

# MMi Iron Ore Review

**February 2020**



# MMi Iron Ore Review

## Contents

- Port Prices \_\_\_\_\_ Page 1
  - \* Iron Ore Port Price Index \_\_\_\_\_ Page 1
  - \* Port Price Differentials to Qingdao Port for PB Fines \_\_\_\_\_ Page 1
  - \* Iron Ore Port Price Index Brand And Port Makeup \_\_\_\_\_ Page 2
  - \* Iron Ore Port Price Index Compilation Volume \_\_\_\_\_ Page 2
  - \* Iron Ore Port Price Index Compilation \_\_\_\_\_ Page 2
  - \* 62% Fe and 65% Fe Port Price Index Normalisation Differentials (monthly averages) \_\_\_\_\_ Page 3
  - \* 58% Fe Port Price Index Normalisation Differentials (monthly averages) \_\_\_\_\_ Page 3
  - \* Key Port Brand Price Assessments Versus Index (monthly averages) \_\_\_\_\_ Page 3
  - \* Iron Ore Port Brand Price Assessments \_\_\_\_\_ Page 4
  - \* Key Port Brand Price Assessments and Traded Prices \_\_\_\_\_ Page 4
- Seaborne Prices \_\_\_\_\_ Page 5
  - \* Iron Ore Seaborne Price Index \_\_\_\_\_ Page 5
  - \* Iron Ore Seaborne Price Index Compilation \_\_\_\_\_ Page 5
  - \* Seaborne Price Index Normalisation Differentials (monthly averages) \_\_\_\_\_ Page 6
  - \* Key Seaborne Brand Price Assessments Versus 62% Fe or 65% Fe Price Index \_\_\_\_\_ Page 6
  - \* Iron Ore Seaborne Brand Price Assessments \_\_\_\_\_ Page 7
  - \* Key Seaborne Brand Price Assessments and Traded Prices \_\_\_\_\_ Page 7
- Iron Ore Port And Seaborne Price Index Comparisons \_\_\_\_\_ Page 7
- Index Specifications and Tickers \_\_\_\_\_ Page 8



# Iron Ore Review—February Update

## IRON ORE PORT PRICE INDEX

### FOT Qingdao (inc. VAT<sup>1</sup>), RMB/wet tonne

Index	Fe Content	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	YTD 2020
IOPI62	62% Fe Fines	639	675	729	825	909	759	758	721	665	683	706	655	<b>677</b>
IOPI58	58% Fe Fines	583	600	637	726	809	691	674	636	567	592	600	563	<b>579</b>
IOPI65	65% Fe Fines	714	753	812	901	954	823	803	758	723	764	808	797	<b>802</b>

### CFR Qingdao Equivalent (exc. VAT<sup>1</sup>), USD/dry tonne

IOPI62	62% Fe Fines	85.37	92.67	98.40	111.42	123.29	100.18	99.15	94.29	87.30	89.84	94.23	86.23	<b>89.78</b>
IOPI58	58% Fe Fines	77.49	82.12	86.39	98.60	110.47	91.86	88.77	83.57	74.67	78.18	80.46	74.33	<b>77.05</b>
IOPI65	65% Fe Fines	95.78	103.92	110.00	121.97	129.53	108.92	105.38	99.32	95.29	100.90	108.54	105.84	<b>107.04</b>

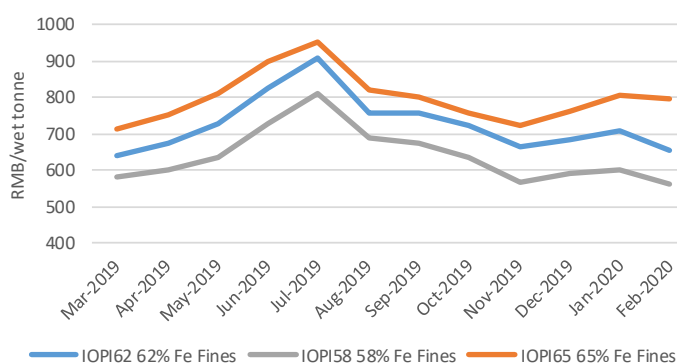
### FOT Qingdao (inc. VAT<sup>1</sup>), RMB/wet tonne

Index	Fe Content	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	YTD 2020
IOPLI62	62.5% Fe Lump	858	827	919	1009	1046	870	804	829	794	825	868	834	<b>851</b>

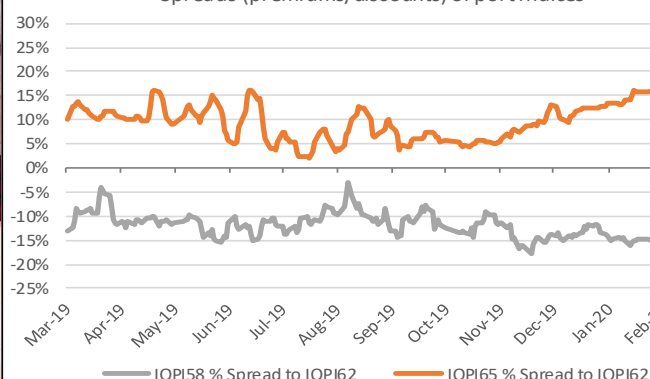
### CFR Qingdao Equivalent (exc. VAT<sup>1</sup>), USD/dry tonne

		Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	YTD 2020
IOPLI62	62.5% Fe Lump	111.03	112.86	117.12	128.00	132.99	108.08	98.44	101.74	97.89	102.01	108.99	106.19	<b>107.59</b>

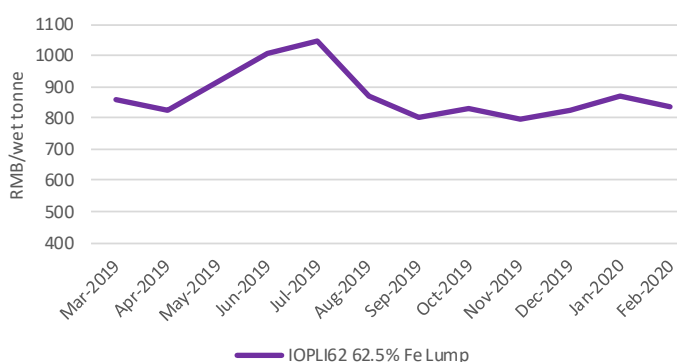
FOT Qingdao Fines (inc. VAT<sup>1</sup>)



Spreads (premiums/discounts) of port indices



FOT Qingdao Lump (inc. VAT<sup>1</sup>)



