




Chinese iron ore market developments and the role of higher-grade material



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research



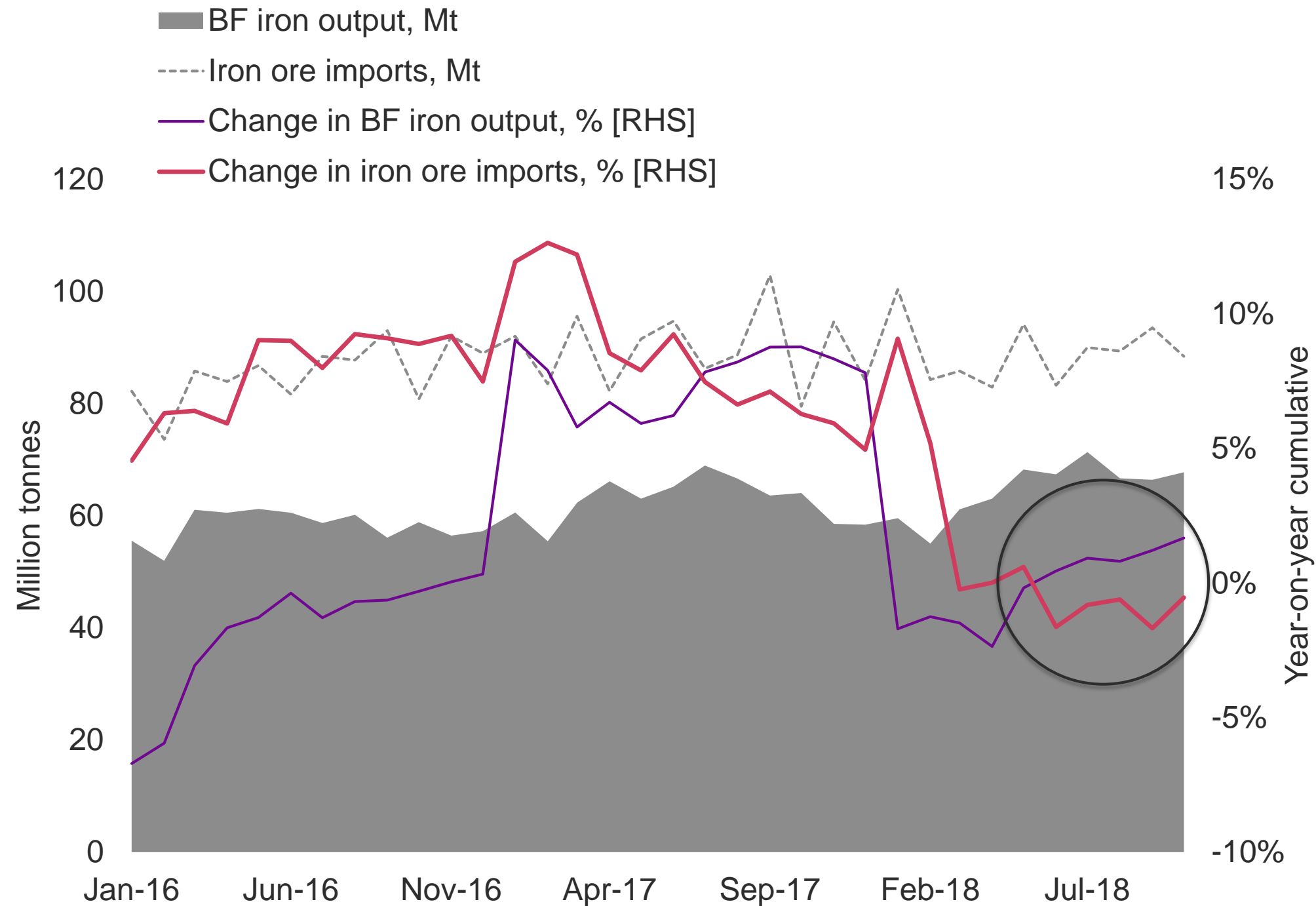
December 2018

Chinese iron ore market developments and the role of higher-grade material



- 1 Trends seen in the Chinese iron ore buying activity over the past years.
- 2 Market fundamentals behind the growing preference for higher-grade iron ore.
- 3 Prospects of demand for higher-grade iron ore in China in the coming years.

IO imports fell despite higher BF iron output



In January-October 2018:

2%

Rise in BF iron output

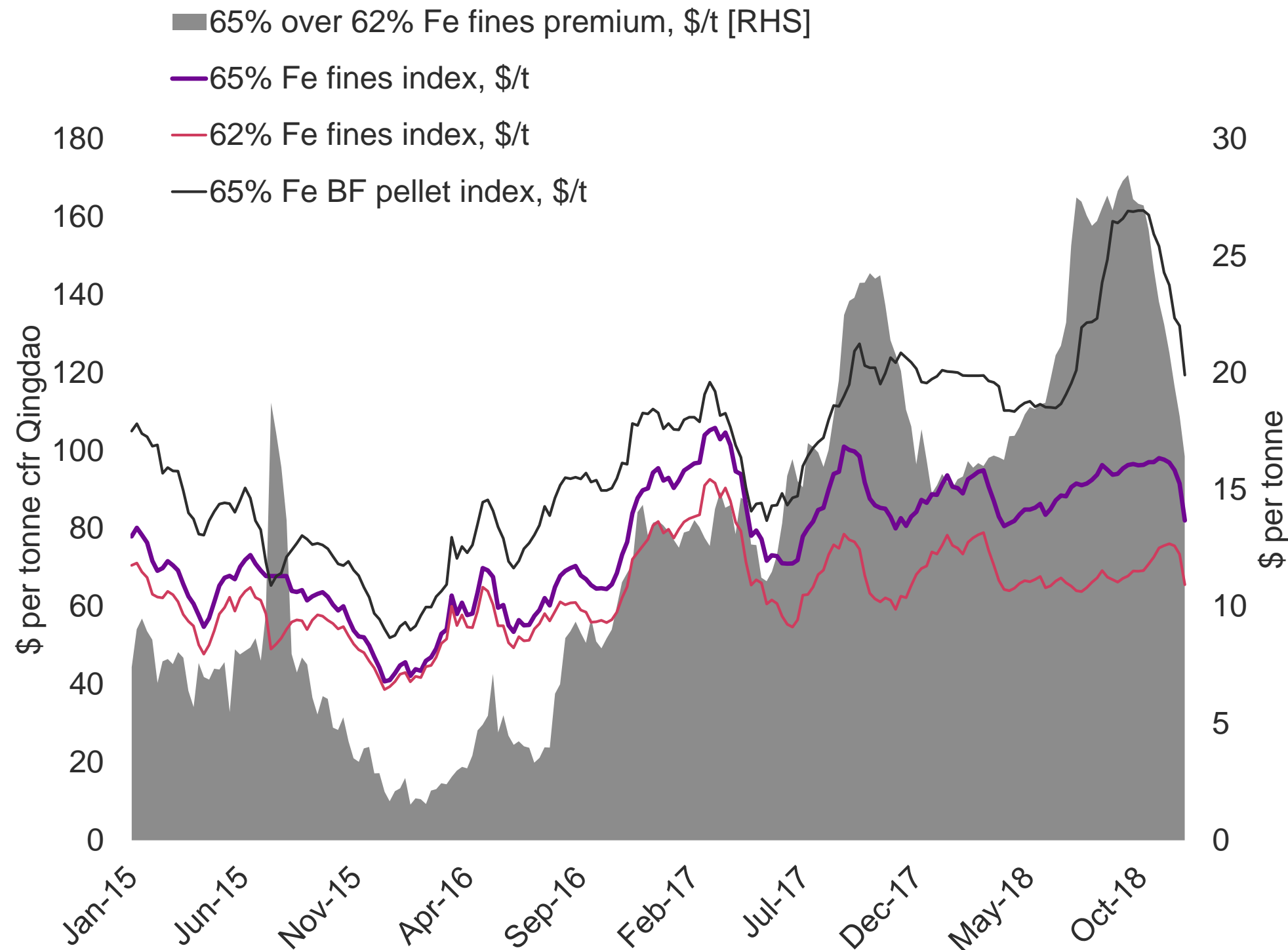
6%

Rise in crude steel output

-1%

Drop in imports of iron ore

Prices for 62% and 65% Fe iron ore diverged



Sources: Fastmarkets MB

From early 2016 to late 2018:

