

IRON ORE PORT STOCK INDEX (IOPI)

February 15th, 2019		FOT Qingdao (inc. 16% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 16% 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	668	-2	-0.3%	665	598	443	681	88.68	-0.12	-0.1%	88.34	78.77	61.36	90.41
IOPI58	58% Fe Fines	568	-3	-0.5%	551	470	304	572	74.83	-0.28	-0.4%	72.54	61.11	40.67	75.32
IOPI65	65% Fe Fines	749	3	0.4%	741	685	541	784	99.91	0.60	0.6%	98.90	90.84	75.83	101.71

IRON ORE SEABORNE INDEX (IOSI)

February 15th, 2019		CFR Qingdao, USD/dry tonne						
Index	Fe Content	Price	Change	Change %	MTD	YTD	Low ³	High ³
IOSI62	62% Fe Fines	88.35	-0.30	-0.3%	87.92	79.52	62.95	89.20
IOSI65	65% Fe Fines	104.05	-0.75	-0.7%	103.81	93.95	83.20	106.85

MARKET COMMENTARY

Significantly higher prices of seaborne iron ore after the Vale accident in Brazil deterred buyers from making purchases. Some mills made small purchases later in the week when the prices retreated from highs. This grew iron ore deliveries leaving ports in Tangshan in the second half of this week. Steel mills made limited spot iron ore purchases this week as some worked through existing inventories at ports. Mills that relied on spot cargoes are expected to start to purchase next week, which would bolster iron ore deliveries from ports.

IRON ORE PORT LUMP INDEX (IOPLI)

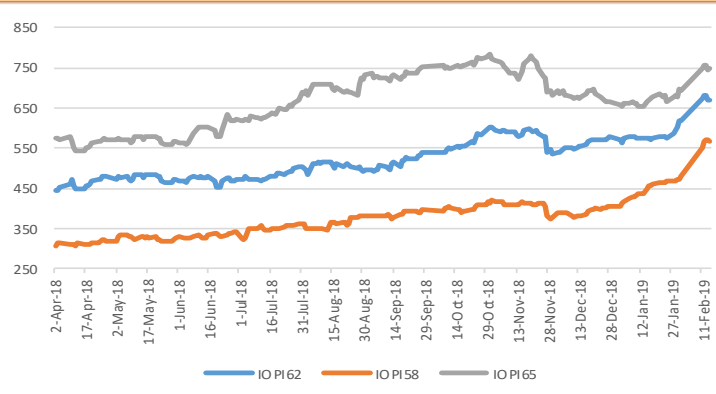
Week Ending February 15th		FOT Qingdao (inc. 16% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 16% VAT), USD/dry tonne ¹						
Index	Fe Content	Price	W-o-W	Change %	MTD	YTD	Low ³	High ³	Price	W-o-W	Change %	MTD	YTD	Low ³	High ³
IOPLI62	62.5% Fe Lump	864	67	8.4%	831	798	565	864	111.02	8.08	7.8%	106.98	102.04	76.63	111.02

