

## Runaway raw materials prices cut scrap premiums over hot metal

Hot metal costs spiked significantly for blast furnace-based producers in December, increasing \$74.11 per tonne on a daily average basis to \$390.04 per tonne.

This was on the back of higher iron ore and coking coal prices, both of which were on a constant upward trend for much of December. Key Fastmarkets seaborne indices rose by more than 20% month on month and more than \$30 per tonne each in absolute terms leading to a dramatic surge in implied ironmaking costs.

The iron ore 62% Fe fines index increased by 34% from its intra-month trough of \$132.13 per tonne cfr Qingdao on December 1 to an intra-month peak of \$176.45 per tonne cfr Qingdao on December 21, while premium hard coking coal increased by 21% between its intra-month trough of \$165 per tonne cfr Qingdao on December 1 and intra-month peak of \$200.06 per tonne cfr Jingtang on December 31.

This cut the China steel scrap premium over hot metal by \$66.19 per tonne to a mere \$1.54 per tonne and reduced the

competitiveness of hot metal.

The hot metal spreads for steel have also dropped, with the hot metal-HRC spread falling \$9.76 per tonne to \$222.55 per tonne and that for rebar falling \$42.06 per tonne to \$184.77 per tonne.

The enduring, upward momentum in Chinese finished steel prices may have continued to support already elevated ferrous scrap prices in December but the gains paled in comparison with both iron ore and coking coal.

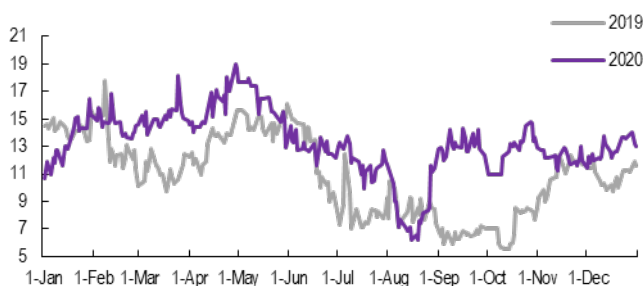
**Analysts say:** Provisional statistics from Cisa-member mills suggest that blast furnace iron production rose strongly again last month, in line with surging steel production. The increased iron and steel production and retreating margins are contrary to patterns overseas where metal spreads reached multi-year highs last month while spot buyers continued to face shortages.

The recovering steel supply overseas and the retreat in margins in China are likely to be leading indicators of short-term developments elsewhere.

	Unit	Monthly average	Previous month average	Change	December maximum	December minimum	Current quarterly average	Previous quarterly average
<b>Iron Ore</b>								
Iron Ore 65% Fe Fines/62% Fe Fines Differential	Usd/tonne	12.83	12.15	▲ 0.68	14.05	11.81	12.57	11.18
Iron ore 66% Fe Concentrates/65% Fe Fines Differential	Usd/tonne	-0.71	-1.99	▲ 1.27	3.08	-4.53	-1.80	-3.74
<b>Hot Metal</b>								
Hot metal cost (Iron ore 62% Fe fines, PHCC)	Usd/tonne	390.04	315.93	▲ 74.11	428.77	338.46	334.18	283.26
East China Domestic HRC / Hot Metal Spread	Usd/tonne	222.55	232.31	▼ 9.76	268.69	202.43	226.84	221.59
East China Domestic Rebar / Hot Metal Spread	Usd/tonne	184.77	226.84	▼ 42.06	224.10	165.11	203.99	181.85
<b>Scrap</b>								
South Korea import HMS 1&2 VS South Korea import H2	Usd/tonne	25.08	16.12	▲ 8.96	33.97	16.43	21.50	22.44
Vietnam import HMS1&2 VS Vietnam import H2	Usd/tonne	19.25	9.63	▲ 9.63	25.00	12.50	13.71	15.31
China steel scrap premium over hot metal	Usd/tonne	1.54	67.73	▼ 66.19	29.91	-13.87	41.02	59.69
Steel billet spread (Steel billet import cfr SE Asia VS scrap HMS cfr Vietnam)	Usd/tonne	102.29	132.53	▼ 30.24	123.90	92.50	123.88	136.97
Steel scrap Shindachi Premium over steel scrap H2 fob Japan	Usd/tonne	34.92	33.67	▲ 1.25	45.60	26.53	31.57	26.94
<b>Steel Mills Margin</b>								
China steel mills' Rebar Margin Proxy	Yuan/tonne	222.18	334.02	▼ 111.84	451.80	112.85	214.11	17.33
China steel mills' HRC Margin Proxy	Yuan/tonne	501.50	375.21	▲ 126.29	781.80	340.30	384.54	329.98