+\$14

In 65% over 62% Fe fines premium

+\$43

In pellet over 62% fines premium

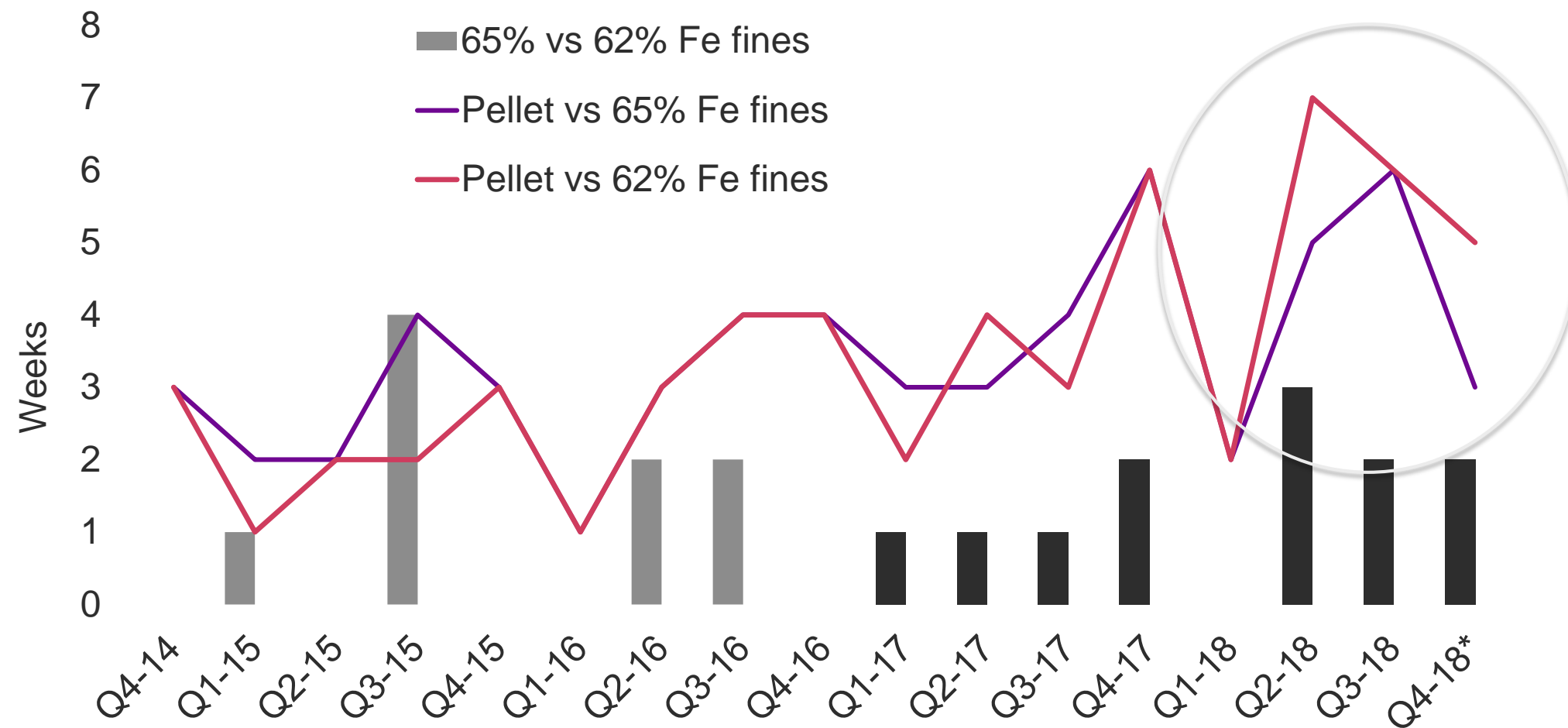
+\$18

In 66% Fe concentrate premium

Prices for 62% Fe and 65% Fe benchmarks have more often moved in opposite directions in 2017-18 than in 2015-16...



