

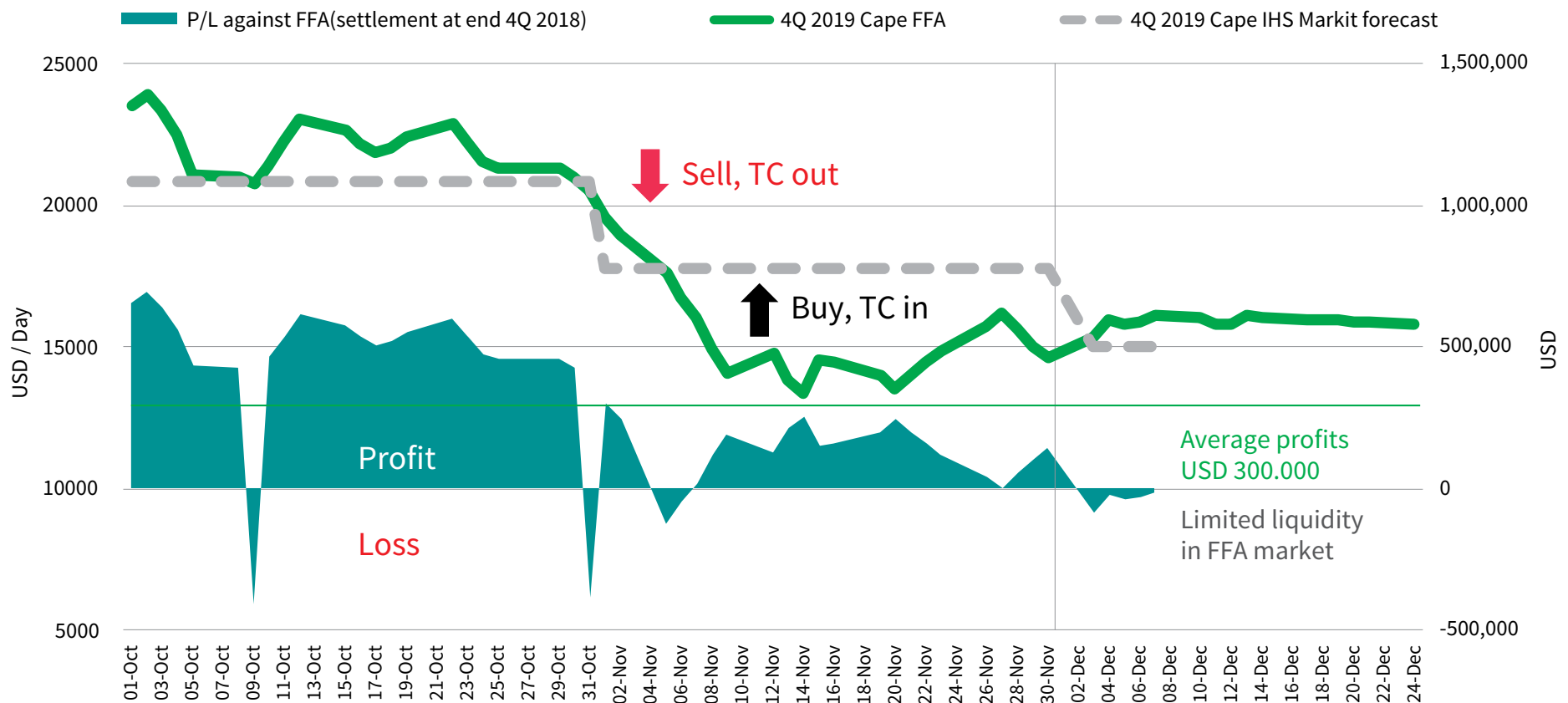


# Dry bulk market

Quarterly Outlook | March 2019

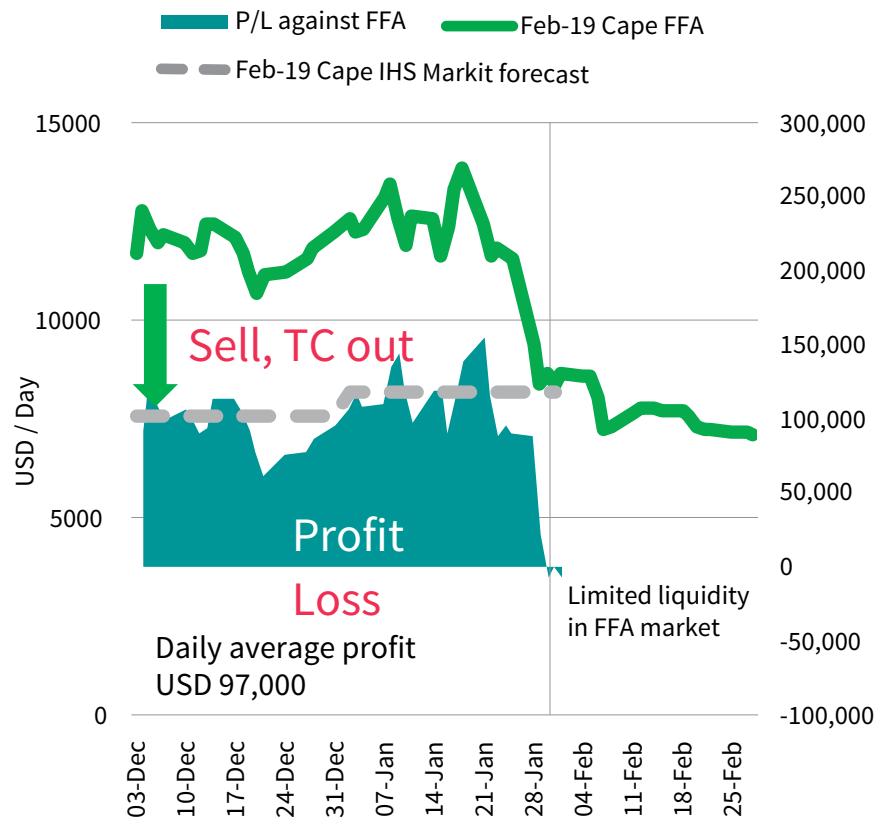
If ships or paper for Q4 2018 were traded as per IHS Markit signals (Buy/Sell), it would have generated \$300,000 USD over just two months (Oct 1 – Nov 30)

Capesize 4Q 2018, IHS Markit Forecast vs FFA



IHS Markit Forecast models have shown strong sell signals for FFA Feb 2019 before the derivative fell significantly and turned bearish than our prediction

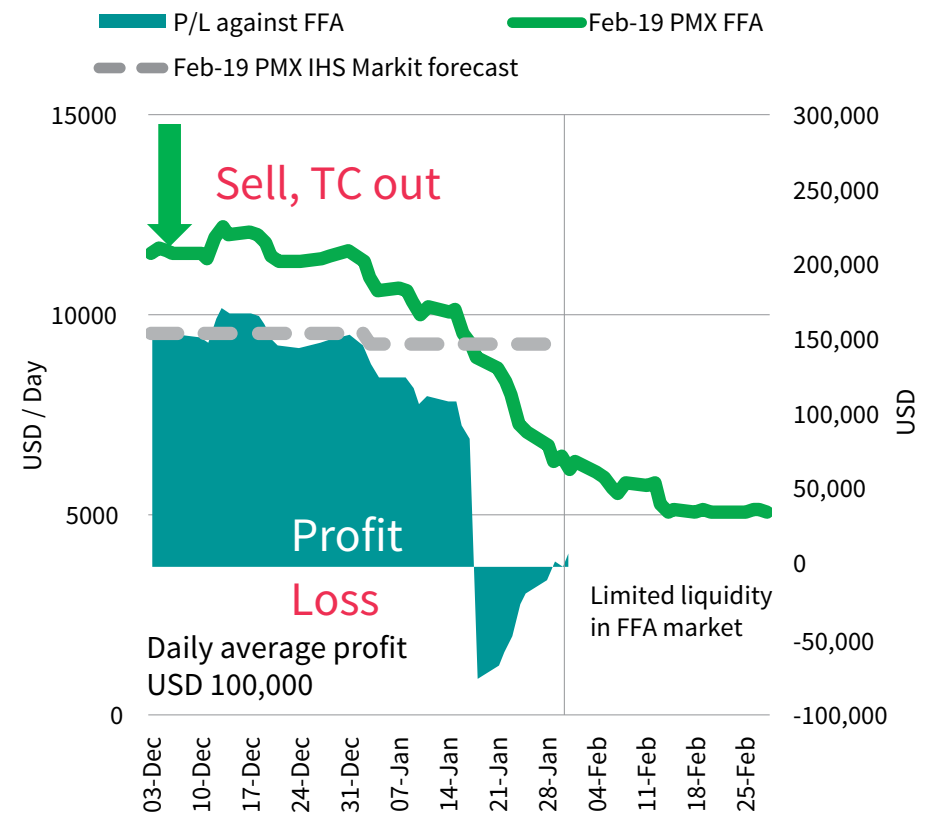
Capesize 5TC average Feb 2019 , IHS Markit vs FFA



Note: profit and loss as of 31st Jan 2019  
Source: IHS Markit, Baltic Exchange

© 2019 IHS Markit

Panamax 4TC average Feb 2019, IHS Markit vs FFA

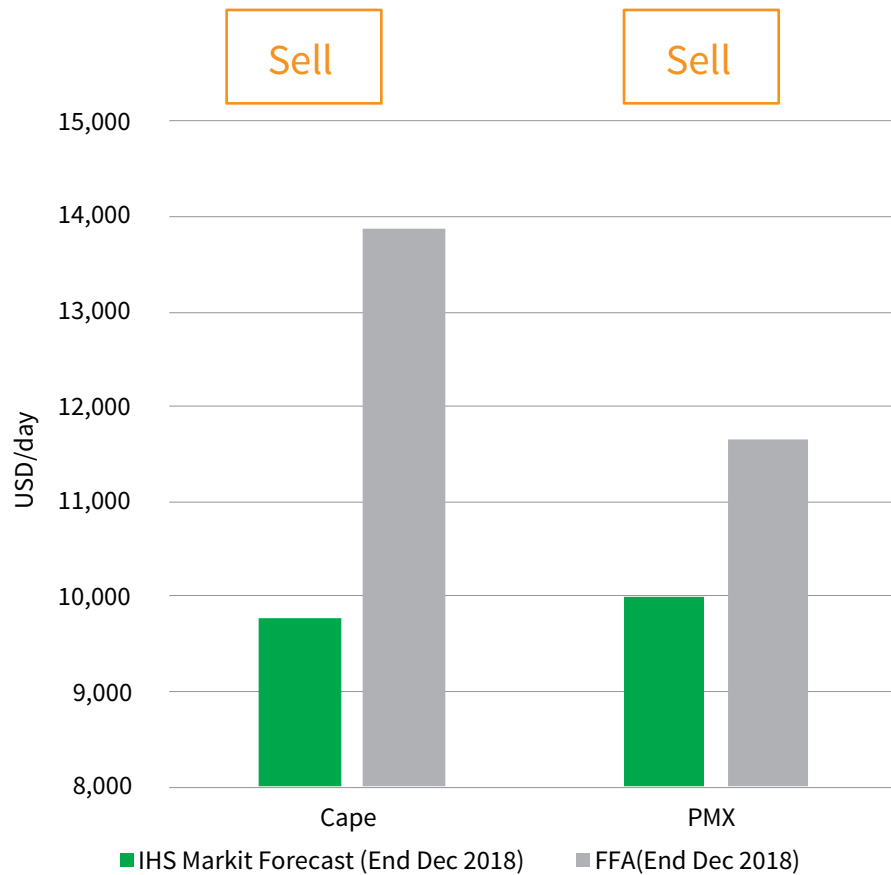


Note: profit and loss as of 31st Jan 2019  
Source: IHS Markit, Baltic Exchange

© 2019 IHS Markit

# IHS Markit's dry bulk freight forecast models on 31st December 2018 showed strong sell signals for FFA first quarter 2019 contracts

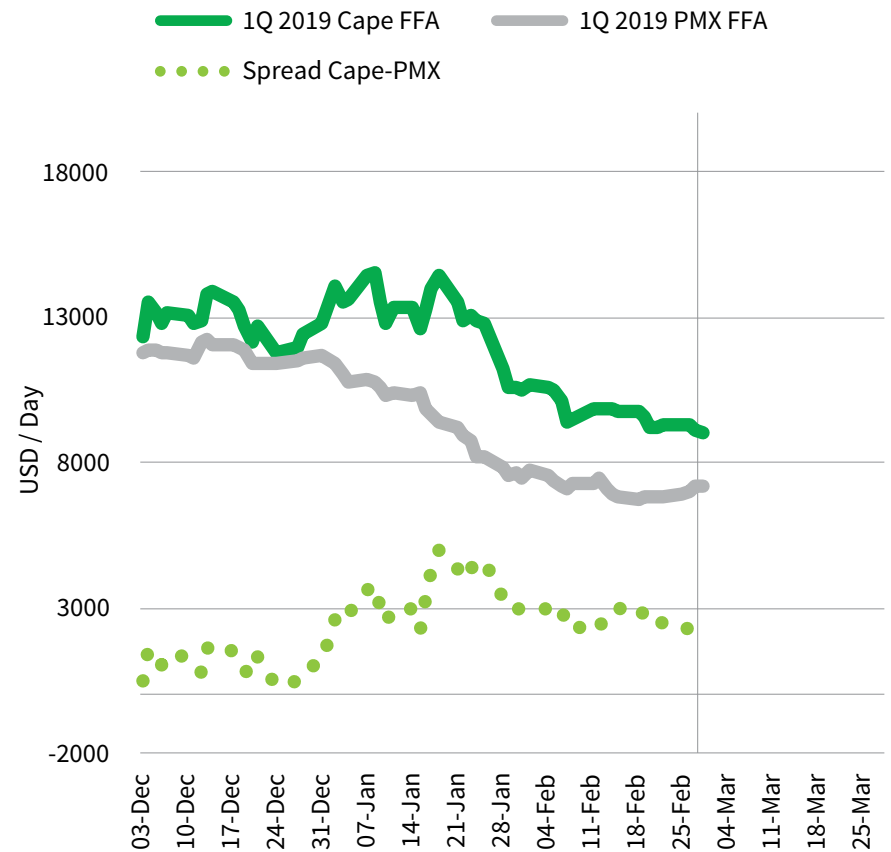
TC average 1Q 2019 : IHS Markit forecast vs FFA (at 31st Dec 2018)



Source: IHS Markit

© 2019 IHS Markit

FFA 1Q 2019 movements

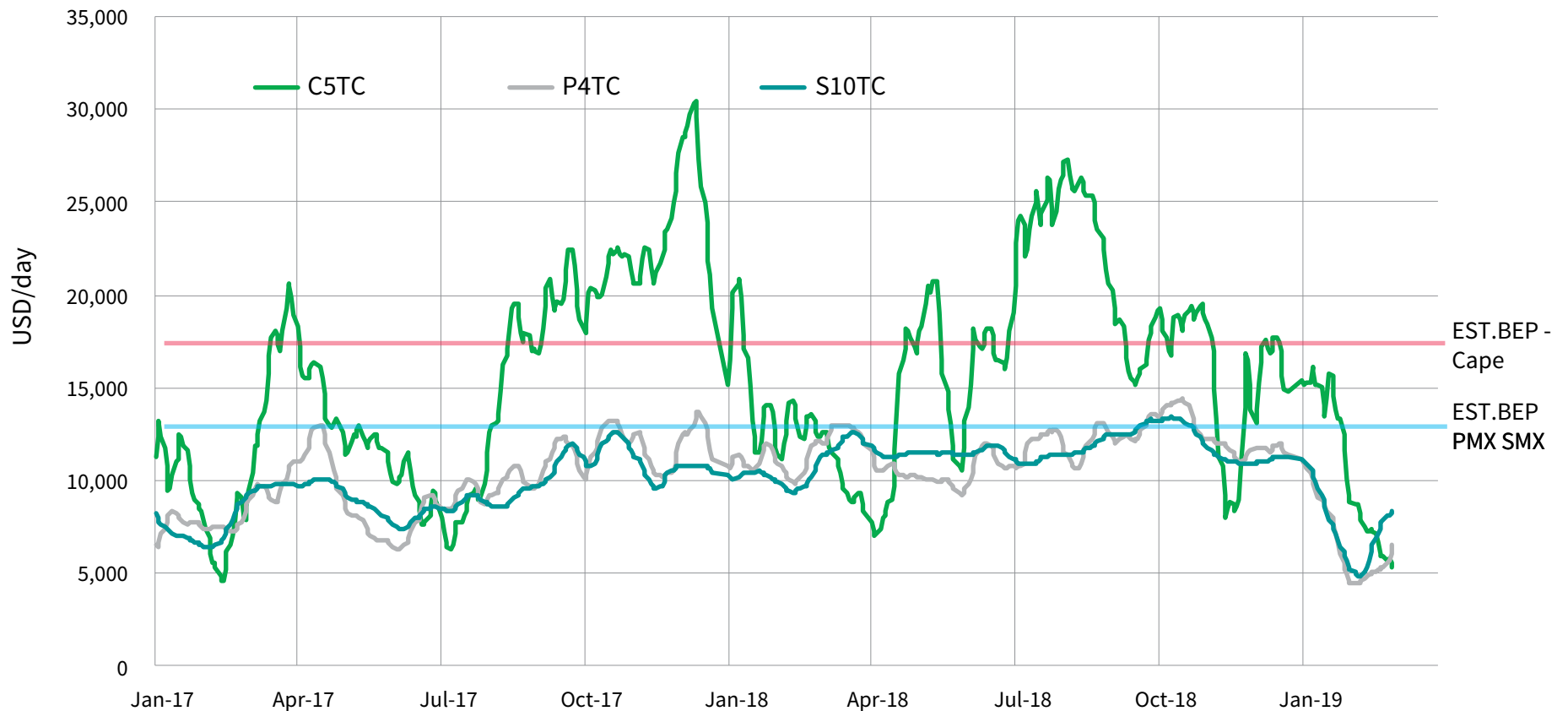


Source: IHS Markit, Baltic Exchange

© 2019 IHS Markit

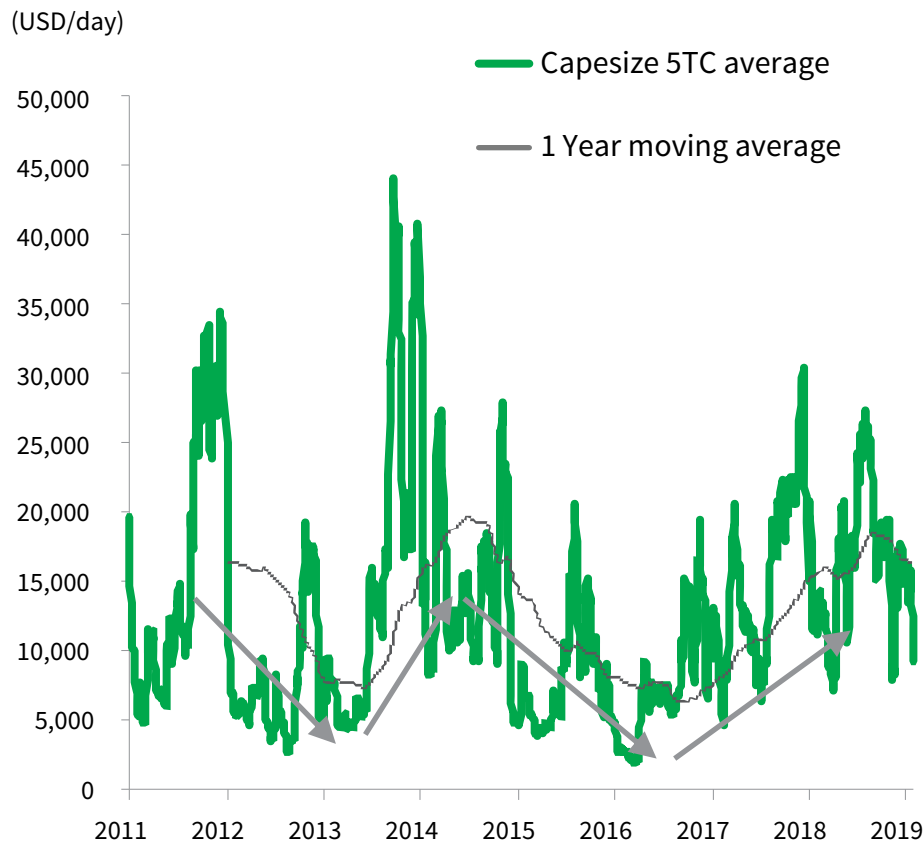
In 2018, Capesize freight rates have improved and stayed profitable for a period, while smaller sizes have continued to earn below break-even point

