

India

**Underweight** (no change)

**Highlighted Companies**

**Jindal Steel and Power**

**ADD, TP Rs476, Rs 377 close**

We expect the company to fare well based on its value-added offerings but expect its profitability to fall, leading to a 6% EBITDA CAGR over FY21-23F.

**JSW Steel**

**REDUCE, TP Rs 330, Rs 688 close**

We value JSW Steel at +1SD 8x FY22F to arrive at a TP of Rs 330. We have valued the stock at +1SD of long-term mean as its balance sheet is deleveraging, and value-added products are increasing in the portfolio.

**Tata Steel**

**REDUCE, TP Rs 750, Rs 1,450 close**

The stock looks overvalued on all parameters, in our view. European asset sales are factored into its price.

**Summary Valuation Metrics**

| P/E (x)                | Mar21-F | Mar22-F | Mar23-F |
|------------------------|---------|---------|---------|
| Jindal Steel and Power | 28.56   | 30.99   | 29.6    |
| JSW Steel              | 50.66   | 42.76   | 41.78   |
| Tata Steel             | 20.78   | 6.02    | 17.93   |

| P/BV (x)               | Mar21-F | Mar22-F | Mar23-F |
|------------------------|---------|---------|---------|
| Jindal Steel and Power | 2.58    | 2.38    | 2.2     |
| JSW Steel              | 4.28    | 3.99    | 3.73    |
| Tata Steel             | 2.34    | 1.74    | 1.63    |

| Dividend Yield         | Mar21-F | Mar22-F | Mar23-F |
|------------------------|---------|---------|---------|
| Jindal Steel and Power | 0%      | 0%      | 0%      |
| JSW Steel              | 0.59%   | 0.59%   | 0.59%   |
| Tata Steel             | 1.72%   | 1.72%   | 1.72%   |

**Analyst(s)**



**Satish KUMAR**

T (91) 9004603998

E satish.kumar@incredcapital.com

**Shaily RUPARELIA**

T (91) 22 4161 1556

E shaily.ruparelia@incredcapital.com

# Steel

## Steel Scrap's Growing Influence

- World can have at least 100 mn tonnes more EAF or electric arc furnace-based steel production without impacting scrap prices significantly.
- Scrap is in oversupply and the world is witnessing more domestic scrap than imported one. Hence, the shipping crisis is not impacting scrap prices.
- We are at the peak of the steel cycle. Reiterate UNDERWEIGHT on the sector. Tata Steel is our top REDUCE with a target price of Rs 750/share.

### World is producing more scrap than ever, and it's not fully utilized

As per WSA (World Steel Association) estimates, the world had the capacity to produce 410 mn tonnes of old steel scrap in 2020 (old scrap is the scrap which comes out of steel that was used decades ago). Apart from this, there is process scrap which is generated during the usage of steel. While process scrap is a function of steel production, old scrap becomes the balancing factor. Old scrap generation is determined by a couple of things: 1) Time – higher the time elapses more is the old scrap generation, 2) Change in steel prices in the near term. It's close to two decades since China started to consume steel in a big way and, hence, it is using 220 mn tonnes of scrap (we estimate around 120 mn tonnes of old scrap which is 60 mn tonnes higher than the WSA estimate). Global trade in scrap is same for the last 15 years (100 mn tonnes in CY06 to 98 mn tonnes in CY19), indicating that the western world is no more a principal source of scrap and that supply chain problems won't lead to price volatility. Please note scrap prices didn't go through the roof like iron ore and steel in CY21. We estimate that 313 mn tonnes of old scrap was used in CY20 against the availability of ~450 mn tonnes (as per the WSA estimate it is 400 mn tonnes). This extra 140 mn tonnes of old scrap can fire at least 100 mn tonnes of EAFs. We expect European production to rise (during peak days, they produced 82-83 mn tonnes of EAF steel against 62-63mn tonnes currently) and steel prices to fall.

