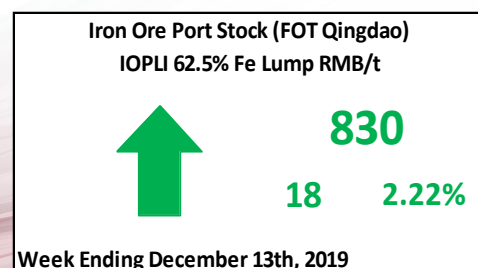
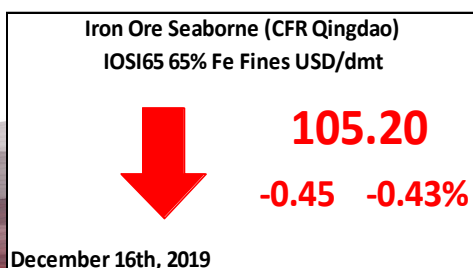
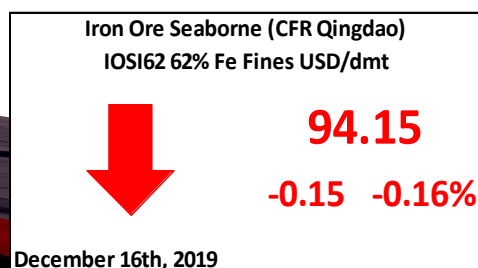
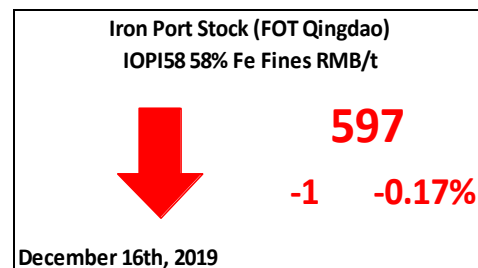
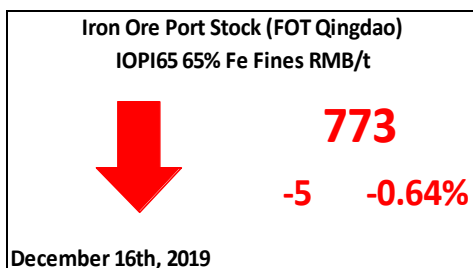
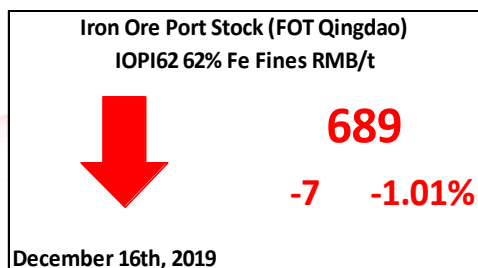


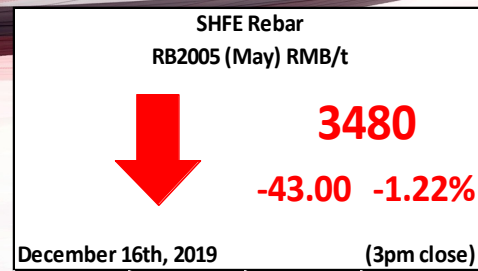
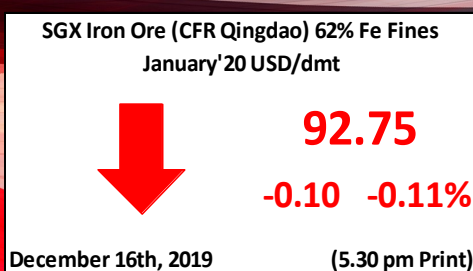
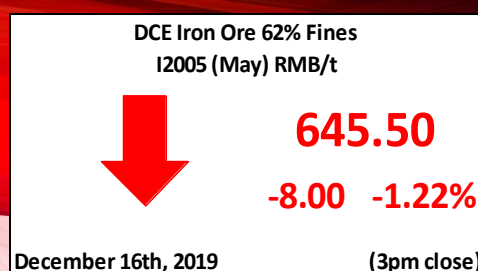


# MMi Dashboard

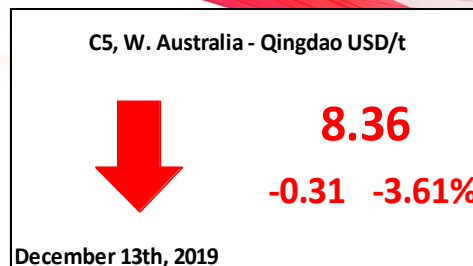
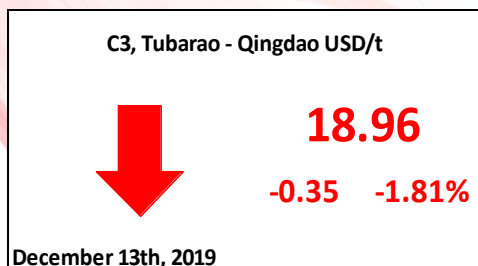
## Iron Ore Price Indices