IRON ORE DOMESTIC CONCENTRATE SPOT PRICE ASSESSMENTS AND COMPOSITE INDEX

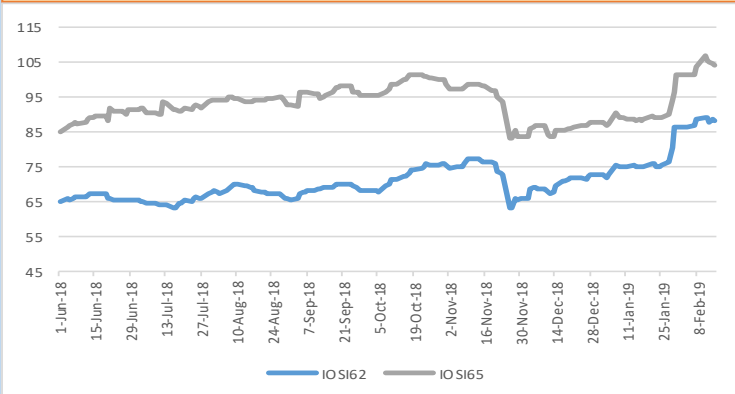
Week Ending February 1st, 2019				RMB/tonne (excluding tax) ⁴				USD/tonne (excluding tax) ⁴			
Province	Region	Product	Basis	This week	Change %	Low ²	High ²	This week	Change %	Low ²	High ²
Hebei	Hanxing	66% Fe Concentrate	Dry	704	0.4%	579	718	104.68	1.35%	91.97	104.68
Hebei	Qian'an	65% Fe Concentrate	Dry	750	0.0%	630	815	111.52	0.91%	100.26	117.34
Liaoning	Anshan	65% Fe Concentrate	Wet	545	0.0%	445	745	81.04	0.91%	68.21	81.35
Shandong	Zibo	65% Fe Concentrate	Dry	765	1.3%	620	815	113.75	2.25%	99.75	117.91
Week Ending February 1st, 2019				This week	Change %	Low ⁵	High ⁵				
China Mines Concentrate Composite Index RMB/WT				637.11	0.7%	534.50	681.52				

¹ Exchange rate applied: RMB/USD = 6.7623 ² Since March 1 2018 ³ Since June 1 2018
⁴ Weekly exchange rate applied: RMB/USD 6.7253 ⁵ Last 12 months

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

February 15th, 2019		FOT Qingdao (inc. 16% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 16% VAT), USD/dry tonne ¹						
Index	Fe Content	October	November	December	January	MTD	QTD	YTD	October	November	December	January	MTD	QTD	YTD
IOPI62	62% Fe Fines	564	564	559	580	665	598	598	63.41	65.25	72.55	76.16	88.34	78.77	78.77
IOPI58	58% Fe Fines	401	401	392	448	551	470	470	44.86	45.84	50.47	57.99	72.54	61.11	61.11
IOPI65	65% Fe Fines	760	760	681	670	741	685	685	85.29	92.13	99.05	88.65	98.90	90.84	90.84

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

February 15th, 2019		CFR Qingdao, USD/dry tonne						
Index	Fe Content	October	November	December	January	MTD	QTD	YTD
IOSI62	62% Fe Fines	72.31	72.91	69.96	76.09	87.92	79.52	79.52
IOSI65	65% Fe Fines	98.97	94.05	85.95	89.92	103.81	93.95	93.95

FREIGHT RATES

February 14th 2019		FREIGHT RATES - DRY BULK US\$/wet tonne				
Route	Designation	Change	Change %	Low ⁵	High ⁵	
W. Australia - Qingdao	C5	5.41	0.25	4.77%	4.814	10.002
Tubarao - Qingdao	C3	13.39	0.17	1.27%	12.705	24.760

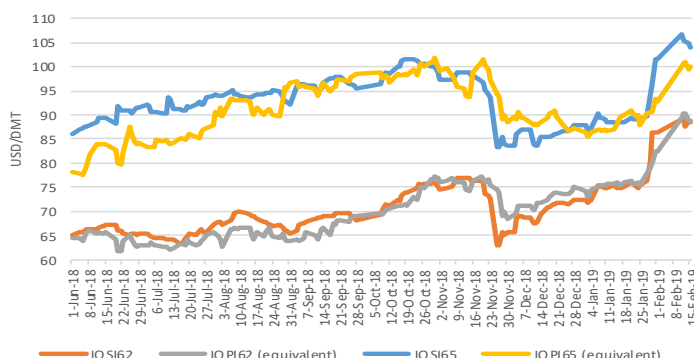
IRON ORE PORT LUMP INDEX MONTHLY, QUARTERLY AND YEAR-TO-DATE AVERAGES

Week Ending February 15th		FOT Qingdao (inc. 16% VAT), RMB/wet tonne							CFR Qingdao Equivalent (exc. 16% VAT), USD/dry tonne ¹						
Index	Fe Content	October	November	December	January	MTD	QTD	YTD	October	November	December	January	MTD	QTD	YTD
IOPLI62	62.5% Fe Lump	720	771	749	782	831	798	798	89.65	96.21	94.22	99.57	106.98	102.04	102.04