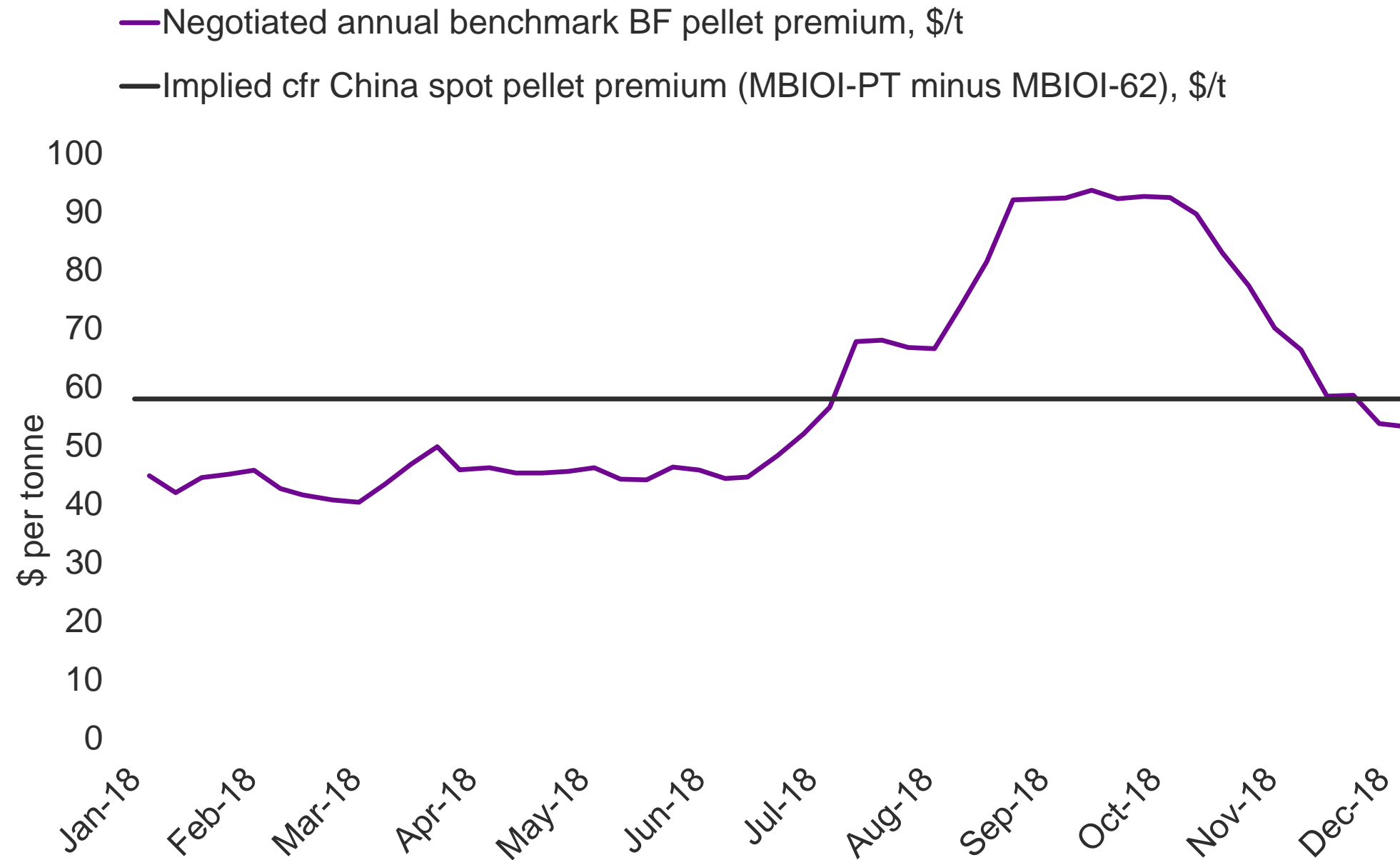
Weeks per quarter when prices diverged



...and pellet prices more often mirrored the trend seen in higher-grade fines

* Q4 results include price movements until the week ended Friday December 7

Spot BF pellet premium vs annual benchmark premium to 62% Fe fines



\$40-94

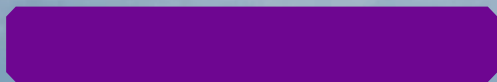
Range for spot weekly premiums

\$58

Negotiated annual premium

Sources: Fastmarkets MB

**What has been driving this
higher demand and pricing
environment?**



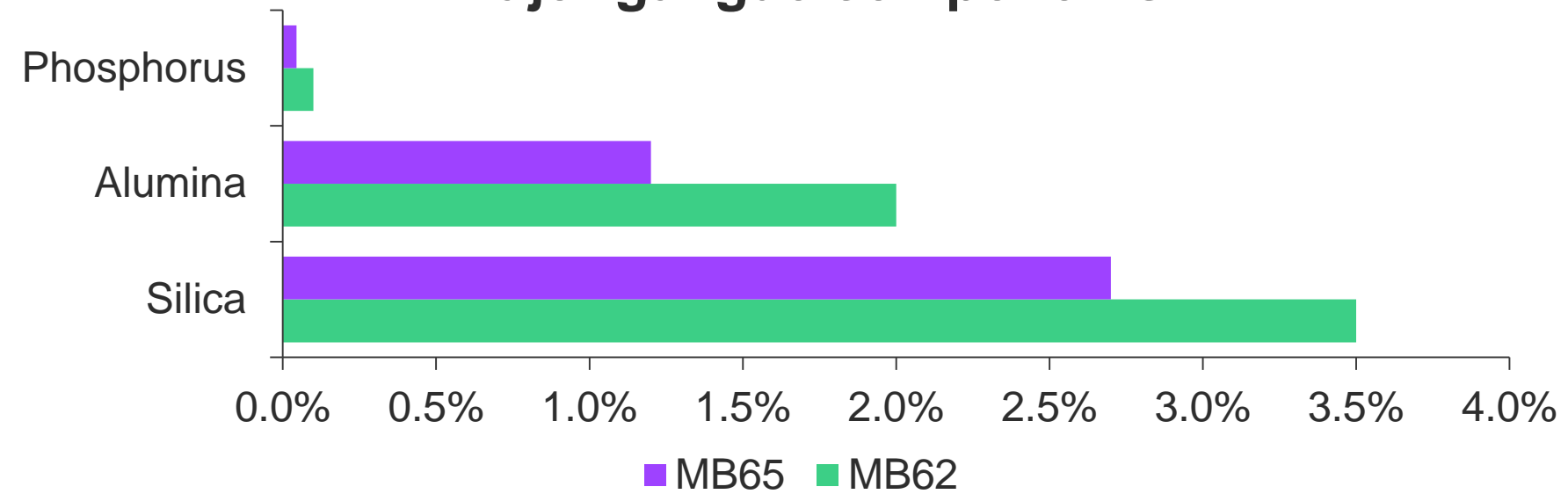
What has been driving the growing preference for higher-grade iron ore products among Chinese steelmakers?



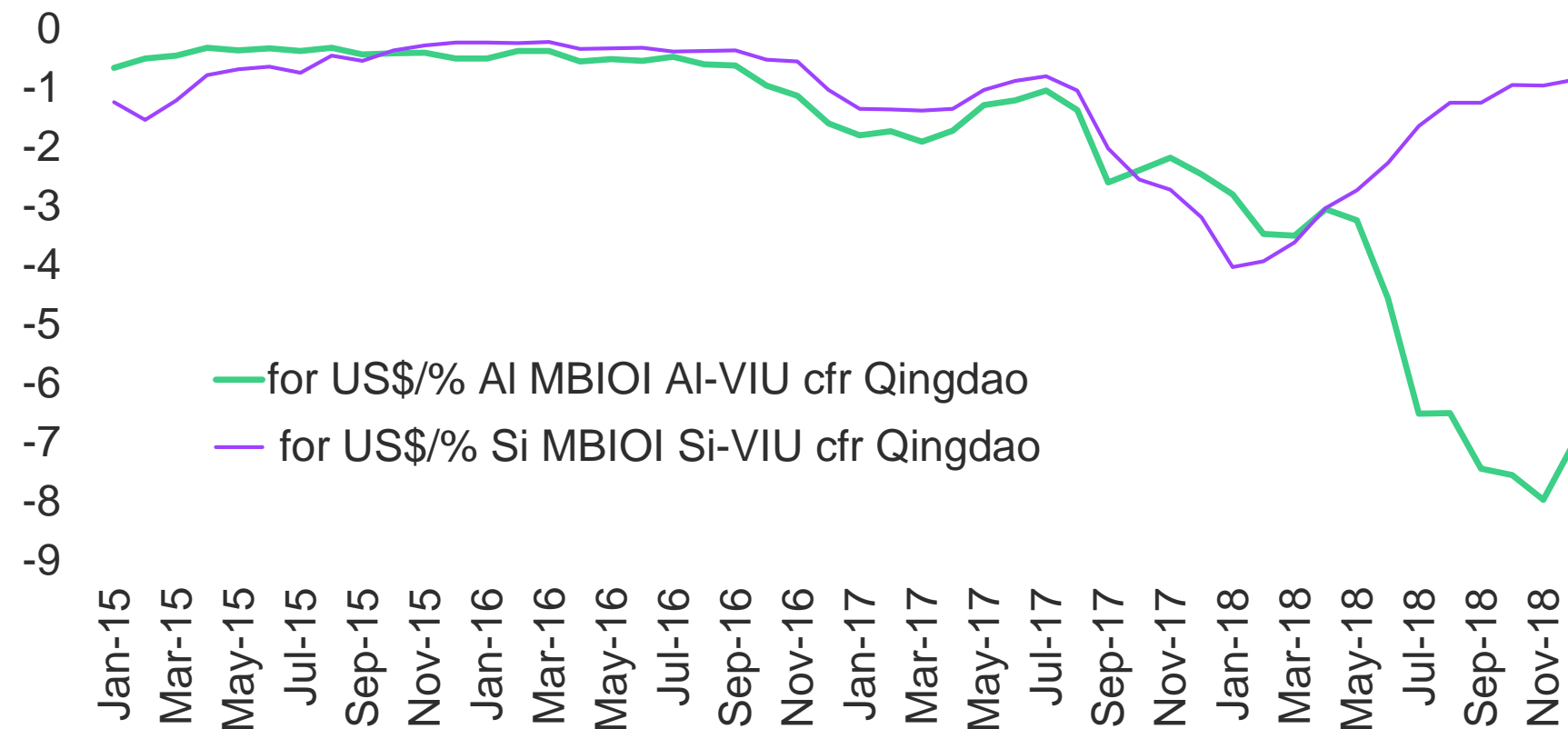
Impurity penalties

Major gangue components (silica, alumina & phosphorus) are present at higher levels in the 62% Fe index than in the 65% Fe iron ore index.