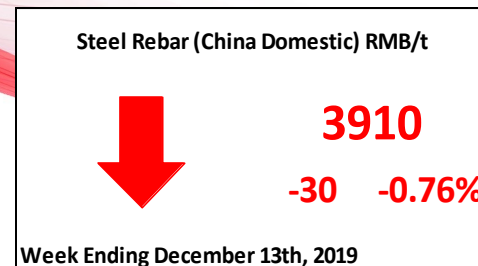
## Exchange Traded Contracts



## Freight Rates



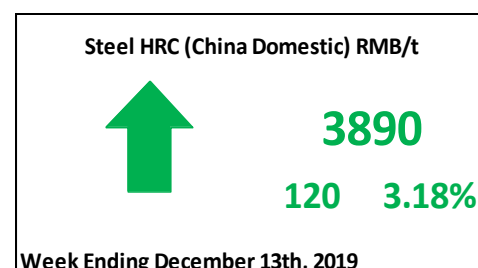
## Steel Price



## Inventory Levels



## Steel Price



## IRON ORE PORT STOCK INDEX (IOPI)

December 16th, 2019		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	689	-7	-1.0%	684	720	560	928	90.94	-0.65	-0.7%	89.82	95.91	72.34	126.12
IOPI58	58% Fe Fines	597	-1	-0.2%	588	630	387	823	79.14	0.13	0.2%	77.44	84.20	48.82	112.44
IOPI65	65% Fe Fines	773	-5	-0.6%	760	786	654	992	102.50	-0.33	-0.3%	100.15	105.18	85.47	135.34

## IRON ORE SEABORNE INDEX (IOSI)

## MARKET COMMENTARY

December 16th, 2019		CFR Qingdao, USD/dry tonne							A volatile trading day in both physical iron ore port stock and DCE iron ore futures markets. PBF traded at 665-668yuan/mt in Shandong, down 5-10yuan/mt over last Friday, whilst trading was restricted in Tangshan as deliveries are still not be allowed due to the alert for heavy pollution. Transactions between traders were active and as recent production limits in Tangshan, Anyang and Shanxi provinces turned out to be stricter than expected, some mills preferred to stand on the side-line for the time being. However, SMM believe iron ore prices could still be bullish around New Years, on account of mills restocking demands before the Chinese Lunar New Year holiday							
Index	Fe Content	Price	Change	Change %	MTD	YTD	Low <sup>2</sup>	High <sup>2</sup>								
IOSI62	62% Fe Fines	94.15	-0.15	-0.16%	92.45	94.05	70.95	127.50								
IOSI65	65% Fe Fines	105.20	-0.45	-0.43%	104.05	105.45	85.50	137.95								

## IRON ORE PORT LUMP INDEX (IOPLI)

Week Ending December 13th, 2019		FOT Qingdao (inc. 16% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 16% 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	830	18	2.2%	821	873	743	1051	102.42	2.35	2.35%	101.24	110.24	93.24	133.81

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

Week Ending December 13th, 2019				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	819	0.5%	651	1032	116.47	0.54%	94.55	150.03
Hebei	Qian'an	65% Fe Concentrate	Dry	840	1.2%	705	960	119.45	1.25%	102.39	139.35
Liaoning	Anshan	65% Fe Concentrate	Wet	650	0.0%	535	745	92.43	0.05%	77.39	104.66
Shandong	Zibo	65% Fe Concentrate	Dry	810	0.0%	740	1040	115.19	0.05%	107.44	151.33

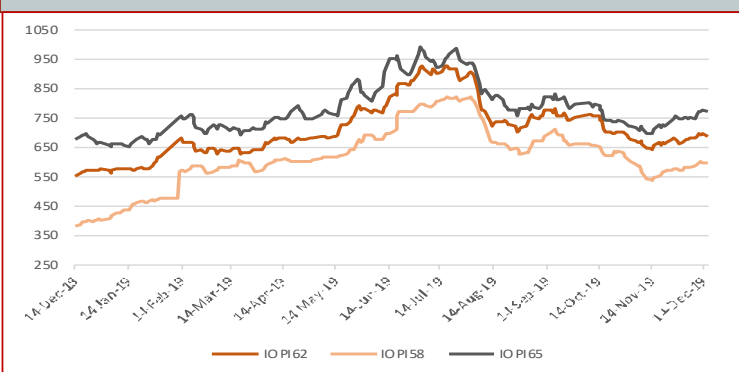
Week Ending December 13th, 2019

This week	Change %	Low <sup>2</sup>	High <sup>2</sup>
715.47	0.2%	609.04	859.50

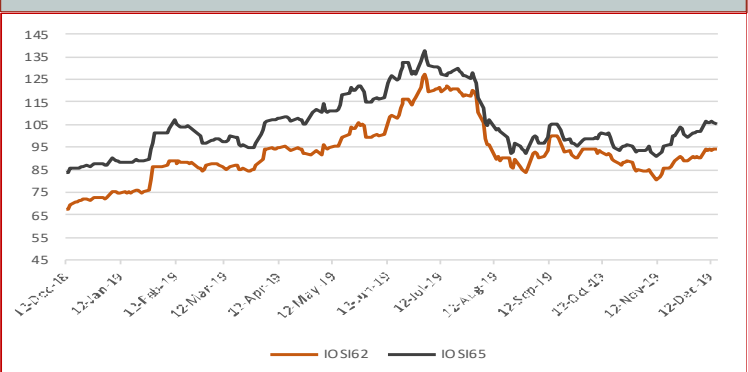
China Mines Concentrate Composite Index RMB/WT

