

## Met coal gains erode mill margins in September

Sharp price gains in metallurgical coal and coke prices had a big impact on steel mill margins in September.

Hot metal costs increased by \$64.70 per tonne on a daily average basis to \$599.28 per tonne in September, supported by imported coking coal prices in China hitting historical highs amid tight seaborne and domestic supply.

Premium hard coking coal hit \$603.28 per tonne cfr Jingtang on September 30, the highest level ever recorded. Hard coking coal, coke export and domestic coking coal prices in China also reached record highs.

This has caused the hot metal-hot rolled coil spread to fall by \$58.88 per tonne on a daily average basis to \$190.19 per tonne, and the hot metal-rebar spread to fall by \$13.45 per tonne to \$160.85 per tonne.

This has also caused steel scrap to be a cheaper alternative than iron ore-based hot metal, although electricity cuts across China have crimped electric arc-furnace operating rates in the country.

Stable steel prices and falling iron ore prices have slightly negated the effects of the massive coking coal price increases, with market participants expecting steel prices to remain supported by production cuts.

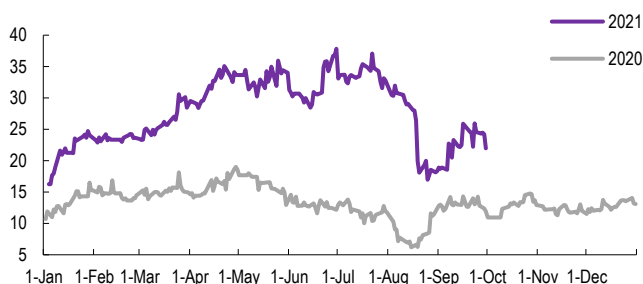
### ANALYST COMMENTS:

As we mentioned last month, integrated steel mills in China were always going to struggle to keep their costs down when cutting steel production had no negative impact on the price of coke; an increasingly significant share of the hot metal cost. Plan "B" to raise steel prices and defend margins is also failing since it is not just steel supply, but steel demand, that is in decline - if only temporarily in our view. Option "C" to push the mini-mills and steel processors (rerollers) out of business and increase production and economies of scale is the next step to make, and with electricity shortages hampering mini-mills and tiny spreads making steel processing unviable it is one that integrated mills have a good chance of taking. The government remains determined to stop steel output from rising, but the atypical third-quarter cuts now give the integrated mills some "wiggle room" in the months ahead. Output could even rise in the fourth quarter, unusually, and the government could still reach its 0% target. Much will depend on what number they finally settle on for 2020.

	Unit	Monthly average	Previous month average	Change	September maximum	September minimum	Current quarterly average	Previous quarterly average
<b>Iron Ore</b>								
Iron Ore 65% Fe Fines/62% Fe Fines Differential	Usd/tonne	22.67	24.85	▼2.17	25.93	18.52	27	32.4
Iron ore 66% Fe Concentrates/65% Fe Fines Differential	Usd/tonne	-2.35	-3.45	▲1.1	-1.6	-2.73	-4.03	-3.51
<b>Hot Metal</b>								
Hot metal cost (Iron ore 62% Fe fines, PHCC)	Usd/tonne	599.28	534.58	▲64.7	655.29	558.78	571.49	516.41
East China Domestic HRC / Hot Metal Spread	Usd/tonne	190.19	249.07	▼58.88	239.86	132.32	217.55	252.28
East China Domestic Rebar / Hot Metal Spread	Usd/tonne	160.85	174.29	▼13.45	189.56	137.36	153.08	180.92
<b>Scrap</b>								
South Korea import HMS 1&2 VS South Korea import H2	Usd/tonne	31.04	33.23	▼2.19	37.89	22.65	29.58	25.68
Vietnam import HMS1&2 VS Vietnam import H2	Usd/tonne	23.13	25.38	▼2.25	27.5	20	25.54	15.23
China steel scrap premium over hot metal	Usd/tonne	-99.19	-23.43	▼75.77	-60.91	-144.82	-62.08	-20.11
Steel billet spread (Steel billet import cfr SE Asia VS scrap HMS cfr Vietnam)	Usd/tonne	185.5	189.06	▼3.56	190.5	174.5	185.01	186.32
Steel scrap Shindachi Premium over steel scrap H2 fob Japan	Usd/tonne	153.9	156.46	▼2.57	164.06	142.22	147.48	60.03
<b>Steel Mills Margin</b>								
China steel mills' Rebar Margin Proxy	Yuan/tonne	917.97	607.24	▲310.74	1344.1	533.7	571.73	389.97
China steel mills' HRC Margin Proxy	Yuan/tonne	1131.97	1154.62	▼22.64	1284.1	983.7	1043.34	910.49