Daily Iron Ore Index Report

February 15th, 2019

IRON ORE INDEX COMPARISONS



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



IRON ORE BRAND SPOT PRICE ASSESSMENTS

February 15th, 2019	PORT STOCK INDEX (RMB/WT)			February 15th, 2019	SEABORNE INDEX (USD/DMT)		
	Price	Change	Diff to IOPI62		Price	Change	Diff to IOSI62
Roy Hill	637	-5	-31	Roy Hill	81.31	-0.63	-7.04
SIMEC Fines	611	-6	-57	SIMEC Fines	76.24	-0.80	-12.11
PB Fines	643	-3	-25	PB Fines	86.76	-0.30	-1.59
Newman Fines	681	3	13	Newman Fines	91.44	-0.08	3.09
MAC Fines	643	-5	-25	MAC Fines	80.09	-0.55	-8.26
Jimblebar Blended Fines	600	-6	-68	Jimblebar Blended Fines	73.11	-0.55	-15.24
Carajas Fines	759	5	91	Carajas Fines	105.51	1.24	17.16
Brazilian SSF	672	-2	4	Brazilian SSF	88.04	0.02	-0.31
Brazilian Blend Fines	674	0	6	Brazilian Blend Fines	91.04	0.02	2.69
RTX Fines	606	-7	-62	RTX Fines	75.71	-0.55	-12.64

February 15th, 2019	PORT STOCK INDEX (RMB/WT)		
	Price	Change	Diff to IOPI58
SSF	515	-13	-53
FMG Blended Fines	570	-4	2
Robe River	531	-45	-37
Western Fines	518	-16	-50
Atlas Fines	514	-9	-54
Yandi	594	-11	26

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%	16.00	2.00	1% Fe	High Grade Fe 60 - 63%	4.25	0.25
	High Grade Fe 63 - 64%	20.00	2.00		High Grade Fe 63 - 64%	3.25	0.25
	High Grade Fe 64 - 65%	20.00	2.00		High Grade Fe 64 - 65%	3.25	0.25
	High Grade Fe 65 - 65.5%	20.00	2.00		High Grade Fe 65 - 65.5%	3.25	0.25
	Low Grade Fe	15.00	3.00				
1% Alumina	High Fe Grade Al <2.25%	24.00	0.00	1% Alumina	High Fe Grade Al <2.25%	2.75	0.25
	High Fe Grade Al 2.25-4%	20.00	3.00		High Fe Grade Al 2.25-4%	3.25	0.00
	Low Fe Grade Al <2.25%	65.00	-5.00				
	Low Fe Grade Al 2.25-4%	20.00	5.00				
1% Silica	High Fe Grade Si <4%	2.00	0.00	1% Silica	High Fe Grade Si <4%	1.75	0.25
	High Fe Grade Si 4-6.5%	16.00	0.00		High Fe Grade Si 4 - 6.5%	1.50	0.00
	Low Fe Grade	18.00	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%	0.75	0.00
	High Fe Grade 0.115%<P<0.15%	2.00	0.00		High Fe Grade 0.115%<P<0.15%	1.50	0.00
	Low Fe Grade 0.09%<P<0.1%	2.00	0.00				