<sup>1</sup> Exchange rate applied: RMB/USD = 6.9915 <sup>2</sup> Last 12 months  
<sup>3</sup> Weekly exchange rate applied: RMB/USD 7.0320

## 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

December 16th, 2019		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	759	758	721	665	684	689	720	123.29	100.18	94.29	87.30	89.82	90.37	95.91
IOPI58	58% Fe Fines	691	674	636	567	588	596	630	110.47	91.86	83.57	74.67	77.44	78.48	84.20
IOPI65	65% Fe Fines	823	803	758	723	760	744	786	129.53	108.92	99.32	95.29	100.15	97.81	105.18

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

## FREIGHT RATES

December 16th, 2019		CFR Qingdao, USD/dry tonne							December 13th, 2019						
Index	Fe Content	August	September	October	November	MTD	QTD	YTD	FREIGHT RATES - DRY BULK US\$/wet tonne						
Index	Fe Content	August	September	October	November	MTD	QTD	YTD	Route	Designation	Change	Change %	Low <sup>2</sup>	High <sup>2</sup>	
IOSI62	62% Fe Fines	92.61	93.76	90.81	85.83	92.45	89.21	94.05	W. Australia - Qingdao	C5	8.36	-0.31	-3.61%	4.39	11.42
IOSI65	65% Fe Fines	101.34	99.42	97.45	96.49	104.05	98.42	105.45	Tubarao - Qingdao	C3	18.96	-0.35	-1.81%	11.61	29.10

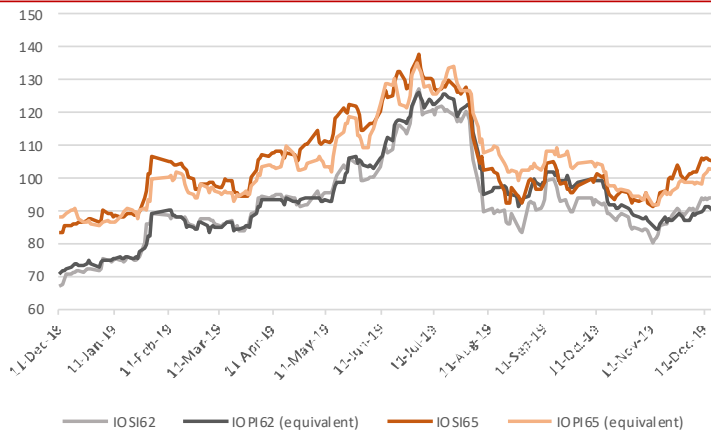
## IRON ORE PORT LUMP INDEX MONTHLY, QUARTERLY AND YEAR-TO-DATE AVERAGES

Week Ending December 13th, 2019		FOT Qingdao (inc. 16% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 16% VAT), USD/dry tonne <sup>1</sup>						
Index	Fe Content	August	September	October	November	MTD	QTD	YTD	May	June	July	November	MTD	QTD	YTD
IOPLI62	62.5% Fe Lump	870	803	829	794	821	810	873	132.99	108.80	98.44	97.89	101.24	99.72	110.24

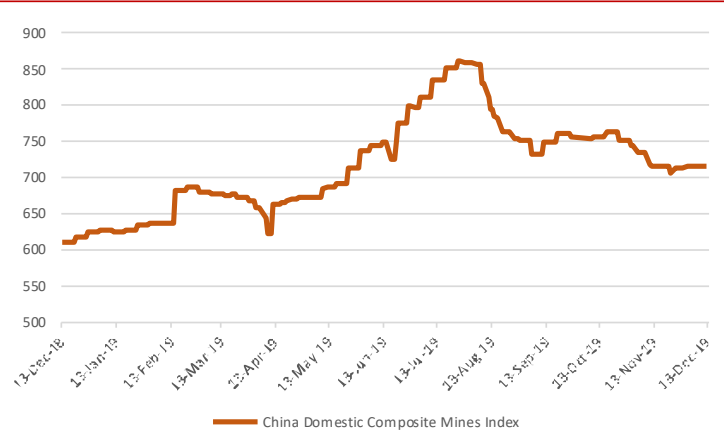
## IRON ORE INDEX PREMIUMS/DISCOUNTS

December 16th, 2019				December 16th, 2019			
PORT STOCK INDEX (RMB/WT)		SEABORNE INDEX (USD/DMT)		PORT STOCK INDEX (RMB/WT)		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	-92	-13.35%	IOSI65	65% Fe Fines	11.05	11.74%
IOPI65	65% Fe Fines	84	12.19%				