### IRON ORE SPREAD

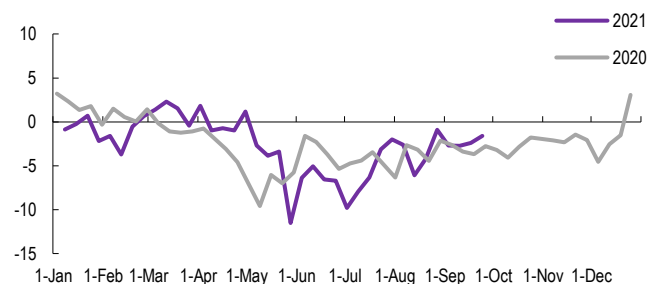
Iron Ore 65% Fe Fines/62% Fe Fines Differential, usd/tonne



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

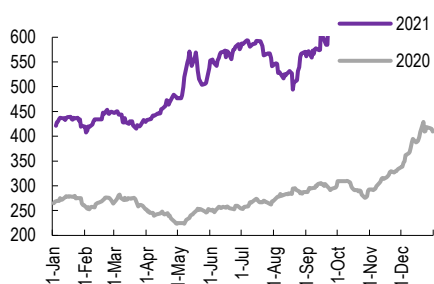


Formula: Fastmarkets' Iron ore 66% Fe concentrate, cfr Qingdao, \$/tonne - Fastmarkets' Iron ore 65% Fe Brazil-origin fines, cfr Qingdao, \$/tonne

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.

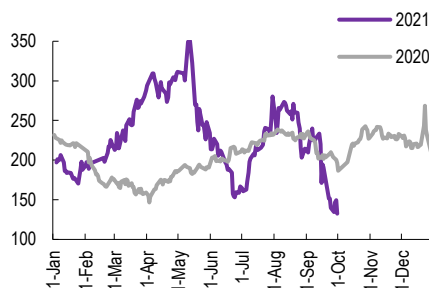
## HOT METAL COST

### Hot metal cost, usd/tonne



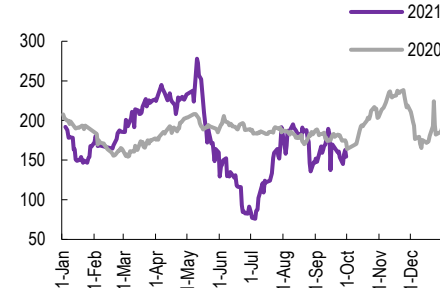
Formula:  $1.6 \times \text{Fastmarkets' Iron ore } 62\% \text{ Fe fines, cfr Qingdao, } \$/\text{tonne} + 0.77 \times \text{Fastmarkets' Premium hard coking coal, cfr Jinglang, } \$/\text{tonne}$   
 The cost of hot metal in the blast furnace steelmaking route in China with imported mid-grade iron ore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

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



Formula:  $\text{Fastmarkets' Steel hot-rolled coil domestic, ex-whs Eastern China, } \$/\text{tonne (converted to usd/tonne)} - \text{Hot metal cost}$   
 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.

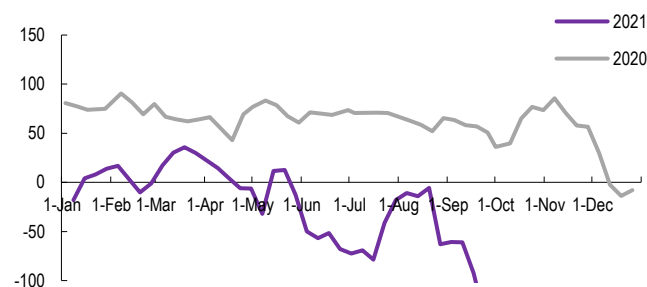
### East China Domestic Rebar/Hot metal spread, usd/tonne



Formula:  $\text{Fastmarkets' Steel reinforcing bar (rebar) domestic, ex-whs Eastern China, } \$/\text{tonne (converted to usd/tonne)} - \text{Hot metal cost}$   
 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.

