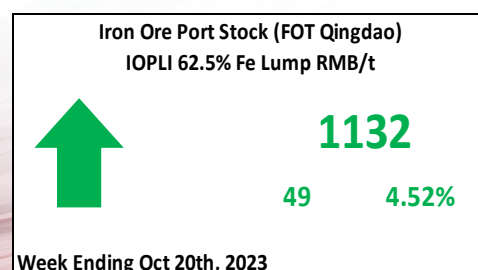
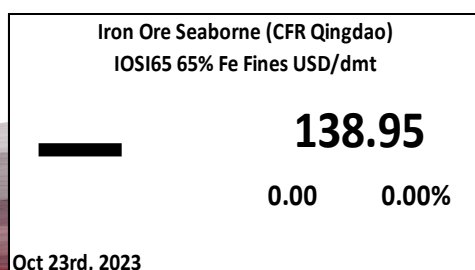
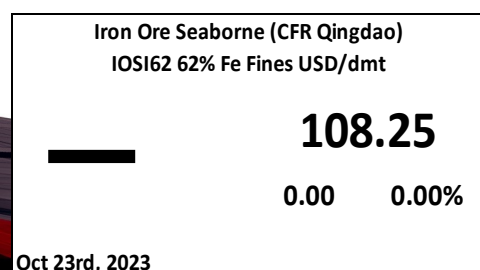
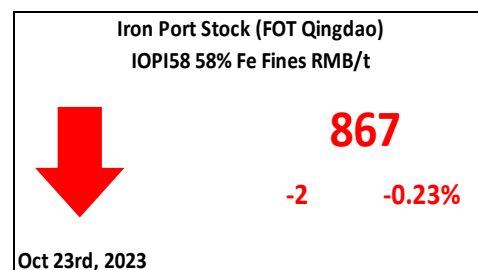
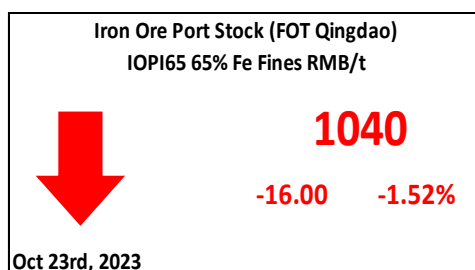
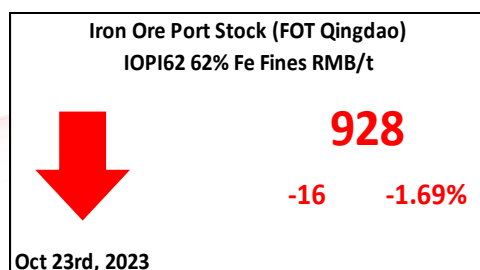


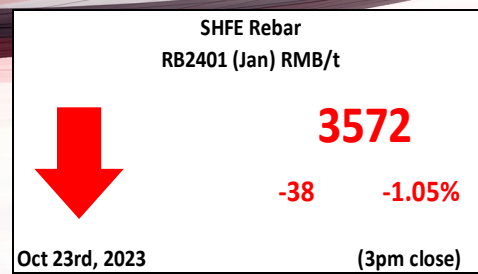
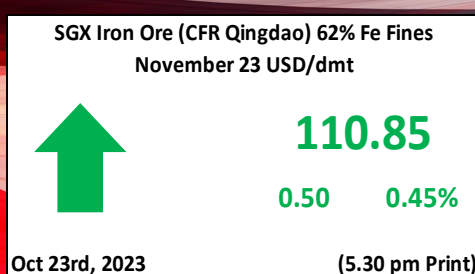
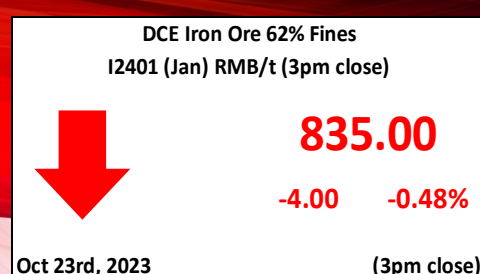