### IRON ORE SPREAD

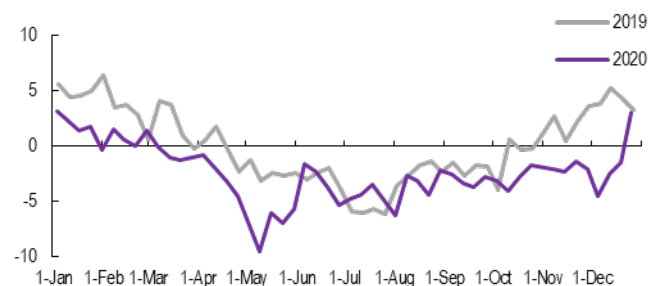
Iron Ore 65% Fe Fines/62% Fe Fines Differential, usd/tonne



Formula: Fastmarkets' Iron ore 65% Fe Brazil-origin fines, cfr Qingdao, \$/tonne - Fastmarkets' Iron ore 62% Fe fines, cfr Qingdao, \$/tonne

The differential indicates the price competitiveness between seaborne Brazilian high-grade iron ore fines and seaborne mid-grade iron ore fines driven by the fundamental supply and demand of the two products.

Iron ore 66% Fe Concentrates/65% Fe Fines Differential, usd/tonne

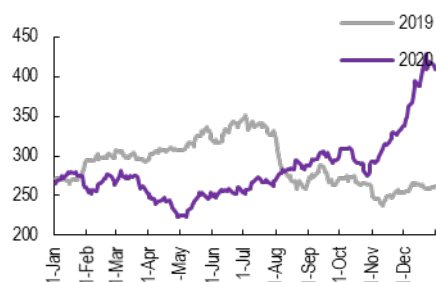


Formula: Fastmarkets' Iron ore 66% Fe concentrate, cfr Qingdao, \$/tonne - Fastmarkets' Iron ore 65% Fe Brazil-origin fines, cfr Qingdao, \$/tonne

The differential indicates the price competitiveness between seaborne iron ore concentrates and seaborne Brazilian high-grade iron ore fines driven by the fundamental supply and demand of the two products.

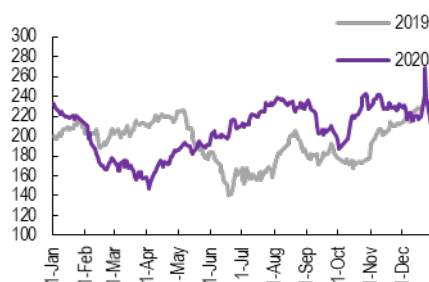
## HOT METAL COST

### Hot metal cost, usd/tonne



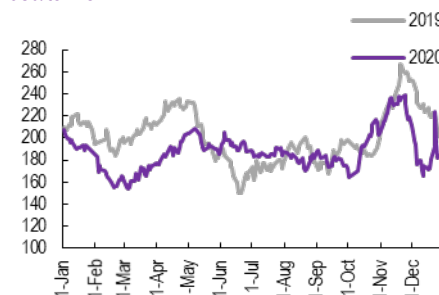
Formula:  $1.6 \times \text{Fastmarkets' Iron ore 62\% Fe fines, cfr Qingdao, \$/tonne} + 0.77 \times \text{Fastmarkets' Premium hard coking coal, cfr Jinglang, \$/tonne}$   
 The cost of hot metal in the blast furnace steelmaking route in China with imported mid-grade iron ore fines and imported premium hard coking coal.

