%	105.40	3.15	3.08%
Day High	808.0	15.50	1.96%	109.15	2.50	2.34%

DRY BULK FREIGHT RATES (USD/MT)



TOTAL CHINA IRON ORE IMPORT VOLUMES (MILLION TONNES)



STEEL SPOT MARKET PRICES—CHINA

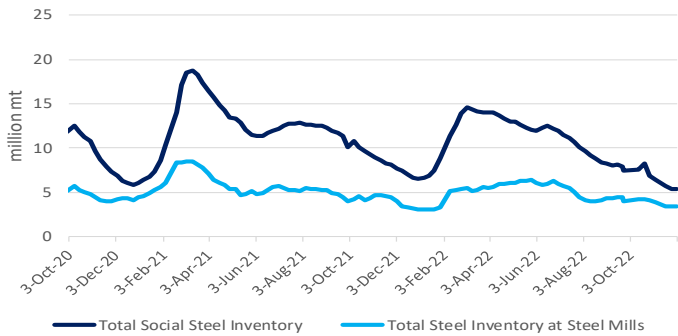
Product	2022/12/2	Change	Change %
ReBar HRB400 φ18mm	3,790	10	0.26%
Wirerod Q300 φ6.5mm	4,260	-30	-0.70%
HRC Q235/SS400 5.5mm*1500*C	3,940	60	1.55%
CRC SPCC/ST12 1.0mm*1250*2500	4,370	30	0.69%
Medium & Heavy Plate Q235B 20mm	3,920	30	0.77%
GI ST02Z 1.0mm*1000*C	4,640	10	0.22%
Colour Coated Plate	7,450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

CHINESE STEEL MILL PROFITABILITY

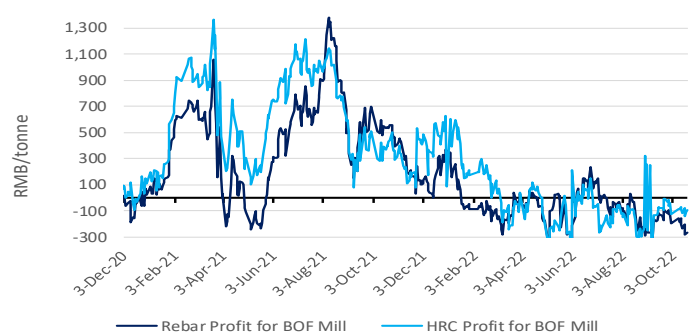
SMM Tracking of Steel Mill P&L - Rebar and Hot-rolled Coil (RMB/tonne)			
Category	Price	Change (WoW)	Note
MMi (Fe 62%), USD/mt excluding tax	101.65	5	Mmi CFR Equivalent index for 1st Feb
Coke	2,850	0	2nd grade met coke, Tangshan, incl. tax
Steel Scrap	2,910	0	steel scrap (6mm) in Zhangjiagang, ext. 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