MMi Dashboard

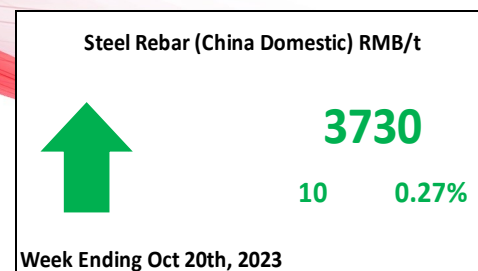
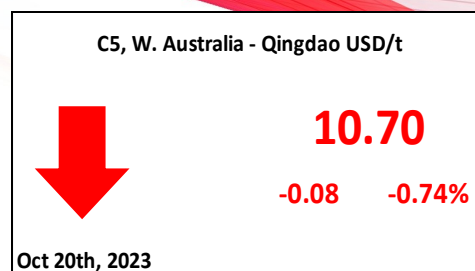
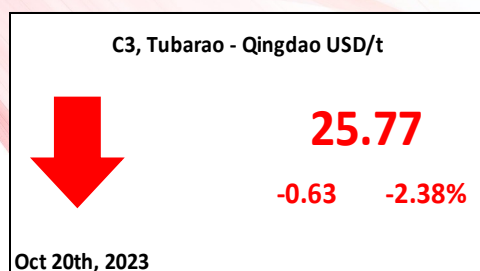
Iron Ore Price Indices



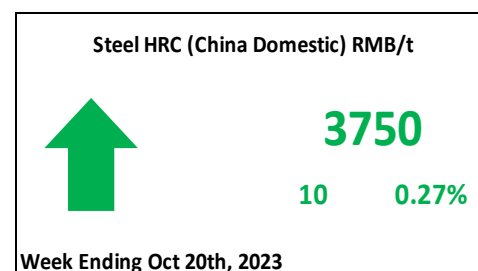
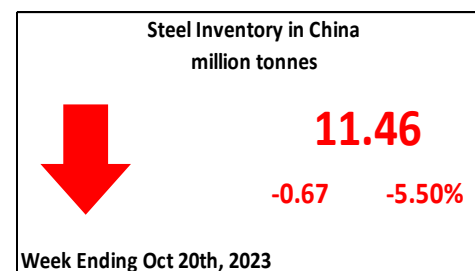
Exchange Traded Contracts



Freight Rates



Inventory Levels



IRON ORE PORT STOCK INDEX (IOPI)

Oct 23rd, 2023		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	928	-16.0	-1.69%	869	880	858	892	120.59	-2.14	-1.7%	120.06	120.58	117.93	122.93
IOPI58	58% Fe Fines	867	-2.0	-0.23%	813	798	761	793	113.65	-0.27	-0.2%	113.29	110.17	105.29	110.04
IOPI65	65% Fe Fines	1040	-16.0	-1.52%	981	992	970	1003	135.59	-2.14	-1.6%	136.05	136.43	133.84	138.73

IRON ORE SEABORNE INDEX (IOSI)

MARKET COMMENTARY

Oct 23rd, 2023		CFR Qingdao, USD/dry tonne							DCE iron ore futures declined by 2.45 % today, the main contract closed at 835. The steel mills are active to purchase. The overall trading sentiment of the market is less. PBF at Shandong port deal 898 yuan/mt. PBF at Tangshan port deal 990 yuan/mt. Yesterday, it was reported that Tangshan blast furnace enterprises have limited the production of sintering machines by 30%, and entered the heating season in the fourth quarter. Environmental protection requirements have gradually been stricter in the same period of previous years, but it does not affect blast furnace production. Therefore, this news mainly affects the amount of coarse powder used, and blocks and balls play a certain substitute role. Fundamentally speaking, the total global iron ore shipment this week was 31.75 million tons, a decrease of 4% compared to the previous week. The total arrival of iron ore in China was 27.597 million tons, an increase of 13.4% compared to the previous week. However, it is difficult for steel mills to improve operating rates and blast furnace capacity utilization due to poor profits, resulting in a relaxed overall supply and demand pattern. Last week's macro news and demand for finished products drove iron ore prices higher. As sentiment digested and iron ore valuations returned to rationality, and as demand gradually turned light, downstream capacity and willingness to undertake high prices may decline. Overall, iron ore prices may move downwards this week.
Index	Fe Content	Price	Change	Change %	MTD	YTD	Low ²	High ²	
IOSI62	62% Fe Fines	108.25	0.00	0.00%	113.24	113.24	83.90	146.75	
IOSI65	65% Fe Fines	138.95	0.00	0.00%	124.70	124.70	94.45	147.55	

IRON ORE PORT LUMP INDEX (IOPLI)