Major gangue components



Impurity penalties indicators

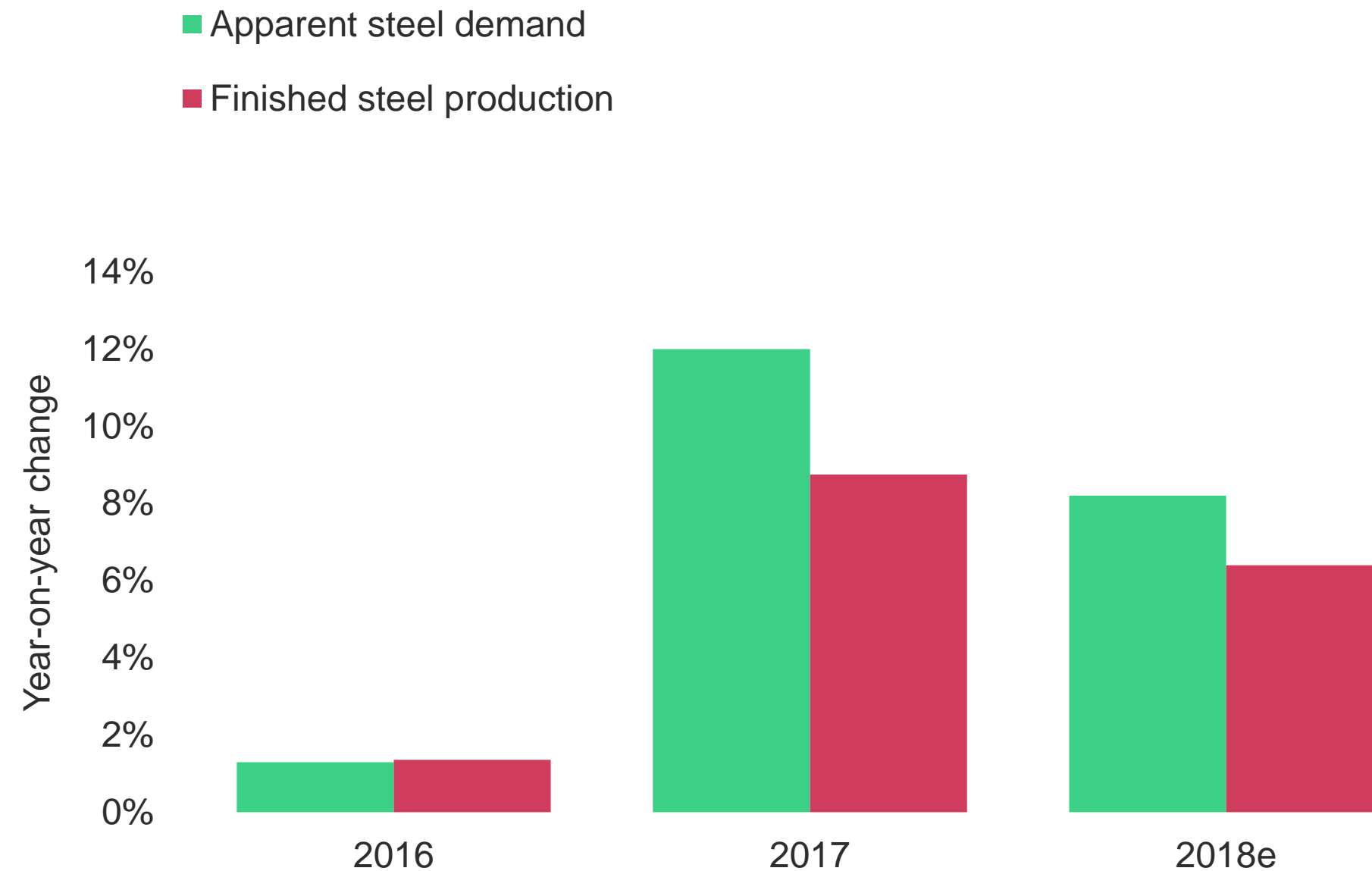


Sources: Fastmarkets MB

End-user demand

Chinese demand and supply of steel products has been pulled higher by a revival in residential construction starts.

China finished steel supply & demand growth

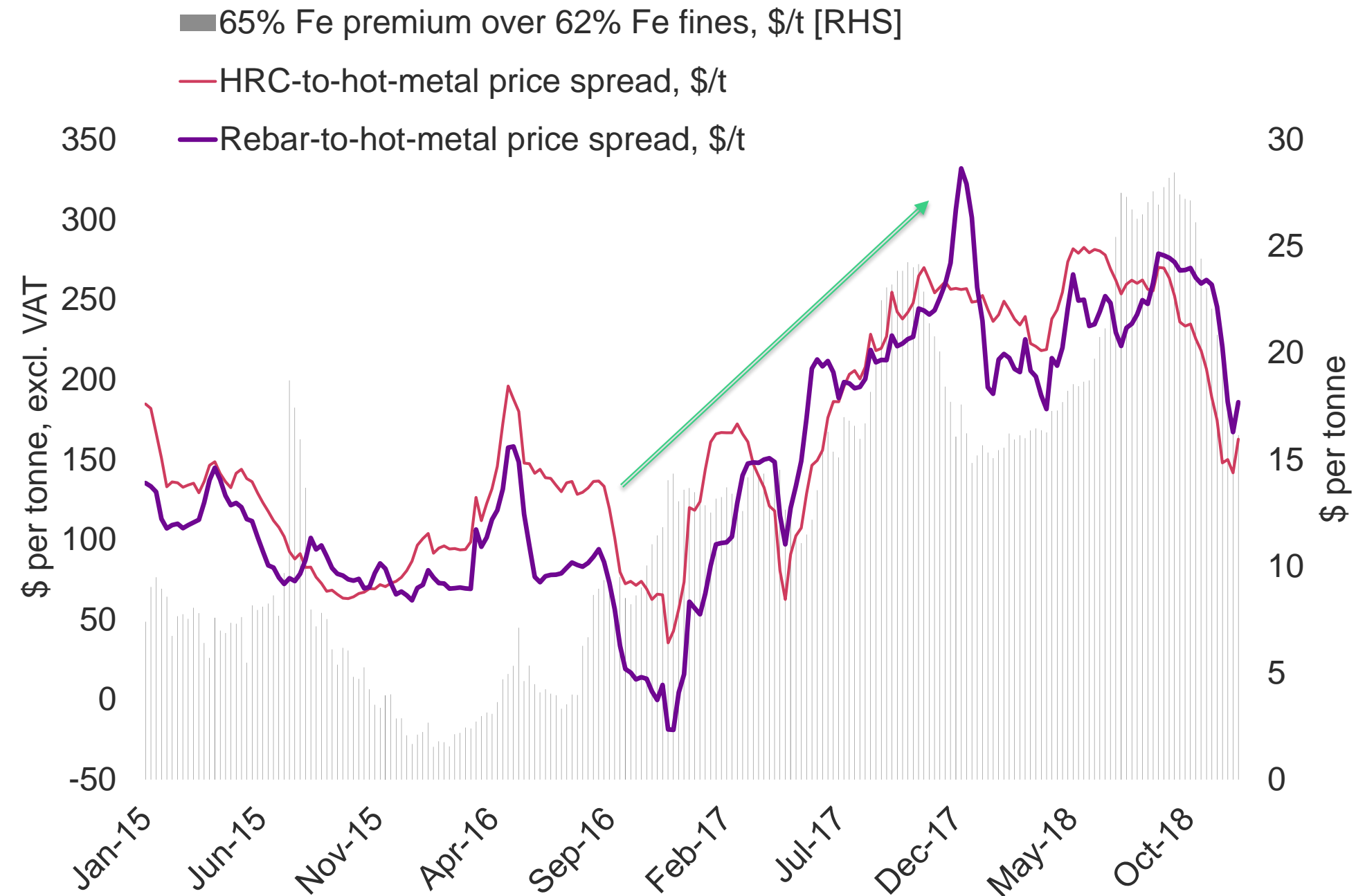


Sources: Fastmarkets MB research

Steel spreads

Elevated margins at steel mills prompted steelmakers to optimize output while using iron ore with less impurities.

Steel prices rose, providing higher margins

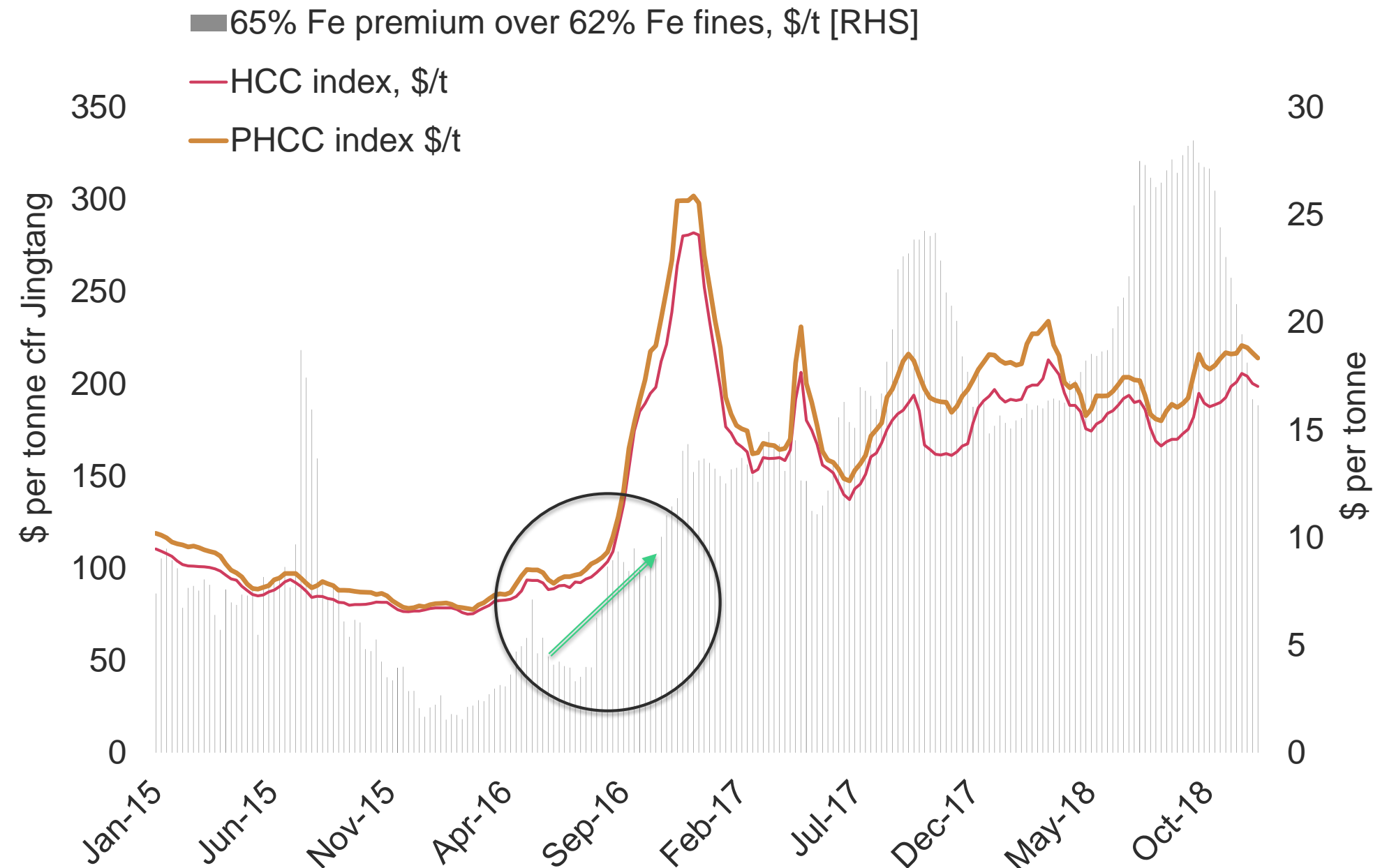


Sources: Fastmarkets MB research

Coking coal

After a jump in coking coal prices in late 2016, Chinese steelmakers have been looking to curtail the consumption of metcoal by using higher quality iron ore.