62.5% Fe Lump Premium

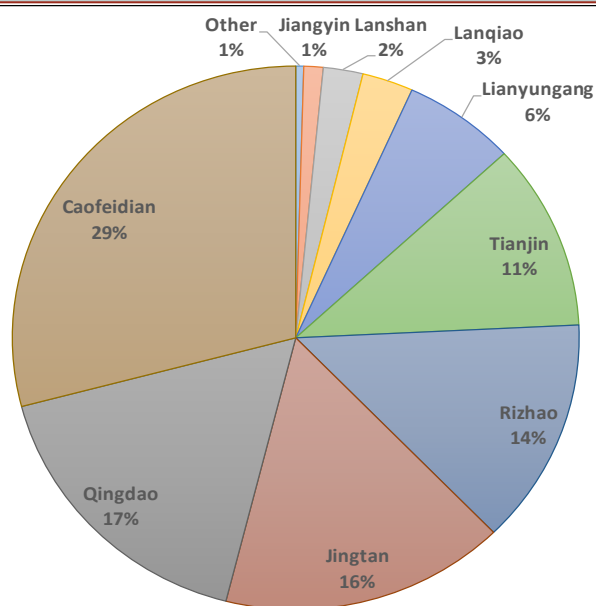
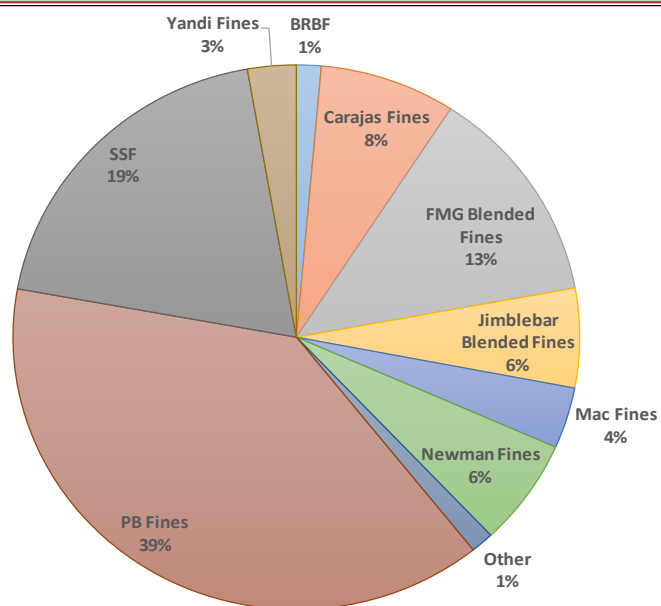


## PORT PRICE DIFFERENTIALS TO QINGDAO PORT FOR PB FINES

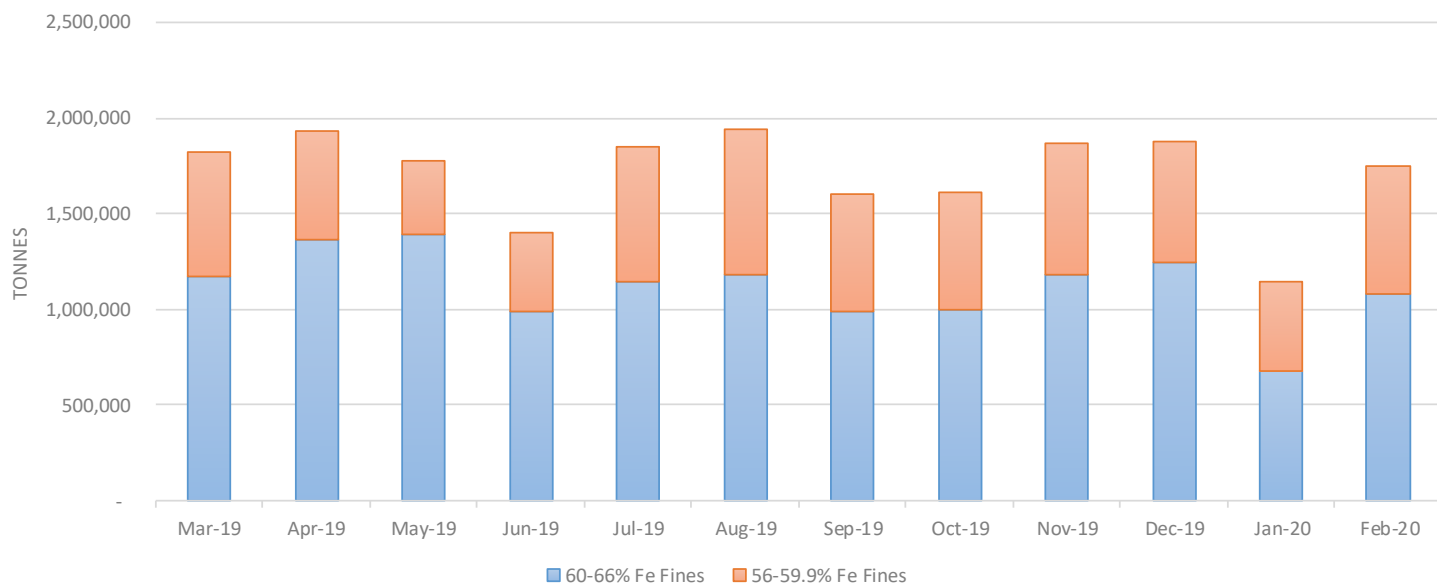
### Port Stock Price Differentials to Qingdao Port for PB Fines (RMB/wet tonne) - March 2019 - February 2020 Average values

Port	Port	Port	Port
Bayuquan -38.23	Fangcheng -5.00	Lanqiao 0.00	Qingdao 0.00
Beilun 5.00	Huanghua -18.44	Lanshan 0.00	Rizhao 0.00
Caofeidian -6.32	Jiangyin -23.11	Majishan 0.00	Shekou 0.00
Dalian -34.81	Jingtang -6.32	Nantong -22.30	Tianjin -13.68

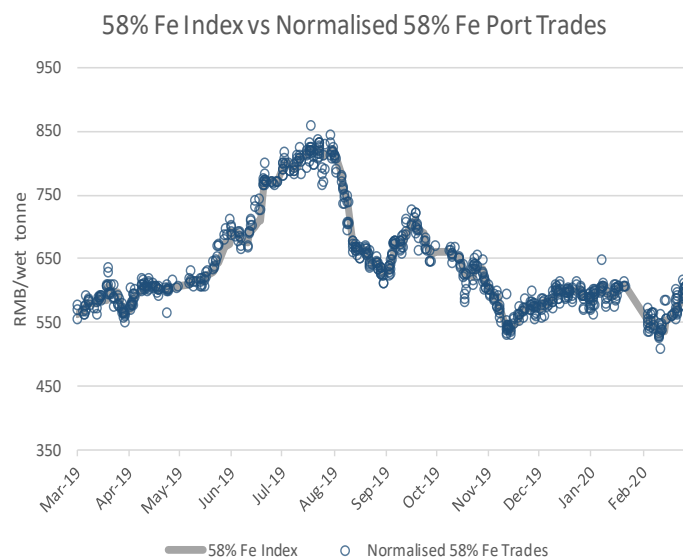
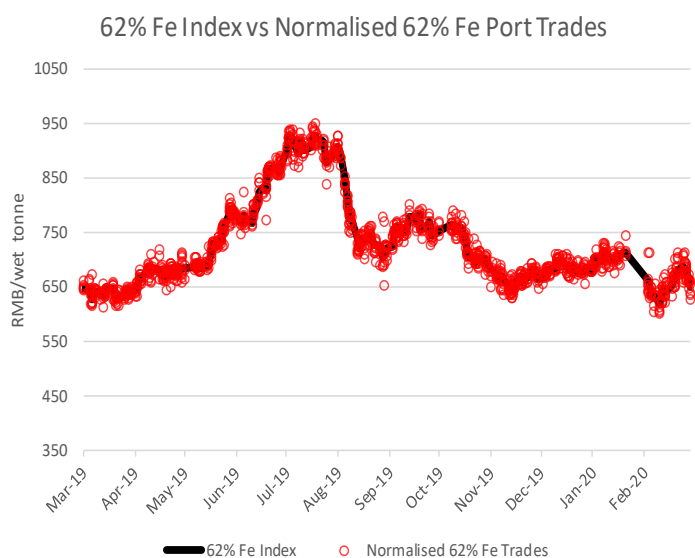
## IRON ORE PORT PRICE INDEX BRAND AND PORT MAKEUP