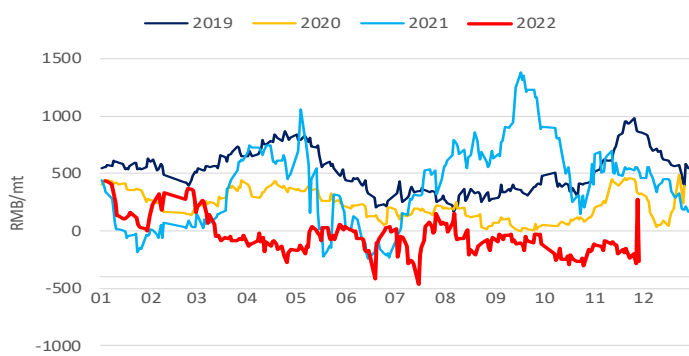
CHINESE STEEL INVENTORIES



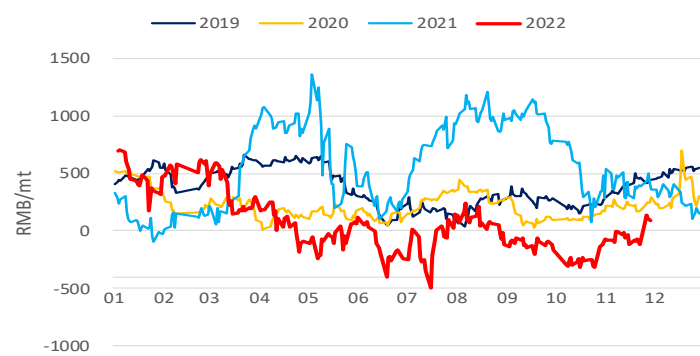
CHINESE STEEL MILL PROFITABILITY



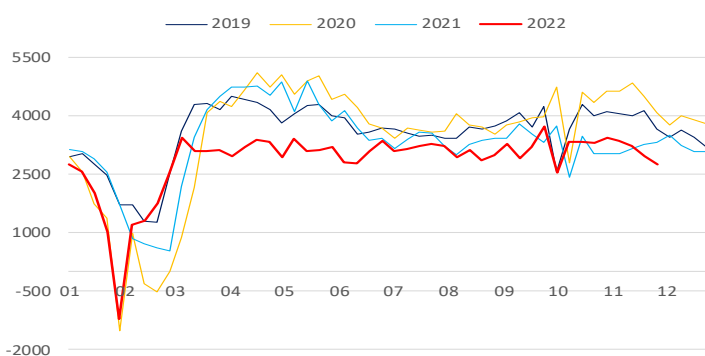
CHINESE STEEL MILL PROFITABILITY—Rebar



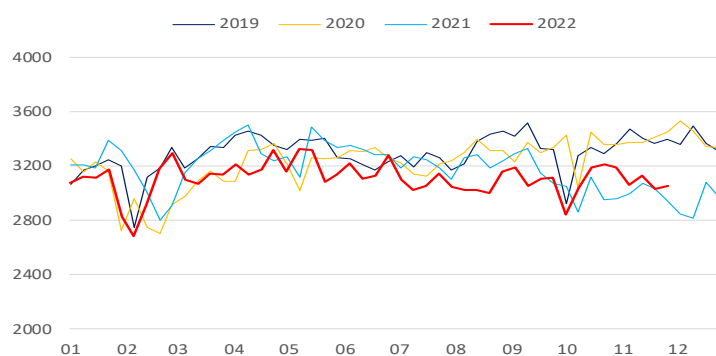
CHINESE STEEL MILL PROFITABILITY—Hot-rolled Coil



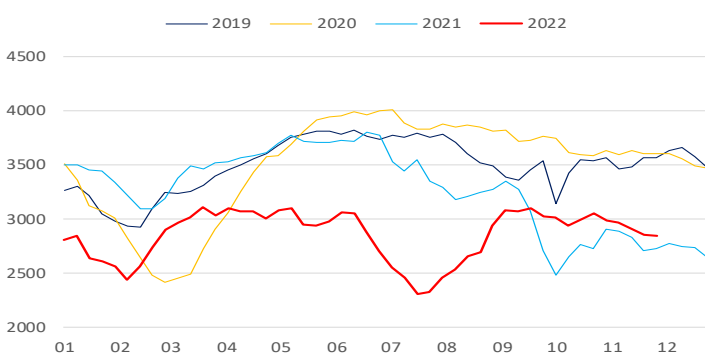
CHINESE STEEL CONSUMPTION—Rebar



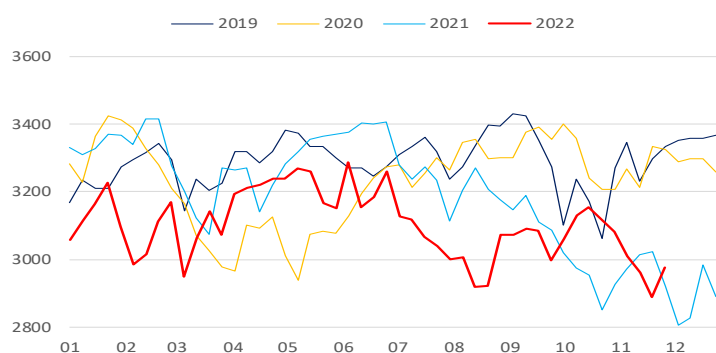
CHINESE STEEL CONSUMPTION—Hot-rolled Coil



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	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: www.mmiprices.com
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					
Dec 5th, 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 5th, 2022	Specifications applied for 58% brand assessments						Specifications applied for 58% brand assessments				
	Fe	Alumina	Silica	Phos	Moisture		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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