Elevated metcoal prices contributed to higher demand and prices for 65% IO

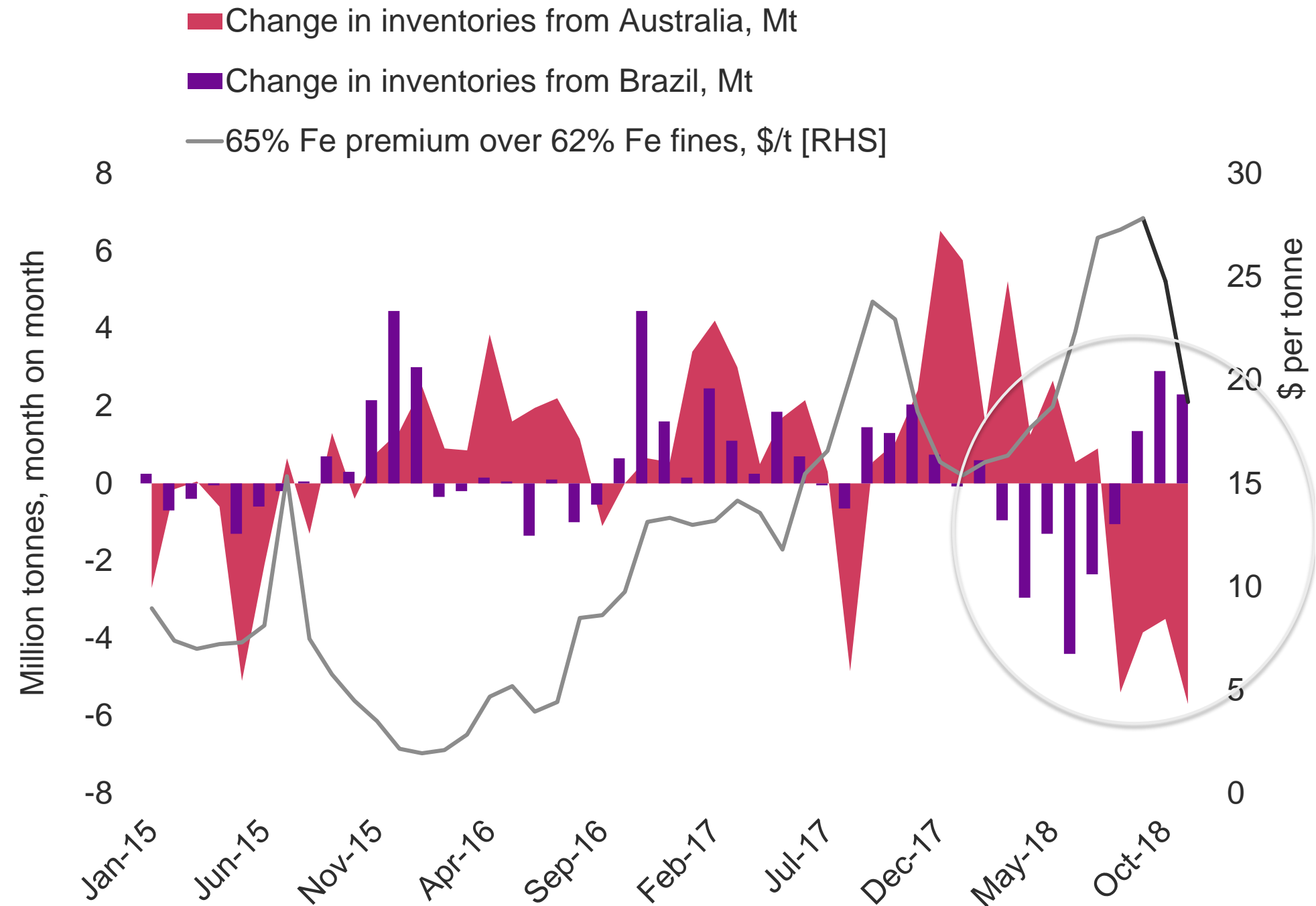


Sources: Fastmarkets MB

Port stocks

The price spreads between different grades of iron ore have also been reflected in the port stock volumes.

End of the month stocks at Chinese ports



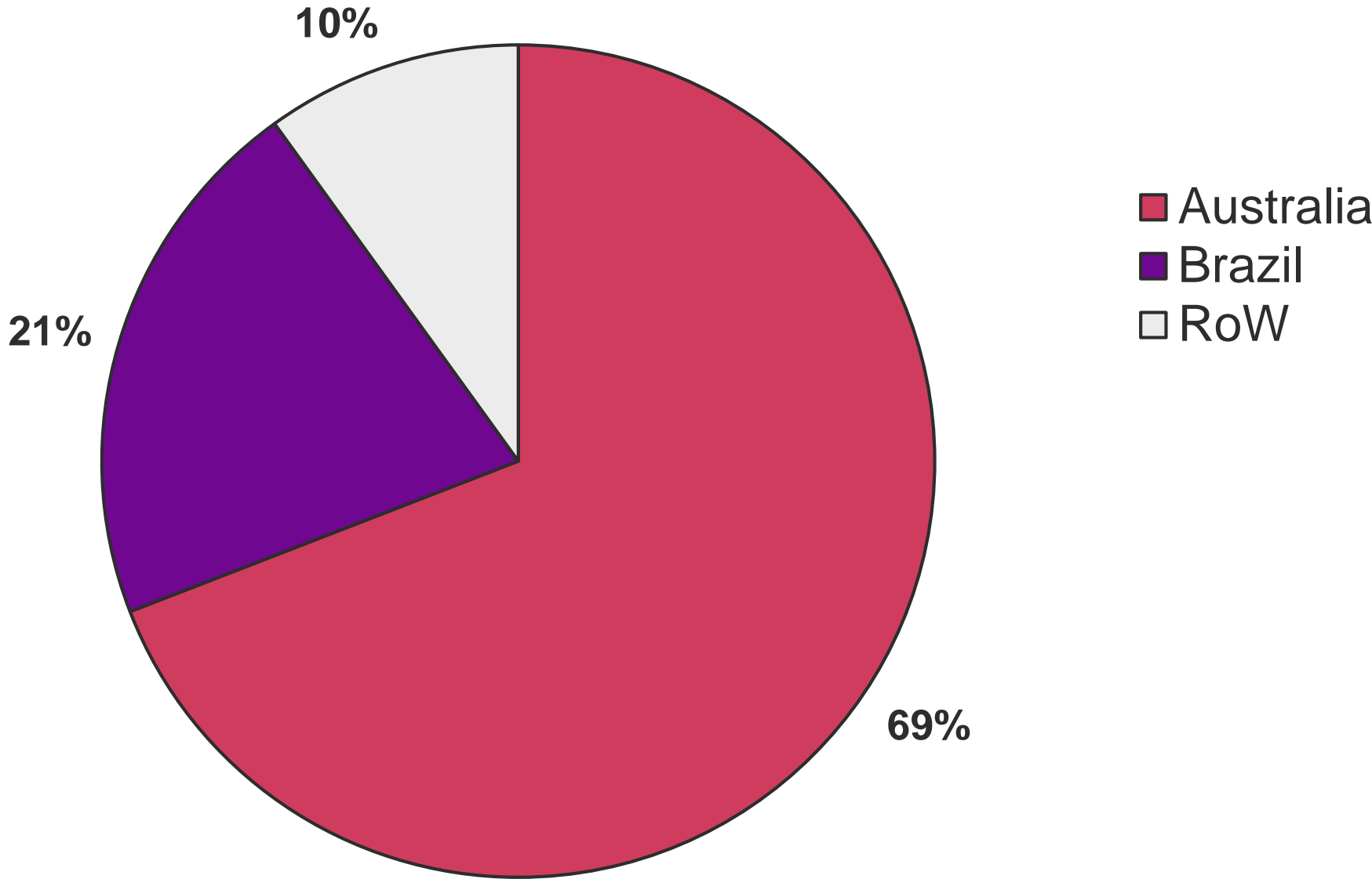
Sources: Bloomberg, Fastmarkets MB

Imports structure

That said, Australia remains the major supplier of iron ore to China, covering about 2/3 of Chinese total imports.