### East China Domestic HRC/Hot metal spread, usd/tonne



Formula:  $\text{Fastmarkets' Steel hot-rolled coil domestic, ex-whs Eastern China, \$/tonne (converted to usd/tonne)} - \text{Hot metal cost}$   
 The spread between China's domestic hot-rolled coil price in the eastern region and the cost of hot metal indicates the profitability of HRC producing steel mills.

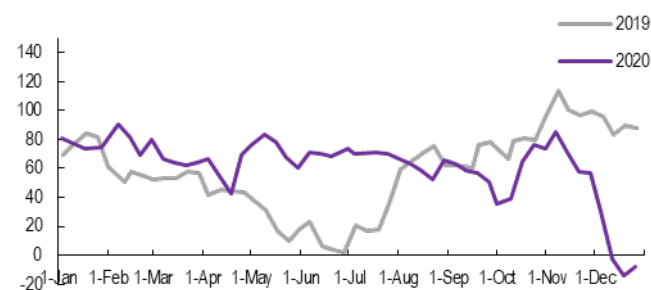
### East China Domestic Rebar/Hot metal spread, usd/tonne



Formula:  $\text{Fastmarkets' Steel reinforcing bar (rebar) domestic, ex-whs Eastern China, \$/tonne (converted to usd/tonne)} - \text{Hot metal cost}$   
 The spread between China's domestic reinforcing bar price in the eastern region and the cost of hot metal indicates the profitability of rebar producing steel mills.

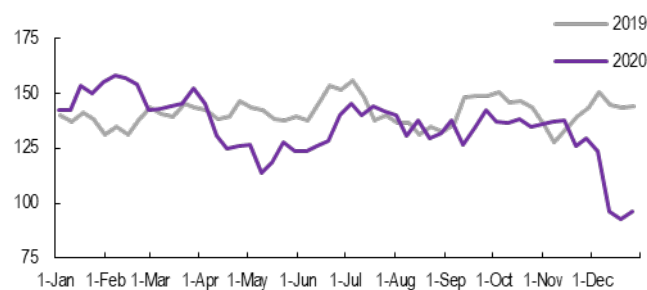
## SCRAP

### China steel scrap premium over hot metal, usd/tonne



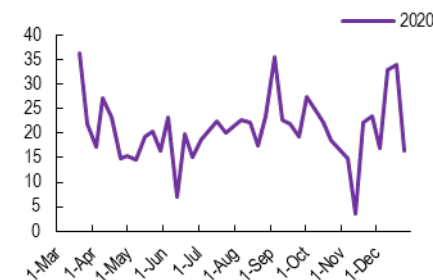
Formula:  $\text{Fastmarkets' Steel scrap heavy scrap domestic, delivered mill China, \$/tonne (converted to \$/tonne)} - \text{Hot metal cost}$   
 The premium indicates the price competitiveness between China's domestic steel heavy scrap and the cost of hot metal.

### Steel billet spread (Steel billet import cfr SE Asia VS scrap HMS cfr Vietnam), usd/tonne



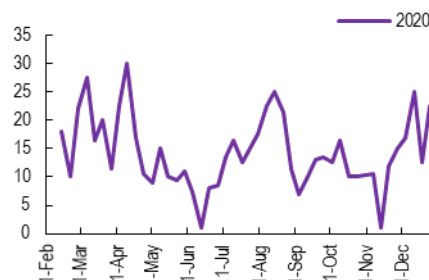
Formula:  $\text{Fastmarkets' Steel billet import, cfr Southeast Asia, \$/tonne} - \text{Fastmarkets' Steel scrap HMS 1\&2 (80:20), cfr Vietnam, \$/tonne}$   
 The spread indicates the price competitiveness between Southeast Asia imported steel billet and Vietnam imported recycled steel.