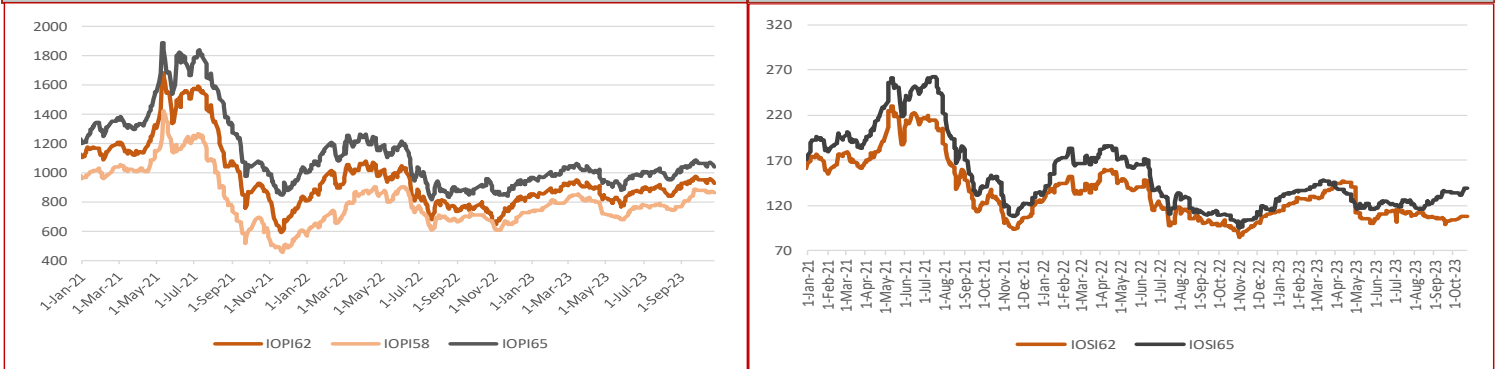
Week Ending Oct 20th, 2023		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne ³						
Index	Fe Content	Price	W-o-W	Change %	MTD	YTD	Low ²	High ²	Price	W-o-W	Change %	MTD	YTD	Low ²	High ²
IOPLI62	62.5% Fe Lump	1132	49	4.5%	944	1019	770	1132	141.75	6.26	4.62%	120.47	134.93	94.72	141.75

IRON ORE DOMESTIC CONCENTRATE SPOT PRICE ASSESSMENTS AND COMPOSITE INDEX

Week Ending Oct 20th, 2023				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	1051	-2.1%	779	1645	146.39	-2.07%	110.31	255.69
Hebei	Qian'an	65% Fe Concentrate	Dry	1105	1.4%	780	1630	153.91	1.35%	110.51	251.57
Liaoning	Anshan	65% Fe Concentrate	Wet	805	-1.2%	620	1310	112.12	-1.25%	87.40	202.32
Shandong	Zibo	65% Fe Concentrate	Dry	1124	-2.6%	800	1752	156.56	-2.62%	117.19	272.32
Week Ending Oct 20th, 2023				This week	Change %	Low ²	High ²	1 Exchange rate applied: RMB/USD = 6.7522 2 Last 12 months			
China Mines Concentrate Composite Index RMB/WT				984.27	-0.73%	706.36	1511.22	3 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

Oct 23rd, 2023		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne						
Index	Fe Content	June	July	August	September	MTD	QTD	YTD	June	July	August	September	MTD	QTD	YTD
IOPI62	62% Fe Fines	863	896	873	945	869	881	880	112.38	116.58	113.28	122.79	120.06	120.90	120.58
IOPI58	58% Fe Fines	748	777	759	838	813	792	798	97.98	101.68	99.13	109.67	113.29	109.35	110.17
IOPI65	65% Fe Fines	975	1008	985	1057	981	993	992	127.41	131.57	128.31	137.74	136.05	136.72	136.43

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

FREIGHT RATES

Oct 23rd, 2023		CFR Qingdao, USD/dry tonne							Oct 20th, 2023						
Index	Fe Content	June	July	August	September	MTD	QTD	YTD	Route	Designation	Change	Change %	Low ²	High ²	
IOSI62	62% Fe Fines	110.54	108.57	109.02	104.25	112.14	112.31	113.24	W. Australia - Qingdao	C5	10.70	-0.08	-0.74%	3.57	16.77
IOSI65	65% Fe Fines	135.30	147.39	119.61	132.40	122.86	123.87	124.70	Tubarao - Qingdao	C3	25.77	-0.63	-2.38%	6.70	36.40