## IRON ORE INDEX COMPARISONS (USD/DMT)



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



## IRON ORE BRAND SPOT PRICE ASSESSMENTS

December 16th, 2019				December 16th, 2019			
PORT STOCK INDEX (RMB/WT)				SEABORNE INDEX (USD/DMT)			
	Price	Change	Diff to IOPI62		Price	Change	Diff to IO SI62
Roy Hill	654	-7	-35	Roy Hill	92.15	-0.14	-2.00
SIMEC Fines	629	-7	-60	SIMEC Fines	90.40	-0.14	-3.75
PB Fines	669	-6	-20	PB Fines	93.75	-0.06	-0.40
Newman Fines	692	-7	3	Newman Fines	94.80	-0.16	0.65
MAC Fines	665	-6	-24	MAC Fines	92.40	-0.04	-1.75
Jimblebar Blended Fines	602	-4	-87	Jimblebar Blended Fines	84.57	0.21	-9.58
Carajas Fines	783	-4	94	Carajas Fines	104.07	-0.92	9.92
Brazilian SSF	686	-3	-3	Brazilian SSF	94.15	-0.46	0.00
Brazilian Blend Fines	708	-5	19	Brazilian Blend Fines	95.02	-0.34	0.87
RTX Fines	619	-5	-70	RTX Fines	87.35	0.06	-6.80
West Pilbara Fines	656	-6	-33	West Pilbara Fines	91.70	-0.14	-2.45

December 16th, 2019			
PORT STOCK INDEX (RMB/WT)			
	Price	Change	Diff to IOPI58
SSF	568	-1	-29
FMG Blended Fines	606	-1	9
Robe River	576	-1	-21
Western Fines	559	-1	-38
Atlas Fines	548	-1	-49
Yandi	579	-3	-18

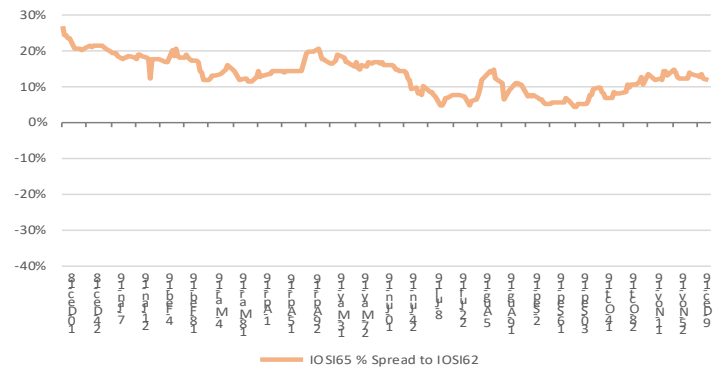
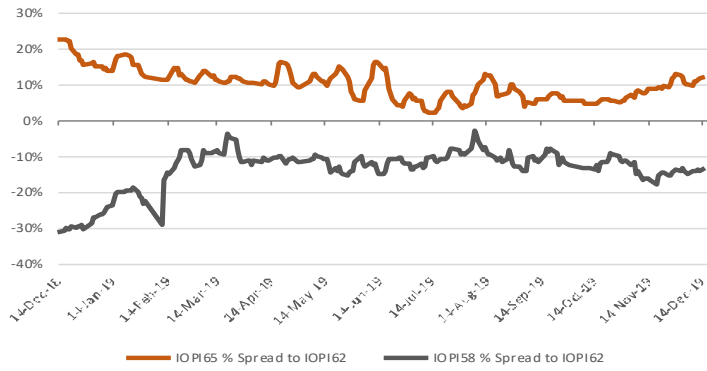
## IRON ORE INDEX NORMALISATION DIFFERENTIALS

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%	1.00	0.00	
	High Grade Fe 63 - 64%	9.00	0.00		High Grade Fe 63 - 64%	1.25	0.00	
	High Grade Fe 64 - 65%	9.00	0.00		High Grade Fe 64 - 65%	1.25	0.00	
	High Grade Fe 65 - 65.5%	9.00	0.00		High Grade Fe 65 - 65.5%	1.25	0.00	
	Low Grade Fe	10.00	0.00					
1% Alumina	High Fe Grade Al <2.25%	40.00	3.00	1% Alumina	High Fe Grade Al <2.25%	1.50	-0.25	
	High Fe Grade Al 2.25-4%	29.00	-3.00		High Fe Grade Al 2.25-4%	0.50	-0.25	
	Low Fe Grade Al <2.25%	19.00	-3.00					
	Low Fe Grade Al 2.25-4%	0.00	0.00					
1% Silica	High Fe Grade Si <4%	11.00	0.00	1% Silica	High Fe Grade Si <4%	2.25	-0.25	
	High Fe Grade Si 4-6.5%	27.00	0.00		High Fe Grade Si 4 - 6.5%	0.75	0.00	
0.01% Phosphorus	High Fe Grade 0.09%<P<0.115%	8.00	0.00	0.01% Phosphorus	High Fe Grade 0.09%<P<0.115%	0.00	0.00	
	High Fe Grade 0.115%<P<0.15%	5.00	0.00		High Fe Grade 0.115%<P<0.15%	2.50	0.00	
	Low Fe Grade 0.09<P<0.1%	2.00	0.00					