Historical time charter rate – Capesize, Panamax, and Supramax



At the start of 2019, the Capesize market maintained its stable trend, while the Panamax spot market plunged and broke the long term resistance line

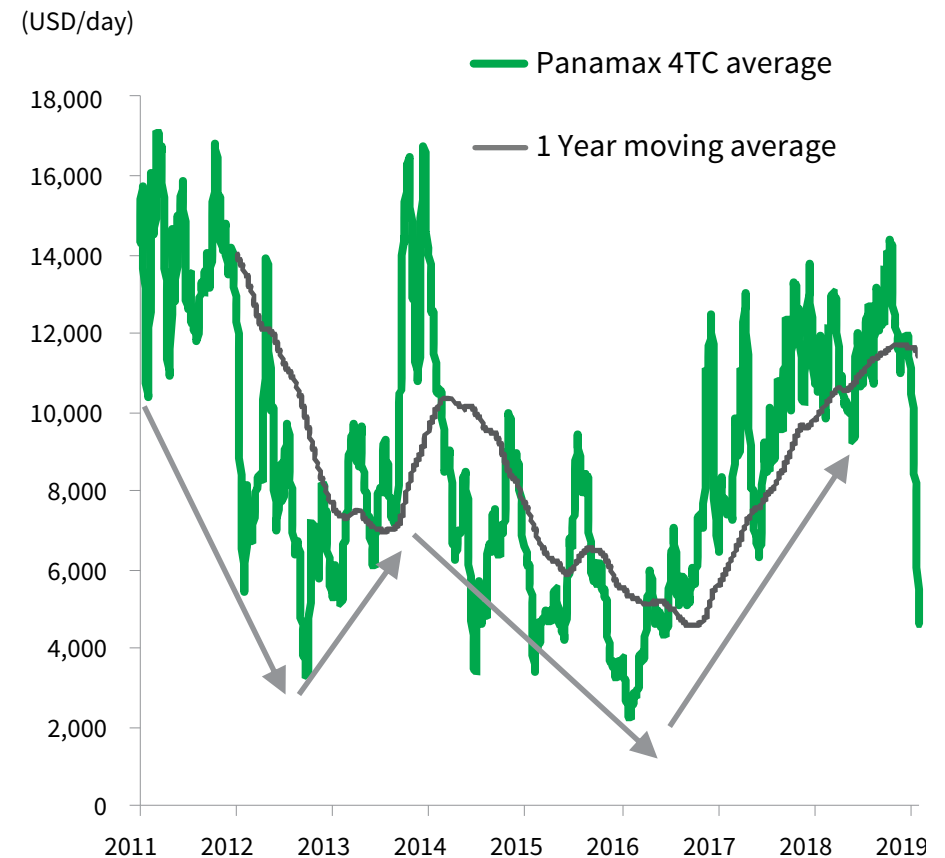
Capesize earning historical trend since 2011



Source: IHS Markit, Baltic Exchange

© 2019 IHS Markit

Panamax earning historical trend since 2011

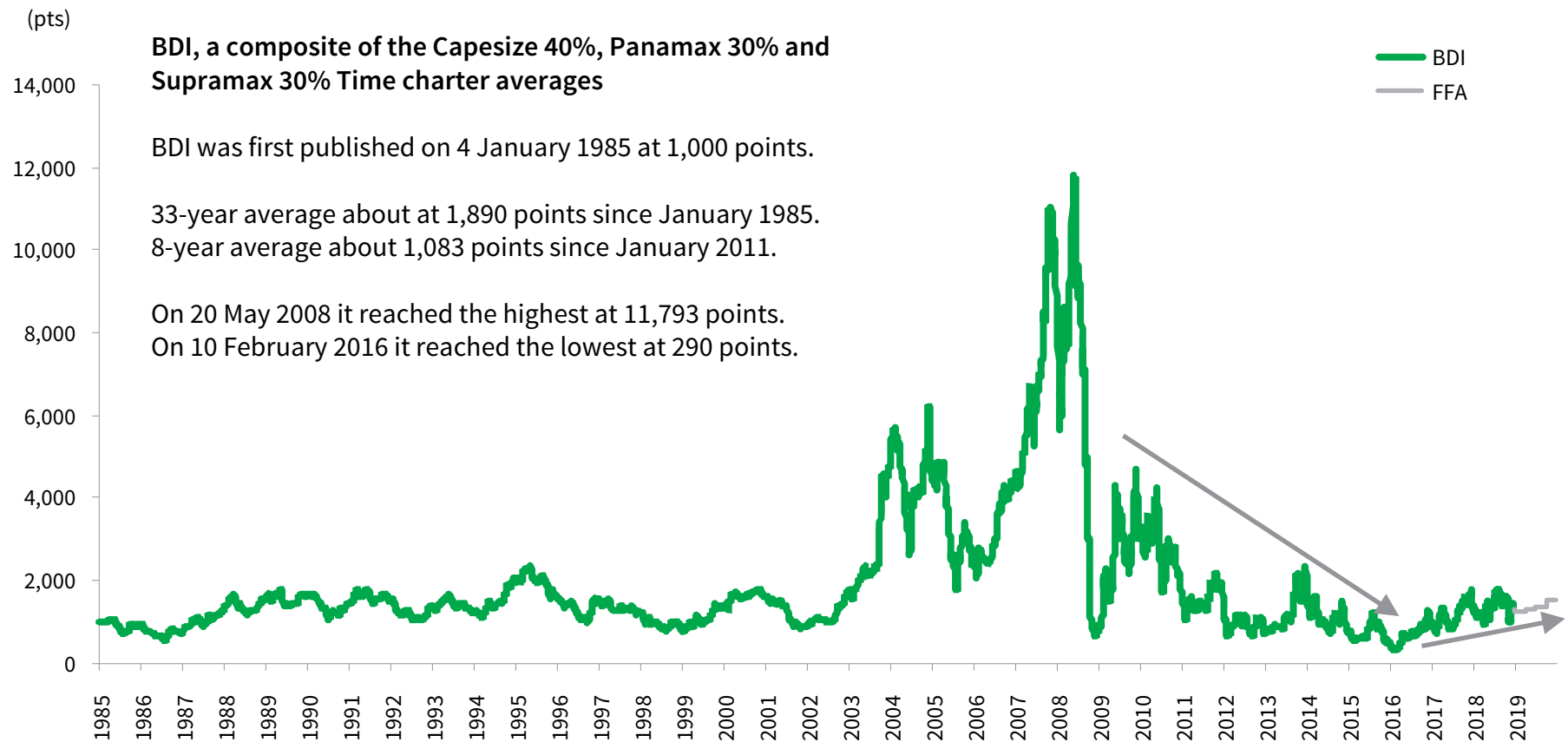


Source: IHS Markit, Baltic Exchange

© 2019 IHS Markit

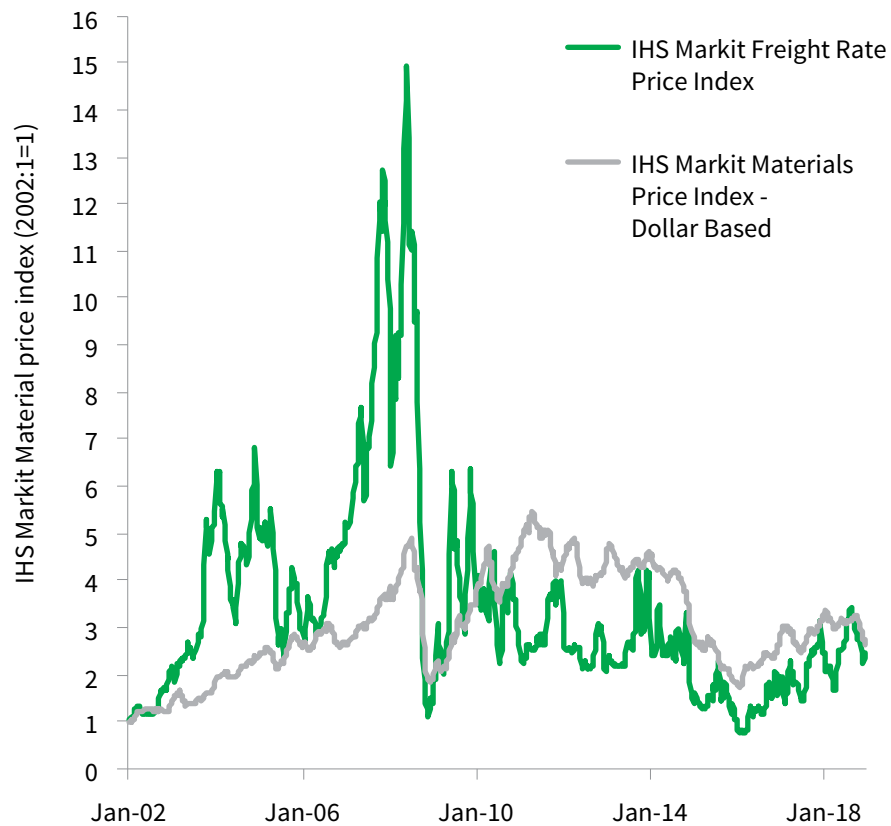
# Has the dry bulk market returned to the 80s and 90s?

## Baltic Dry Index historical trend



# Freight and commodity prices

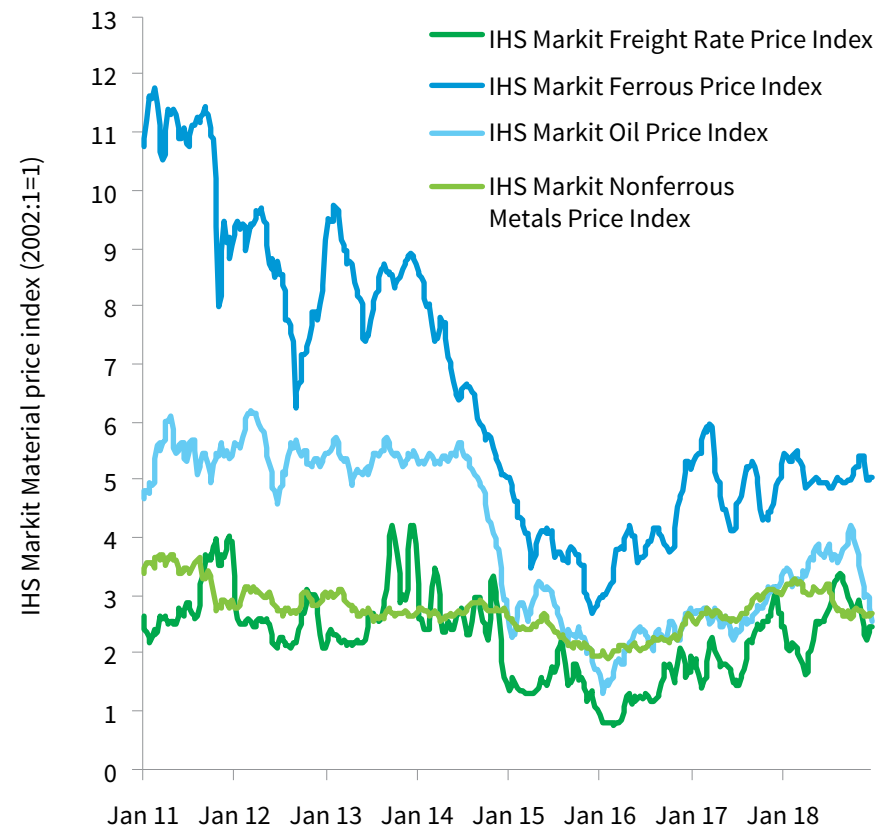
IHS Markit freight rate price index vs IHS Markit material price index



Source: IHS Markit

© 2019 IHS Markit

Freight vs major commodities



Source: IHS Markit

© 2019 IHS Markit



# Dry bulk market summary

- **Steel/Iron ore:** Steel prices are currently in free fall, reflecting iron ore and coal prices. Prices slid due to a steel demand drop and excess production. Steelmakers have therefore cut costs by switching to lower grade iron ore in an attempt to avoid high premiums on 65% Fe fines and direct charge material. Premiums for 65% Fe fines have now fallen from 40% in September to 22%
- Total Chinese Iron ore import volumes were 1,064 million tonnes in 2018, down 1% from last year as steel production was mainly increased from electric arc furnace which use steel scrap rather than iron ore and coking coal
- **Coal:** China's efforts to keep 2018 imports flat to 2017 levels, culminating in the introduction of import restrictions at ports throughout the last six weeks of the year, brought a heavy decline in December. Uncertainties regarding when Chinese policy on coal cargoes would be changed are weighing heavily on sentiment and resulting in Chinese-exposed traders largely withdrawing from coal transactions
- Total China coal import volumes were 281.5 million tonnes in 2018, up 3.4% from last year, while China produced 3.55 bnt of raw coal last year, up 5% from 3.34 bnt in 2017
- **Grain:** Chinese buyers ordered a few soybean shipments in the current trade war truce, but considering the expected record soybean harvest in Brazil, US exports are expected to continue to be displaced by Brazilian exports. US exports moved heavily to alternative markets such as Europe
- Total China soybean imports were down 7.8% in 2018, with US volume down 49% from last year
- **Other:** Guinea bauxite exports are expected to continue growing
- **Fleet:** Recent demolitions and deliveries dropped average fleet age, so potential for demolition capacity is small. The order book remains under control prompting the opinion that expected IMO 2020 disruptions will further tighten tonnage supply and favourably influence freight rates for dry bulk owners
- Owners of older inefficient tonnage face some tough choices in the market, to scrap or to comply with or without investing in scrubbers. Ultimately freight earnings, future sentiment and asset prices are going to play the biggest role
- Based on last year's slippage of 23%, the dry bulk fleet growth is expected to be 3.5% in 2019 compared to 2.9% in 2018

# Macroeconomic trends and risks – World

- The period of above-trend economic growth is ending
- Financial conditions are tightening and volatility is increasing
- The combined effects of policy uncertainty and the surge in financial volatility are hurting business sentiment and investment
- World real GDP growth is projected to diminish from 3.2% this year to 3.0% in 2019 and 2.8% in 2020
- Softening global demand growth, tightening credit conditions, and US dollar strength are putting downward pressure on commodity prices
- The risks of policy shocks have risen, but probably not enough to trigger a global recession in 2019. These include rising debt levels, US-initiated trade conflicts, Brexit, and heightened political uncertainty in many parts of the world
- In the United States, fiscal stimulus will continue to fuel growth in 2019, but inflationary pressures and policy tightening will restrain growth in 2020–21
- China's growth will be slowed by US tariffs, deleveraging, and excess capacity. Government stimulus will provide some offsetting support
- Europe's growth will be restrained by weakening global trade dynamics and political uncertainties, including the United Kingdom's Brexit path
- Emerging markets that depend heavily on external finance, such as Turkey, Argentina, and South Africa, are vulnerable



# Macroeconomic trends and risks – China and India



China

- Real GDP growth slowed to 6.4% y/y in the fourth quarter, its weakest pace since the second quarter of 2009. For the year 2018, the economy grew 6.6%
- Growth in industrial production recovered to 5.8% y/y in the fourth quarter with the relaxation of pollution curbs. However, services output growth eased to 7.4% y/y. In 2018, services accounted for 60% of real GDP growth
- The latest US import tariffs on USD200 billion of Chinese goods are assumed to remain at 10% indefinitely. Both exports and imports of goods registered y/y declines in December, pointing to further economic weakness in 2019
- Efforts to reduce leverage in the economy through tighter financial supervision and regulation have slowed real-estate investment growth
- The government is shifting its policy balance toward growth support. Beijing has announced personal income tax cuts, export tax rebates on selected products (mostly intermediate goods), and a reduction in banks' reserve requirement ratio. Corporate tax cuts are expected in 2019

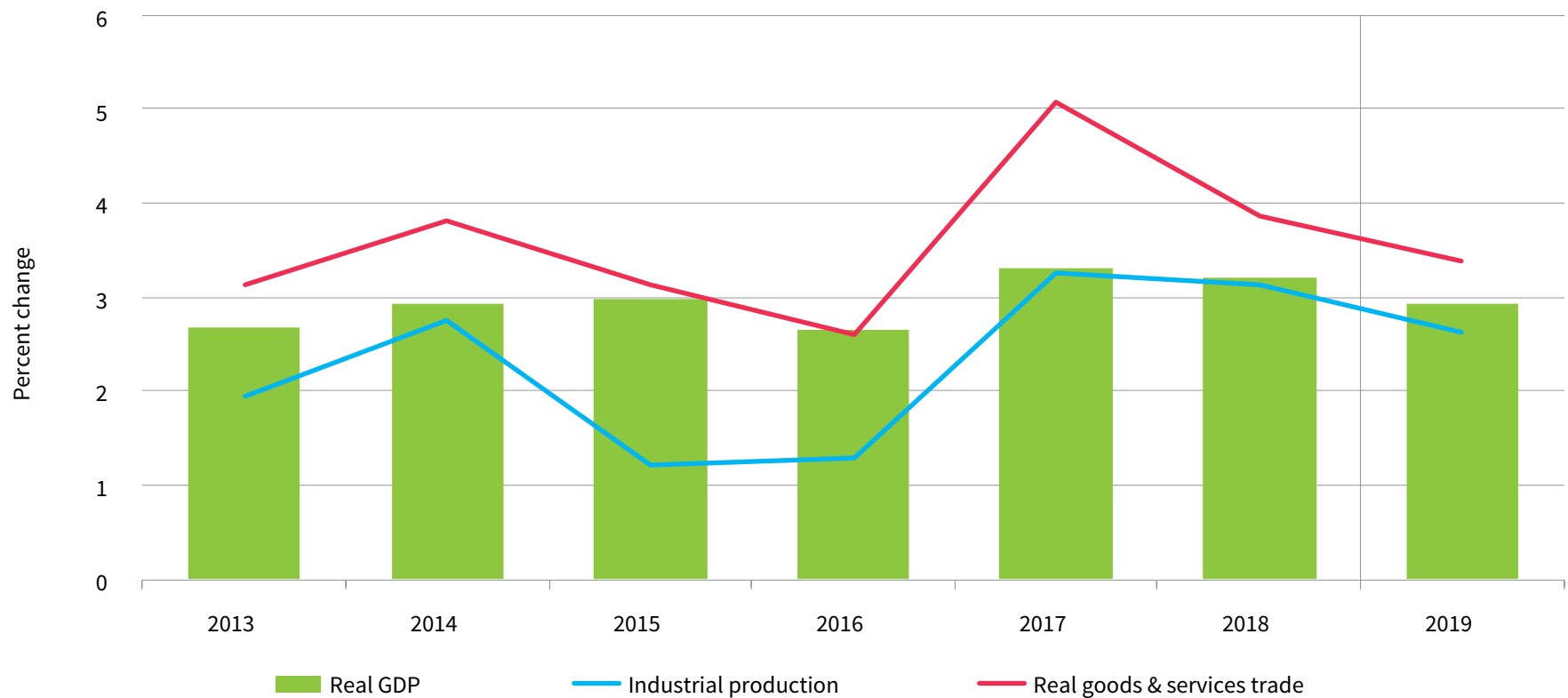


India

- Real GDP grew 7.1% y/y in the September quarter; gains were broadly based
- A loss of momentum in private consumption is a key risk. The re-emergence of food price deflation signals continued weakness in rural demand - even as the government boosts support to farmers ahead of general elections due in May
- Consumer price inflation slowed to 2.2% y/y in December as food and beverage prices declined for a third consecutive month. While a pickup in inflation is expected in the coming months, it should remain relatively benign
- Mild inflation and weakening industrial production growth may prompt the Reserve Bank of India (RBI) to abandon its tightening bias and hold its policy rate at 6.5%. New RBI governor Shaktikanta Das is more focused on supporting economic growth
- India is expected to overtake the United Kingdom to become the world's fifth-largest economy in 2019