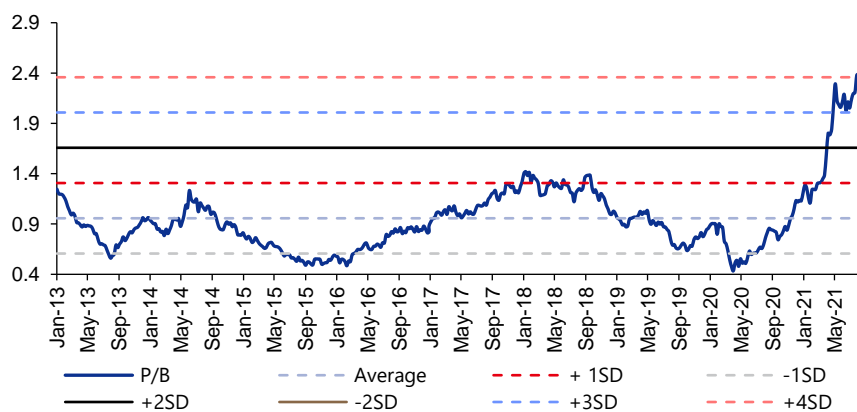
### Iron ore surge is not led by demand but supply chain problems

If one sees the presentation of Rio Tinto, Vale or BHP, then one will surmise that there is enough iron ore production ramp-up globally. It is just supply chain problems which were led by a longer turnaround time of ships as well as port congestion because of new COVID-19 protocols. The shipping rates are high, which is adding at least US\$ 20-25/tonne to CFR China prices. While we cannot determine the exact timing of easing of congestion, it is sufficient to say that current prices of iron ore are bound to correct by US \$20-25/tonne on this factor alone in the medium term. The growing usage of scrap will be another headwind for iron ore. Iron ore prices are likely to fall below US\$100/tonne in the near to medium term.

### Underweight on steel sector, Tata Steel is our top REDUCE

We maintain underweight stance on Indian steel sector. Tata Steel is our Top non-consensus REDUCE with a target price of Rs 750/share.

**Figure 1: Our equally weighted steel index comprising JSPL, Tata Steel, SAIL and JSW steel is trading near +4 SD of long-term mean**



## Steel Scrap's Growing Influence

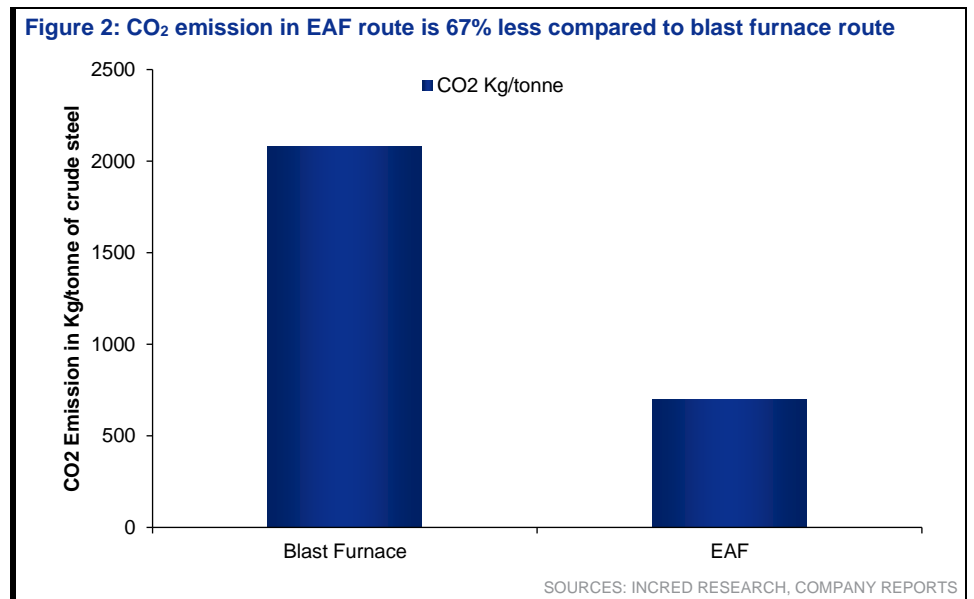
### Crude steel to scrap ratio is rising

Barring 2020 when expectation of a global slowdown led to mothballing of many electric arc furnaces and thereby lower scrap consumption, global scrap usage has taken a positive turn since CY16. From CY16, to combat pollution, China started to use EAF in a big way. Going forward, the rising usage of scrap will keep a lid on iron ore prices. The growing availability of scrap will also lead to lowering of the scrap/iron ore price ratio. We expect integrated steel players to feel the pinch because of falling steel prices in coming months.