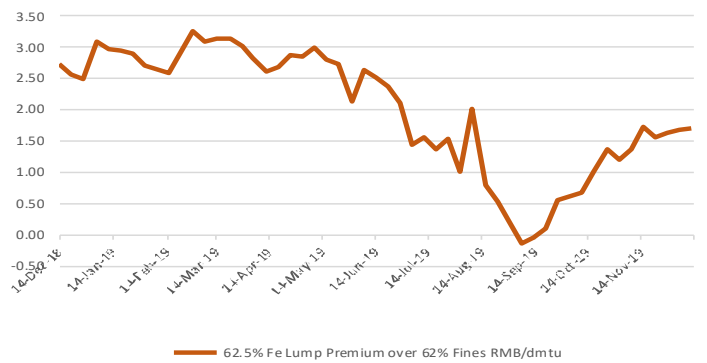
## Port Stock Price Differentials to Qingdao Port for PB Fines (RMB/wet tonne)

Port	Value	Change	Port	Value	Change	Port	Value	Change	Port	Value	Change
Bayuquan	-50.00	0.00	Fangcheng	-5.00	0.00	Lanshan	0.00	0.00	Qingdao	0.00	0.00
Beilun	5.00	0.00	Jiangyin	-15.00	0.00	Lianyungang	0.00	0.00	Rizhao	0.00	0.00
Caofeidian	-10.00	0.00	Jingtang	-10.00	0.00	Majishan	0.00	0.00	Shekou	0.00	0.00
Dalian	-50.00	0.00	Langqiao	0.00	0.00	Nantong	-15.00	0.00	Tianjin	0.00	0.00

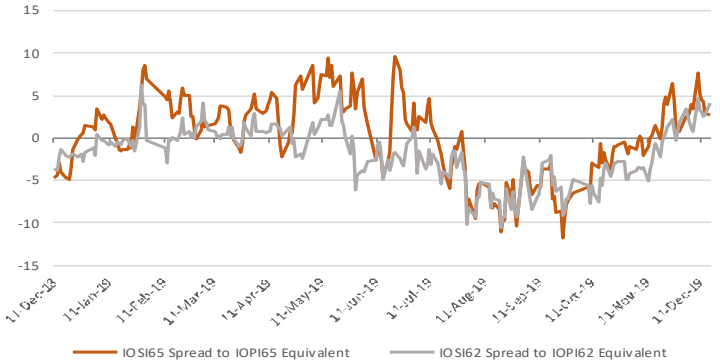
IRON ORE INDEX PREMIUMS/DISCOUNTS



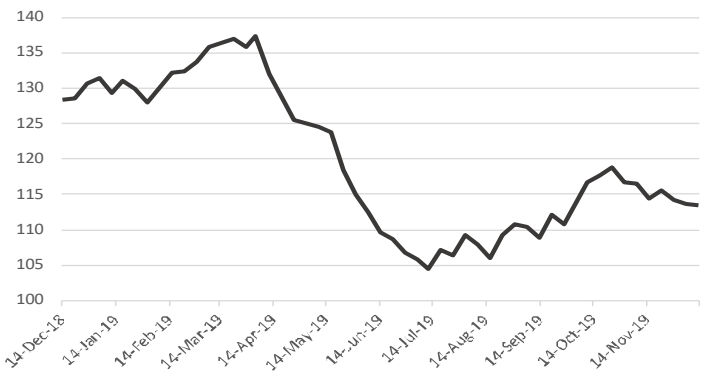
WEEKLY IRON ORE PORT STOCK LUMP PREMIUM (RMB/DMTU)



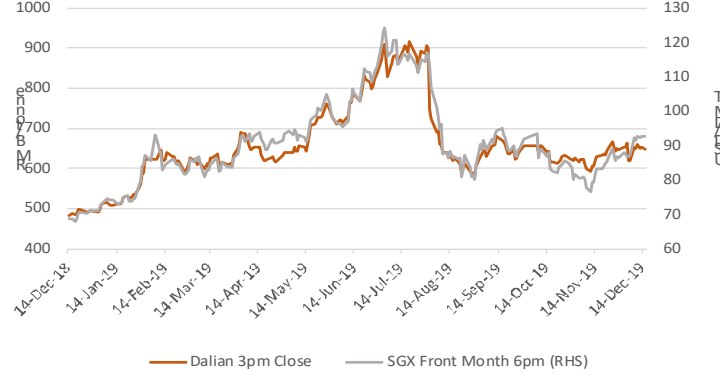
IRON ORE SEABORNE TO PORT STOCK PRICE SPREADS (USD/DMT)