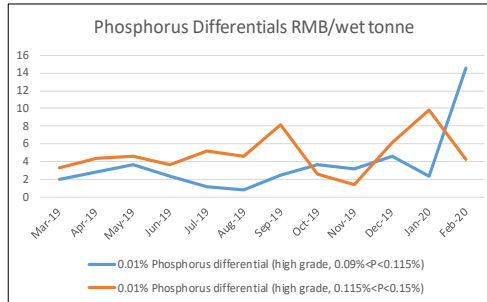
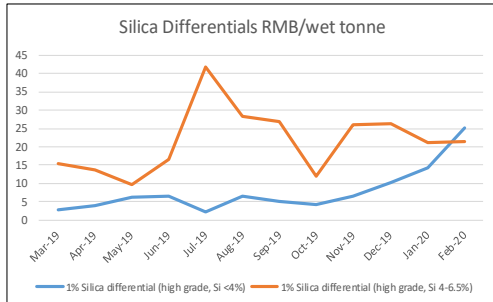
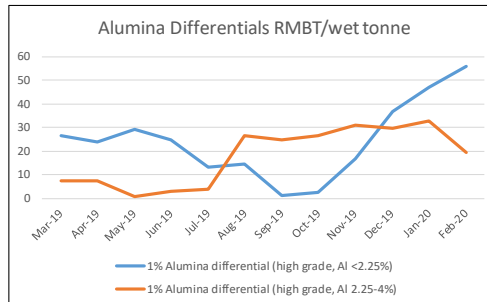
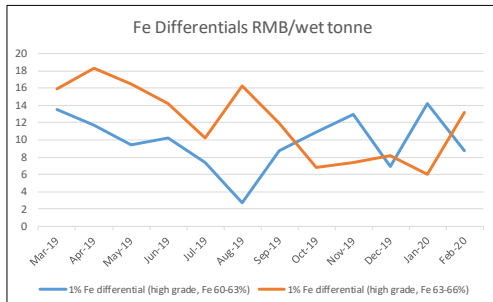
## IRON ORE PORT PRICE INDEX COMPILATION VOLUME



## IRON ORE PORT PRICE INDEX COMPILATION



## 62% FE AND 65% FE PORT PRICE INDEX NORMALISATION DIFFERENTIALS (MONTHLY AVERAGES)



Coronavirus strikes, causing chaos in the Chinese iron ore market, just as the population prepares to come back to work following the National Lunar New Year Holiday.

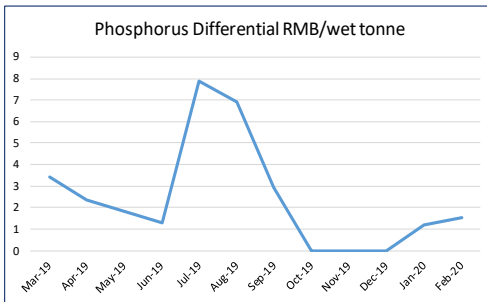
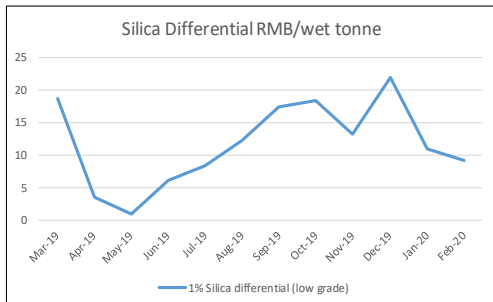
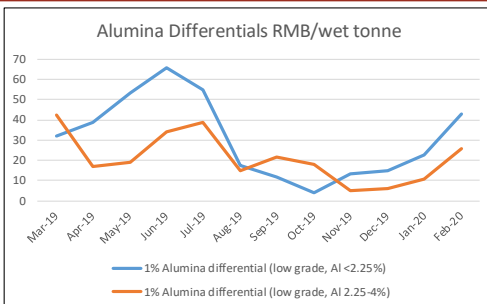
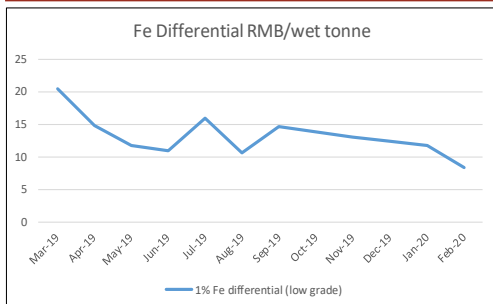
January prices of imported and domestic iron ore were strong as mills replenished stocks ahead of the holiday.

Operating rates at domestic mines fell to 50% in January as some mines which would normally operated, were ordered to close due to the virus.

Lump prices and premiums over January and February remained steady.

Rebar and HRC profit margins continued to fall on stronger iron ore. Mills forced to pay more for low-silica and low-phosphorous products. Despite efforts by the Chinese government to promote downstream manufacturing, demand remained low and further hurt steel margins.

## 58% FE PORT PRICE INDEX NORMALISATION DIFFERENTIALS (MONTHLY AVERAGES)



High grade products experienced strong demand with BRBF and Carajas fines strengthening relative to the index throughout January and February. Low-grade demand fell; their values vis-à-vis mid-grade and high-grade FE falling.