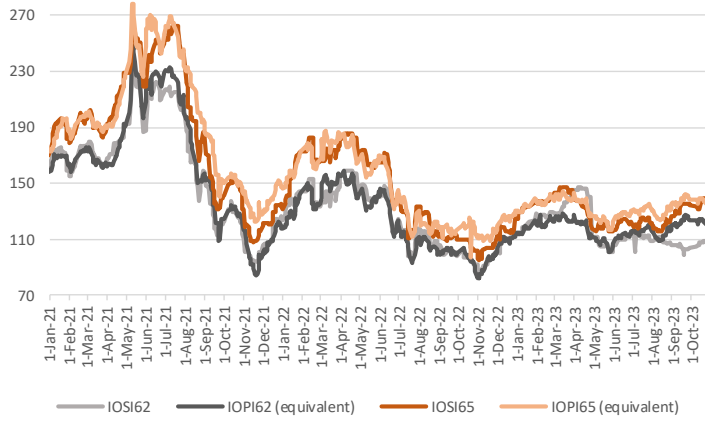
IRON ORE PORT LUMP INDEX MONTHLY, QUARTERLY AND YEAR-TO-DATE AVERAGES

Week Ending Oct 20th, 2023		FOT Qingdao (inc. 13% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 13% VAT), USD/dry tonne ¹						
Index	Fe Content	June	July	August	September	MTD	QTD	YTD	June	July	August	September	MTD	QTD	YTD
IOPLI62	62.5% Fe Lump	969	980	951	1043	933	941	1017	121.33	122.51	118.96	130.25	119.96	120.46	134.98

IRON ORE INDEX PREMIUMS/DISCOUNTS

Oct 23rd, 2023		PORT STOCK INDEX (RMB/WT)		Oct 23rd, 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	-61	-6.57%	IOSI65	65% Fe Fines	30.70	28.36%
IOPI65	65% Fe Fines	112	12.07%				

IRON ORE INDEX COMPARISONS (USD/DMT)



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



IRON ORE BRAND SPOT PRICE ASSESSMENTS

Oct 23rd, 2023	PORT STOCK INDEX (RMB/WT)			Oct 23rd, 2023	SEABORNE INDEX (USD/DMT)		
	Price	Change	Diff to IOPI62		Price	Change	Diff to IOSI62
Roy Hill	871	-16	-57	Roy Hill	103.75	0.00	-4.50
SIMEC Fines	802	-16	-126	SIMEC Fines	100.25	0.00	-8.00
PB Fines	895	-16	-33	PB Fines	104.50	0.00	-3.75
Newman Fines	897	-16	-31	Newman Fines	107.40	0.00	-0.85
MAC Fines	878	-16	-50	MAC Fines	104.50	0.00	-3.75
Jimblebar Blended Fines	793	-17	-135	Jimblebar Blended Fines	96.90	0.00	-11.35
Carajas Fines	1109	-16	181	Carajas Fines	137.80	0.00	29.55
Brazilian SSF	893	-17	-35	Brazilian SSF	112.00	0.00	3.75
Brazilian Blend Fines	909	-16	-19	Brazilian Blend Fines	113.65	0.00	5.40
RTX Fines	811	-16	-117	RTX Fines	98.15	0.00	-10.10
West Pilbara Fines	839	-16	-89	West Pilbara Fines	102.50	0.00	-5.75
Oct 23rd, 2023	PORT STOCK INDEX (RMB/WT)						
	Price	Change	Diff to IOPI58				
SSF	867	-2	0				
FMG Blended Fines	878	-2	11				
Robe River	879	-2	12				
Western Fines	882	-2	15				
Atlas Fines	875	-2	8				
Yandi	859	-2	-8				

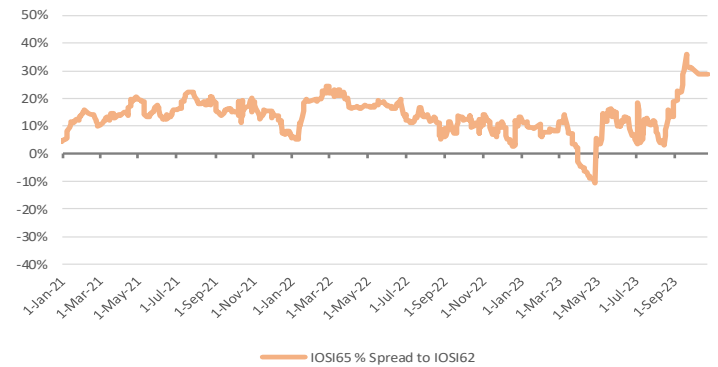
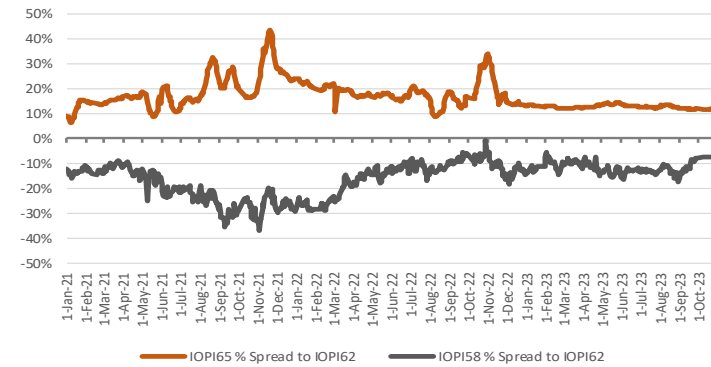
IRON ORE INDEX NORMALISATION DIFFERENTIALS