China's IO imports in 8 months of 2018



Sources: International Steel Statistics Bureau, Steelhome

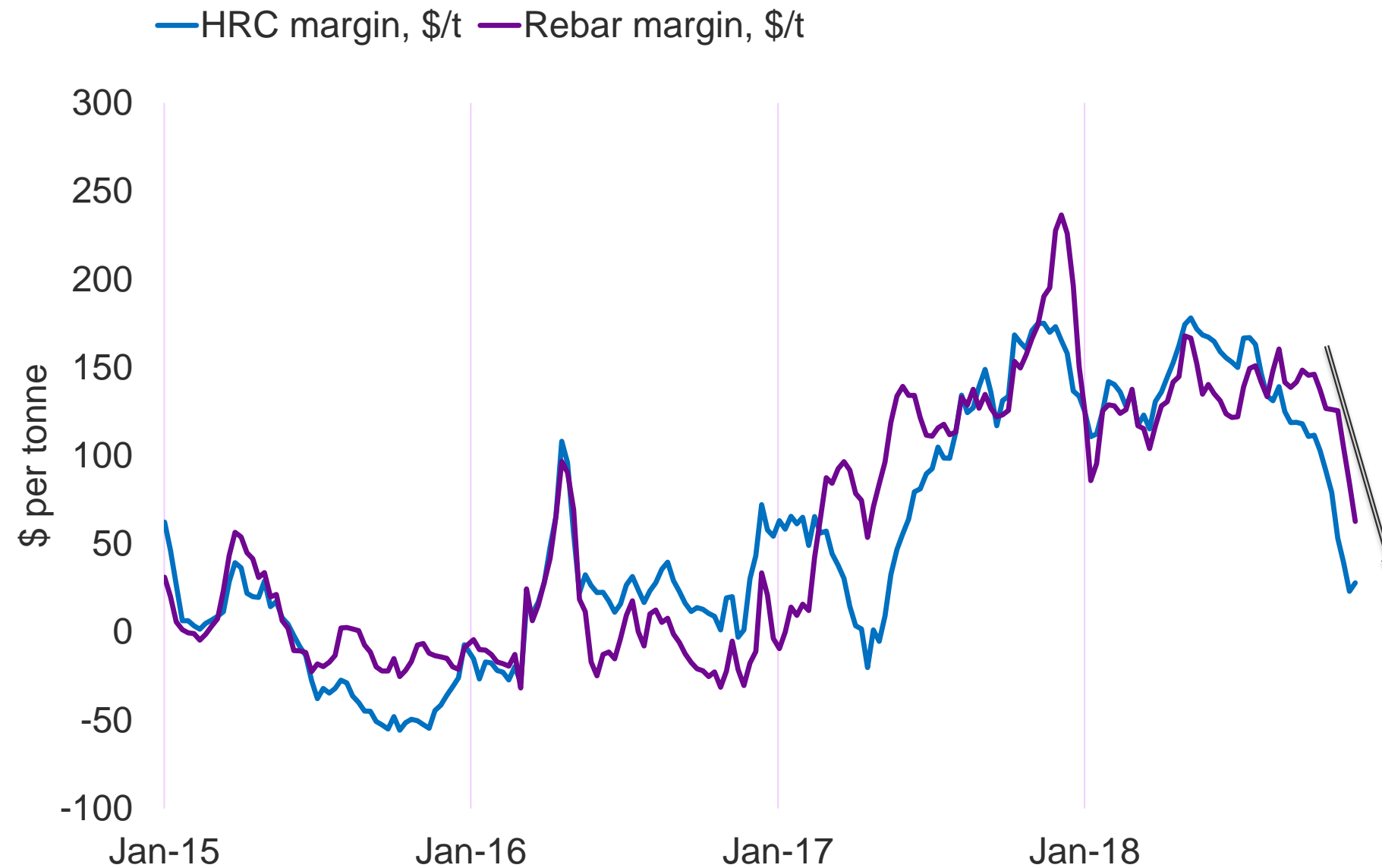
What's Next?



Margins

Operating margins at steel mills are facing a squeeze. HRC margin down by 75%, rebar margin down by 57% in the course of seven weeks from early October.

Steel mills margins falling in China





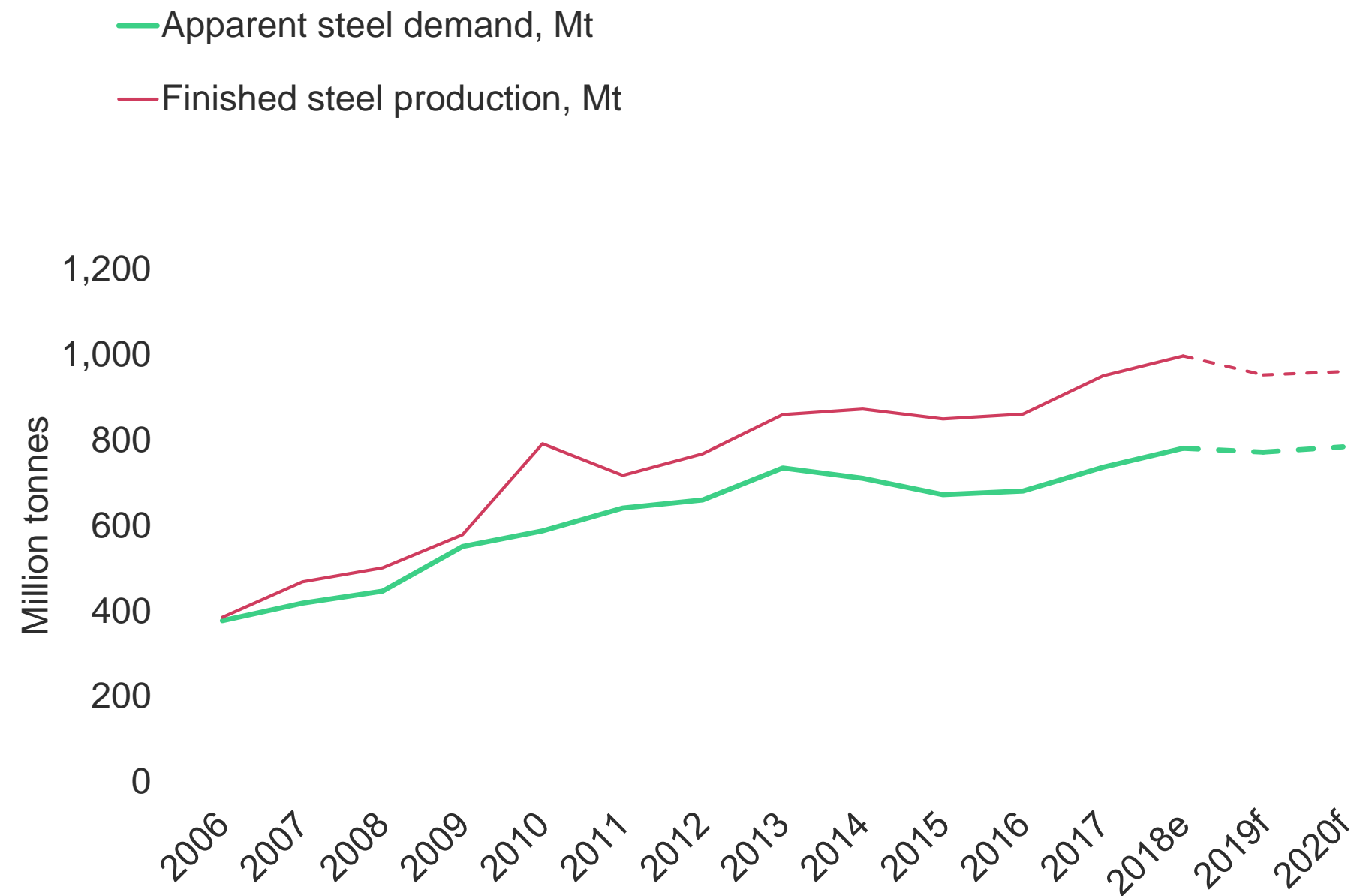
“Early November estimates by CISA suggest that blast furnace iron production will fall further and at an accelerating pace. And even sharper cuts to finished steel production in China imply that reasons behind the reduction are more demand- rather than environment-related,” Alistair Ramsay, Research Manager at Fastmarkets.