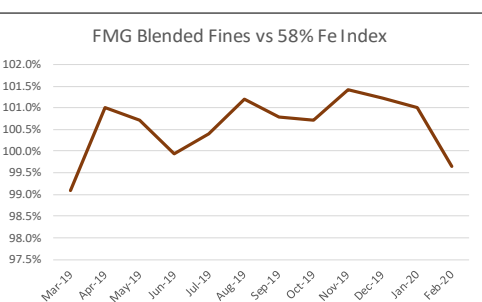
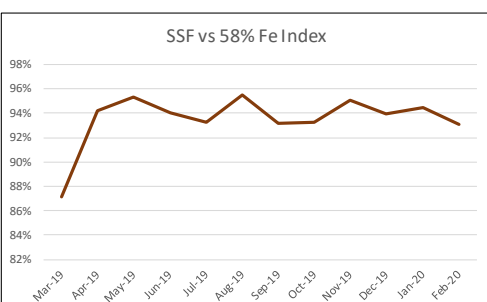
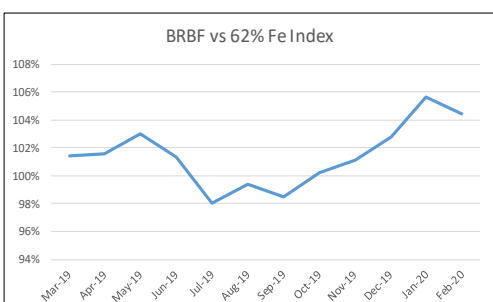
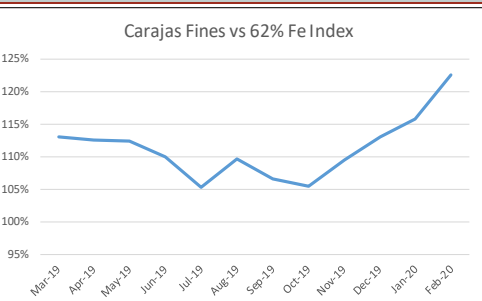
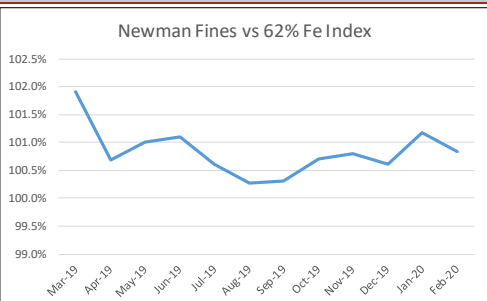
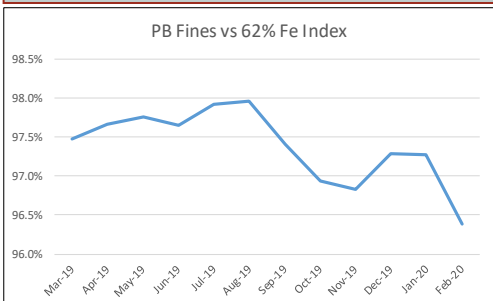
Low-alumina products such as Yandi fines found better values relative to other low-fe products amongst falling demand in low-grade iron ore fines.

Fe differentials for low grade products falling due to aforementioned decreasing demand for low-grade fines.

SSF relative to index managed to remain steady whilst FMG blended fines fell heavily on rising alumina differentials and falling silica penalties.

PB fines fell to 1 year lows against the index, contrasted by the high demand for low-alumina products. Newman fines recovered some of its relative strength, reaching levels last seen in June of 2019.

## KEY PORT BRAND PRICE ASSESSMENTS VERSUS INDEX (MONTHLY AVERAGES)

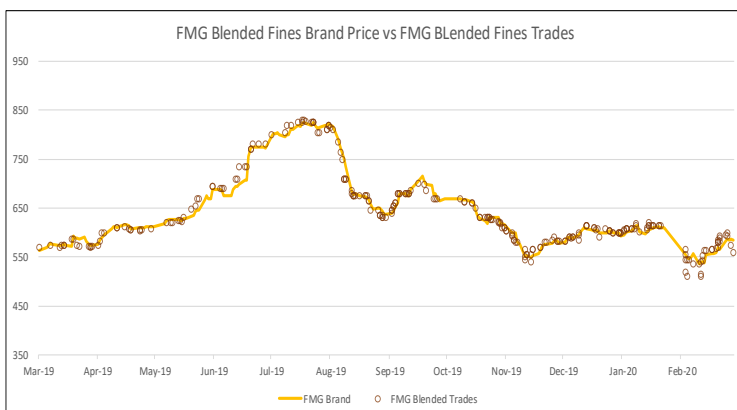
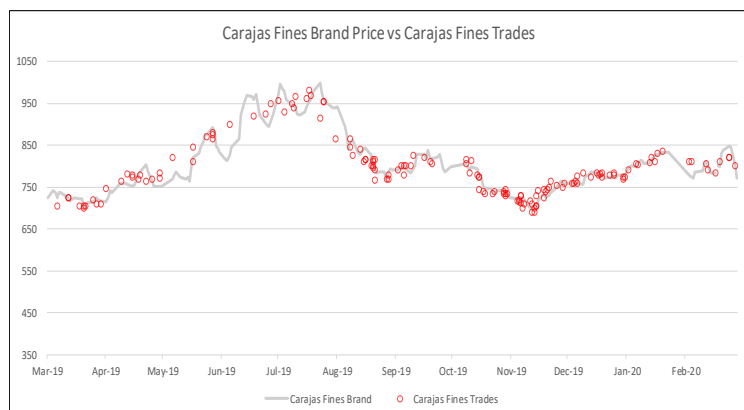
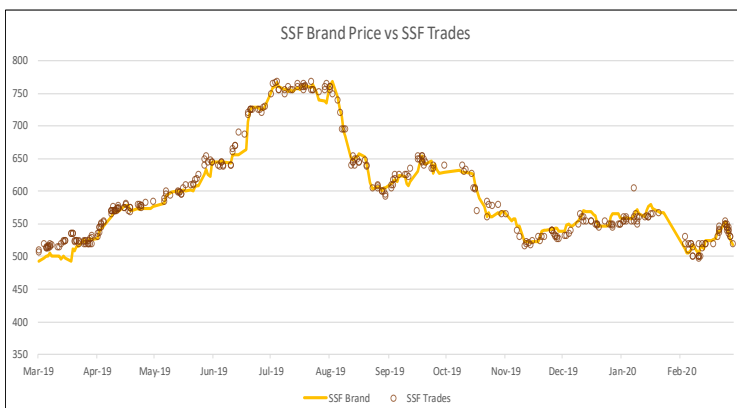
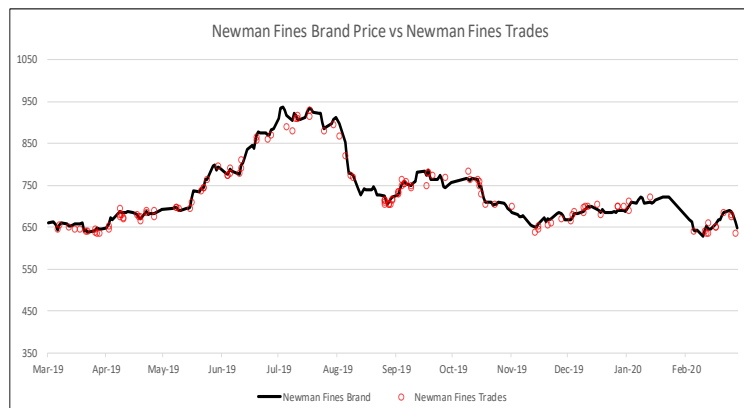
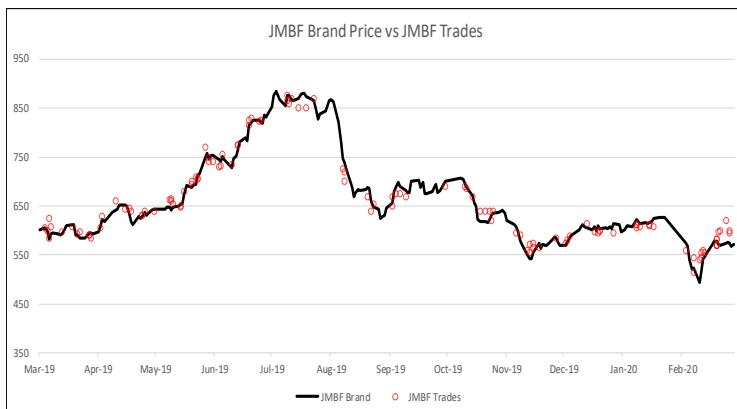
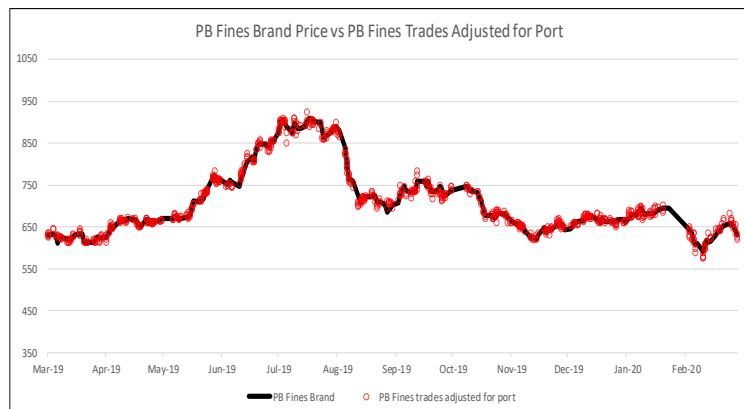