Port Stock Index Product Differentials (RMB/wet tonne)				Seaborne Index Product Differentials (USD/dry tonne)			
	Applicable range	Value	Change		Applicable range	Value	Change
1% Fe	High Grade Fe 60 - 63%	5.00	0.00	1% Fe	High Grade Fe 60 - 63%	5.25	0.25
	High Grade Fe 63 - 64%	10.00	4.00		High Grade Fe 63 - 64%	2.75	0.00
	High Grade Fe 64 - 65%	10.00	4.00		High Grade Fe 64 - 65%	2.75	0.00
	High Grade Fe 65 - 65.5%	10.00	4.00		High Grade Fe 65 - 65.5%	2.75	0.00
1% Alumina	Low Grade Fe	15.00	-1.00	1% Alumina	High Fe Grade Al <2.25%	3.00	0.75
	High Fe Grade Al <2.25%	10.00	-5.00		High Fe Grade Al 2.25-4%	0.75	0.00
	High Fe Grade Al 2.25-4%	5.00	0.00				
	Low Fe Grade Al <2.25%	5.00	0.00				
1% Silica	Low Fe Grade Al 2.25-4%	12.00	-8.00	1% Silica	High Fe Grade Si <4%	0.25	0.00
	High Fe Grade Si <4%	12.00	1.00		High Fe Grade Si 4 - 6.5%	2.75	-0.25
	High Fe Grade Si 4 - 6.5%	5.00	0.00				
	Low Fe Grade	5.00	-2.00				
0.01% Phosphorus	High Fe Grade 0.09%<P<0.115%	5.00	0.00	0.01% Phosphorus	High Fe Grade 0.09%<P<0.115%	1.50	-0.50
	High Fe Grade 0.115%<P<0.15%	5.00	0.00		High Fe Grade 0.115%<P<0.15%	4.00	-0.50
	Low Fe Grade 0.09%<P<0.1%	5.00	0.00				

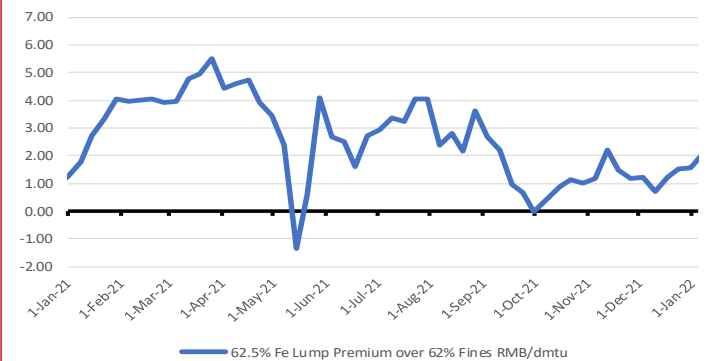
Port Stock Price Differentials to Qingdao Port for PB Fines (RMB/wet tonne)

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	-15.00	Jingtang	-5.00	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	-30.00	0.00

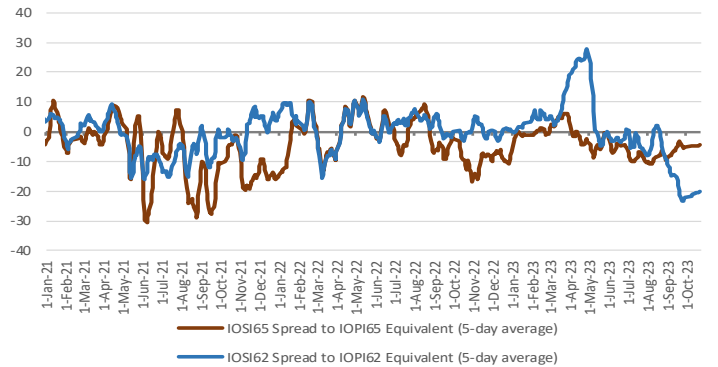
IRON ORE INDEX PREMIUMS/DISCOUNTS



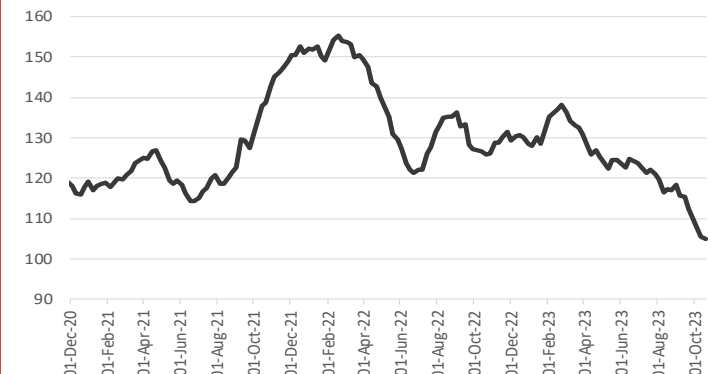
WEEKLY IRON ORE PORT STOCK LUMP PREMIUM (RMB/DMTU)