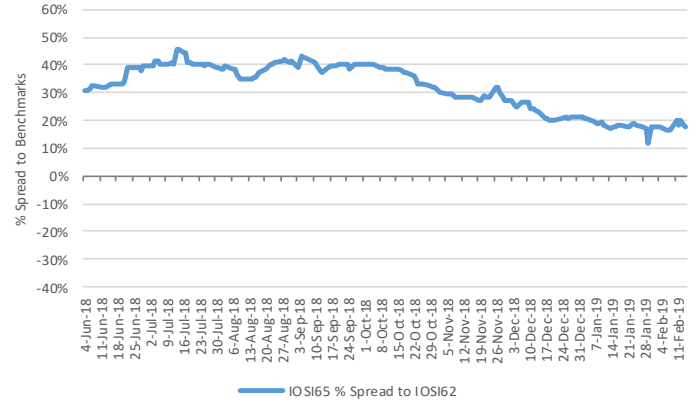
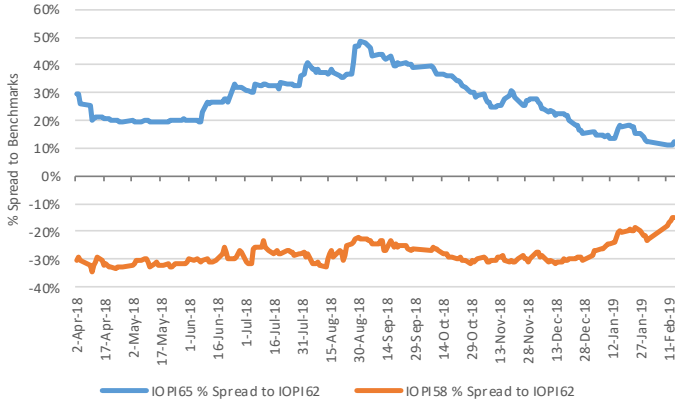
Port Stock Price Differentials to Qingdao Port for PB Fines (RMB/wet tonne)

Port	Value	Change	Port	Value	Change	Port	Value	Change	Port	Value	Change
Bayuquan	-25.00	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	0.00	0.00	Jingtang	0.00	0.00	Majishan	0.00	0.00	Shekou	0.00	0.00
Dalian	-10.00	0.00	Lanqiao	0.00	0.00	Nantong	-15.00	0.00	Tianjin	-15.00	0.00

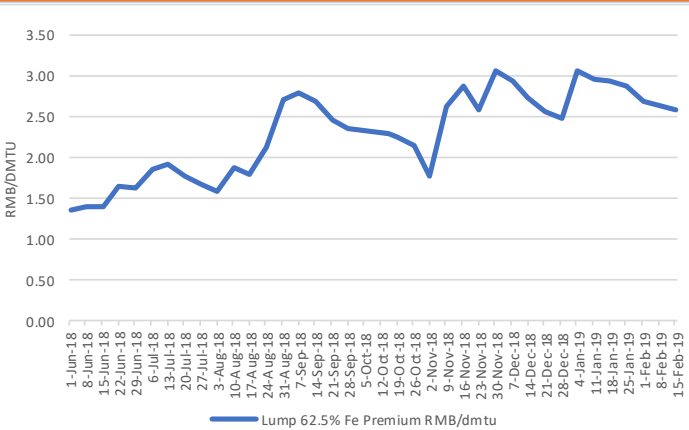
IRON ORE INDEX PREMIUMS/DISCOUNTS

February 15th, 2019	PORT STOCK INDEX (RMB/WT)	
Fe Content	Spread to IOPI62	% Spread to IOPI62
58% Fe Fines	-100	-14.97%
65% Fe Fines	81	12.13%

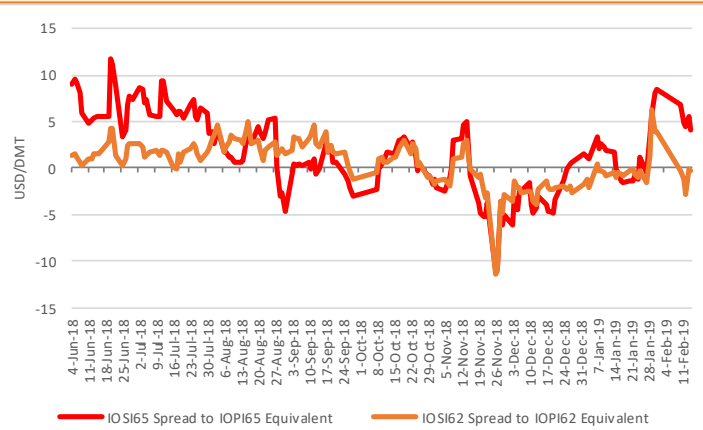
February 15th, 2019	SEABORNE INDEX (USD/DMT)	
Fe Content	Spread to IOSI62	% Spread to IOSI62
65% Fe Fines	15.70	17.77%