# Global output growth and trade will continue to slow

Global real GDP, industrial production, and real exports



# Real GDP growth in major economies

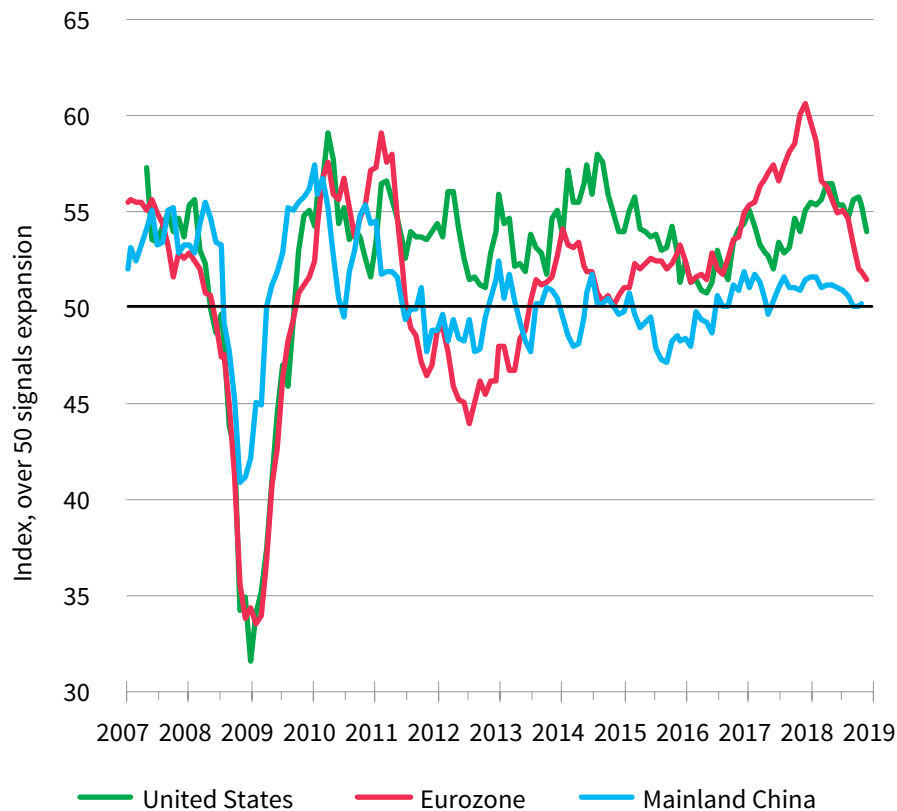
Real GDP			
Percent change	2017	2018	2019
World	3.3	3.2	2.9
United States	2.2	2.9	2.5
Canada	3.0	2.1	2.0
Eurozone	2.5	1.9	1.4
United Kingdom	1.8	1.3	1.1
China	6.9	6.6	6.3
Japan	1.9	0.8	0.8
India*	6.7	7.2	7.0
Brazil	1.1	1.4	1.8
Russia	1.5	1.6	1.3

Source: IHS Markit

© 2019 IHS Markit

# IHS Markit manufacturing PMIs signal deceleration and emerging-market currencies have depreciated in 2018

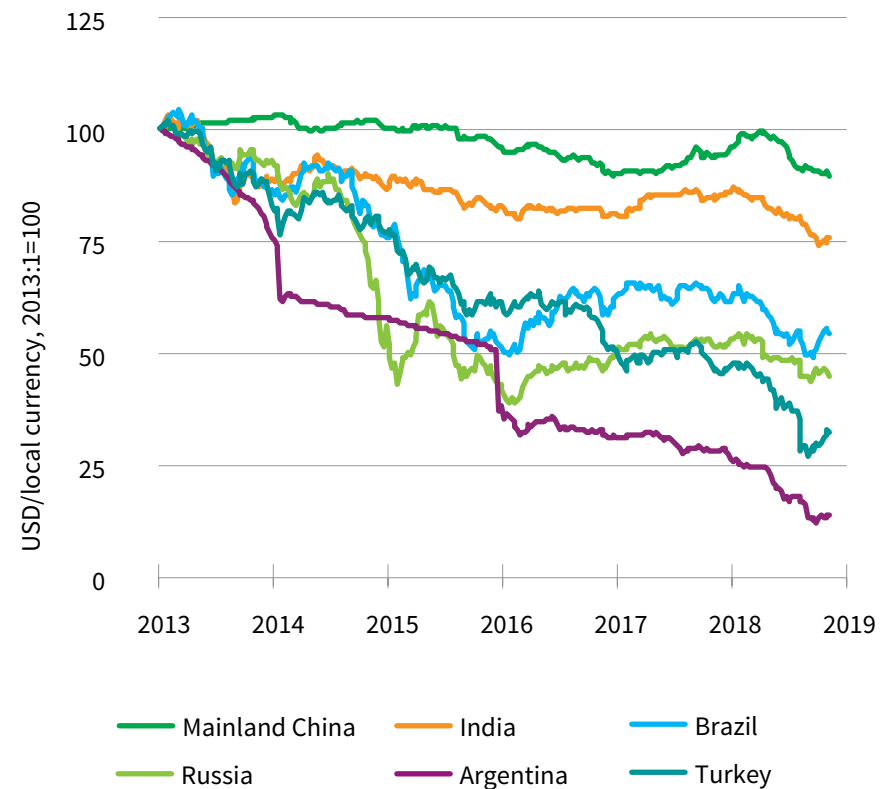
Purchasing managers' indexes (PMI's)



Source: IHS Markit

© 2019 IHS Markit

Exchange rates indexes



Source: IHS Markit

© 2019 IHS Markit

# Vale dam disaster impact summary

- Vale's output was expected to fall by at least 10% after the collapse of its dam in Brumadinho, Minas Gerais
- Iron ore price spiked while the spread of different grades of iron ore have not diverged much
- Capesize freight fell significantly in the short-term, however the trade pattern change could have a bigger downside risk on shipping demand
- As it happened in the low season with several other weather disruptions and holidays, the dam disaster impact on freight was heightened. With the uncertainty caused, there could be an FFA overreaction to supply interruptions caused by Vale's temporary mine suspension
- However, the impact of the cut in iron ore production will be felt most by spot Capesize vessels using southern Brazil ports. Actually, Capesize shipments in southern Brazil ports started to decrease after the dam accident, while VLOCs lifting still increased in northern Brazil ports. Therefore, even if more iron ore cargo produced from northern Brazil (Vale indicates to make up the shortfall by expanding production in northern system), its positive impact on spot demand will be limited or controlled
- More importantly, even after the dam accident, the spread of different grades of iron ore have not diverged much due to a recent low steel margin. Surging ore prices could put more pressure on steel margins, that may limit China's buying appetite for Brazil's high grade ore. Eventually, Chinese iron ore buyers could switch to lower grade ore from port stocks or domestic sources, which could be a much greater downside risk on seaborne trade demand



# Vale dam disaster overview

- On 25 January 2019, tailings Dam I at Vale's Córrego do Feijão mine, in Minas Gerais, Brazil, ruptured, releasing millions of metric tons of iron ore tailings. (Tailings are the output of the wet beneficiation process, comprising of very fine particles of iron ore and impurities, in a suspension of water.) Tragically, the outflow impacted key administrative and production areas of the mine operation, leaving more than 100 staff and residents dead, with more than 200 still missing
- Vale, based in Brazil, is the largest iron ore miner in the world, producing 33%, or 390 million metric tons (Mt), of iron ore for the seaborne market on an annual basis. Its operations comprise three systems: Northern, Southern, and South-Eastern. The Córrego do Feijão mine produced around 8.2 million metric tons per annum (Mtpa) of iron ore in the Parapoeba complex (26 Mtpa) of the Southern System (89 Mtpa)
- Since the accident, Vale has announced plans to decommission all of its 19 “upstream-type” tailings dams and has presented its decision to do so to the Brazilian authorities. This decision will result in a temporary production cut of around 10%, or 40 Mtpa of total output. Vale indicates it will be able to make up the majority of this shortfall by expanding production at other facilities in systems with dry-processing, which do not produce wet tailings, as well as drawing on around 30 Mt of inventories at blending facilities in Brazil, China, and Malaysia. In the very short term, however, we do not expect Vale will be able to react fast enough to completely replace lost tons. Additionally, Vale's flagship S11D mine is still ramping up to its nameplate 90 Mtpa capacity and is therefore unlikely to be able to speed up
- Within this 40 Mtpa figure is included high-value pellet feed for 11 Mtpa of iron ore pellet, roughly 18% of Vale's pellet production, as Vale idles the Fabrica and Vargem Grande pelletizing plants, which also supply Brazilian steel mills. As Vale is now using 100% of total pelletizing capacity, this will be a 11 Mtpa net loss, which is equivalent to around 10% of total seaborne pellet supply. With pellet premiums trading at around USD55/metric ton over benchmark prices, this will be a significant loss of revenue for Vale, despite the fact that this loss of supply will boost premiums in 2019
- Also, a court ruling in Brazil has recently suspended operations at the Brucutu mine with 30 million ton of capacity. Vale has argued the court ruling is unjust and is fighting to resume operations at this facility as soon as possible. If Vale is unsuccessful in its appeal, other producers will be hard-pressed to make up the shortfall

Source: IHS Markit Pricing and Purchasing Strategic Report

## Iron ore production

Unit: Million metric ton	2016	2017	3Q 2018	9M 2018
Southern System*	95.7	86.4	22.4	63.2
- Parapeba	26.4	26.3	7.3	20.6
- Vargem Grande	29.2	23.3	5.8	16.3
- Minas Itbirito	40.1	36.8	9.3	26.3
Southeastern System	102.7	108.6	28.0	w77.9
Northern System	148.1	169.2	53.9	140.7
- S11D	0.4	22.2	16.1	42.1
Midwestern System	2.3	2.4	0.6	1.9
<b>Total Vale System</b>	<b>348.8</b>	<b>366.5</b>	<b>104.9</b>	<b>283.7</b>

Source: Vale

© 2019 IHS Markit

## Iron ore pellets production

Unit: Million metric ton	2016	2017	3Q 2018	9M 2018
Southeastern System	28.5	30.8	8.7	24.5
Southern System*	9.2	10.3	2.5	8.1
- Fabrica	2.8	3.8	1.1	3.1
- Vargem Grande	6.4	6.4	1.5	5.0
Oman	8.5	9.2	2.6	6.9
Samarco	0.0	0.0	0.0	0.0
<b>Total</b>	<b>46.2</b>	<b>50.3</b>	<b>13.9</b>	<b>39.5</b>

Source: Vale

© 2019 IHS Markit

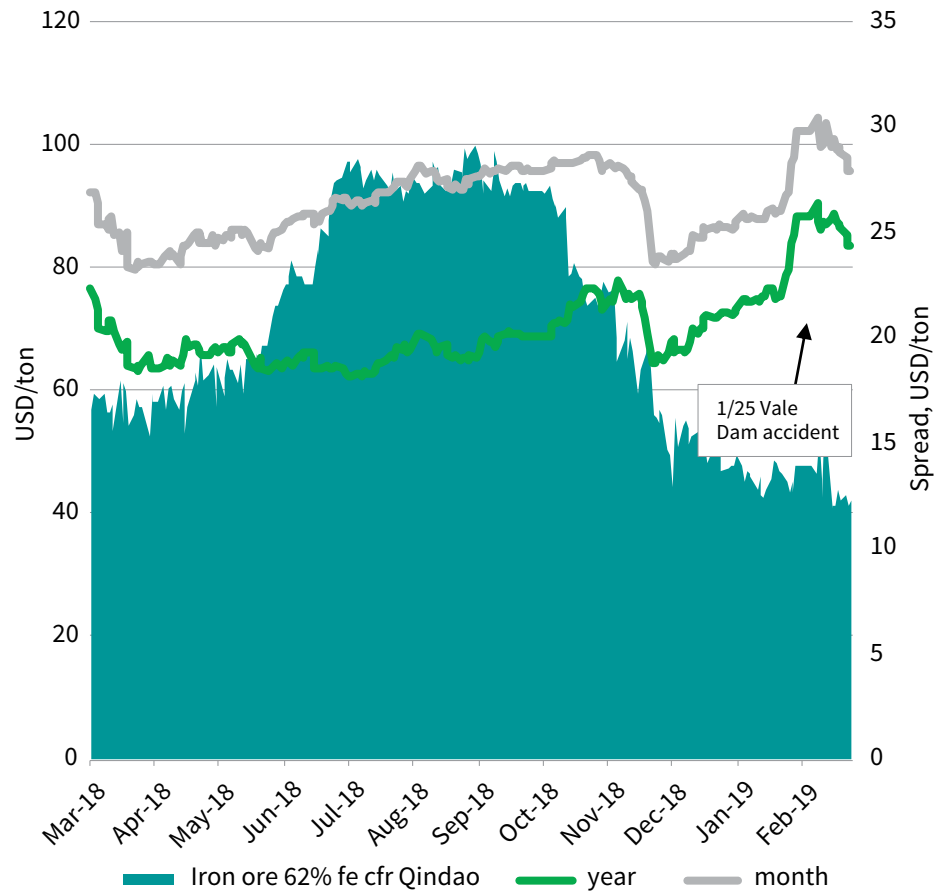


## Brazil iron ore ports



Freight fell and iron ore prices spiked, while the spread of different grades of iron ore have not diverged

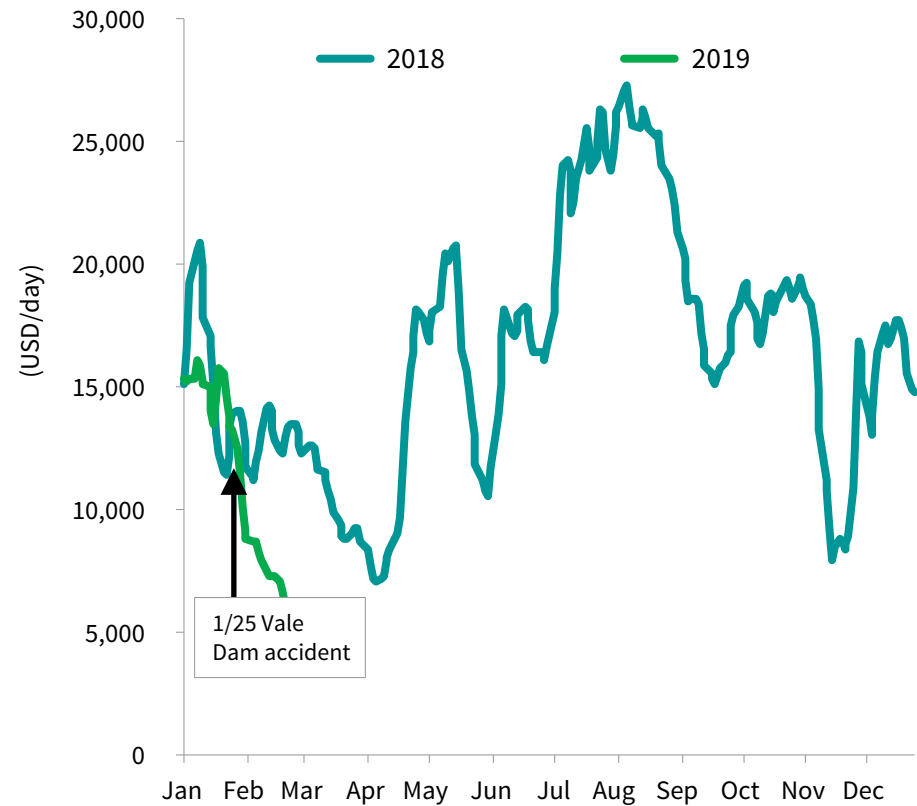
Iron ore prices (cfr Qingdao)



Source: IHS Markit

© 2019 IHS Markit

Capesize 5TC average & FFA

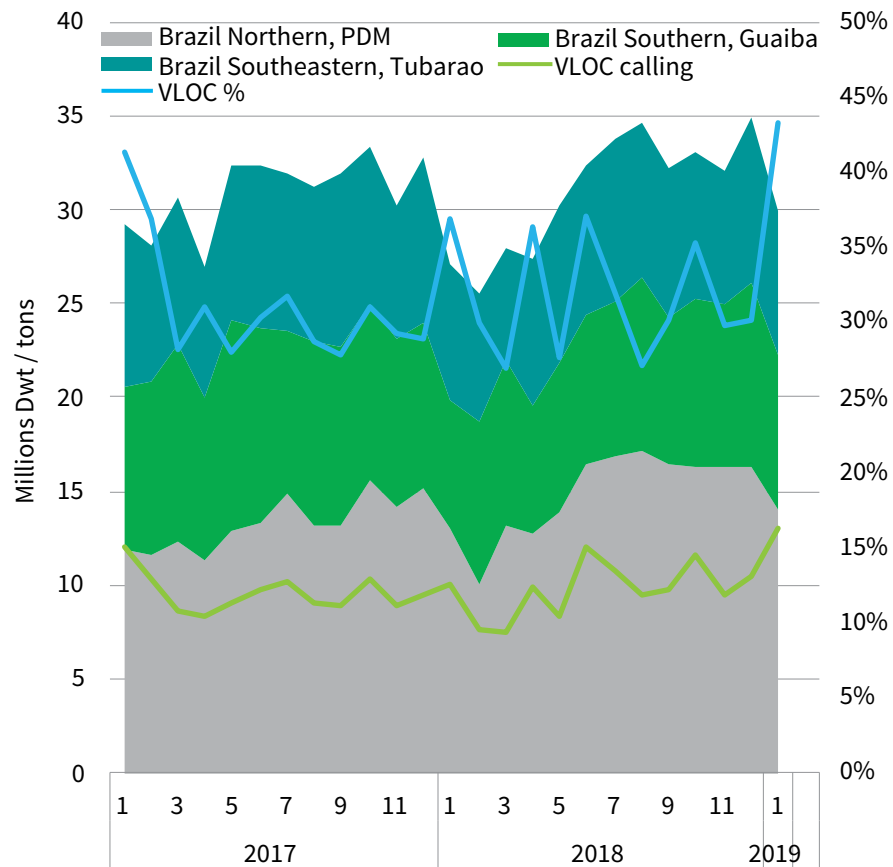


Source: IHS Markit, Baltic Exchange

© 2019 IHS Markit

Northern Brazil ports share in iron ore exports has been increased, while the incremental is mostly covered by VLOCs