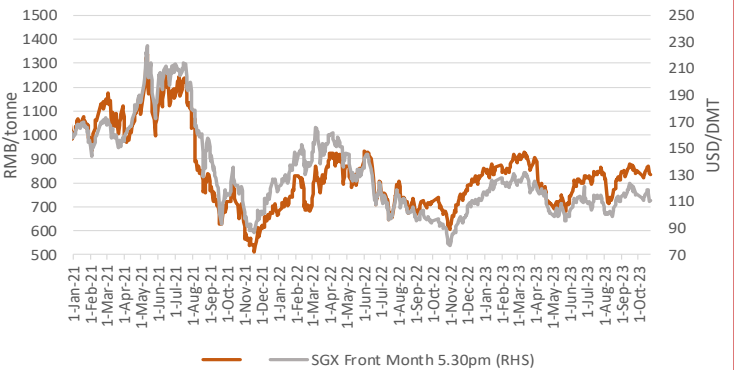
IRON ORE SEABORNE TO PORT STOCK PRICE SPREADS (USD/DMT)



TOTAL IRON ORE INVENTORIES AT CHINA PORTS (MILLION TONNES)



FUTURE TRADING—FRONT MONTH CLOSING PRICE



IRON ORE PORT INVENTORIES (MILLION TONNES)

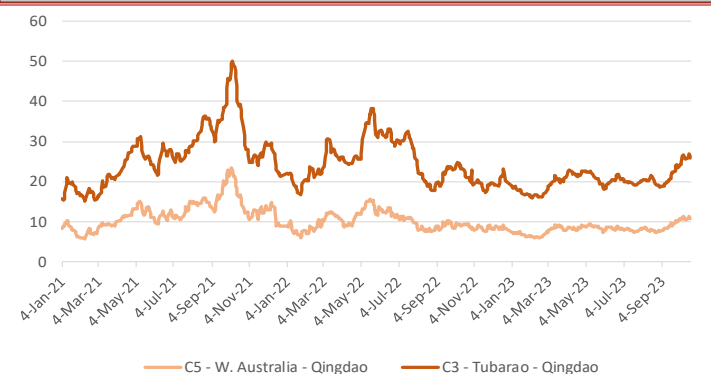
Week Ending Oct 20th, 2023

Province	This week	Change %	Low ²	High ²
Jingtang	8.70	-10.31%	8.70	19.20
Qingdao	23.88	0.93%	9.41	26.24
Caofeidian	9.58	13.78%	8.42	16.29
Tianjin	6.49	-2.26%	6.49	12.97
Rizhao	12.20	5.90%	9.44	19.26
Total (35 Ports)	105.01	-0.52%	98.80	155.39

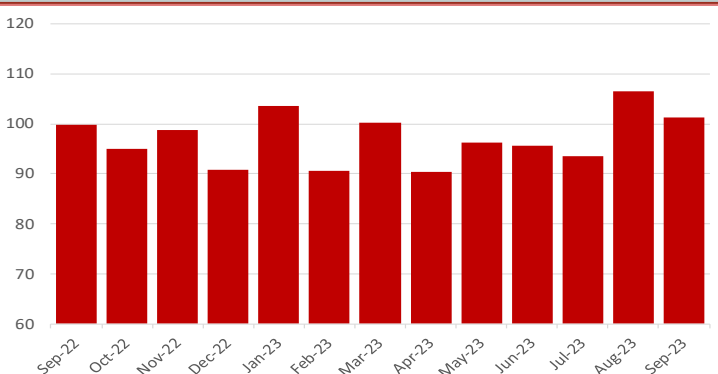
IRON ORE FUTURES CONTRACTS

Closing Date	DCE (RMB/WMT)			SGX (USD/DMT)		
	Oct 23rd, 3pm close			Oct 23rd, 5:30pm		
Contract	I2401	Change	Change %	Nov. 23	Change	Change %
Closing Price	835.00	-4.00	-0.48%	110.85	0.50	0.45%
Vol traded ('000 lots)	55.13	-18.25	-24.87%	7.43	-1.92	-20.50%
Open positions ('000 lots)	80.10	-0.99	-1.22%	38.29	0.70	1.87%
Day Low	825.5	-11.50	-1.37%	110.70	-1.50	-1.34%
Day High	842.5	-31.00	-3.55%	113.55	-3.70	-3.16%