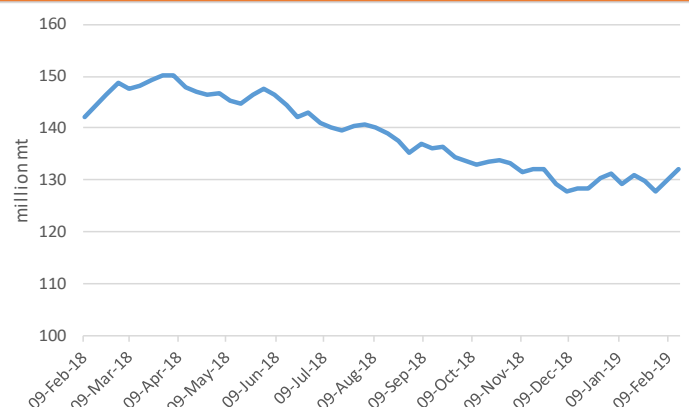
WEEKLY IRON ORE PORT STOCK LUMP PREMIUM (62.5% FE LUMP—62% FE FINES)



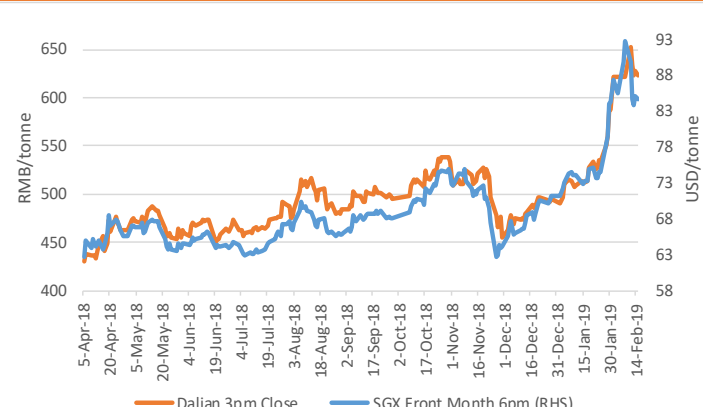
IRON ORE SEABORNE TO PORT STOCK SPREADS



TOTAL IRON ORE INVENTORIES AT CHINA PORTS



FUTURE TRADING—FRONT MONTH CLOSING PRICE



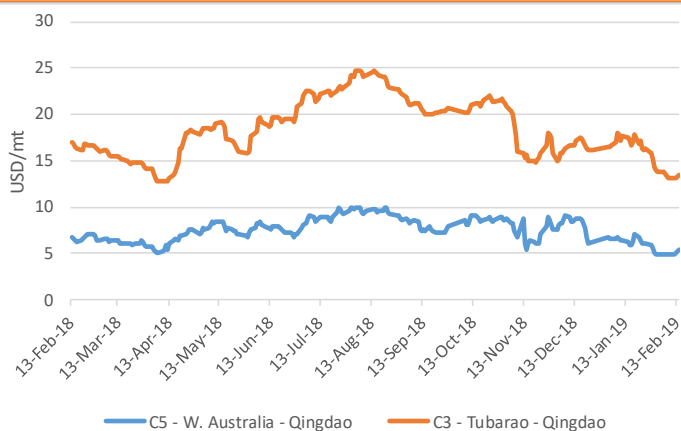
IRON ORE PORT INVENTORIES

Week Ending February 15th, 2019 (million tonnes)				
Province	This week	Change %	Low ⁴	High ⁴
Jingtang	14.57	3.85%	13.29	19.00
Qingdao	18.00	5.88%	16.09	19.97
Caofeidian	16.80	3.07%	16.30	25.30
Tianjin	9.30	2.76%	8.50	11.00
Rizhao	15.95	6.33%	14.00	19.00
Total (35 Ports)	132.00	3.23%	127.72	150.04