## IRON ORE PORT BRAND PRICE ASSESSMENTS

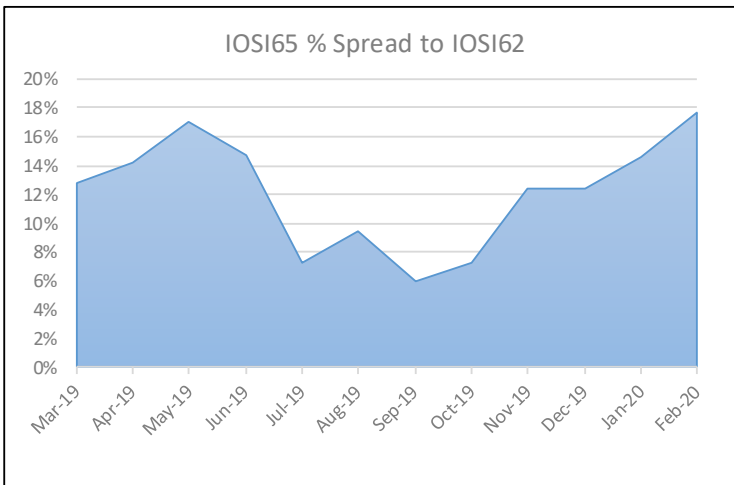
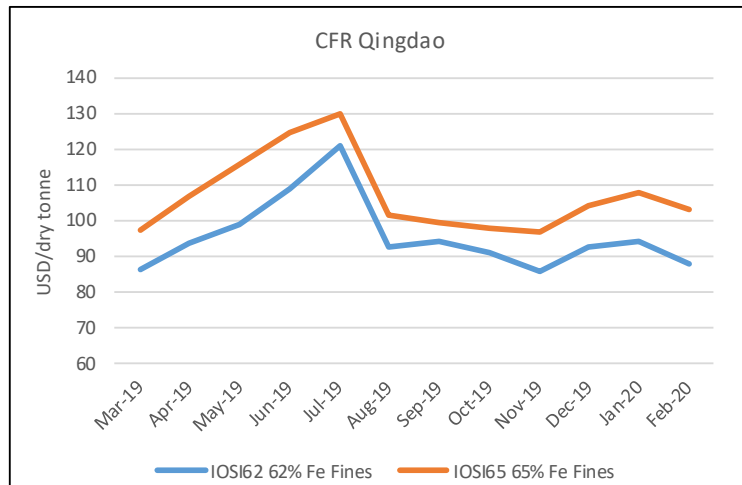
FOT Qingdao (inc VAT <sup>1</sup> ), RMB/wet tonne													
Brand	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	YTD 2020
PB Fines	623	659	713	806	890	743	738	699	644	664	686	631	635
Newman Fines	651	680	736	834	915	761	760	726	670	687	714	660	684
MAC Fines	618	656	712	807	878	742	735	705	633	657	671	628	647
Jimblebar Blended Fines	596	632	691	793	858	676	689	631	571	606	618	555	711
Carajas Fines	723	759	820	907	957	832	807	760	728	772	816	802	808
Brazilian Blend Fines	648	686	751	836	891	754	746	722	672	702	745	684	711
SSF	508	565	607	683	755	660	628	593	539	556	567	523	543
FMG Blended Fines	578	606	641	725	812	699	679	640	575	599	606	560	581
Yandi Fines	572	616	657	752	836	688	658	612	553	570	596	576	585

## KEY PORT BRAND PRICE ASSESSMENTS AND TRADED PRICES

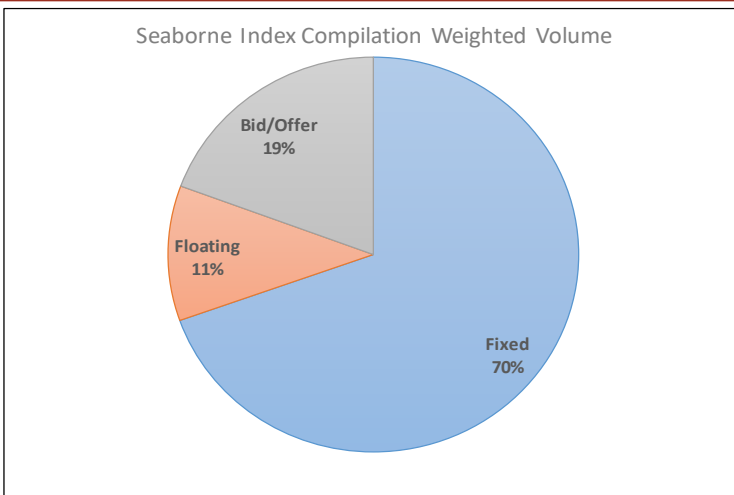
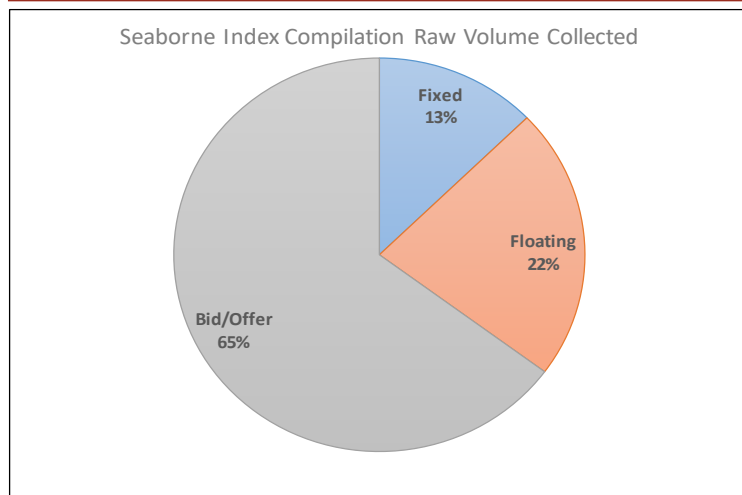