DRY BULK FREIGHT RATES (USD/MT)



TOTAL CHINA IRON ORE IMPORT VOLUMES (MILLION TONNES)



STEEL SPOT MARKET PRICES—CHINA

Steel Spot Market RMB/tonne

Product	2023/10/20	Change	Change %
ReBar HRB400 ϕ 18mm	3,730	10	0.27%
Wirerod Q300 ϕ 6.5mm	3,930	10	0.26%
HRC Q235/SS400 5.5mm*1500*C	3,750	10	0.27%
CRC SPCC/ST12 1.0mm*1250*2500	4,800	-50	-1.03%
Medium & Heavy Plate Q235B 20mm	3,760	0	0.00%
GI ST02Z 1.0mm*1000*C	5,050	-40	-0.79%
Colour Coated Plate	6,950	0	0.00%

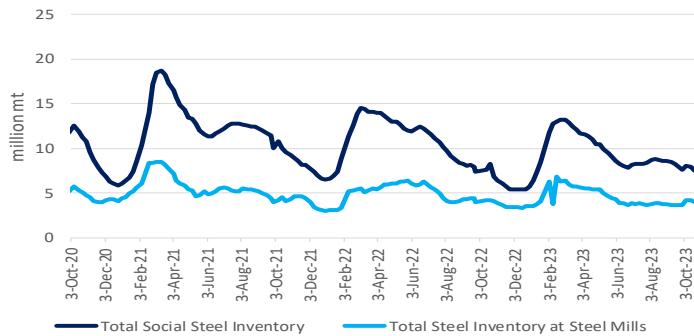
CHINESE STEEL MILL PROFITABILITY

SMM Tracking of Steel Mill P&L - Rebar and Hot-rolled Coil (RMB/tonne)

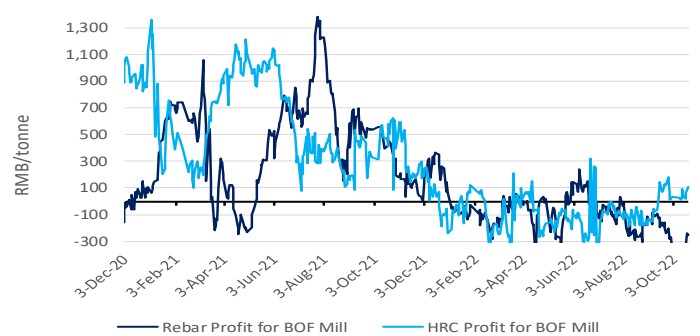
Category	Price	Change (WoW)	Note
MMi (Fe 62%), USD/mt excluding tax	107.83	5	Mmi CFR Equivalent index for 1st Feb
Coke	2,560	110	2nd grade met coke, Tangshan, incl. tax
Steel Scrap	2,890	-80	steel scrap (6mm) in Zhangjiagang, excl. tax
Billet Cost	3,254	-2	Q234, incl. tax
Rebar cost - Blast furnace	3,903	-3	calculated based on theoretical weight, incl. tax
Rebar profit - Blast furnace	-263	-78	based on Shanghai prices, incl. tax
Hot-rolled coil cost - Blast furnace	3,961	7	based on actual weight, incl. tax
Hot-rolled coil profit - Blast furnace	-221	-137	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