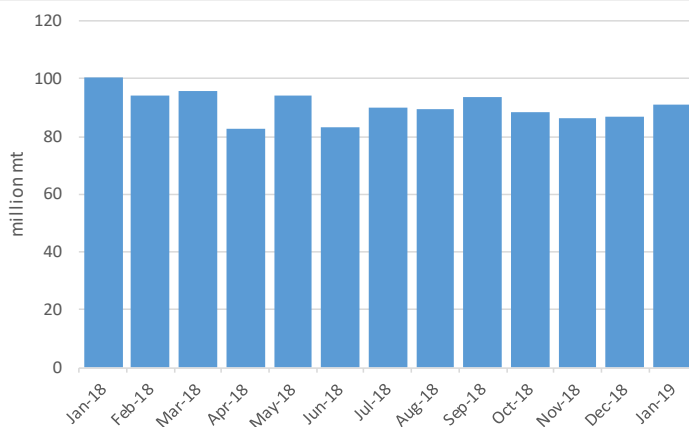
IRON ORE FUTURES CONTRACTS

Closing Date	DCE			SGX		
	15th Feb 3pm close	Change	Change %	15th Feb 6 pm	Change	Change %
Contract	11905			Mar'19		
Closing Price	624.0	-4.5	-0.72%	84.73	-0.32	-0.38%
Vol traded ('000 lots)	219.64	34.0	18.31%	7.93	-6.00	-43.09%
Open positions ('000 lots)	118.74	4.9	4.33%	120.89	0.32	0.27%
Day Low	617.5	7.0	1.15%	84.11	0.87	1.05%
Day High	636.0	6.0	0.95%	85.10	0.04	0.05%

DRY BULK FREIGHT RATES



TOTAL CHINA IRON ORE IMPORT VOLUMES

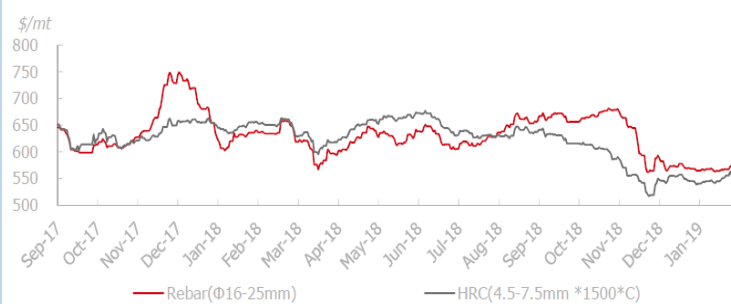


Steel Spot Market Prices - China

Steel Spot Market RMB/tonne

Product	1/2/2019	Change	Change %
ReBar HRB400 φ18mm	3,875.0	21	0.54%
Wirerod Q300 φ6.5mm	3,940.0	7	0.18%
HRC Q235/SS400 5.5mm*1500*C	3,802.0	28	0.74%
CRC SPCC/ST12 1.0mm*1250*2500	4,243.0	7	0.17%
Medium & Heavy Plate Q235B 20mm	3,926.0	30	0.77%
GI ST02Z 1.0mm*1000*C	4,580.0	0	0.00%
Billet Q235 150*150mm	3,430.0	0	0.00%

Rebar and HRC spot prices



Source: SMM

CHINESE STEEL EXPORT PRICES

China Export Prices USD/tonne

Product	Specification	Export tax (+)/Vate rebate (-)	Change
			1/2/2019
Rebar	BS4449 460B 12-25mm, + chrome	-13%	485 0
Wire Rod	SAE1008 6.5-10mm +chrome	-9%	495 0
Hot-rolled coil	SS400/Q235 4.0-10.mm	-9%	495 0
Cold-rolled coil	SPCC 1.0mm	-13%	535 0
Medium & Heavy plate	A-level Ship plate 12-25mm	0%	500 0
Galvanised	ST02Z/SGCC 1.0mm	-13%	550 0