Demand

Growth in industrial production (IP) has been slowing down and is forecast to be lower next year, affecting the steel sector.

Finished steel supply & demand forecast

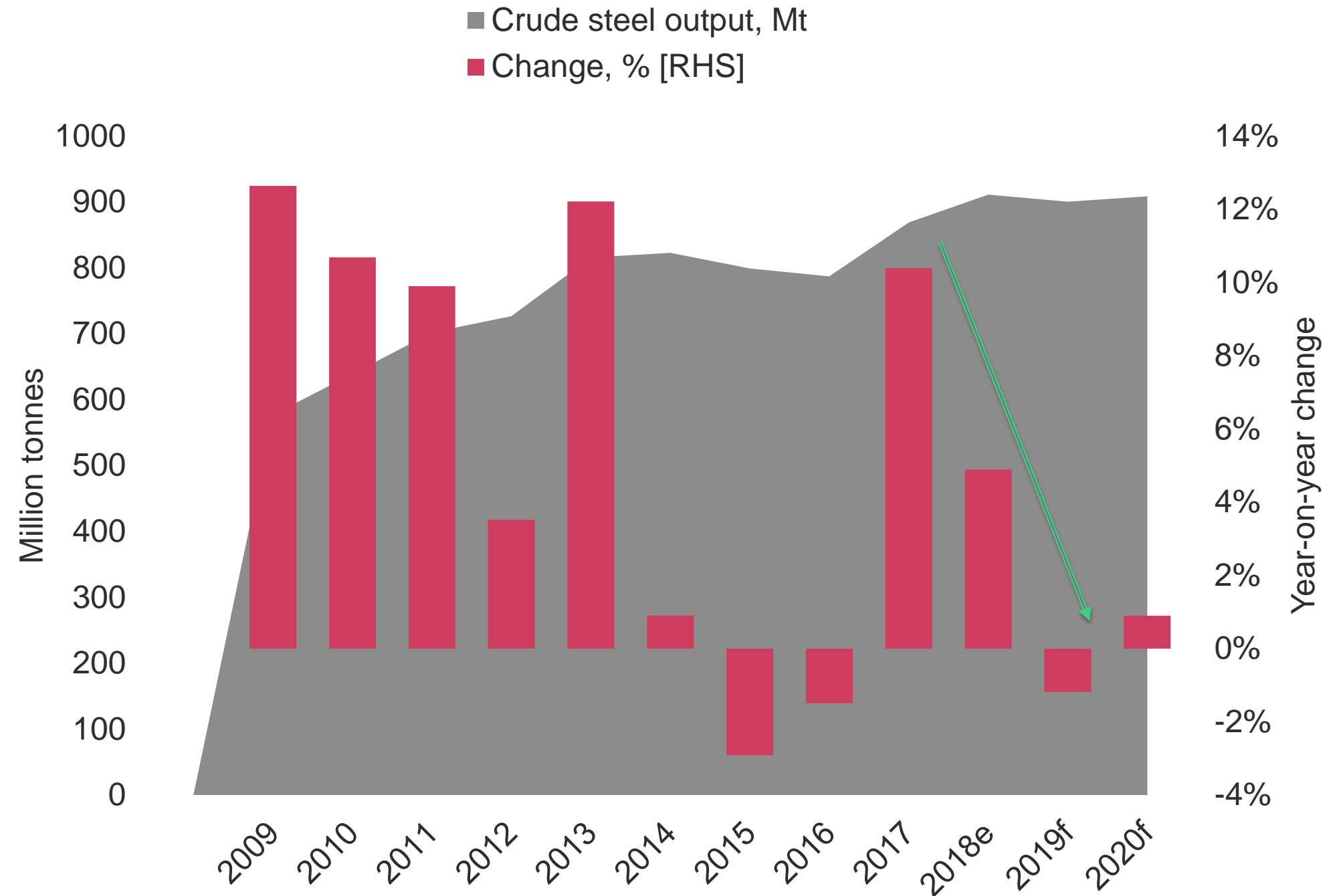


Sources: Fastmarkets MB research

Production

Growth in the Chinese steel production has slowed down this year; and we at Fastmarkets MB research anticipate the output may inch down in 2019.

Chinese steel output boom is over

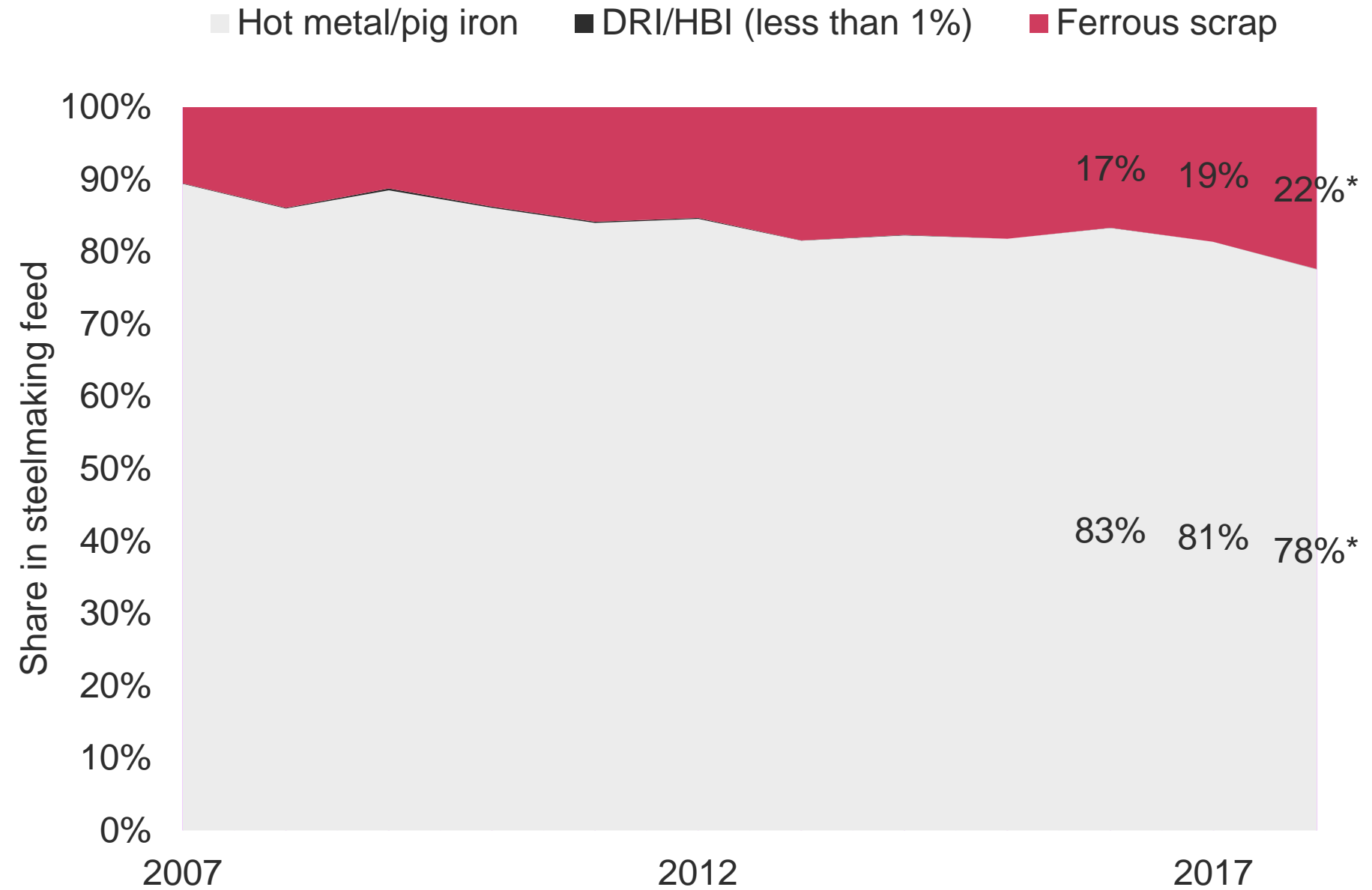


Sources: Fastmarkets MB research, National Bureau of Statistics, Worldsteel

Ferrous scrap factor

Although Chinese steelmaking remains primarily BF/BOF-route-based, scrap has been gaining its share over the past couple of years.