## IRON ORE SEABORNE PRICE INDEX

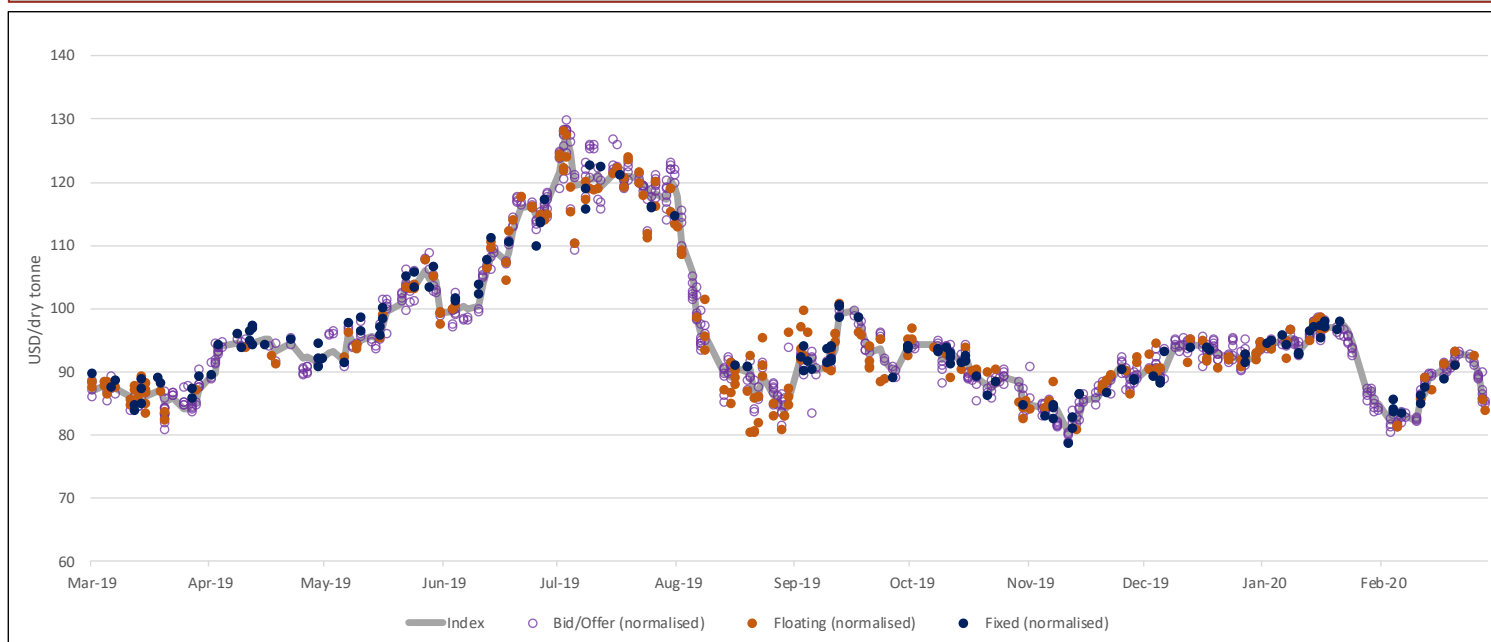
CFR Qingdao, USD/dry tonne													
Index	Fe Content	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20
IOSI62	62% Fe Fines	86.18	93.42	98.68	108.57	120.82	92.61	93.76	90.81	85.83	92.64	93.85	87.46
IOSI65	65% Fe Fines	97.22	106.75	115.53	124.49	129.53	101.34	99.42	97.45	96.49	104.14	107.56	102.94
													YTD 2020
													90.74
													105.30



## IRON ORE SEABORNE PRICE INDEX COMPILATION

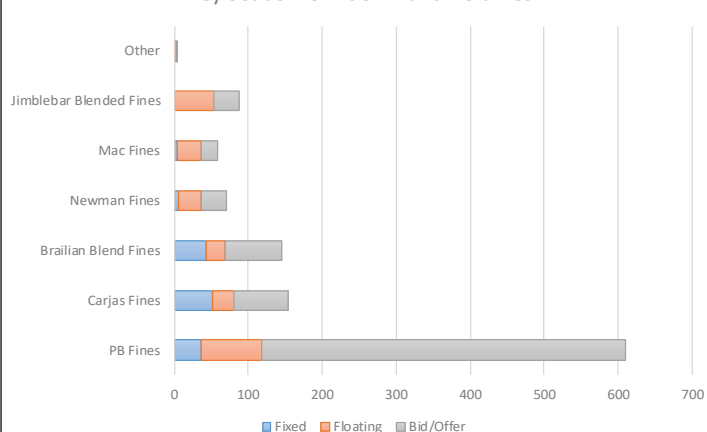


## IRON ORE SEABORNE PRICE INDEX COMPILATION

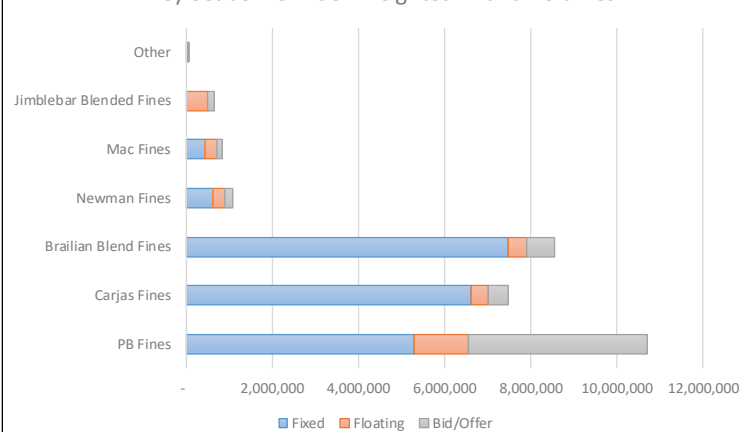


## IRON ORE SEABORNE PRICE INDEX COMPILATION

Key Seaborne Index Brand Volumes

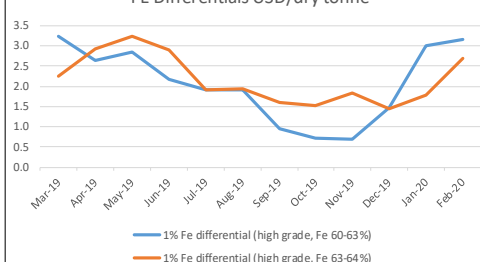


Key Seaborne Index Weighted Brand Volumes

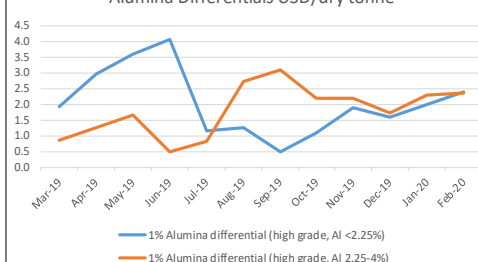


## SEABORNE PRICE INDEX NORMALISATION DIFFERENTIALS (MONTHLY AVERAGES)

FE Differentials USD/dry tonne



Alumina Differentials USD/dry tonne



Strong demand for high-grade fe seaborne iron ore products boosted fe and alumina differentials, whilst pressuring silica and phosphorous penalties lower.