Note: Calculation formula for converting export prices of rebar, cold-rolled steel and galvanizing into prices in China's spot market = FOB * exchange rate * 1.16 / (1.16 - 0.13); Calculation formula for converting export prices of wire rod and hot-rolled steel into prices in China's spot market = FOB * exchange rate * 1.16 / (1.16 - 0.09); Calculation formula for converting export prices of medium-thick plate into prices in China's spot market = FOB * exchange rate

CHINESE STEEL INVENTORIES

Steel Inventories³ (unit: 1000 tonnes)

Product	1/2/2019	25/1/2019	Change	Change %
Rebar	5,168	4,375	793	18.13%
Wirerod	1,751	1,504	247	16.42%
Hot-rolled Coil	2,104	1,948	156	8.01%
Medium & Thick Plate	1,020	888	132	14.86%
Cold-rolled Coil	1,120	1,066	54	5.07%
Total	11,163	9,781	1,382	14.13%

³ SMM statistics cover inventories of major steel products in China's major markets: hot-rolled steel inventories in 33 major cities; rebar and wire inventories in 35 major cities; cold-rolled steel and medium-thick plate inventories in 31 major cities.

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	76.16	0.15	Mmi CFR Equivalent index for 1st Feb
Coke	1,970	0	2nd grade met coke, Tangshan, incl. tax
Steel Scrap	2,210	0	steel scrap (6mm) in Zhangjiagang, excl. tax
Billet Cost	2,872	12	Q234, incl. tax
Rebar cost - Blast furnace	3,126	13	calculated based on theoretical weight, incl. tax
Rebar profit - Blast furnace	624	87	based on Shanghai prices, incl. tax
Hot-rolled coil cost - Blast furnace	3,197	12	based on actual weight, incl. tax
Hot-rolled coil profit - Blast furnace	583	28	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

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: www.mmiprices.com			
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%	Data Exclusions*			
Pricing Point	Qingdao Port (FOT and CFR respectively)			FOT Qingdao Port	Port Index	62%	58%	65%
Timing (Seaborne)	Loading within 4 weeks, Delivery within 8 weeks			Delivery within 2 weeks	Seaborne Index	0	0	0
Payment Terms	L/C at sight			L/C at sight or CAD	Lump Index 62.5	0		

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					
February 15th, 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	60.76%	2.35%	4.31%	0.060%	8.58%	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	61.67%	2.38%	3.56%	0.100%	9.28%	PB Fines 62%	62.00%	2.60%	4.30%	0.090%	10.00%
Newman Fines	62.67%	2.18%	4.16%	0.090%	7.63%	Newman Fines	62.80%	2.20%	4.30%	0.080%	6.40%
MAC Fines	60.90%	2.20%	4.81%	0.080%	7.43%	MAC Fines	61.00%	2.70%	4.70%	0.110%	9.30%
Jimblebar Blended Fines	61.17%	3.06%	4.27%	0.120%	6.99%	Jimblebar Blended Fines	61.79%	2.67%	4.08%	0.115%	7.16%
Carajas Fines	65.37%	1.28%	1.59%	0.070%	8.05%	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	62.62%	1.86%	4.72%	0.070%	8.29%	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%
February 15th, 2019	SPECIFICATIONS APPLIED FOR 58% BRAND ASSESSMENTS										
	Fe	Alumina	Silica	Phos	Moisture						
SSF	56.60%	3.17%	6.22%	0.050%	9.02%						
FMG Blended Fines	58.19%	2.66%	5.57%	0.060%	7.57%						
Robe River	56.64%	2.91%	5.58%	0.040%	9.29%						
Western Fines	58.00%	3.08%	7.84%	0.070%	7.52%						
Atlas Fines	56.59%	2.55%	7.14%	0.080%	8.46%						
Yandi	57.19%	1.39%	6.57%	0.040%	8.85%						

BLOOMBERG TICKERS

PORT STOCK INDICES			
	FOT Qingdao (RMB/wet tonne)		CFR Qingdao Equivalent (USD/dry tonne)
IOPI62	IRCNQ001		IRCNQ004
IOPI58	IRCNQ002		IRCNQ005
IOPI65	IRCNQ003		IRCNQ006

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