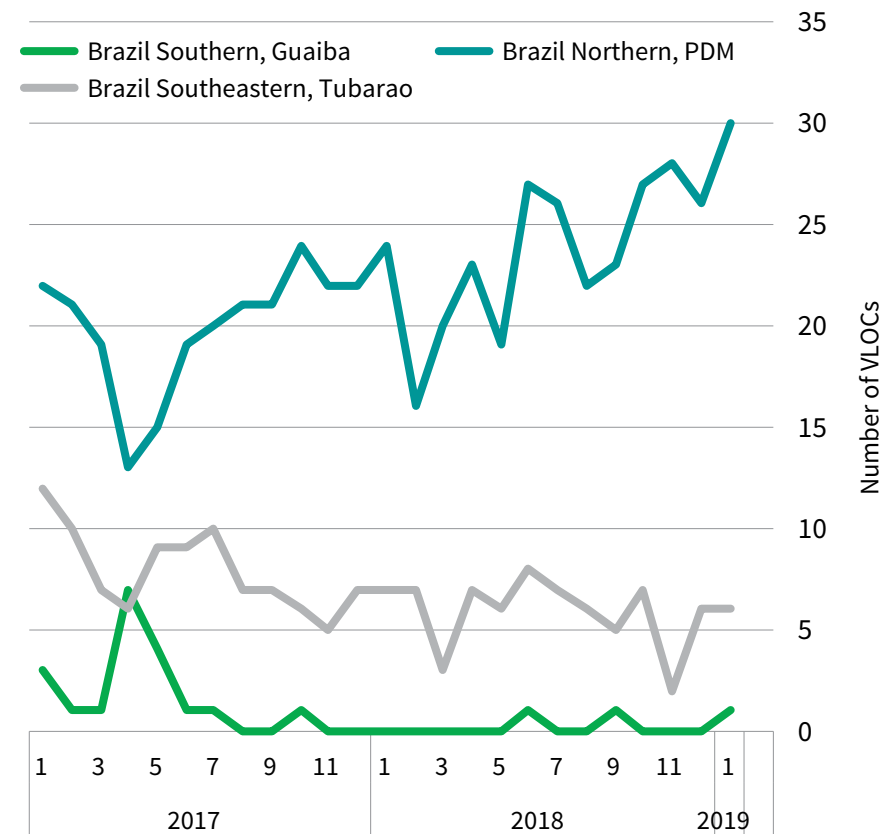
Brazil Iron ore shipments by port



Source: IHS Markit

© 2019 IHS Markit

VLOC lifting by region

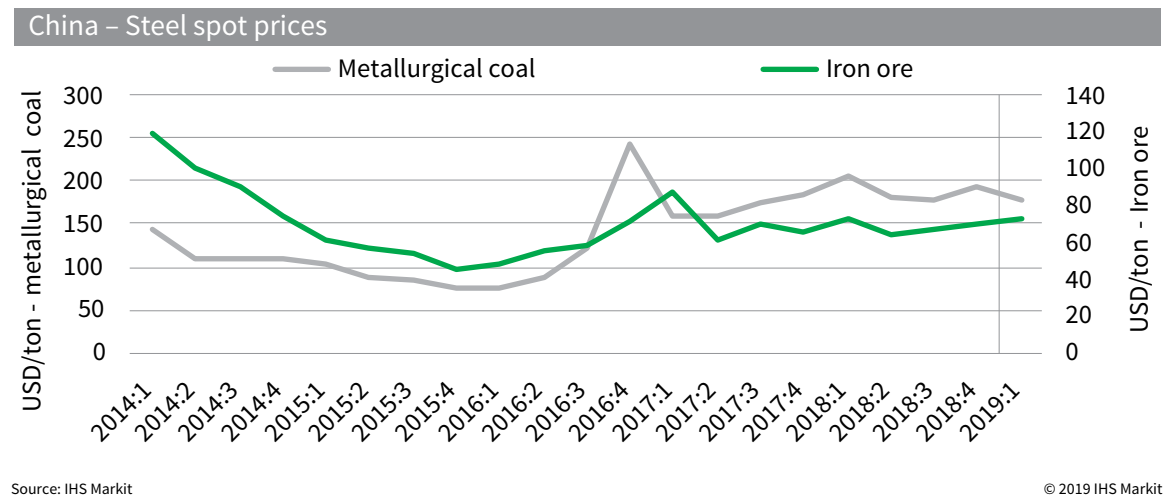
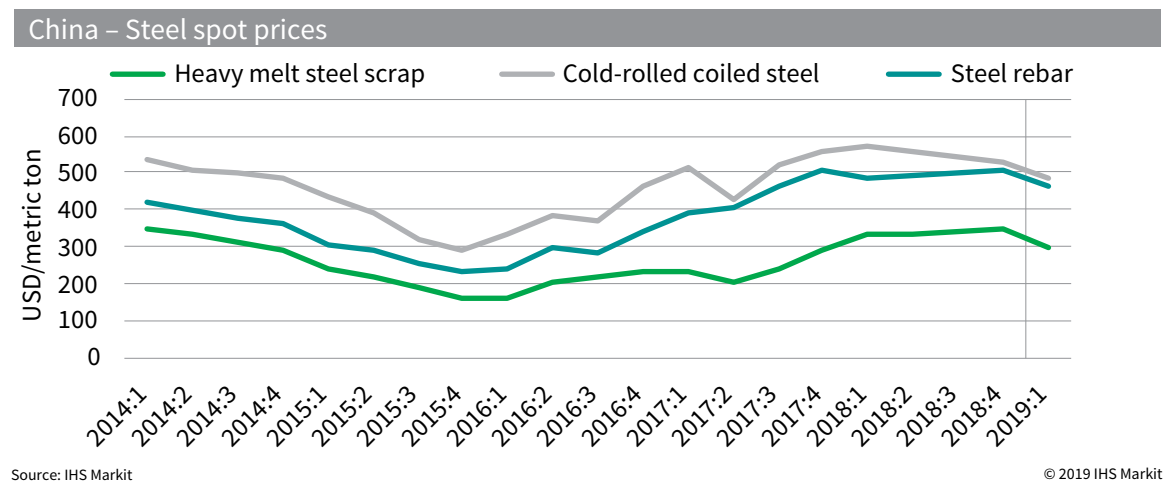


Source: IHS Markit, Baltic Exchange

© 2019 IHS Markit

# Steel and steel resource prices are under pressure

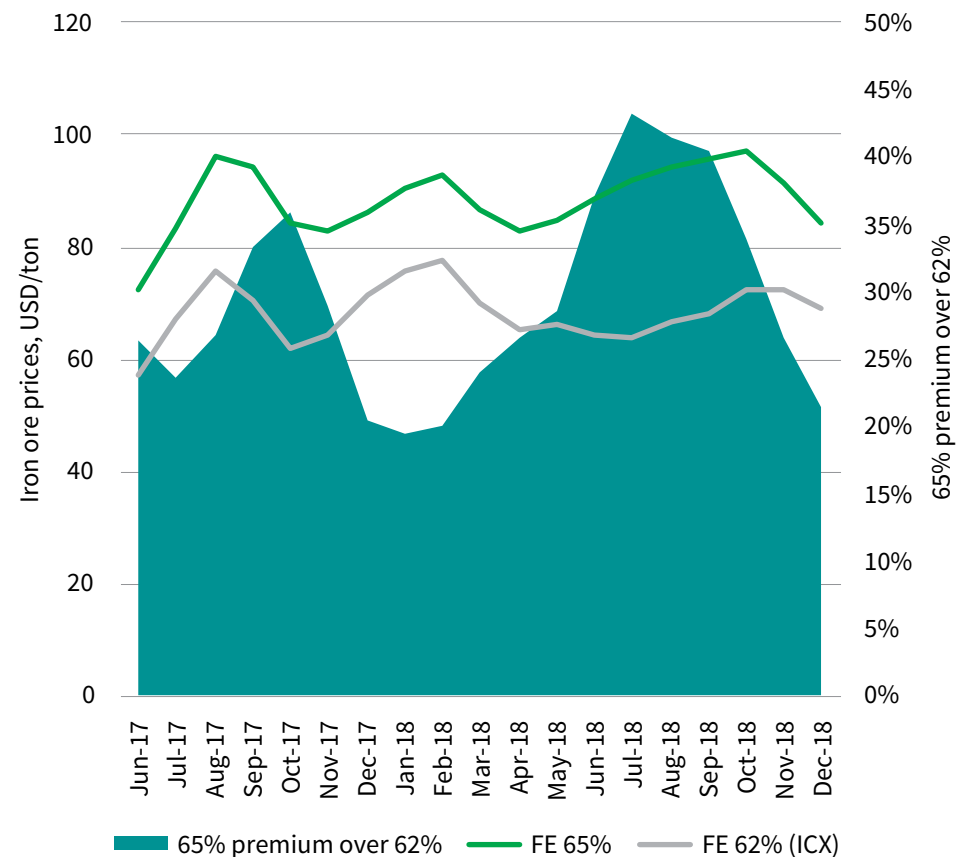
- Chinese and Asian steel prices are falling as demand is disappointing and production cuts are not as deep as last year. Therefore, steel mills and traders are trying to buy on spot until prices bottom-out
- Chinese prices are almost in freefall. Demand is basically flat. Winter production cuts were minimal as Beijing relaxed pollution controls. Tepid demand and excess production combine for very weak prices. We had expected prices to fall through the second quarter of 2019, but the rate of decline has accelerated. Prices may bottom out in the first quarter of 2019, and certainly by the second
- Lead indicators are turning downwards. The IHS Markit steel-users PMI for new orders is below 50 in Europe and China, and trending downwards
- Uncertainties regarding when Chinese policy on coal cargoes would be changed are weighing heavily on sentiment and resulting in Chinese-exposed traders largely withdrawing from coking coal transactions. However, as import control eased, trading conditions should improve



# Iron ore premiums for 65% Fe fines in China picked in third quarter last year declined significantly afterwards due to lower steel margins

- Less-stringent-than-expected pollution controls have helped to bring steel prices lower since September especially given the rampaging crude steel output from China this year. This oversupply, combined with trade war concerns and a Chinese economic consolidation has hit demand taking margins on HRC negative and rebar to around \$5/ton
- Steelmakers have therefore cut costs by switching to lower grade iron ore in an attempt to avoid high premiums on 65% Fe fines and direct charge material. Premiums for 65% Fe fines have now fallen from 40% in September to 22% and discounts for low grade, 58% Fe fines have shrunk to 12%, from 18% over the same period. Historically, we see a restocking surge towards the year-end into January, which is likely to see some demand strength
- The Chinese iron ore port-stocks are heavily weighted towards lower grade ores, such as those with 58% Fe content. When steel mills are more interested in receiving higher Fe-content ores these port-stocks need to be discounted to attract buyers, and so would further increase high quality iron ore import volumes and the differential between low and high-grade material. On the other hand, when the steel margin decreases and steel mills become unprofitable, the port stocks will be an attractive option for those mills, and so would decrease overseas import demands

Iron ore 65% and 62% FE fines CFR Qingdao

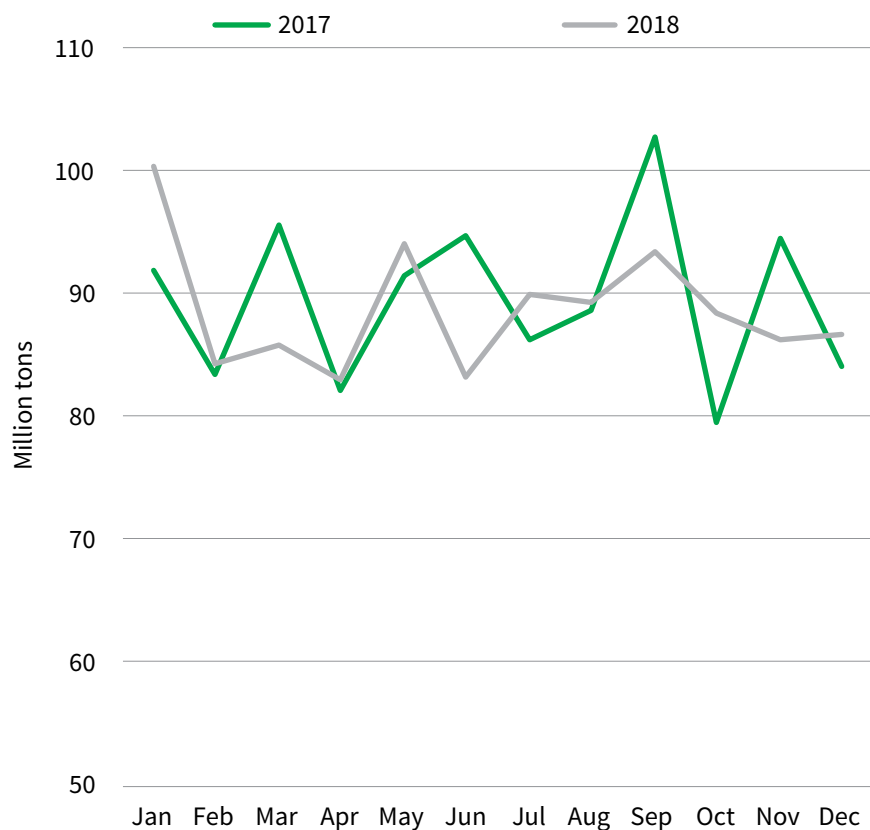


Source: IHS Markit, ICX

© 2019 IHS Markit

# China's iron ore imports down 1% in 2018

China iron ore imports monthly



Source: IHS Markit

© 2019 IHS Markit

Chinese import of Iron ore, 2016-2018 (mt)

Exporters	2016	2017	2018	Y-o-Y(%)
Australia	640.14	668.67	679.96	2%
Brazil	214.86	229.41	233.76	2%
South Africa	44.88	45.13	41.12	-9%
India	15.6	25.1	14.78	-41%
Others	109.24	107.08	94.98	-11%
<b>Total</b>	<b>1024.71</b>	<b>1075.4</b>	<b>1064.61</b>	<b>-1%</b>

Source: IHS Markit, China customers

© 2019 IHS Markit

- Total Chinese Iron ore import volumes were 1,064 million tonnes in 2018, down 1% from last year as steel production was mainly increased from electric arc furnace which use steel scrap rather than iron ore and coking coal
- However, shipping demand increased as long-distance Brazilian ore shipments increased market share in Chinese market as Chinese steel mills are increasingly focus on securing high-grade iron ores, both to increase profitability and to comply with environmental regulations. High-grade iron ores offer higher productivity and typically lower silica and alumina, which form the main environmental pollutants

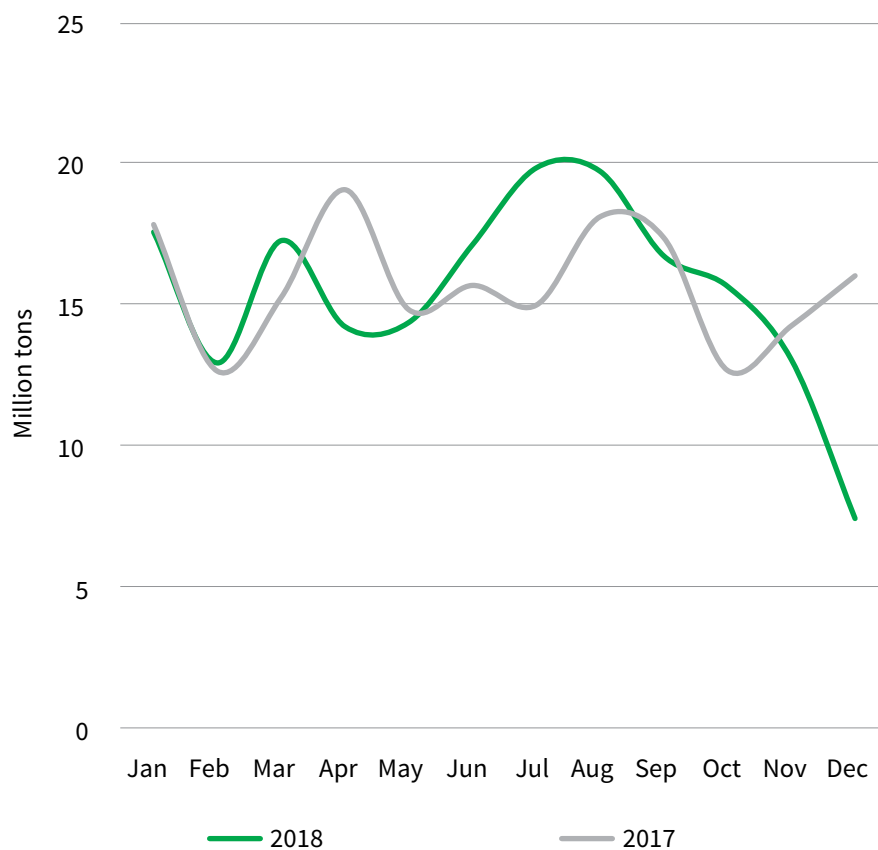
# Chinese coal imports up 3.4% in 2018

- Chinese coal import volumes were 281.5 million tonnes in 2018, up 3.4% from last year, while China produced 3.55 bnt of raw coal last year, up 5% from 3.34 bnt in 2017
- China increased its thermal coal imports by 10% in 2018, as international prices, particularly Indonesian, provided strong competition to domestic material throughout much of the year
- The country's total thermal coal imports - which covers steam coal, lignite and others - were 207.16 mt in the year, up from 187.80 mt
- Indonesia made the greatest gains into China in 2018, with thermal volumes up 16% on the year, giving it a market share of 60.5%
- Australia, Mongolia and the United States also saw healthy percentage rises in imports, but Russia and the Philippines saw notable declines
- China's efforts to keep 2018 imports flat to 2017 levels, culminating in the introduction of import restrictions at ports throughout the last six weeks of the year, brought a heavy decline in December
- Thermal imports into China in December dropped 57% on the year, to 6.75 mt from 15.80 mt
- Australia bore the brunt of this, suffering a 71% drop on the year in December, to 1.59 mt, with the restrictions particularly hard to navigate for Capesize vessels
- China's coking coal imports fell 7% on the year in 2018, to 64.72 mt
- Australia and Mongolia were by far the top two suppliers of coking coal into China, accounting for 44% and 43% respectively



# China's thermal coal imports up 10% in 2018, despite December restrictions while coking coal imports down 7%

China coal import monthly



Source: IHS Markit

© 2019 IHS Markit

Chinese import of steam coal and lignite, 2016-2018 (mt)

Exporters	2016	2017	2018	Y-o-Y(%)
Indonesia	103.22	108.25	125.38	16%
Australia	42.95	47.40	50.83	7%
Russia	13.66	17.10	15.94	-7%
Mongolia	2.72	7.65	8.45	10%
Philippines	6.68	5.54	4.40	-21%
<b>Total</b>	<b>169.95</b>	<b>187.80</b>	<b>207.16</b>	<b>10%</b>

Source: IHS Markit, China customers, IHS McCloskey - Coal market alert

© 2019 IHS Markit

Chinese imports of coking coal, 2016-2018 (mt)

Exporters	2016	2017	2018	Y-o-Y(%)
Australia	26.82	30.98	28.23	-9%
Mongolia	23.56	26.27	27.28	5%
Russia	2.62	4.62	4.36	-6%
Canada	5.19	4.25	2.13	-50%
US	0	2.82	1.98	-30%
<b>Total</b>	<b>59.30</b>	<b>69.90</b>	<b>64.72</b>	<b>-7%</b>

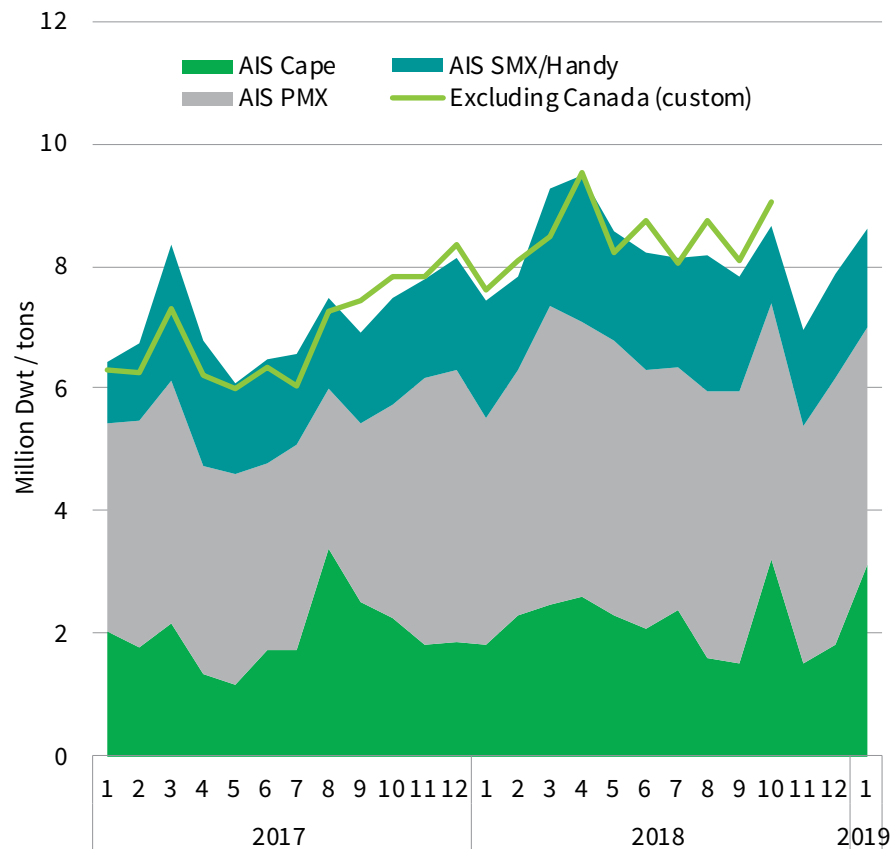
Source: IHS Markit, China customers, IHS McCloskey - Coal market alert