### Scrap is a cleaner source of steel rather than iron ore ➤

CO<sub>2</sub> emission in EAF-based steel making is 67% lower compared to blast furnace-based steel manufacture.

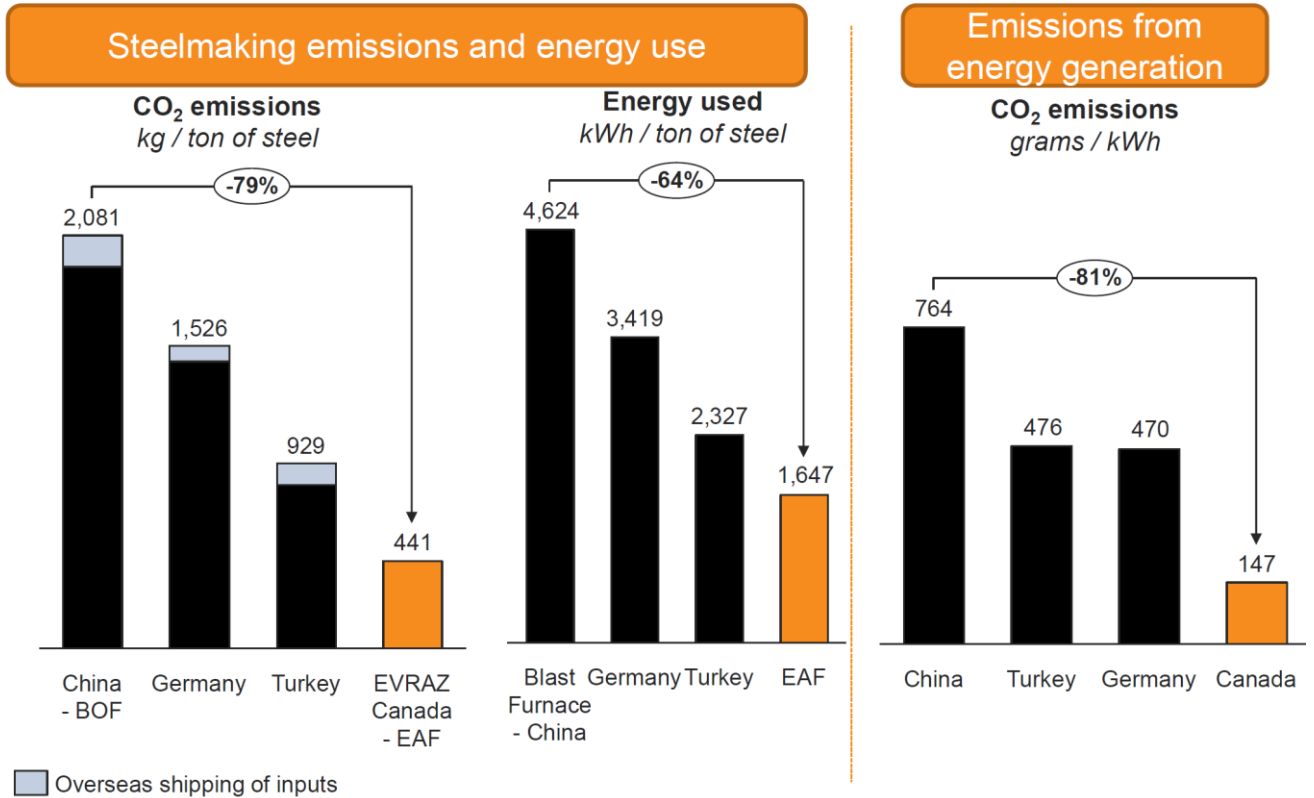
**Figure 2: CO<sub>2</sub> emission in EAF route is 67% less compared to blast furnace route**