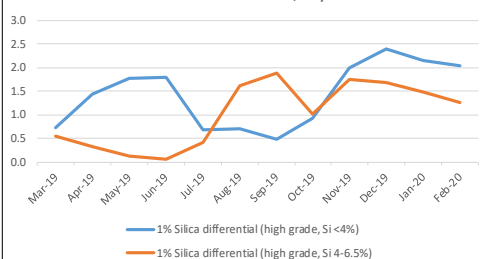
In contrast to iron ore, most brands fell relative to the index, falling on the anticipated short-fall in demand as China went on holiday.

Torrential rain in Australia and Brazil hurt ship loadings in February, whilst the virus impacted operations at domestic Chinese ports as fewer stevedores came back to work.

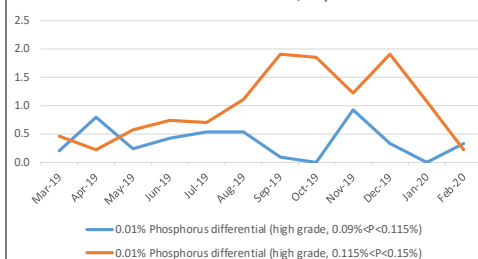
High-grade fines relative to mid-grade fines rose to 1 year highs in February.

Seaborne prices rising in February as markets slowly recovered and port inventories falling. Mills were running lean inventory levels at the site but were still operating.

Silica Differentials USD/dry tonne

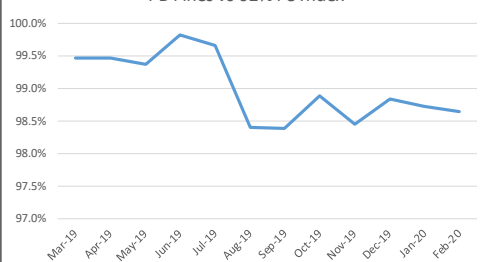


Phos Differentials USD/dry tonne

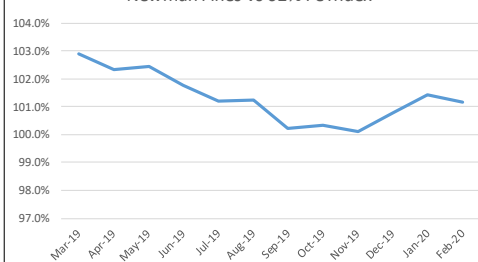


## KEY SEABORNE BRAND PRICE ASSESSMENTS VERSUS 62% FE or 65% FE PRICE INDEX

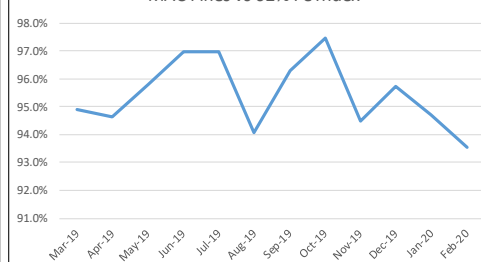
PB Fines vs 62% Fe Index



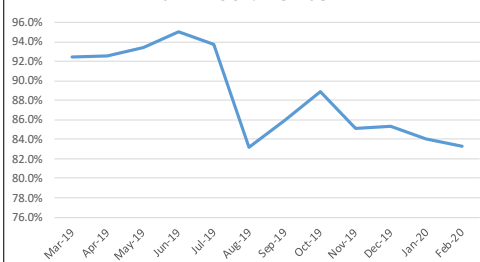
Newman Fines vs 62% Fe Index



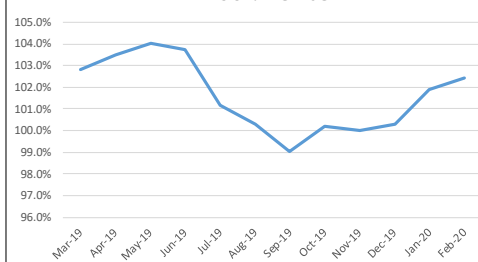
MAC Fines vs 62% Fe Index



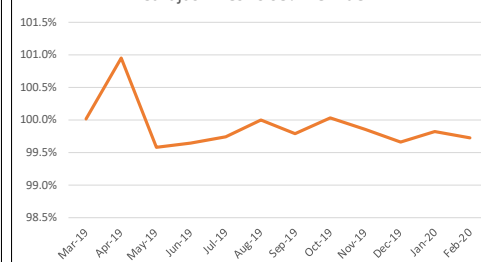
JMBF vs 62% Fe Index



BRBF vs 62% Fe Index



Carajas Fines vs 65% Fe Index



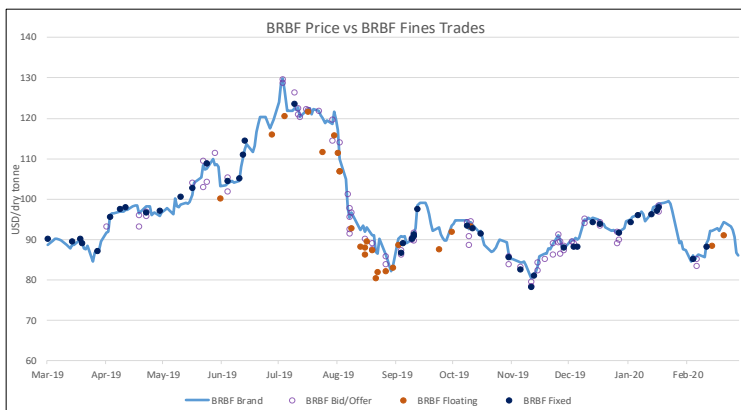
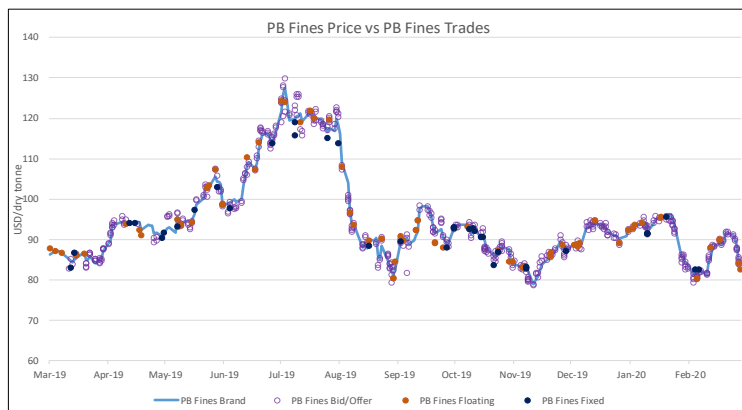


## IRON ORE SEABORNE BRAND PRICE ASSESSMENTS

Selected Iron Ore Seaborne Brand Averages, USD/dry tonne

Brand	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	YTD 2020
PB Fines	85.72	92.92	98.06	108.38	120.41	91.13	92.25	89.79	84.49	91.56	82.25	88.65	89.54
Newman Fines	88.69	95.61	101.09	110.50	122.30	93.78	93.97	91.13	85.95	93.38	95.19	88.47	91.91
MAC Fines	81.80	88.43	94.53	105.27	117.18	87.14	90.29	88.50	81.11	88.68	88.90	81.82	85.45
Jimblebar Blended Fines	79.68	86.48	92.12	103.21	113.27	77.01	80.58	80.72	73.07	79.01	78.90	72.80	75.92
Carajas Fines	97.24	107.76	115.04	124.05	129.18	101.34	99.21	97.48	96.34	103.78	107.36	102.65	105.07
Brazilian Blend Fines	88.59	96.66	102.67	112.64	122.24	92.89	92.87	91.01	85.85	92.92	95.65	89.60	92.70