TOTAL IRON ORE INVENTORIES AT CHINA PORTS (MILLION TONNES)



FUTURE TRADING—FRONT MONTH CLOSING PRICE



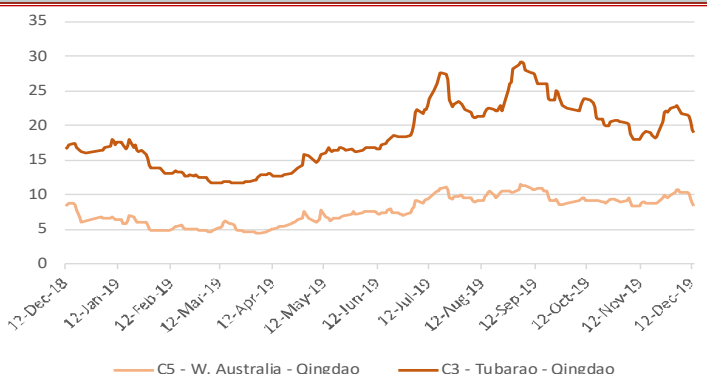
IRON ORE PORT INVENTORIES (MILLION TONNES)

Week Ending December 13th, 2019				
Province	This week	Change %	Low <sup>2</sup>	High <sup>2</sup>
Jingtang	13.63	-5.35%	10.80	17.00
Qingdao	13.37	-2.12%	12.38	19.01
Caofeidian	13.55	0.59%	13.47	19.30
Tianjin	7.58	0.53%	6.37	9.70
Rizhao	12.62	-3.00%	11.41	17.10
<b>Total (35 Ports)</b>	<b>113.33</b>	<b>-0.15%</b>	<b>104.40</b>	<b>137.30</b>

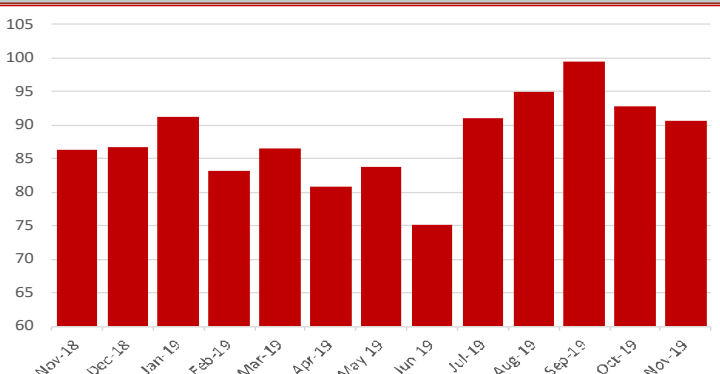
IRON ORE FUTURES CONTRACTS

Closing Date	DCE (RMB/WMT)			SGX (USD/DMT)		
	Dec 16th, 3pm close			Dec 16th, 5:30 pm		
Contract	I2005	Change	Change %	Jan'20	Change	Change %
Closing Price	645.50	-8.0	-1.22%	92.75	-0.10	-0.11%
Vol traded ('000 lots)	280.28	90.0	47.32%	18.94	3.12	19.71%
Open positions ('000 lots)	136.90	0.2	0.14%	126.74	-1.89	-1.47%
Day Low	640.5	-2.5	-0.39%	91.69	-0.38	-0.41%
Day High	669.0	10.5	1.59%	94.58	1.21	1.30%

DRY BULK FREIGHT RATES (USD/MT)

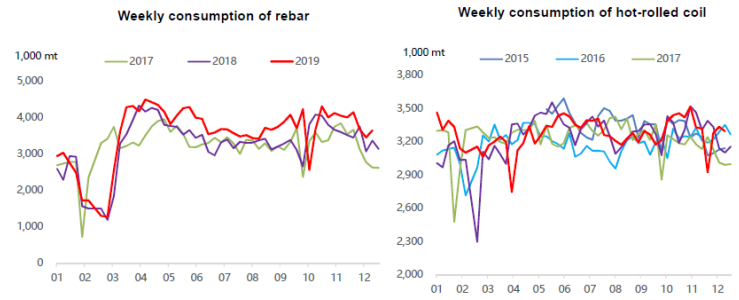


TOTAL CHINA IRON ORE IMPORT VOLUMES (MILLION TONNES)



STEEL SPOT MARKET PRICES—CHINA

Steel Spot Market RMB/tonne			
Product	13/12/2019	Change	Change %
ReBar HRB400 ?18mm	3,910.0	-30	-0.76%
Wirerod Q300 ?6.5mm	4,070.0	-80	-1.93%
HRC Q235/SS400 5.5mm*1500°C	3,890.0	120	3.18%
CRC SPOC/ST12 1.0mm*1250*2500	4,400.0	90	2.09%
Medium & Heavy Plate Q235B 20mm	3,820.0	50	1.33%
GI ST02Z 1.0mm*1000°C	4,520.0	30	0.67%
Colour Coated Plate	6,800.0	50	0.74%