© 2019 IHS Markit



USEC coal export volume recovered from November drop as per AIS signal, while long haul shipments to Pacific decreased according to custom data

US coal shipments



Source: IHS Markit, Baltic Exchange

© 2019 IHS Markit

US coal seaborne exports by destination

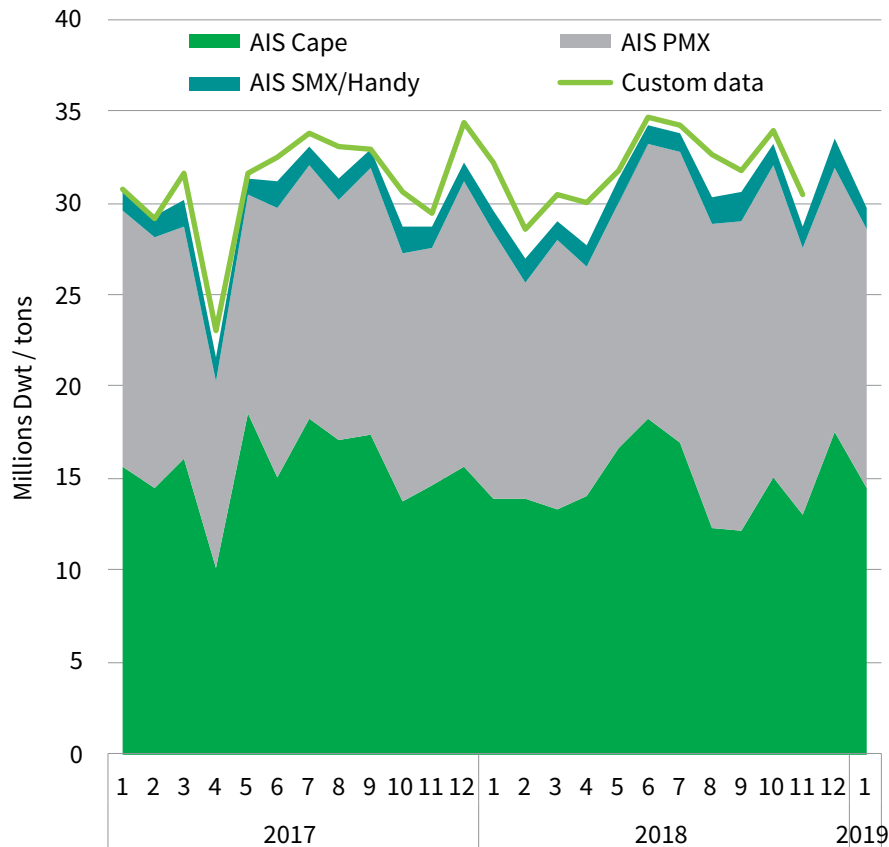


Source: IHS Markit

© 2019 IHS Markit

# Australian Capesize coal shipments increased in Dec 2018 before falling in Jan 2019, while Panamax shipments stagnated

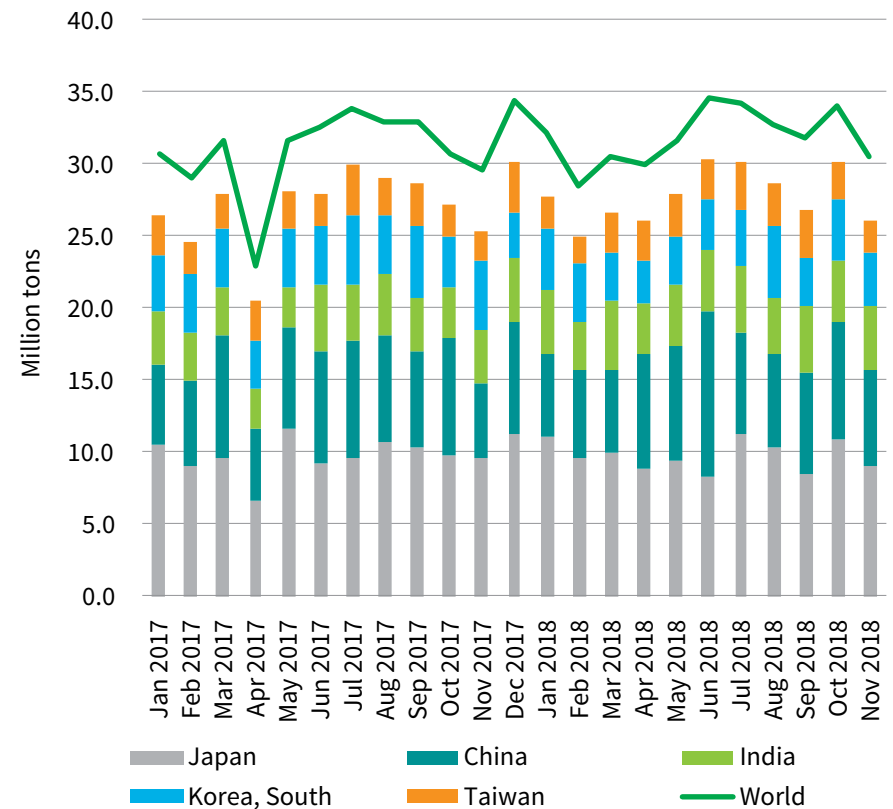
Australian coal shipments



Source: IHS Markit

© 2019 IHS Markit

Australian coal exports by destination

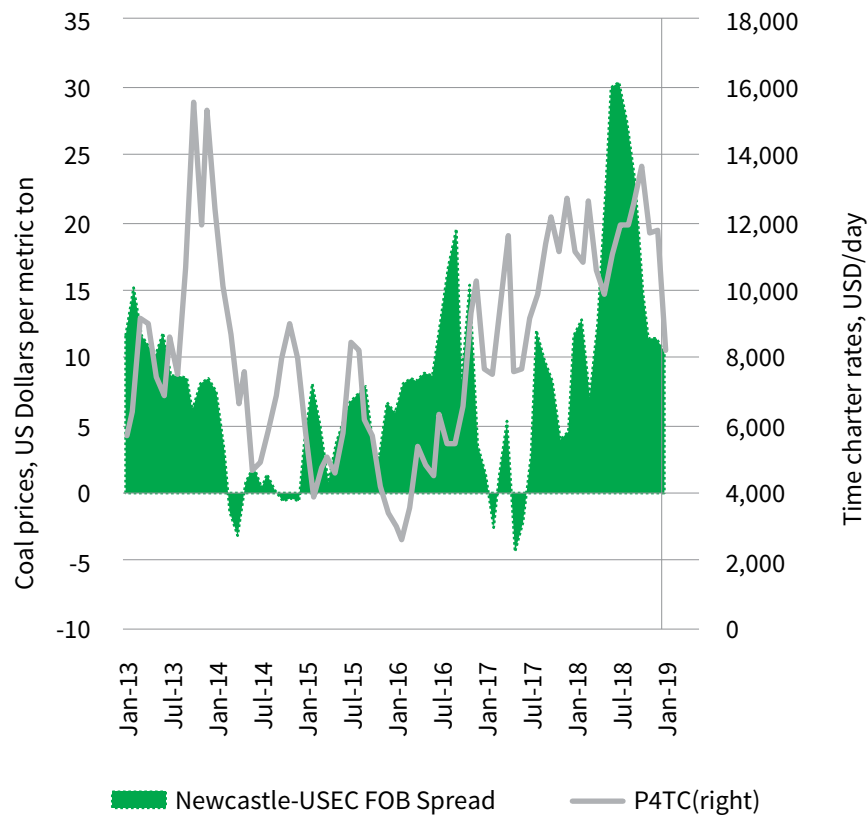


Source: IHS Markit

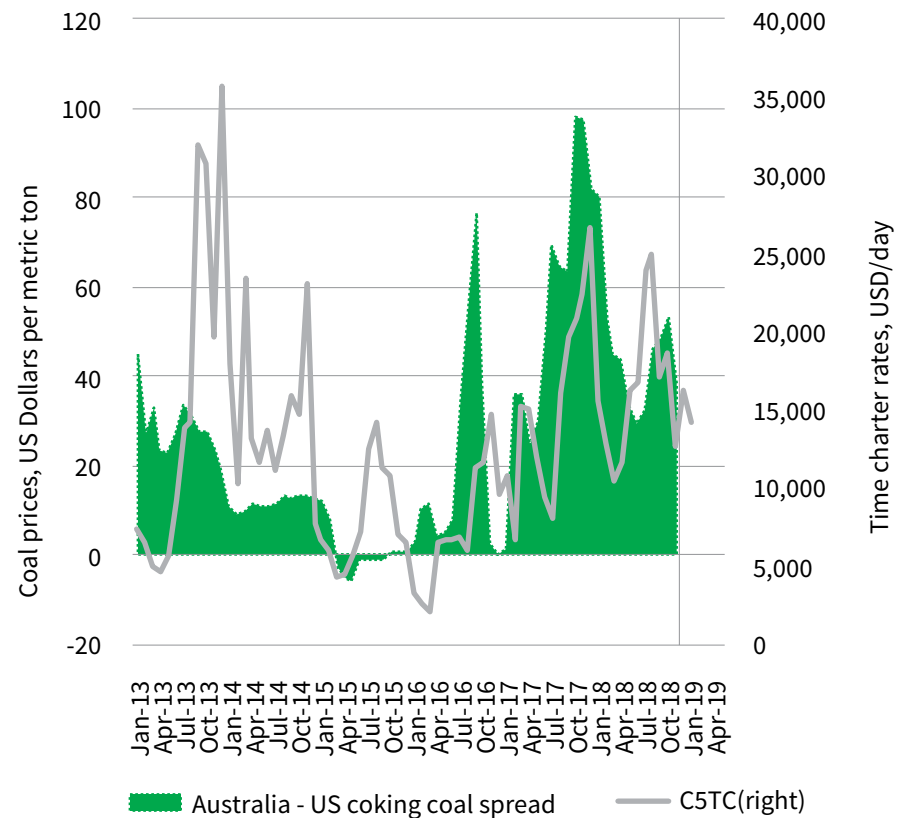
© 2019 IHS Markit

Expensive Australian coal price and slow demand from Europe will attract US coal to the Pacific (to India), which will increase long haul shipping demand

Steam: Australia and US East FOB spread vs P4TC

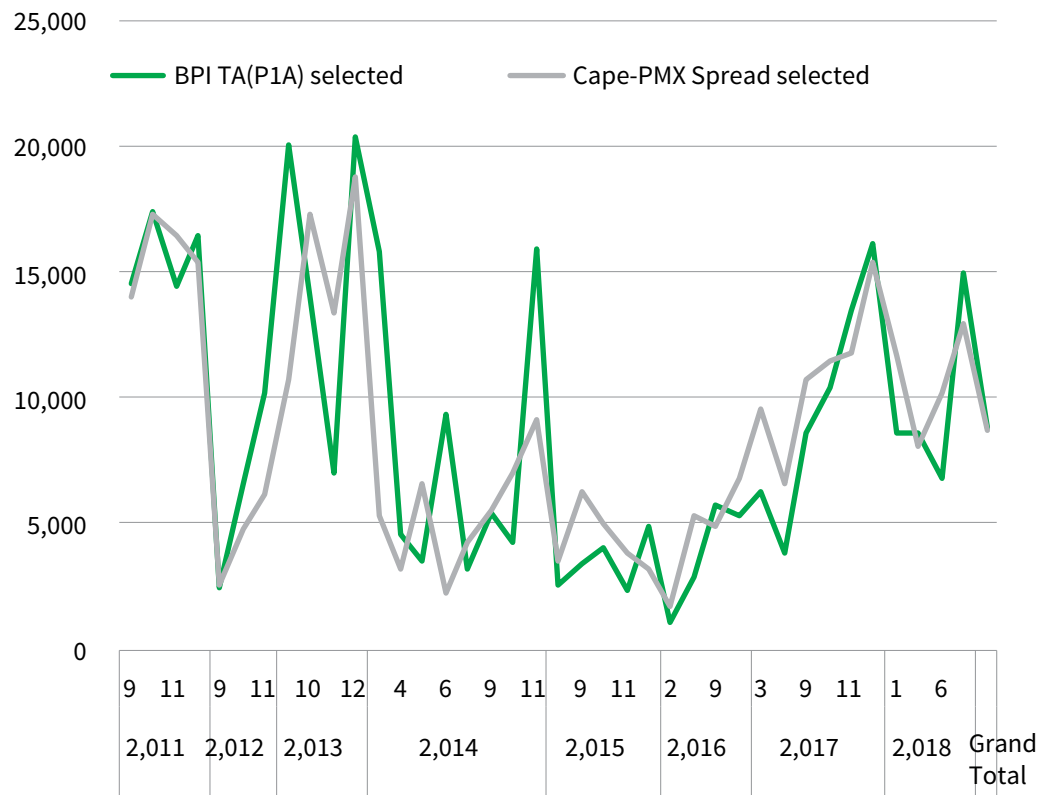


Coking: Australia and US East FOB spread vs C5TC



When Capesize become more expensive than Panamax, Capesize cargo starts to split into Panamax cargoes and both rates start to move together

Cape and Panamax spread in Atlantic Basin (Ratio 1.5)

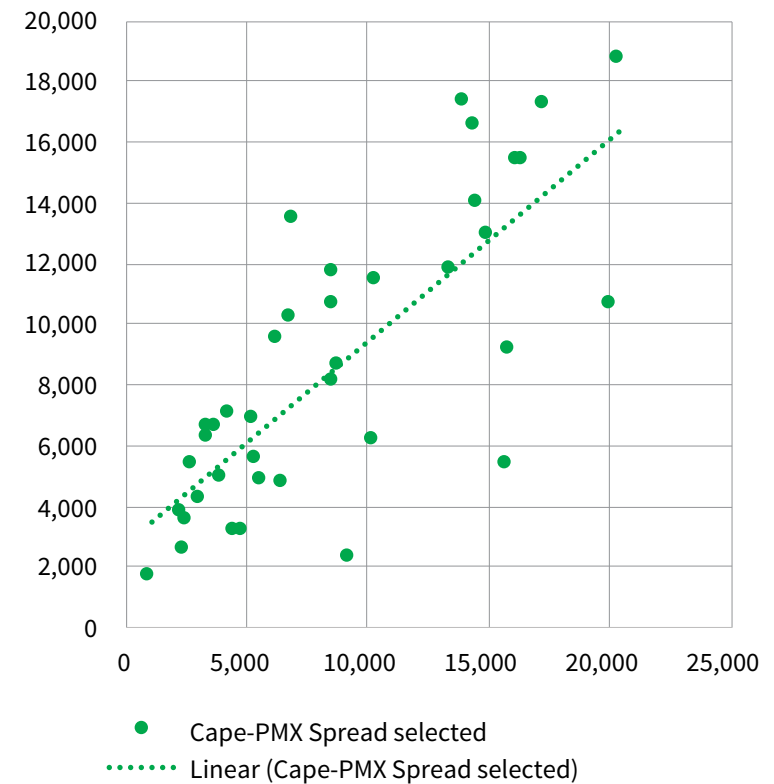


Source: IHS Markit, Baltic Exchange

© 2019 IHS Markit

Cape and Panamax spread correlation (Ratio 1.5)

$$y = 0.6719x + 2734.5 \quad R^2 = 0.6048$$

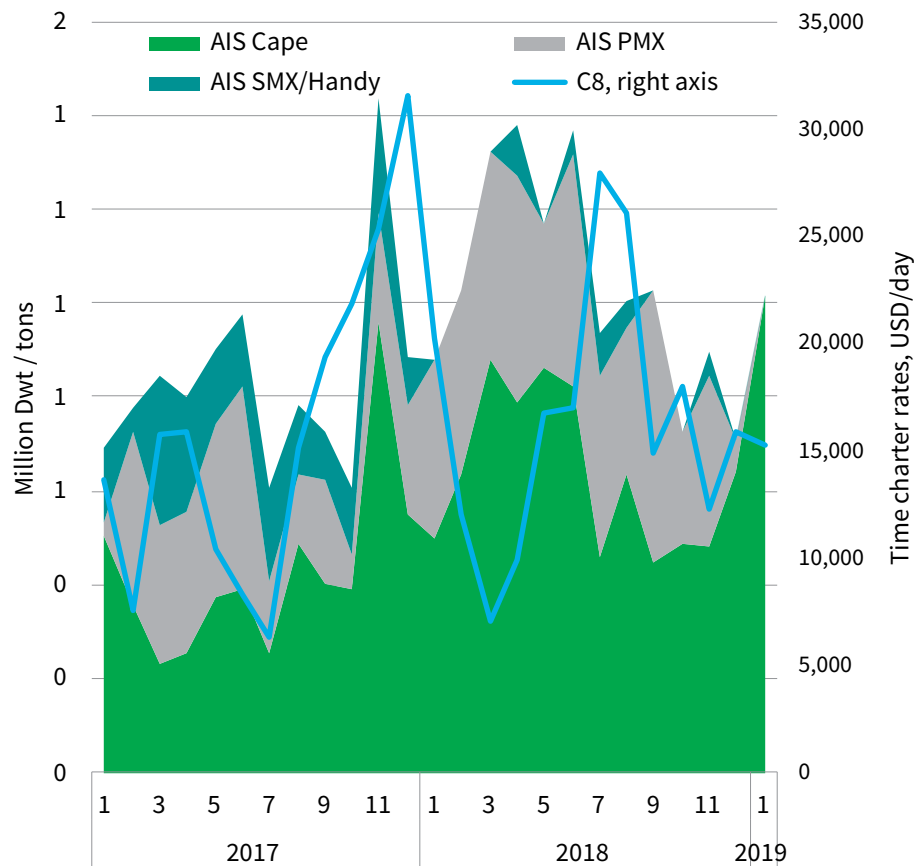


Source: IHS Markit, Baltic Exchange

© 2019 IHS Markit

Capesize coal shipments from US to India increased over last two months, whilst PMX decreased, which explains widening Cape/PMX spread in Jan 2019

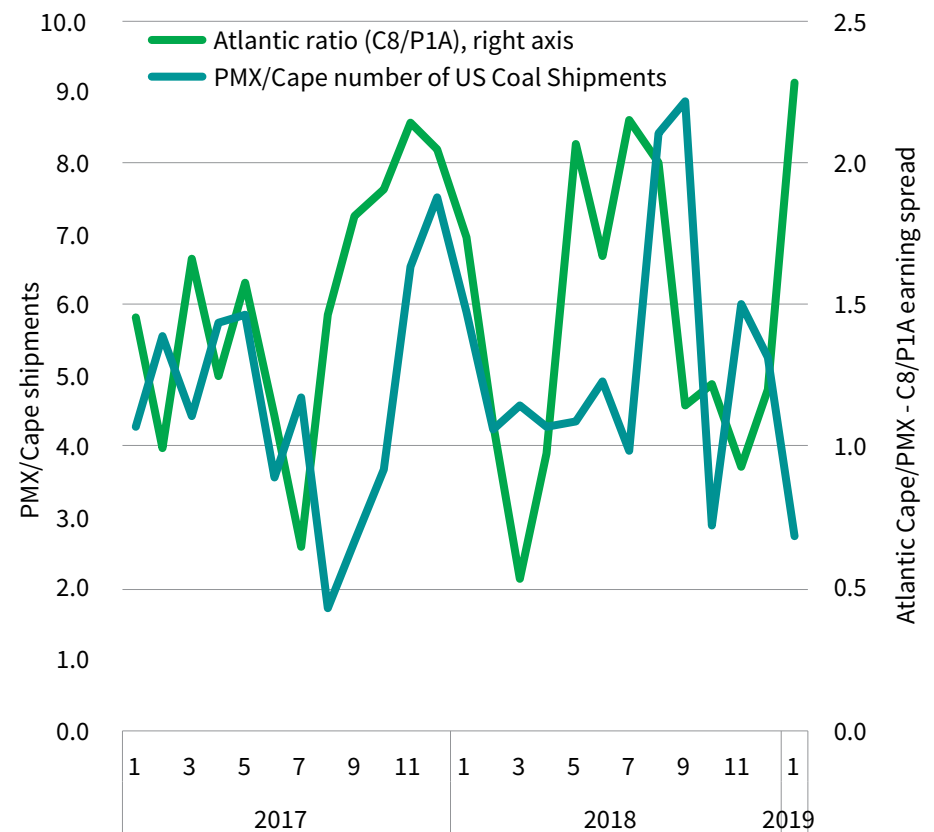
US coal shipments to India vs Capesize Atlantic rates (C8)