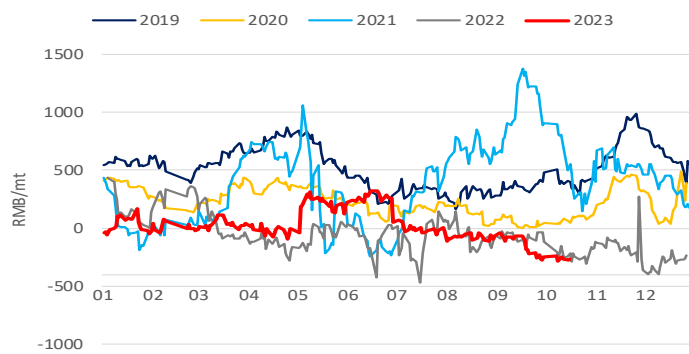
CHINESE STEEL INVENTORIES



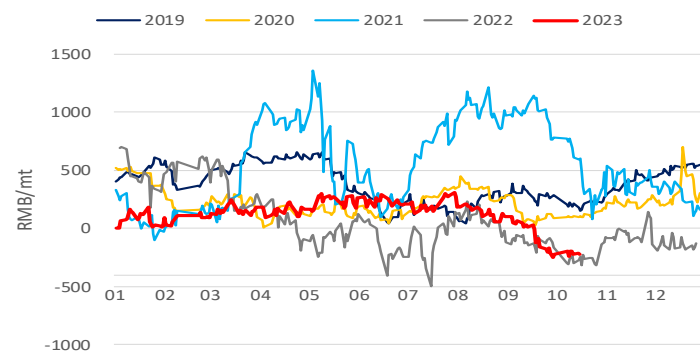
CHINESE STEEL MILL PROFITABILITY



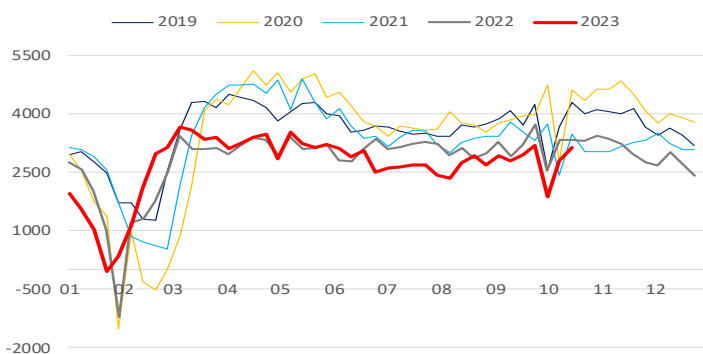
CHINESE STEEL MILL PROFITABILITY—Rebar



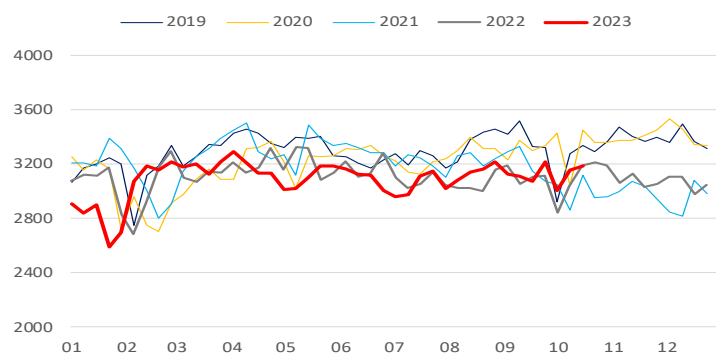
CHINESE STEEL MILL PROFITABILITY—Hot-rolled Coil



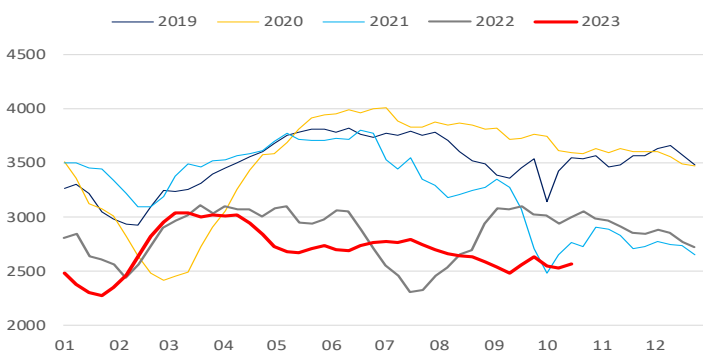
CHINESE STEEL CONSUMPTION—Rebar



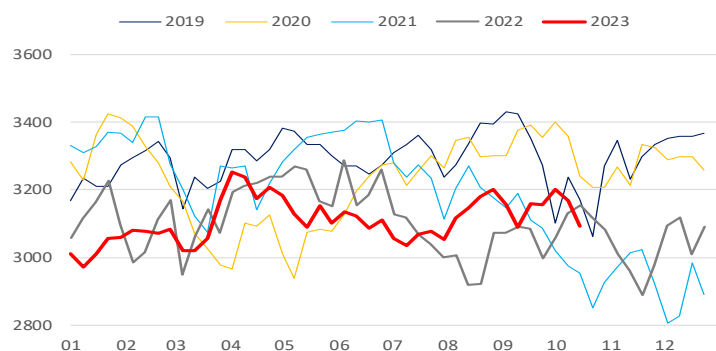
CHINESE STEEL CONSUMPTION—Hot-rolled Coil



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
Fe %	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
Alumina %	65.00	62.00	58.00	62.50	
Silica%	1.40	2.25	2.25	1.50	
Phosphorus %	1.50	4.00	5.50	3.50	
Sulphur %	0.06	0.09	0.05	0.08	
Moisture %	0.01	0.02	0.02	0.02	
	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*			
	62%	58%	65%
Port Index	0	0	0
Seaborne index	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					
Oct 23rd, 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%
Oct 23rd, 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	IOSI62	IRCN0034	
IOPI58	IRCNQ002	IRCNQ005	IOSI65	IRCN0035	
IOPI65	IRCNQ003	IRCNQ006			
IOPLI62	IRCN0036	IRCN0037			

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