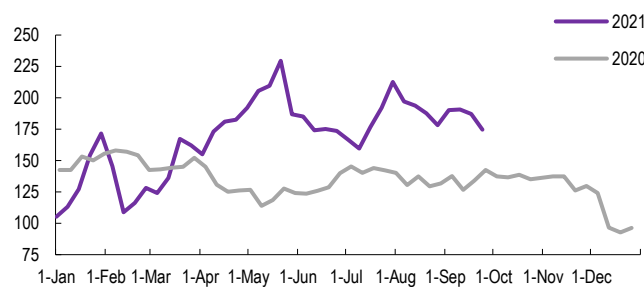
## SCRAP

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



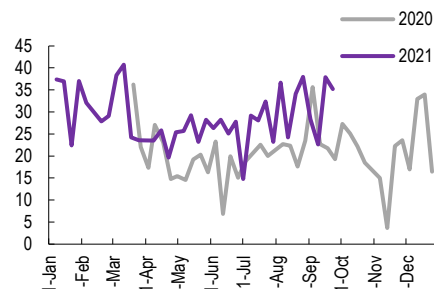
Formula:  $\text{Fastmarkets' Steel scrap heavy scrap domestic, delivered mill China, } \$/\text{tonne (converted to } \$/\text{tonne)} - \text{Hot metal cost}$   
 The premium indicates the price competitiveness between China's domestic steel heavy scrap and the cost of hot metal.

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



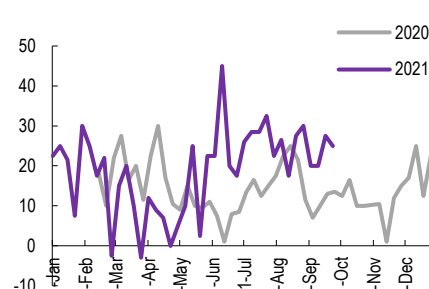
Formula:  $\text{Fastmarkets' Steel billet import, cfr Southeast Asia, } \$/\text{tonne} - \text{Fastmarkets' Steel scrap HMS } 1\&2 \text{ (80:20), cfr Vietnam, } \$/\text{tonne}$   
 The spread indicates the price competitiveness between Southeast Asia imported steel billet and Vietnam imported recycled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

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



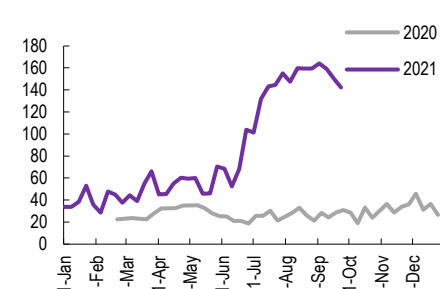
Formula:  $\text{Fastmarkets' Steel scrap HMS } 1\&2 \text{ (80:20) deep-sea origin import, cfr South Korea, } \$/\text{tonne} - \text{Fastmarkets' Steel scrap H2 Japan origin import, cfr main port South Korea, } \$/\text{tonne (converted to usd/tonne)}$   
 The premium for deep-sea origin HMS 1&2 scrap 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:  $\text{Fastmarkets' Steel scrap HMS } 1\&2 \text{ (80:20), cfr Vietnam, } \$/\text{tonne} - \text{Fastmarkets' Steel scrap H2 Japan-origin import, cfr Vietnam, } \$/\text{tonne}$   
 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.

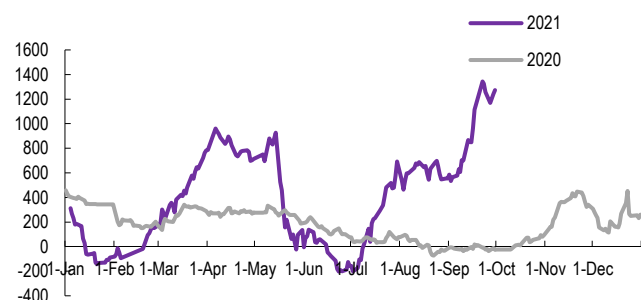
### Steel scrap Shindachi premium over steel scrap H2 fob Japan, usd/tonne



\*Formula:  $\text{Fastmarkets' Steel scrap Shindachi export, fob main port Japan, } \$/\text{tonne (converted to usd/tonne)} - \text{Fastmarkets' Steel scrap H2 export, fob main port Japan, } \$/\text{tonne (converted to usd/tonne)}$   
 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.

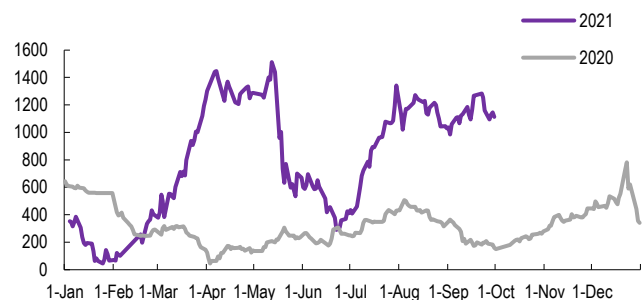
## STEEL MILLS MARGIN

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



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