**Energy usage by EAF is also lower than that under BOF, and at the same time some EAFs are better than others ➤**

**Figure 3: All EAFs are not of the same quality. As shown in the graph below, Turkish EAFs are worse than western world's EAFs**

**EVRAZ cleaner EAFs, Canada's power generation outpace others**



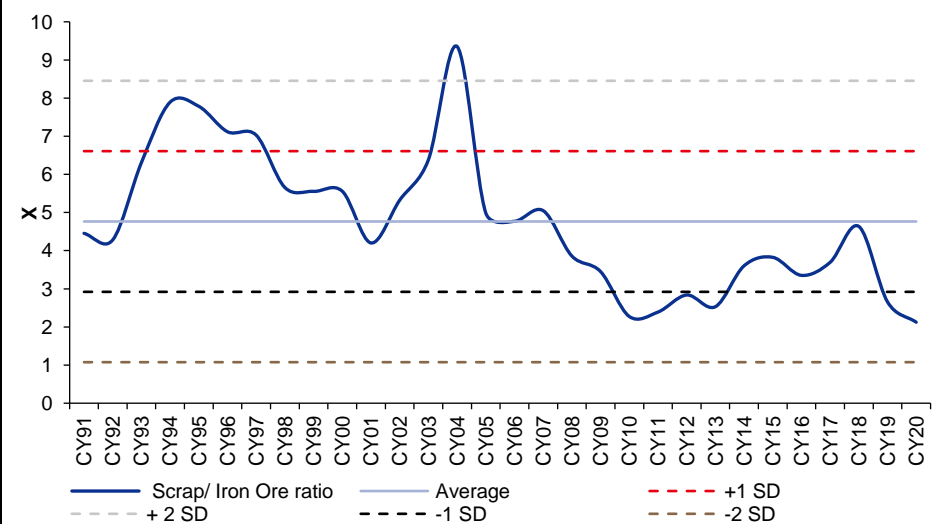
Sources: BOF percentage: Worldsteel. Shipping emissions: National Technical University of Athens, from China to BC, Europe to Houston. Steelmaking: Midrex – Blast Furnace assuming 11% Scrap, EAF Use of 100% scrap. Scrap statistics: Worldsteel. Electricity Generation: IEA 2013

SOURCES: INCRED RESEARCH, EVRAZ COMPNAVY PRESENTATIONS

**At the same time, scrap is becoming cheaper compared to iron ore ➤**

The last 30-year average ratio of scrap vis-à-vis iron ore has been 4.8. However, in the recent past iron ore prices have risen too fast and scrap prices haven't kept pace. The time has come for a mean reversal.

**Figure 4: Prices of scrap have not risen commensurate with the rise in iron ore prices in the recent past, and neither have they fallen with the same fervour**



SOURCES: INCRED RESEARCH, COMPANY REPORTS

**However, don't expect any rise in scrap prices but rather a fall in iron ore prices is more imminent >**

While equity markets are going ga ga, but in reality the world is slowing. Iron ore prices were growing crazily because of supply problems which are getting resolved now. We expect iron ore prices to fall to US\$ 100/tonne in the near term.

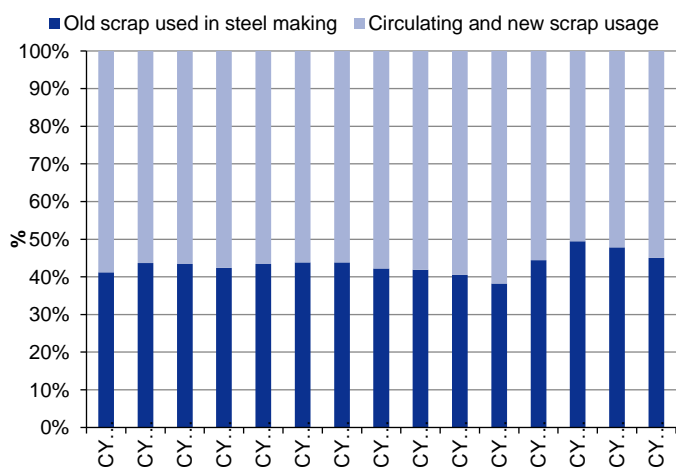
**Rise in scrap usage is structural as it is less polluting, capex is lower and land requirement is lesser >**