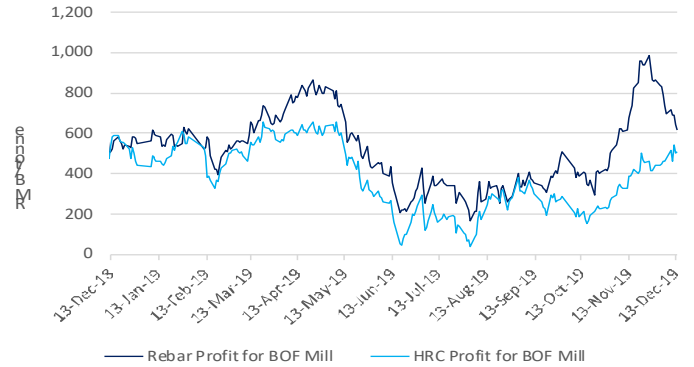
CHINESE STEEL MILL PROFITABILITY

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	93.80	3.80	Mmi CFR Equivalent index for 1st Feb
Coke	1,910	50	2nd grade met coke, Tangshan, incl. tax
Steel Scrap	2,290	-20	steel scrap (6mm) in Zhangjiagang, excl. tax
Billet Cost	3,045	66	Q234, incl. tax
Rebar cost - Blast furnace	3,271	67	calculated based on theoretical weight, incl. tax
Rebar profit - Blast furnace	619	-77	based on Shanghai prices, incl. tax
Hot-rolled coil cost - Blast furnace	3,362	67	based on actual weight, incl. tax
Hot-rolled coil profit - Blast furnace	508	33	based on Shanghai prices, incl. tax

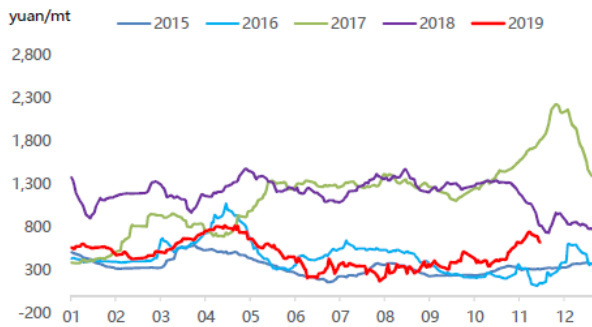
Note: 1. Costs in the table are calculated based on today's market prices and fact of our management, sales, financial and depreciations fees.  
2. The cost refers to average cost in the industry based on SMM's survey of small, medium and large mills in China