## KEY SEABORNE BRAND PRICE ASSESSMENTS AND TRADED PRICES

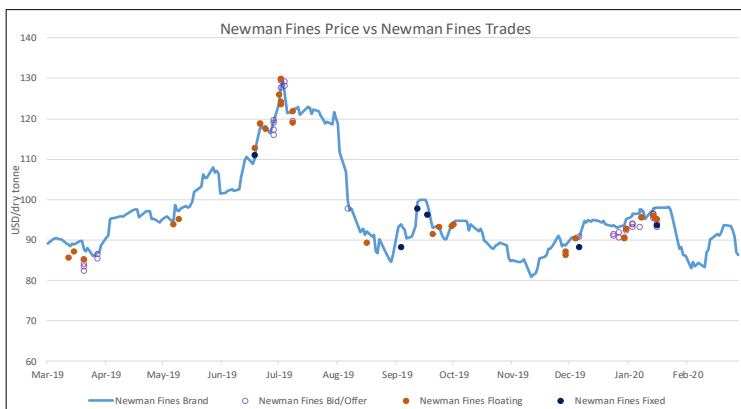
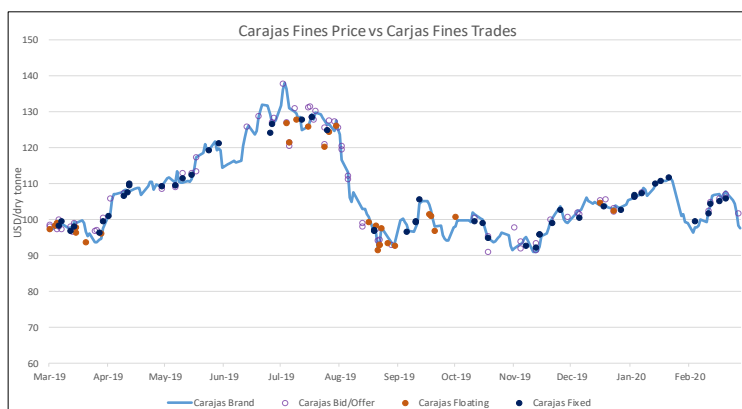


## Correlations to PB Fines Brand Assessment

PB Fines Bid/Offer	99.26%
PB Fines Floating trades	99.47%
PB Fines Fixed trades	99.56%

## Correlations to BRBF Brand Assessment

BRBF Bid/Offer	99.08%
BRBF Floating trades	99.05%
BRBF Fixed trades	99.52%



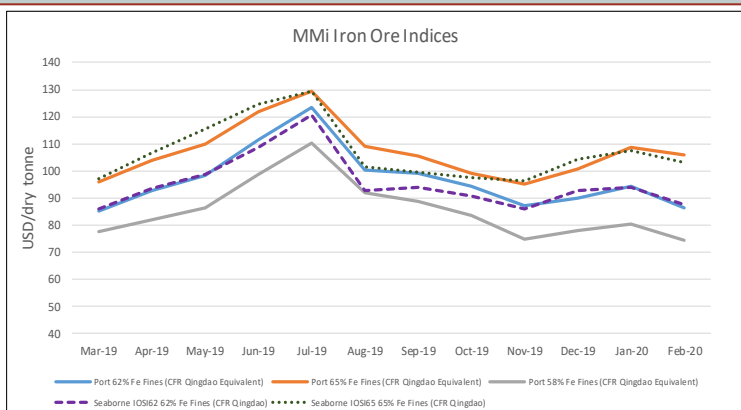
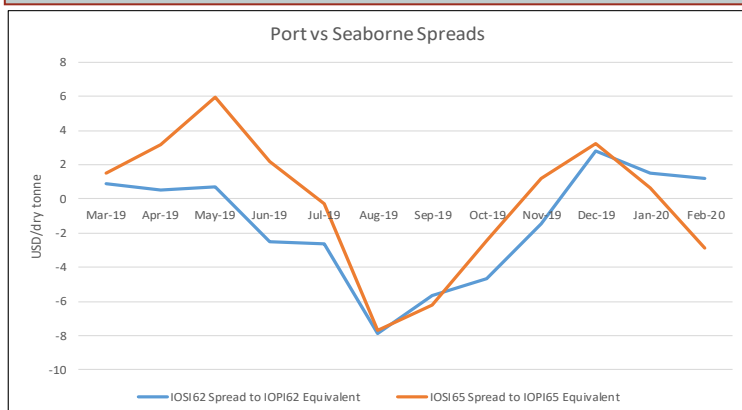
## Correlations to Carajas Fines Brand Assessment

Carajas Fines Bid/Offer	97.67%
Carajas Fines Floating trades	98.45%
Carajas Fines Fixed trades	98.95%

## Correlations to Newman Fines Brand Assessment

Newman Fines Bid/Offer	99.70%
Newman Fines Floating trades	99.46%
Newman Fines Fixed trades	98.65%

## IRON ORE PORT AND SEABORNE PRICE INDEX COMPARISONS



IRON ORE INDEX SPECIFICATIONS AND COMPILATION RATIONALE

Iron Ore Index Specifications (Port and Seaborne)					Index Compilation Rationale
	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.
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	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>
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	

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		

AVERAGE 2019 IRON ORE BRAND SPECIFICATIONS

PORT STOCK BRANDS						SEABORNE BRANDS					
	62% Fe average brand specifications for 2019						Specifications applied for 62% brand assessments				
	Fe	Alumina	Silica	Phos	Moisture		Fe	Alumina	Silica	Phos	Moisture
Roy Hill	60.70%	2.24%	4.89%	0.060%	9.33%	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	61.55%	2.36%	3.75%	0.099%	9.38%	PB Fines 62%	62.00%	2.60%	4.30%	0.090%	10.00%
Newman Fines	62.50%	2.24%	4.09%	0.088%	7.66%	Newman Fines	62.40%	2.20%	4.30%	0.080%	6.40%
MAC Fines	60.83%	2.26%	4.74%	0.083%	7.49%	MAC Fines	61.00%	2.70%	4.70%	0.110%	9.30%
Jimblebar Blended Fines	60.78%	3.01%	4.45%	0.115%	7.47%	Jimblebar Blended Fines	59.50%	3.70%	5.80%	0.135%	8.30%
Carajas Fines	65.41%	1.28%	1.47%	0.077%	8.12%	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	62.67%	1.54%	4.78%	0.071%	8.24%	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%

	58% Fe average brand specifications for 2019				
	Fe	Alumina	Silica	Phos	Moisture
SSF	56.70%	3.07%	6.20%	0.055%	8.69%
FMG Blended Fines	58.22%	2.67%	5.54%	0.061%	7.61%
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	57.19%	1.57%	6.40%	0.039%	8.91%

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