Scrap is less polluting (as shown in earlier paragraphs) and scrap-based furnaces are easy to switch on and off, which makes them ideal in the current world order where no one knows how sustainable the current demand pattern is. EAF have lower capital cost, require less area and manpower costs are also lower. Also, at current carbon credit prices, they are straight away saving at least US\$ 40/tonne of crude steel.

**Old scrap generation declined in CY20 because of COVID-related lockdowns >**

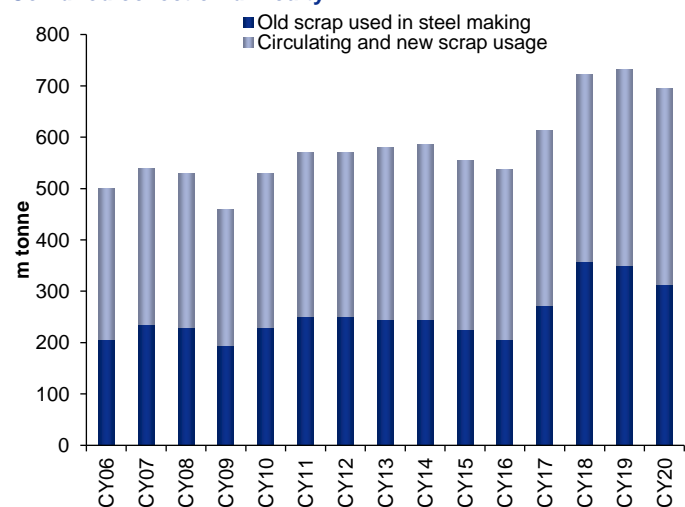
Steel scrap can be divided in two categories: 1) Circulating and new scrap, and 2) Old scrap. Circulating and new scrap is generated during the steel production process, while old scrap is generated by the scrapping of old structures/ machines/ buildings/ automobiles etc. Old scrap generation is a function of the used metal pool available in the world.

**Figure 5: Old scrap still forms around 42% of overall scrap usage by Steel Industry**



SOURCES: COMPANY REPORTS, INCRED RESEARCH

**Figure 6: CY20 saw a decline in old scrap usage because of Covid-led collection difficulty**

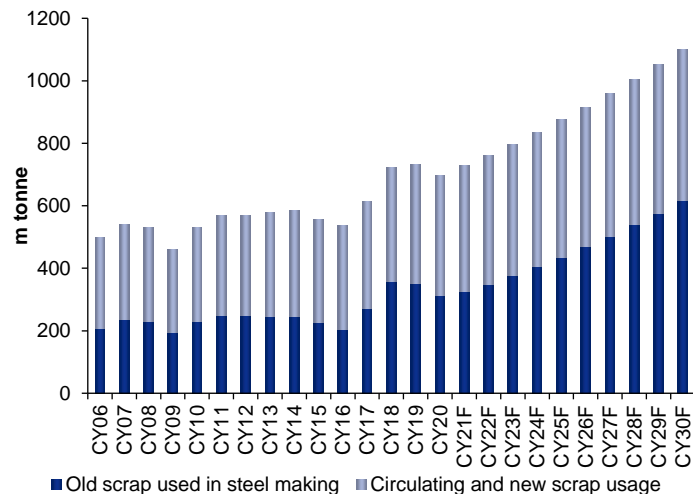


SOURCES: COMPANY REPORTS, INCRED RESEARCH

**World has enough old scrap to feed 100 mn tonnes of new electric arc furnaces over the next three years, and China to lead this boom >**