Source: IHS Markit

© 2019 IHS Markit

Cape/PMX Atlantic freight spread vs US coal shipments market share

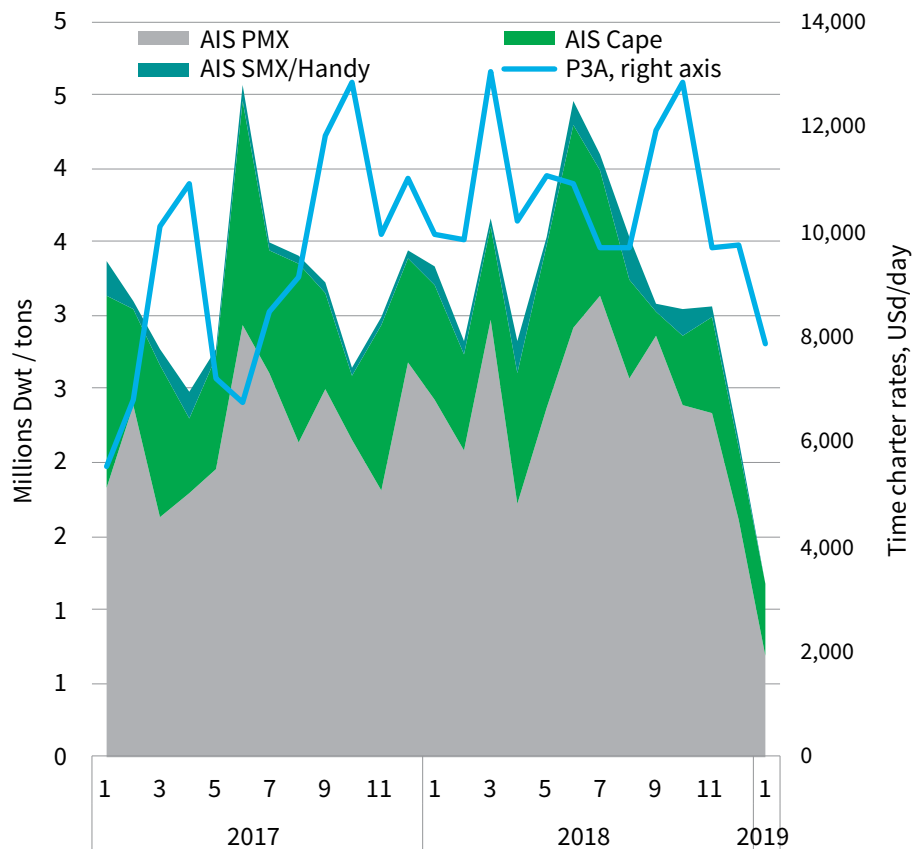


Source: IHS Markit, Baltic Exchange

© 2019 IHS Markit

# Panamax mainly carries Australian coal to India and its shipments decreased significantly over the last two months

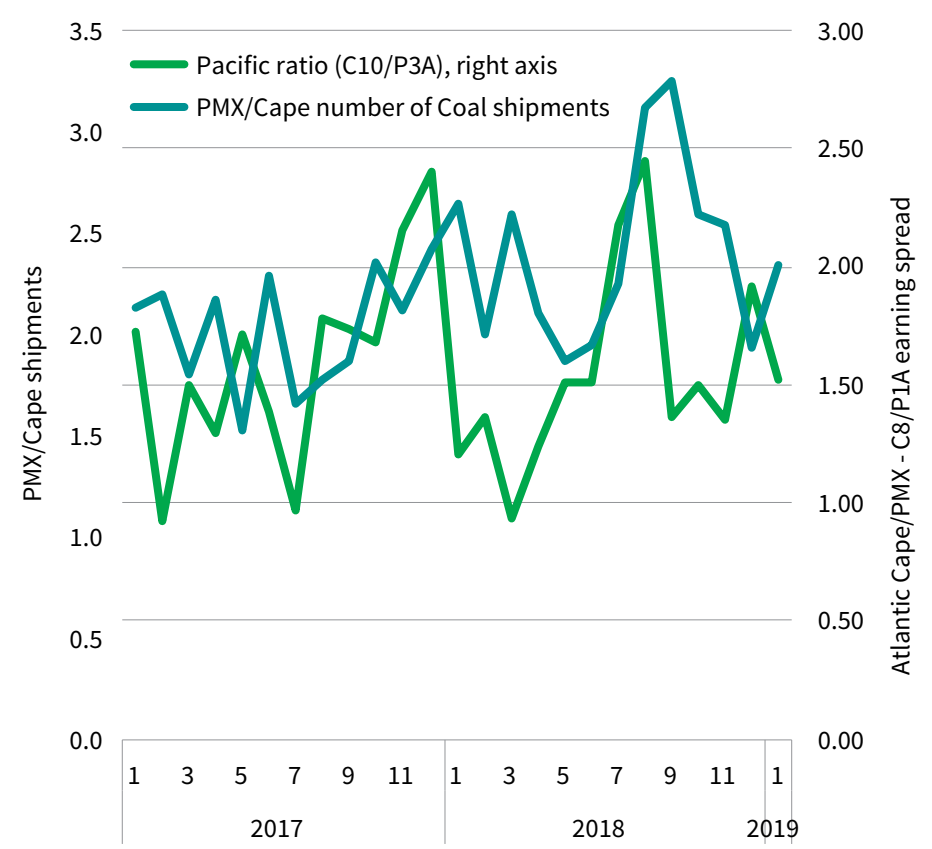
Australian coal shipments to India vs Panamax Pacific rates (P3A)



Source: IHS Markit

© 2019 IHS Markit

Cape/PMX Pacific freight spread vs Aus coal shipments market share



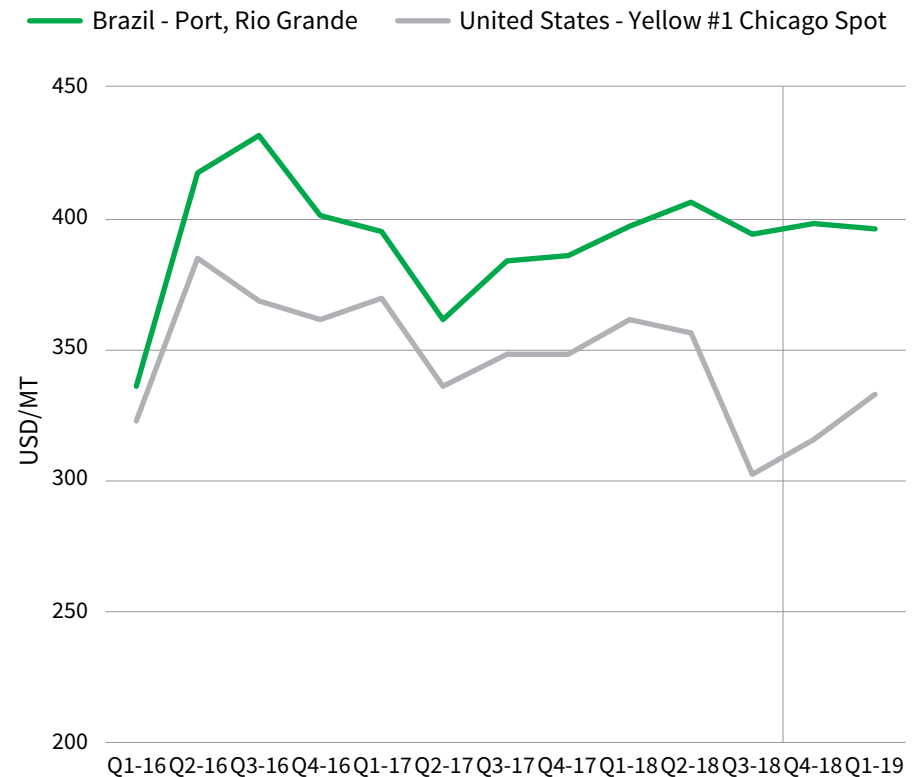
Source: IHS Markit, Baltic Exchange

© 2019 IHS Markit

# This year, China has started purchasing a limited number of soybeans from the US following the trade war truce

- With a new Chinese tariff, US soybean exports volume to China indeed decreased, however, total volume increased thanks to alternative buyers in Atlantic:
- US soybean exports volume to China decreased as China shifts to Brazilian beans as cheap supplies from Brazil and trade tension with China made US cargoes less attractive to buyers
- Through the first seven months of the year, US soybean export volumes to China decreased by 23% year-on-year from January–July 2017. However, the total US soybean export volume increased nearly 10% year-on-year, thanks to alternative buyers in Atlantic basin (up 61% yoy)
- In November 2018, China imported no soybeans from the US, while Brazil's share in the Chinese soybean market increased to 75% in 2018 (January–November)
- China ordered the first quantity of soybeans from the United States following a truce in the “trade war” set to last until March 2019, tempting the market that potential future negotiations may be possible
- However, the incentive for China to negotiate soybean tariffs may be delayed until the fall of 2019 as Brazil's new record soybean crop will begin to be available for export in Q2 and there are increasing concerns about China's swine fever outbreak
- Panamax's are expected to be mainly used for the soybean shipments from PNW to China

## US and Brazil soybean prices outlook

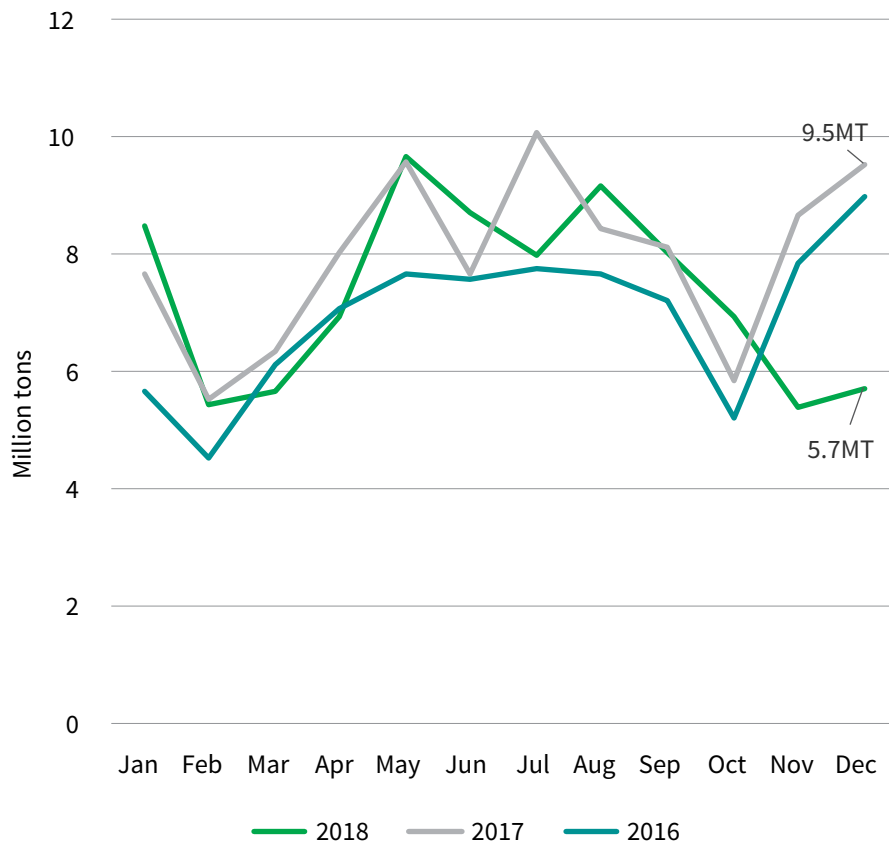


Source: IHS Markit

© 2019 IHS Markit

# China's soybean imports down 7.8% in 2018, with US volume down 49% from last year

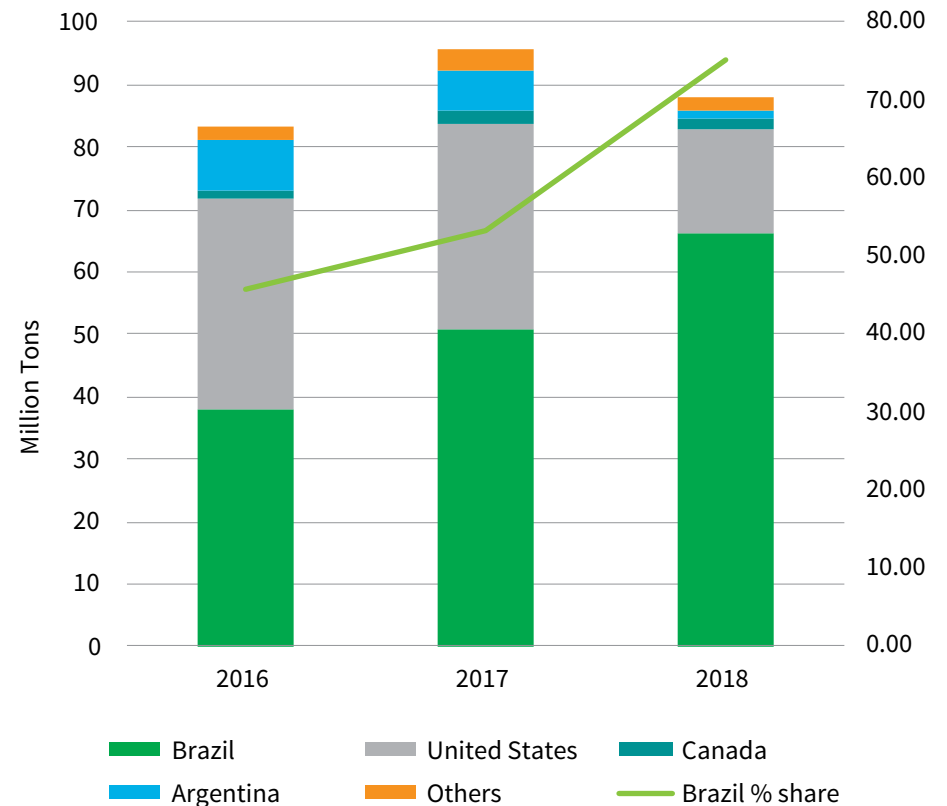
China soybean imports



Source: IHS Markit

© 2019 IHS Markit

China soybean imports by source



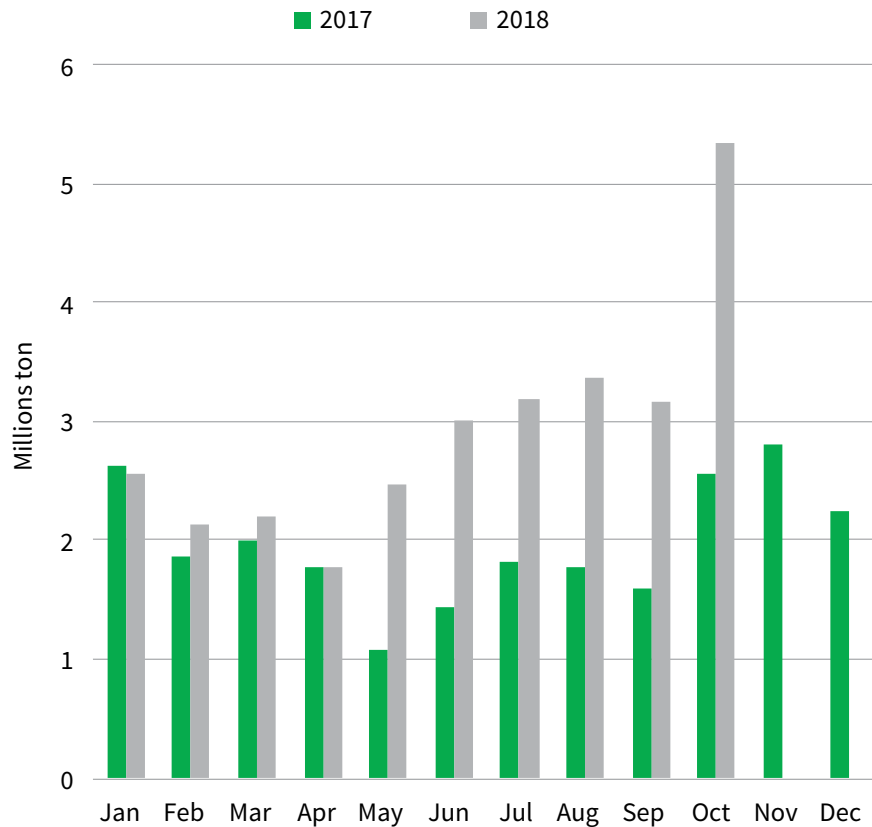
Source: IHS Markit

© 2019 IHS Markit



# US soybean found alternative market in Europe, MENA (Egypt and Iran), South East Asia, and Argentina (3rd biggest soya exporter)

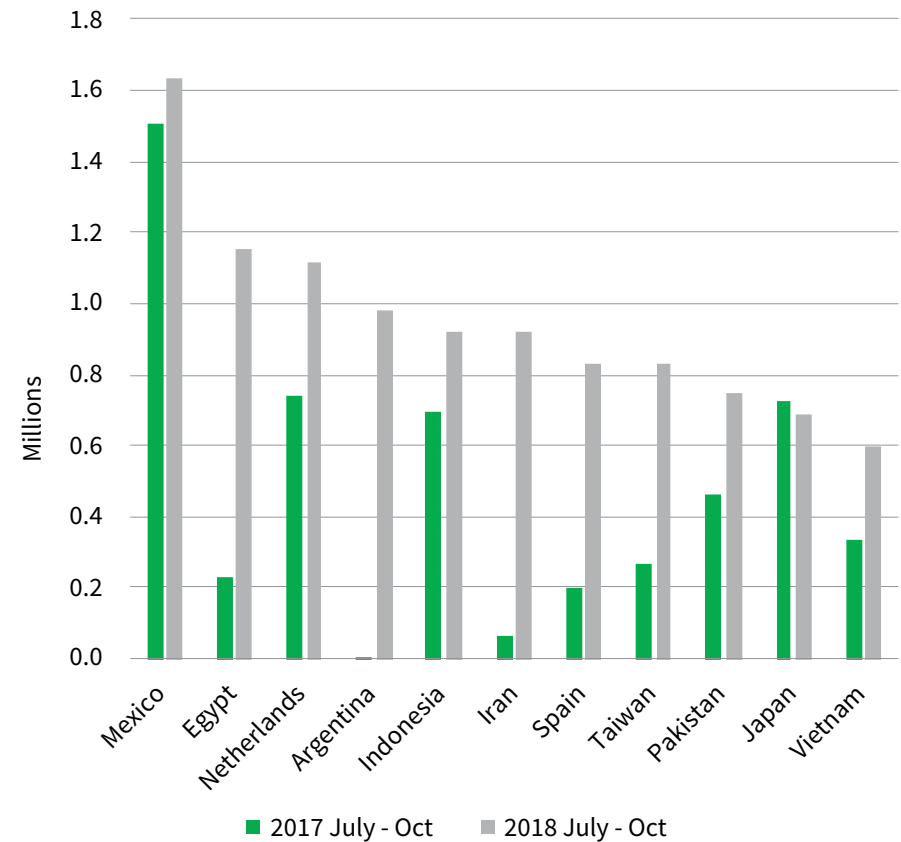
US soybean exports to rest of world (ex. China)