### South Korea import HMS 1&2/South Korea import H2 Differential, usd/tonne



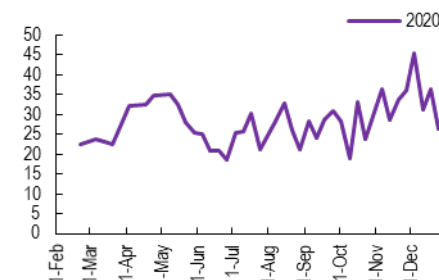
Formula:  $\text{Fastmarkets' Steel scrap HMS 1\&2 (80:20) deep-sea origin import, cfr South Korea, \$/tonne} - \text{Fastmarkets' Steel scrap H2 Japan origin import, cfr main port South Korea, \$/tonne (converted to usd/tonne)}$   
 The premium for deep-sea origin HMS 1&2 scrap over Japan-origin H2 scrap on a cfr South Korea basis shows which material is more competitive for Korean steelmakers to purchase.

### Vietnam import HMS1&2/Vietnam import H2 Differential, usd/tonne



Formula:  $\text{Fastmarkets' Steel scrap HMS 1\&2 (80:20), cfr Vietnam, \$/tonne} - \text{Fastmarkets' Steel scrap H2 Japan-origin import, cfr Vietnam, \$/tonne}$   
 The premium for deep-sea origin HMS 1&2 scrap over Japan-origin H2 scrap on a cfr Vietnam basis shows which material is more competitive for Vietnamese steelmakers to purchase.

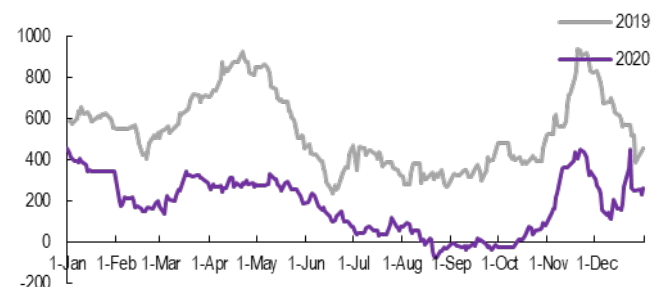
### Steel scrap Shindachi premium over steel scrap H2 fob Japan, usd/tonne



\*Formula:  $\text{Fastmarkets' Steel scrap Shindachi export, fob main port Japan, \$/tonne (converted to usd/tonne)} - \text{Fastmarkets' Steel scrap H2 export, fob main port Japan, \$/tonne (converted to usd/tonne)}$   
 The premium for Japan export Shindachi over Japan export H2 shows how competitive high-grade busheling scrap prices are compared with those for the base-grade heavy scrap material.

## STEEL MILLS MARGIN

### China's Steel Mill rebar margin proxy, yuan/tonne



Formula:  $\text{Fastmarkets' Steel reinforcing bar (rebar) domestic, ex-whs Eastern China, \$/tonne} - 1.6 \times \text{Fastmarkets' Iron ore 62\% Fe fines, cfr Qingdao, \$/wet tonne} - 0.5 \times \text{China Domestic Coke price} - \text{Other costs (1250\$/tonne)}$   
 The profitability of China's rebar producing steel mills with portside purchased iron ore and domestic coke.

### China's Steel Mill HRC margin proxy, yuan/tonne



Formula:  $\text{Fastmarkets' Steel hot-rolled coil domestic, ex-whs Eastern China, \$/tonne} - 1.6 \times \text{Fastmarkets' Iron ore 62\% Fe fines, cfr Qingdao, \$/wet tonne} - 0.5 \times \text{China Domestic Coke price} - \text{Other costs (1250\$/tonne)}$   
 The profitability of China's HRC producing steel mills with portside purchased iron ore and domestic coke.