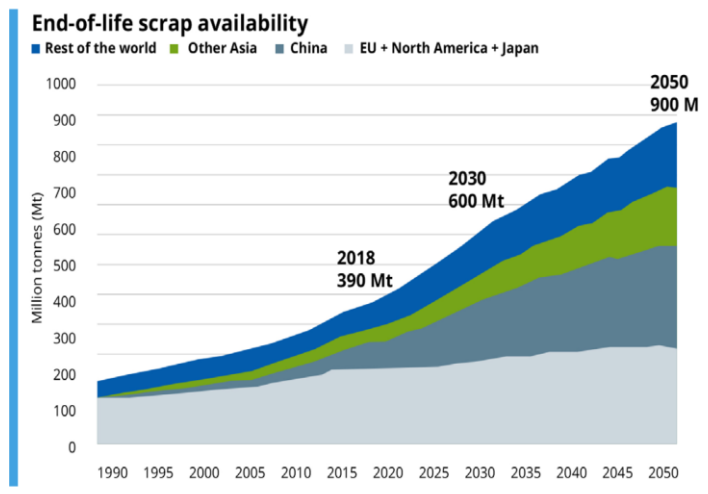
World Steel Association forecasts that globally the total availability of old scrap pool is ~400 mn tonnes in CY20. However, please note that it forecasts old scrap availability in China at 50-60 mn tonnes whereas our calculation (based on 220 mn tonnes of scrap usage by China in CY20) indicates that old scrap availability in China was at least 100 mn tonnes in CY20 alone. So, as of now, old scrap availability in world is at 430 mn tonnes whereas the demand is only 315 mn tonnes. So, world can accommodate 100 mn tonnes of extra EAF capacity over the next three years. Please note that most of these capacities should come up in China at the expense of old polluting capacity, as most of the incremental scrap generation will happen in China.

**Figure 7: Given the global thrust on clean steel, most of the incremental demand for steel will be fulfilled by scrap**



SOURCES: INCRED RESEARCH, WORLD STEEL ASSOCIATION

**Figure 8: WSA is underestimating scrap availability in China by at least 50 mn tonnes in CY20**



SOURCES: INCRED RESEARCH, WORLD STEEL ASSOCIATION FACT SHEET ON STEEL SCRAP

**WSA underestimates old scrap availability in China by at least 50-60 mn tonnes in CY20 ➤**

Assuming global norms of circulating and new scrap, China would have generated this type of steel scrap at ~100 mn tonnes. Hence, old scrap generation in CY20 was ~120 mn tonnes, which is at least 50-60 mn tonnes higher than the WSA model shown in Fig.8 above.

**Figure 9: As per Bureau of International Recycling, China used 220 mn tonnes of scrap in CY20, which means old scrap generation of 100-120 mn tonnes**

**STEEL SCRAP USE FOR STEELMAKING IN KEY COUNTRIES AND REGIONS (MILLION TONNES)**

|                   | 2016  | 2017  | 2018   | 2019   | 2020   | % 2020/2019 |
|-------------------|-------|-------|--------|--------|--------|-------------|
| China             | 90.1  | 147.9 | 187.8  | 215.9  | 220.3  | +2.0        |
| EU-28             | 88.4  | 93.3  | 90.939 | 86.473 | 77.539 | -10.3       |
| USA               | 56.7  | 58.8  | 60.1   | 60.7   | 50.0   | -17.6       |
| Turkey            | 25.9  | 30.27 | 31.317 | 27.900 | 30.077 | +7.8        |
| Russia            | 27.8  | 29.34 | 31.776 | 30.173 | 29.929 | -0.8        |
| Japan             | 33.57 | 35.77 | 36.513 | 33.682 | 29.179 | -13.4       |
| Republic of Korea | 27.4  | 30.67 | 29.956 | 28.601 | 25.831 | -9.7        |
| Canada            | *     | 6.29  | 6.67   | 6.28   | *      |             |