Source: IHS Markit

© 2019 IHS Markit

US soybean exports by country (July-Oct)

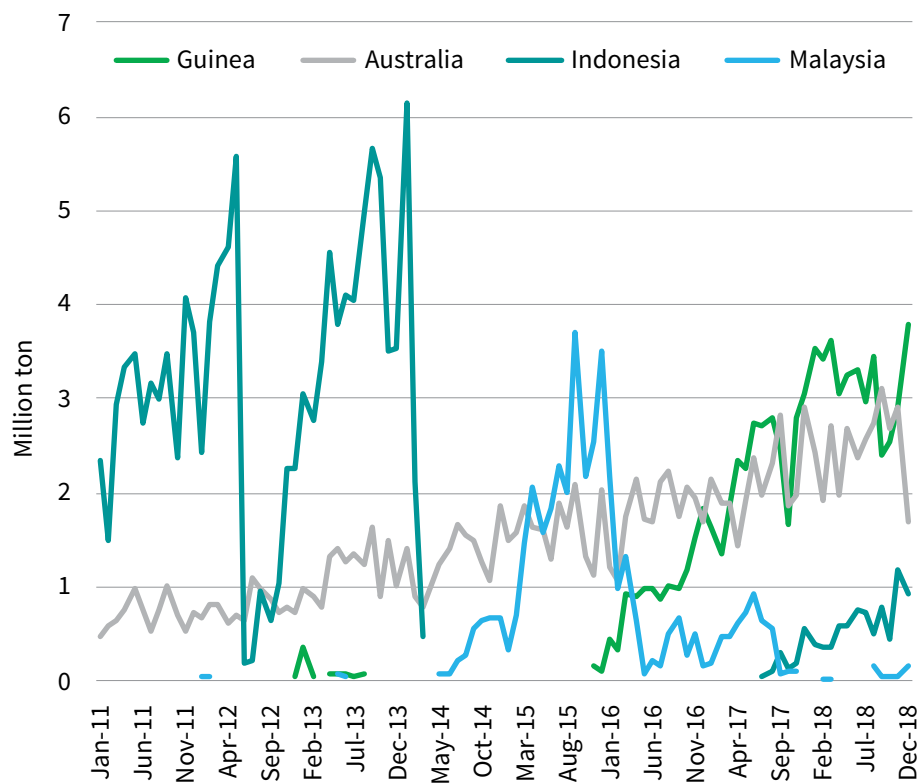


Source: IHS Markit

© 2019 IHS Markit

# China's bauxite imports up 20% in 2018, with Guinean volume up 38.33%

Bauxite trade to China by source



Source: IHS Markit, China customs

© 2019 IHS Markit

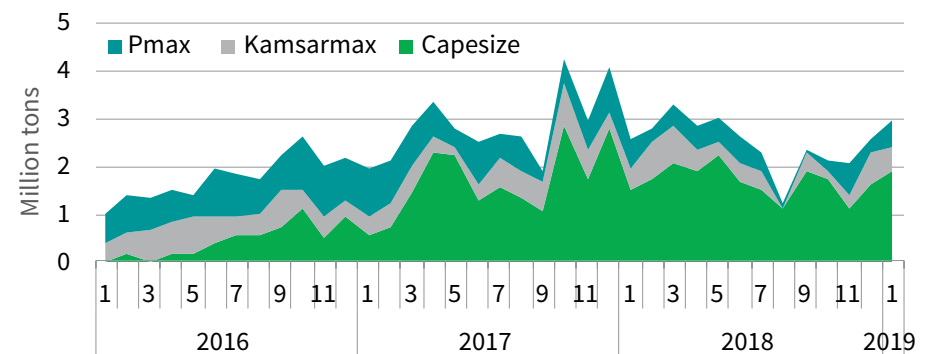
Chinese import of Bauxite, 2013-2018 (mt)

Exporters	2013	2015	2017	2018	Y-o-Y(%)
Guinea	0.83	0.33	27.65	38.25	38%
Australia	14.29	19.58	25.48	29.77	17%
Indonesia	48.70	0	1.29	7.55	483%
Malaysia	0.15	24.19	4.86	0.55	-89%
Others	7.63	11.99	9.48	6.6	-30%
<b>Total</b>	<b>71.61</b>	<b>56.10</b>	<b>64.76</b>	<b>82.72</b>	<b>20%</b>

Source: IHS Markit, China customers

© 2019 IHS Markit

Guinea bauxite shipments (AIS)

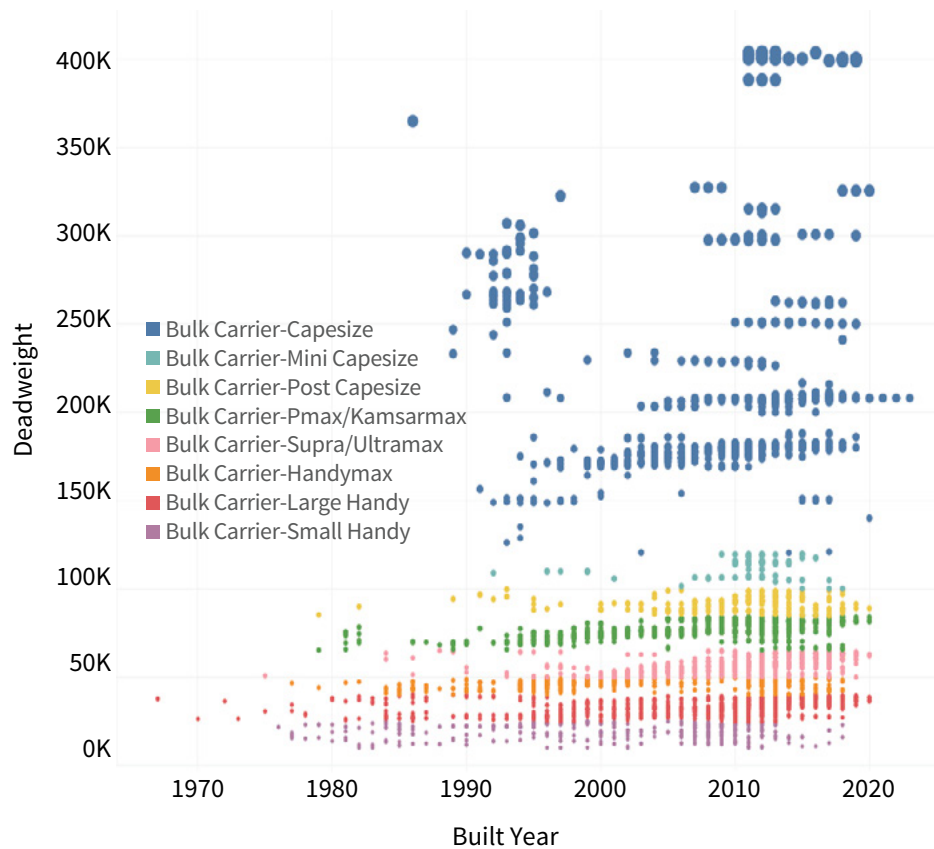


Source: IHS Markit

© 2019 IHS Markit

Based on last year's slippage of 23%, the dry bulk fleet growth is expected to be 3.5% in 2019 compared to 2.9% in 2018

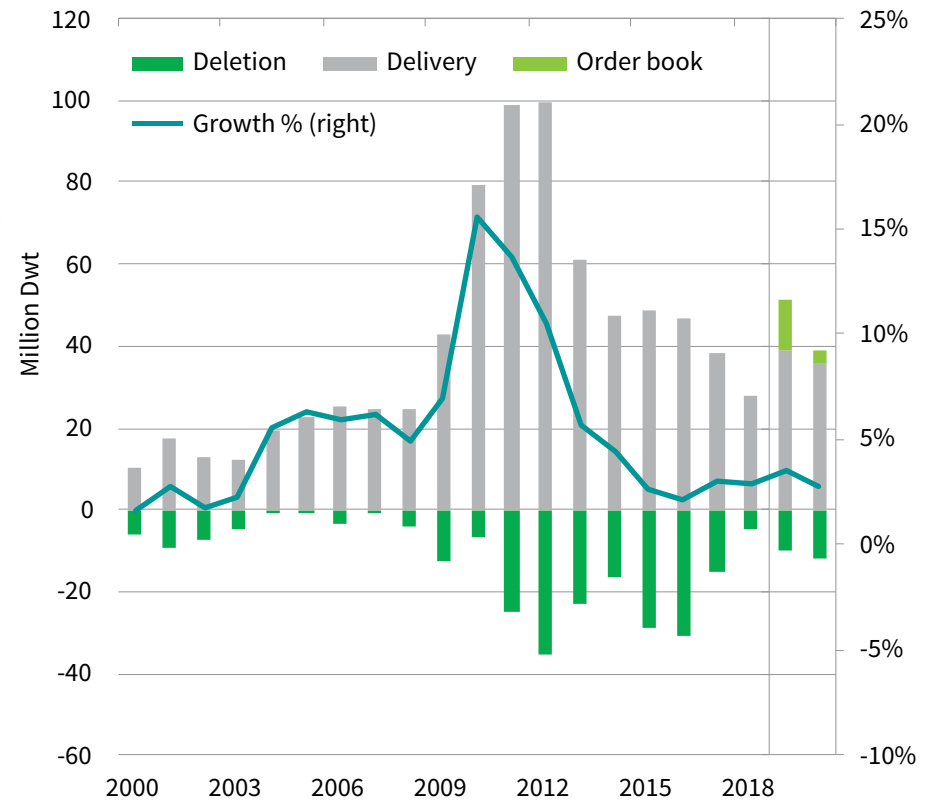
Dry bulk fleet – by built and size



Source: IHS Markit

© 2019 IHS Markit

Dry bulk fleet development

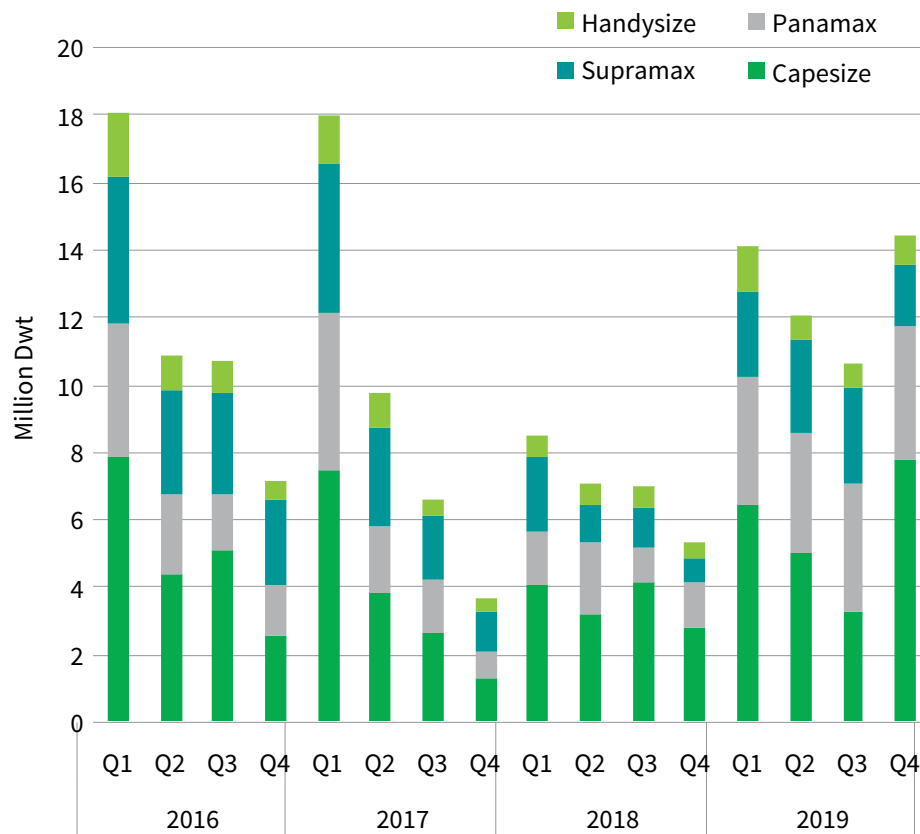


Notes: Above 1,0,000dwt  
Source: IHS Markit

© 2019 IHS Markit

Orderbook seems to be still under control, although newbuilds in 2019 will be much higher than 2018 due to scheduled VLOCs delivery

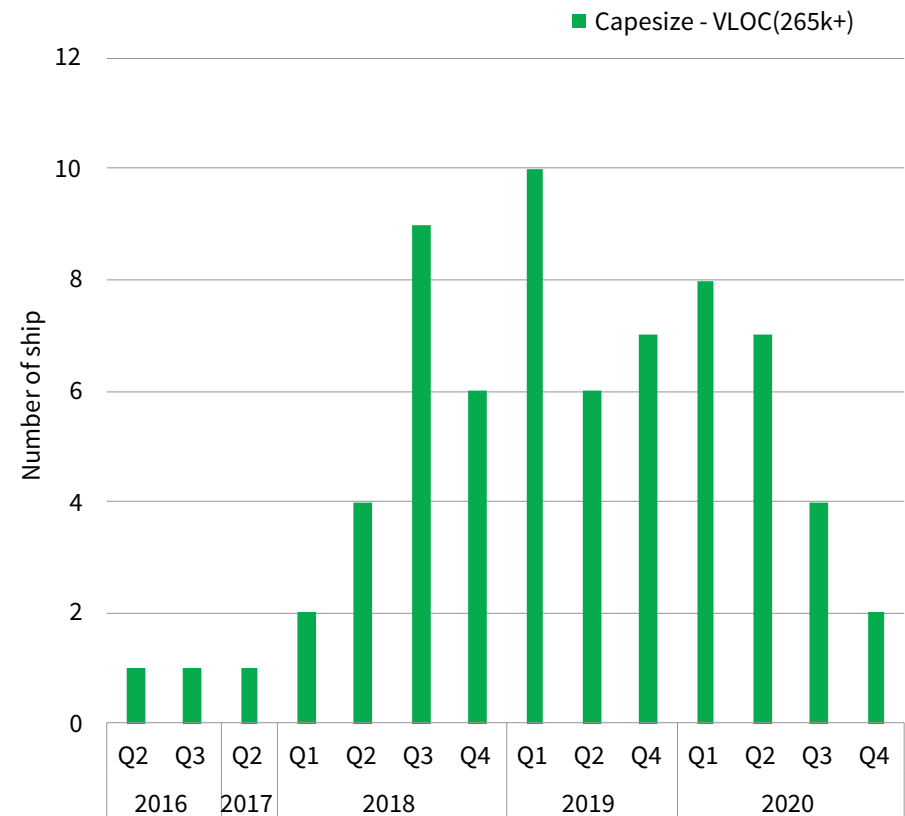
Delivery and scheduled orderbook



Source: IHS Markit

© 2019 IHS Markit

VLOCs delivery

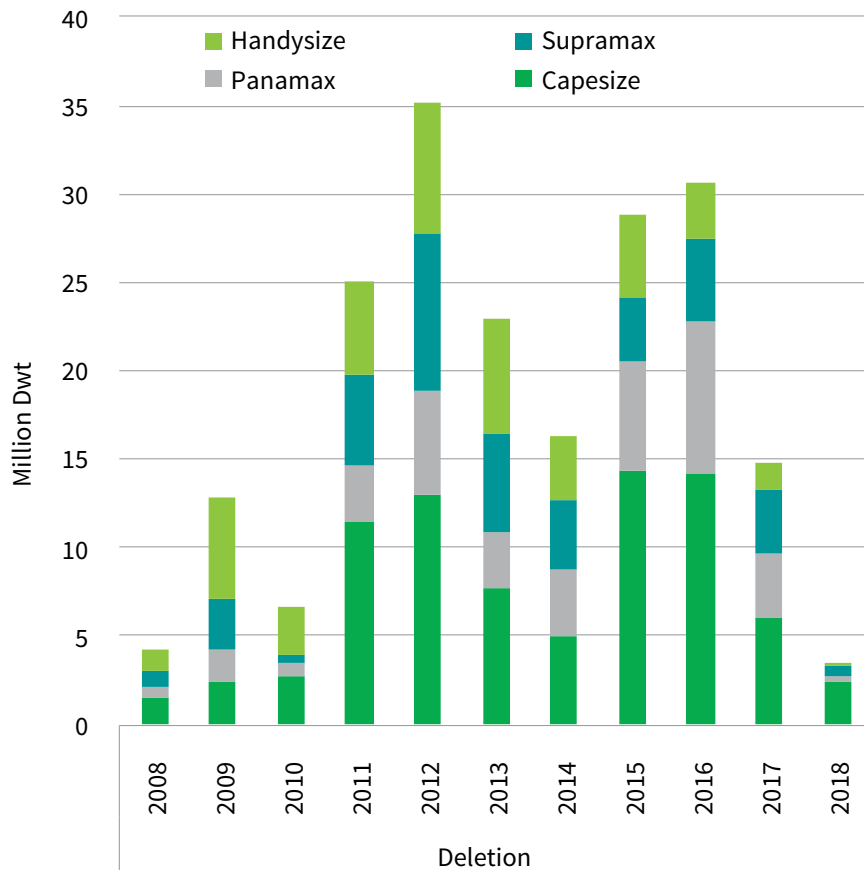


Source: IHS Markit

© 2019 IHS Markit

Owners will find it difficult to maintain their old fleet due to increasing regulation cost; BWTS + Scrubber + Dry docking