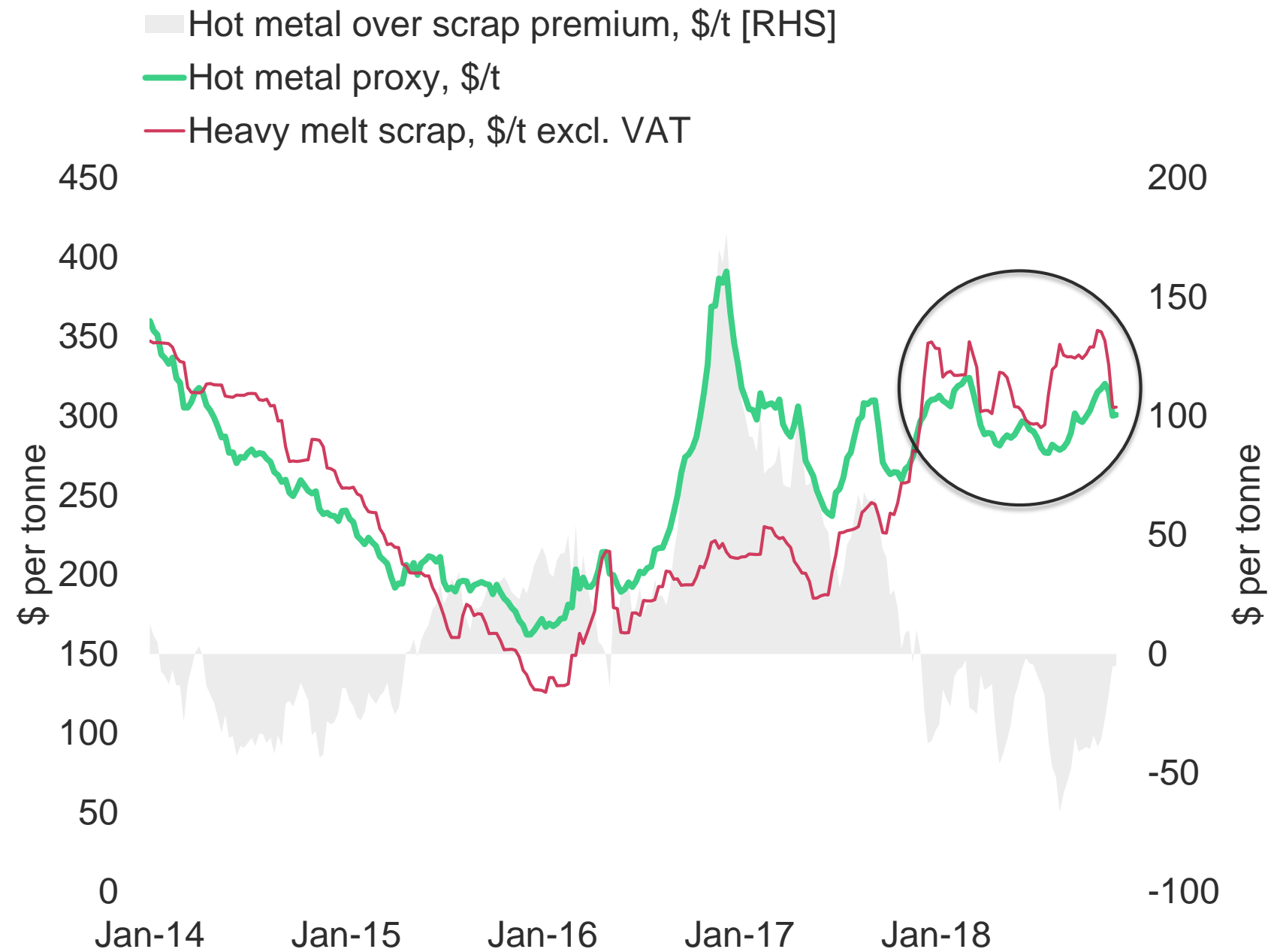
Scrap and iron metallics shares in Chinese steelmaking



*2018 ytd (January-September)

Sources: Fastmarkets MB research

Hot metal lost its premium over scrap in 2018



Annual average HM premiums:

Year	Premium, \$/t
2014	-23
2015	9
2016	55
2017	54
2018 (ytd till December 7)	-26



Prospects of the iron ore market and higher-grade material in particular in the coming years

- The downside risks to iron ore prices are looming with an anticipated slowdown in crude steel output and dampened construction activity over winter months.
- However, local authorities have recently relaxed their attitude toward restrictions, and expectations that steel production cuts over the winter would significantly restrict steel output have become less probable.
- Meanwhile, soaring premium for BF pellets and 65% Fe fines reached a turning point as Chinese buyers developed some resistance to the surging premiums.
- We expect they have peaked and will start to decline from Q4 2018, although will still remain elevated.
- For the Mena region in particular, we see the DR pellet premium remaining strong on both demand- and supply-side factors with regional DRI start-ups and pellet supply shortages only resolving themselves from 2020 onward.

A portfolio of research services for steel raw material markets

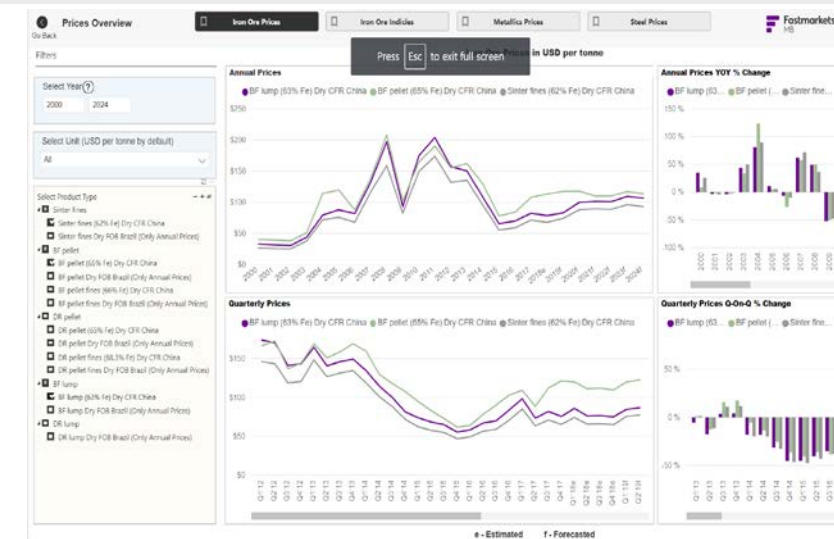


Weekly Trackers

- Short-term market analysis and forecasts of all key steel raw materials
- 18-month quarterly price forecasts
- 6-month monthly price forecasts

Intelligence Platforms

- Quarterly updated online platform
- Providing long-term forecasts to 2030
- Focused on sinter fines, premiums, BF and DR pellets
- Price forecasts for 28 different iron ore specifications, including 8 propriety iron ore index prices, including our new 65% fines benchmark price out to 2030
- Dedicated MENA cfr calculations for DR pellet including component freight and DR Premium breakdowns out to 2030
- Price, capacity, production, consumption, trade and operating cost data by mine/steel plant specific to DR pellet
- Detailed and accurate existing and planned regional DRI & steel projects – specific DR pellet demand drivers



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MIRIAM FALK



Senior analyst. Has seven years of experience in commodities and previously worked at S&P Global Platts before joining Fastmarkets research team. She first specialised in analysing supply and demand in the European power market, and later moved on to bulk steel raw materials, where she was responsible for the buildout of an analytical model of steel mill margins. Miriam is a commentator in the media and at industry events. She began her career as a policy intern at the Swedish Delegation to the OECD where she reported to the Ministry for Foreign Affairs. Miriam also has experience in international development policy from working at the Global Policy Forum in New York. She completed her Master's degree at Uppsala University in Sweden, with a major in political science and a minor in economics. Miriam also studied at Science-Po in Paris for a year.

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Senior analyst, editor of the Steel Raw Materials weekly tracker, which provides market analysis and independent price forecasting for all major key steel raw materials. Prior to joining the research team, Alona for four years covered iron metalics and a wide range of semi- and finished steel products on the editorial side as a reporter in the CIS, Turkey and Mena team and then as an editor in the European steel team at Fastmarkets MB. Before that, she worked at Metal Expert for two years, covering Asian steel markets, as well as providing analysis and forecasting of iron ore prices in China. Alona obtained a master's degree in economics at the National Mining University in Dnepr, Ukraine.

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Fastmarkets MB pricing team recent achievements

62% Fe Low Alumina Index launched on August 27
and trade done on it

Fastmarkets MB 65% Fe Iron Ore Index is heavily
used in physical market

SGX launched high-grade iron ore swaps and futures
contracts on December 3, using Fastmarkets MB
65% Fe Iron Ore Index