CHINESE STEEL MILL PROFITABILITY

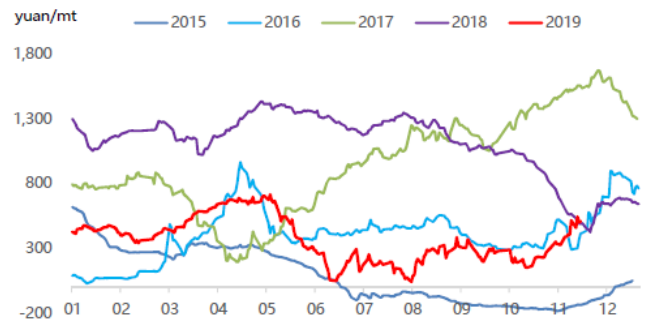


CHINESE STEEL MILL PROFITABILITY

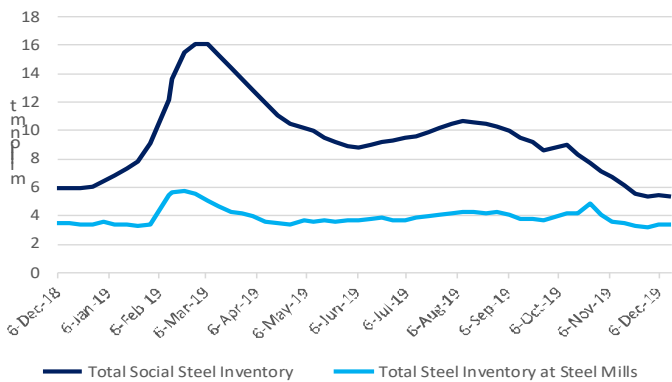
Rebar profits



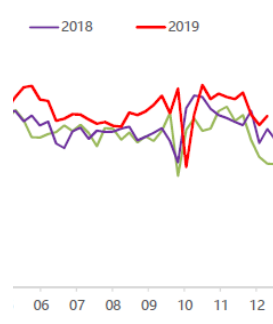
Hot-rolled coil profits



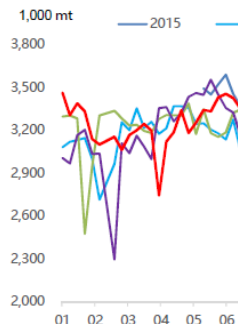
CHINESE STEEL INVENTORIES



consumption of rebar



Weekly consumpt



## IRON ORE INDEX SPECIFICATIONS, COMPILATION RATIONALE AND DATA EXCLUSIONS

Iron Ore Index Specifications (Port and Seaborne)					Iron Ore Index Compilation Rationale and Data Exclusions
	<b>65% Fe Fines</b>	<b>62% Fe Fines</b>	<b>58% Fe Fines</b>	<b>62.5% Fe Lump</b>	MMi iron ore indices are compiled from data provided by companies that are part of the iron ore supply chain and involved in spot market transactions. The indices are calculated using detailed transaction-level data submitted to MMi by these companies. This data is normalised to the appropriate specifications and screened to remove outliers before volume-weighted average prices are calculated from the remaining core set of data.  For more details on MMi's iron ore methodology please download the guide published on our website at: <a href="http://www.mmiprices.com">www.mmiprices.com</a>
Fe %	65.00	62.00	58.00	62.50	
Alumina %	1.40	2.25	2.25	1.50	
Silica%	1.50	4.00	5.50	3.50	
Phosphorus %	0.06	0.09	0.05	0.08	
Sulphur %	0.01	0.02	0.02	0.02	
Moisture %	8.00	8.00	9.00	4.00	
Sizing	Granular size below 10mm for at least 90% of cargo; maximum of 40% below 150 micron			Size below 6.3mm max 15% Size above 31.15mm max 25%	
Pricing Point	Qingdao Port (FOT and CFR respectively)			FOT Qingdao Port	
Timing (Seaborne)	Loading within 4 weeks, Delivery within 8 weeks			Delivery within 2 weeks	
Payment Terms	L/C at sight			L/C at sight or CAD	

Data Exclusions*			
Port Index	62%	58%	65%
Seaborne Index	0	0	0
Lump Index 62.5	0		

\* Number of price submissions for iron ore indices that were excluded from index calculations today as they were anomalous and could not be verified

## IRON ORE DOMESTIC CONCENTRATE INDEX CALCULATION METHODOLOGY

The compilation method for price index generally refers to the compilation method of CPI price index and other price indices, breakdown the price data and calculate the average value according to a certain method, taking the vertical axis as the regional composite index (average of different grade index) and the horizontal axis as the grade composite index (average of different regional index), a total composite index for domestic ore can be output ultimately. The process system is also adopted in the calculation i.e. each sub-index can be obtained as well.

## AVERAGE IRON ORE SPECIFICATIONS APPLIED FOR BRAND PRICE ASSESSMENTS

PORT STOCK BRANDS						SEABORNE BRANDS					
December 16th, 2019	Specifications applied for 62% brand assessments					Specifications applied for 62% brand assessments					
	Fe	Alumina	Silica	Phos	Moisture		Fe	Alumina	Silica	Phos	Moisture
Roy Hill	60.70%	2.25%	4.70%	0.054%	9.34%	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	61.57%	2.36%	3.71%	0.099%	9.50%	PB Fines 62%	62.00%	2.60%	4.30%	0.090%	10.00%
Newman Fines	62.47%	2.21%	4.10%	0.090%	7.72%	Newman Fines	62.80%	2.20%	4.30%	0.080%	6.40%
MAC Fines	60.78%	2.30%	4.70%	0.080%	7.70%	MAC Fines	61.00%	2.70%	4.70%	0.110%	9.30%
Jimblebar Blended Fines	60.50%	3.03%	4.65%	0.116%	7.89%	Jimblebar Blended Fines	59.50%	3.70%	5.80%	0.135%	8.30%
Carajas Fines	65.38%	1.27%	1.45%	0.082%	7.98%	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	62.99%	1.45%	4.74%	0.073%	7.69%	Brazilian Blend Fines	62.50%	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%

December 16th, 2019	Specifications applied for 58% brand assessments				
	Fe	Alumina	Silica	Phos	Moisture
SSF	56.72%	3.04%	6.17%	0.056%	9.07%
FMG Blended Fines	58.26%	2.73%	5.62%	0.062%	7.55%
Robe River	56.31%	3.17%	5.64%	0.041%	9.10%
Western Fines	57.88%	2.87%	7.50%	0.062%	7.45%
Atlas Fines	56.59%	2.55%	7.14%	0.080%	8.46%
Yandi	57.10%	1.60%	6.40%	0.039%	9.02%

## 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			

## CONTACT US

MMI Singapore Office Details: Level 28, Manulife Tower, 8 Cross Street Singapore. Tel: + 65 6850 7629 E: [jarek@mmiprices.com](mailto:jarek@mmiprices.com)

SMM Singapore Office Details: Level 28, Manulife Tower, 8 Cross Street Singapore. Tel: + 65 6850 7630 E: [service.en@smm.cn](mailto:service.en@smm.cn)

SMM Shanghai Office Details: 9th FL, Building 9, Lujiazui Software Park, No.20, Lane 91, Pudong, Shanghai Tel: +86 021 5155 0306 E: [service.en@smm.cn](mailto:service.en@smm.cn)

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