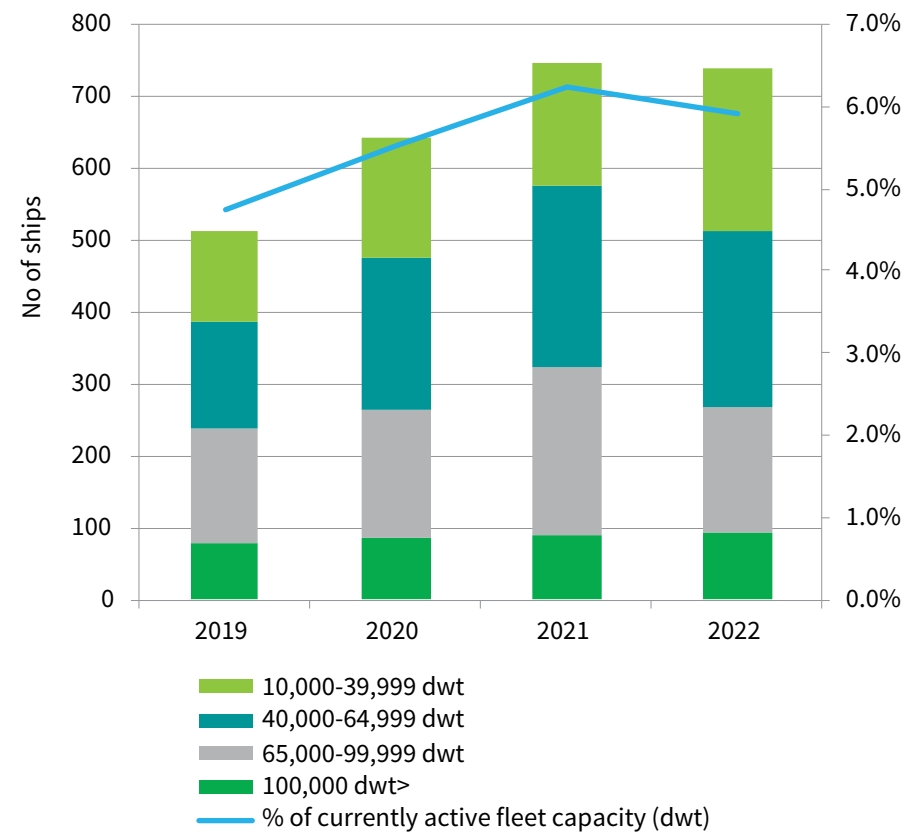
Deletion



Source: IHS Markit

© 2019 IHS Markit

Estimated Dry bulk fleet due for 3rd special survey and later

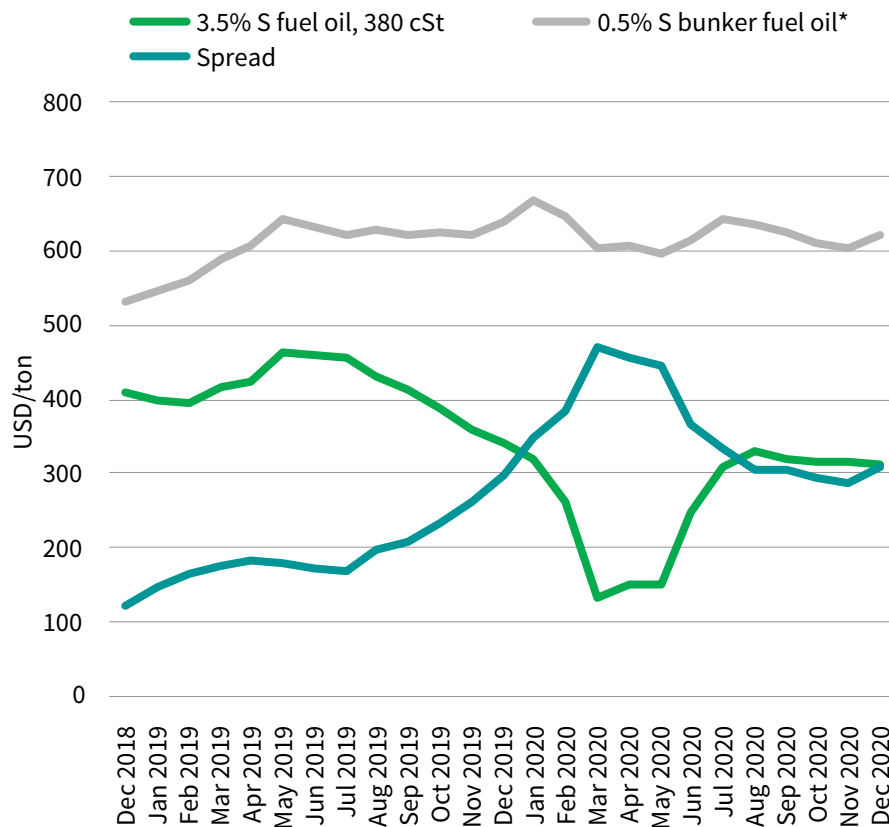


Source: IHS Markit

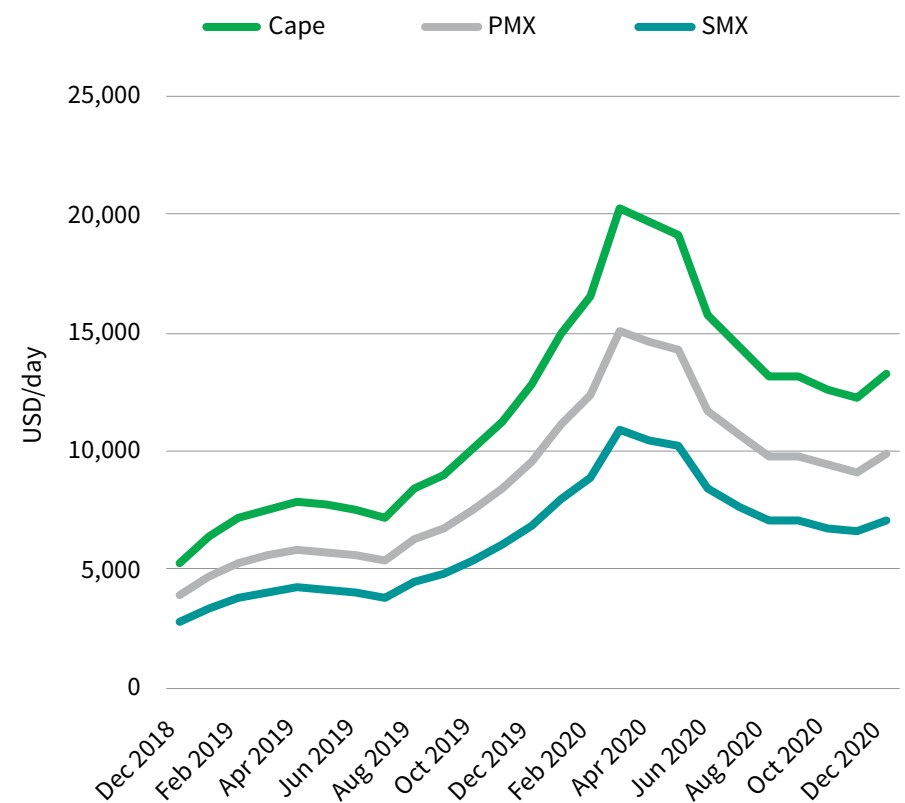
© 2019 IHS Markit

IHS Markit Energy's HFO and LSFO price scenario expects considerable spread from mid-2019 and scrubbers on large ships have strong positive economics

HFO and LSFO spread

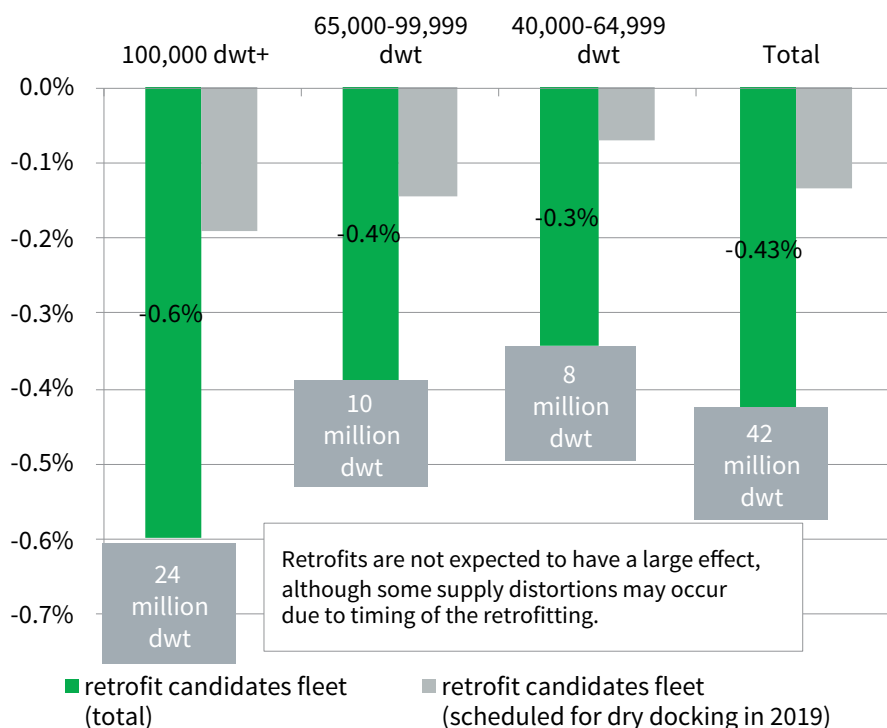


Daily bunker cost spread between HSFO and LSFO



# Scrubber retrofits are intensifying particularly among larger tonnage, but capacity indicated so far has had minimal effect on fleet supply

Confirmed and unconfirmed scrubber fitting tonnage influence on fleet supply (2018 fleet size)



Notes: Scrubber fittings dates when non - available assumed to be around scheduled dry dockings time. The scrubber fitting information is collected from company announcements, press releases, news websites and through various sources. Non - confirmed scrubber fitting numbers are subject to change and fleet slippage.

Source: IHS Markit

© 2019 IHS Markit

Confirmed scrubber fittings

Size type	In service No of ships	In service DWT	On order No of ships	On order DWT
VLOC	3	967,180	36	11,705,104
Capesize	4	827,363	29	5,842,000
Post Panamax	2	181,531	2	164,000
Panamax/ Kamsarmax	3	202,066	-	-
Supramax/ Ultramax	3	179,491	32	2,021,870
Handymax	1	48,184	-	-
Large Handy	13	449,438	4	152,000
<b>Total</b>	<b>29</b>	<b>2,855,253</b>	<b>103</b>	<b>19,884,974</b>

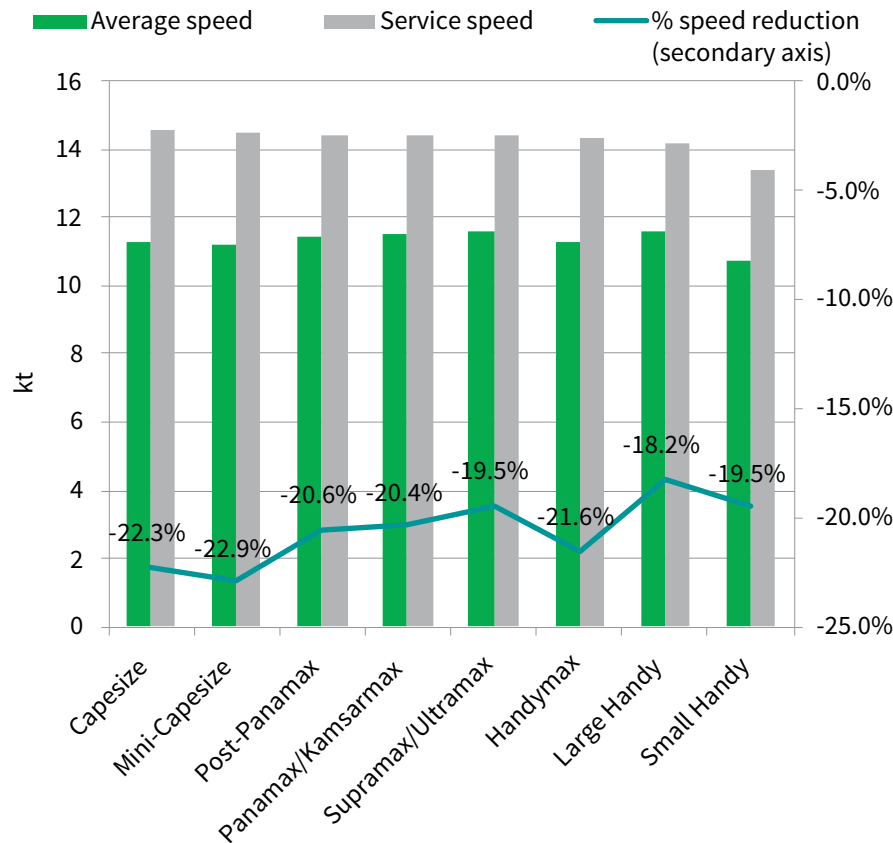
Notes: confirmed number as of Jan 2019  
Source: IHS Markit, China customers

© 2019 IHS Markit

- Scrubber retrofitting as it currently stands is not expected to bring much relief to the dry bulk feet, but larger disruption may happen as more ships are sent for retrofitting in shorter time periods as the compliance date approaches.
- Larger units may consider scrubber fittings for older vessels as well, particularly in case of high HSFO/LSFO differential

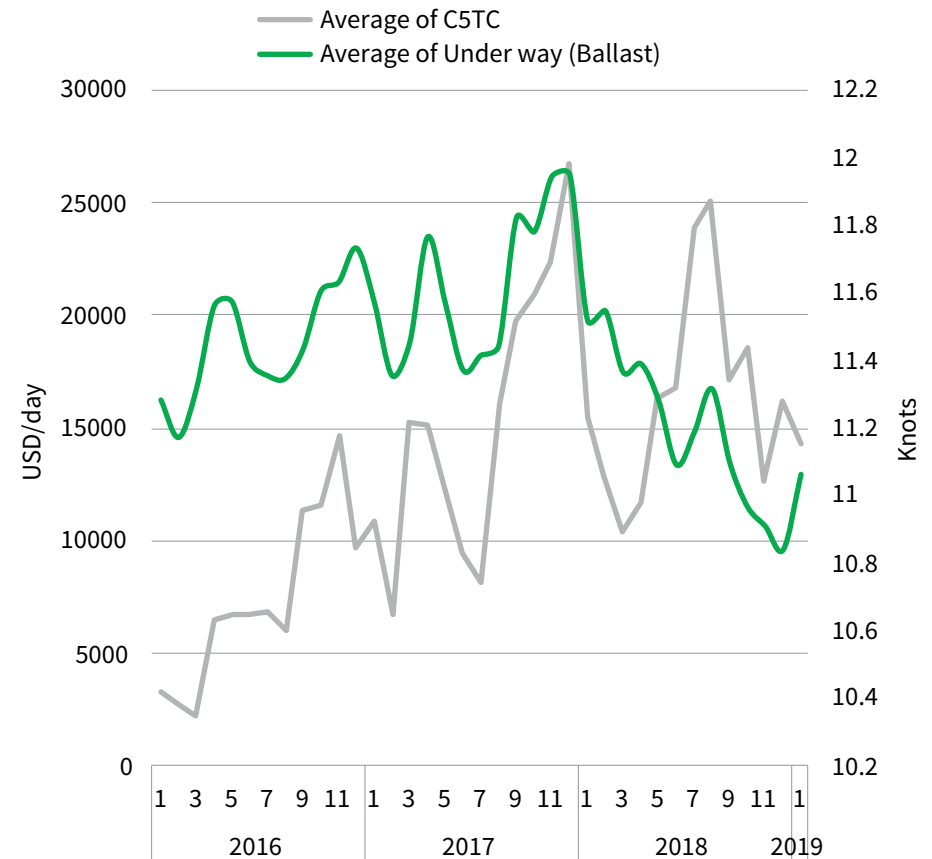
# Most of the dry bulk fleet sails with eco speed and consumption while Capesize sailing speed is highly correlated with the freight market

Bulk carriers average speed



Notes: 2018 average speed; ships moving at 5 kt and above  
Source: IHS Markit

Capesize speed and C5TC



© 2019 IHS Markit

Source: IHS Markit

© 2019 IHS Markit

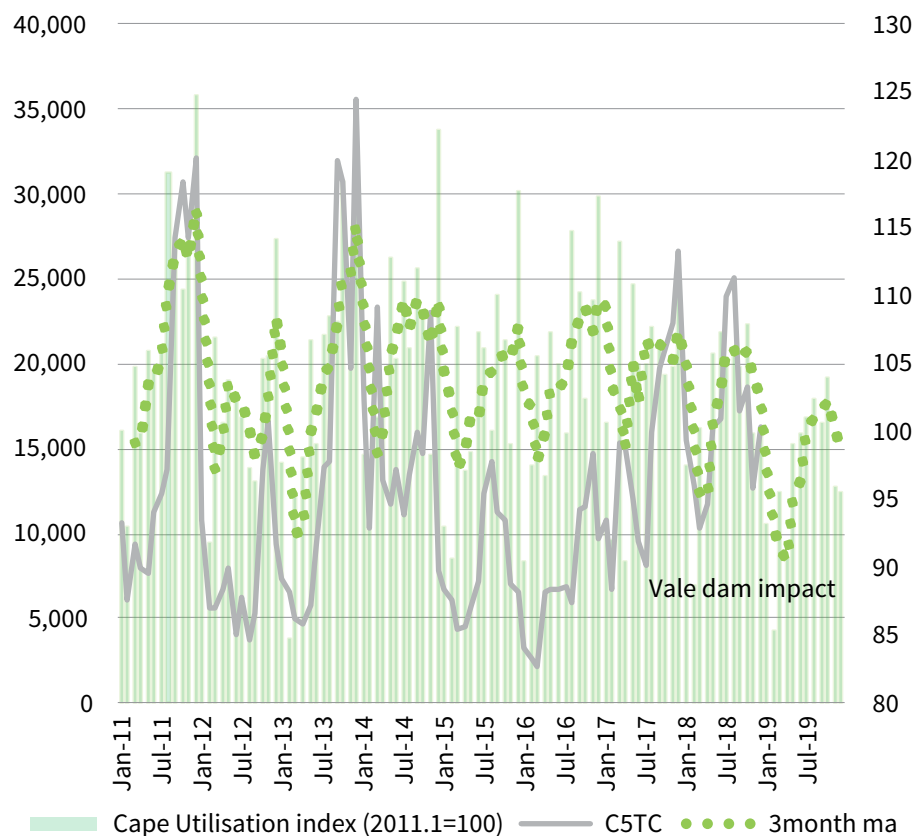


## Snapshot of global dry bulk fundamentals and outlook

Fundamentals		2017	2018	2019
World economic growth (% from previous year)		3.3	3.2	3.1
Dry Bulk Trade growth base case (% from previous year)		4.2	3.5	3.1
Dry Bulk supply growth base case (% from previous year)		3.1	3.0	3.5
Implied balance		1.1	0.5	(0.4)
Dry Bulk Trade growth scenario 2 (% from previous year)	Chinese iron ore imports volume stagnant due to scrap-driven steel production. Depreciation of emerging-market currencies lowers import demand. Higher bunker cost may put more pressure on long-haul trade flows.			2.5
Dry Bulk supply growth scenario 2 (% from previous year)	Higher scrappage due to increase in environmental cost – BWTS and high bunker cost. Scrubber installation and IMO-compliant bunker usage could cause productivity loss and off-hire – slower steaming and engine problems.			2.7
Implied balance			High case	0.4
			Low case	(1.0)

# Analytics-Big data driven models can supplement the fundamental outlook with an unbiased view

## Capesize utilization and freight



Advanced analytics, supplementing the fundamental outlook

Trade of commodities

Economic drivers

Bunker prices  
HFO-  
MGO/LSFO

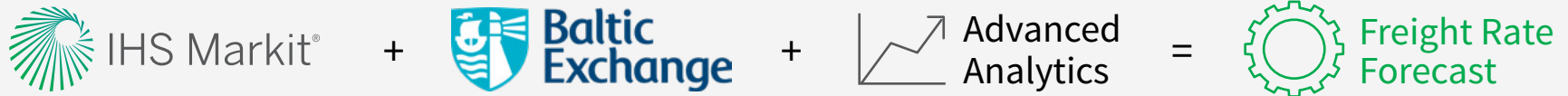
Categories of main predictors used

Commodity prices/Price spreads

Fleet Supply-  
Regional Vessels  
availability  
by AIS

Baltic indices  
spread/  
BCI-BPI-BSI

# The dry bulk freight rate forecast (FRF) – data driven computer models



## A **data-driven-bias-free** forecast model

Forecast Horizon	Freight rates on a monthly basis up to 3 years. Models will be updated at the 1st week of every month and results published on the 2nd week.
Charter Rates Type	Voyage charter (\$/ton) and Time charter (\$/day)
Vessel Types & Routes	Capesize: 5TC + 12 routes Panamax: 4TC + 5 routes Supramax: 10TC + 10 routes
Deliverables	Web-based interface with dynamic dashboards showing model results & in depth analysis of influential drivers per route

30 models

# Find out more

For more information please contact:

**DAEJIN LEE**

Principal Analyst, Maritime & Trade

+65 9150 9641

**E** [Daejin.Lee@ihsmarkit.com](mailto:Daejin.Lee@ihsmarkit.com)

## CUSTOMER CARE

AMERICA

**T** +1 800 447 2273 (1 800 IHS CARE)

EUROPE, MIDDLE EAST AND AFRICA

**T** +44 1344 328 300

ASIA PACIFIC

**T** +604 291 3600

**E** [CustomerCare@ihsmarkit.com](mailto:CustomerCare@ihsmarkit.com)



## About IHS Markit

IHS Markit (Nasdaq: INFO) is a world leader in critical information, analytics and solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 key business and government customers, including 85 percent of the Fortune Global 500 and the world's leading financial institutions. Headquartered in London, IHS Markit is committed to sustainable, profitable growth.

[ihsmarkit.com/maritime\\_trade](https://ihsmarkit.com/maritime_trade)