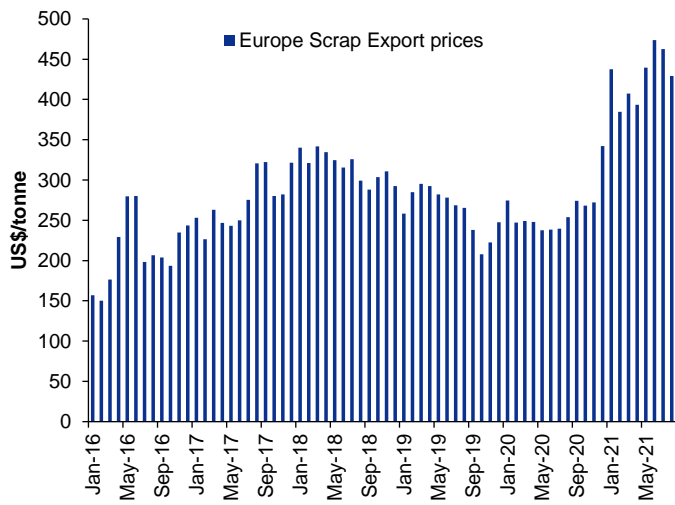
\*Not available at editorial deadline

Source: EUROFER, CAMU, USGS/ISRI-calculations, Japan Ministry of Economy, RUSLOM, KOSA, TCUD, CARI

SOURCES: INCRED RESEARCH, BUREAU OF INTERNATIONAL RECYCLING FERROUS DIVISION 2016-2020 REPORT

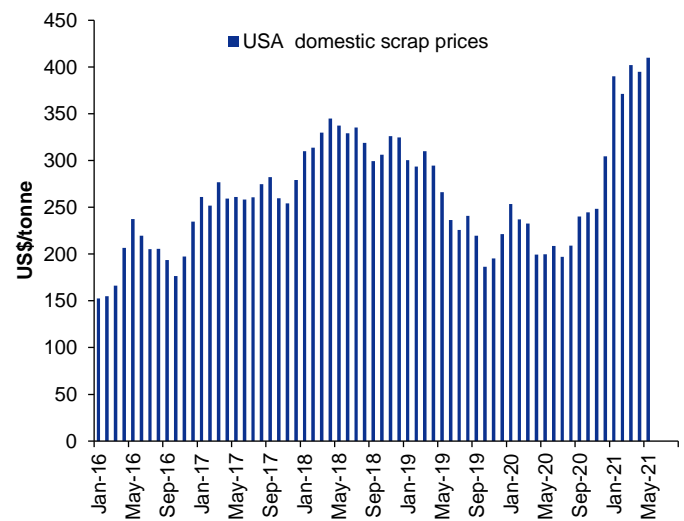
**What are the indicators of scrap oversupply in the supply chain - doggedly low scrap despite rampaging iron ore ➤**

**Figure 10: Europe scrap export prices remained well below US\$ 500/tonne even when iron ore prices touched US\$ 230/tonne**



SOURCES: INCRED RESEARCH, COMPANY REPORTS

**Figure 11: Similarly, while US steel prices are as high as US\$ 2,000/tonne, scrap prices are well below US\$ 500/tonne**

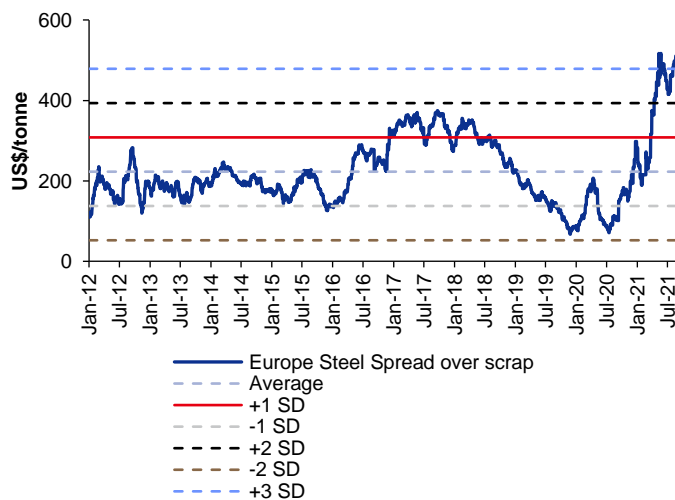


SOURCES: INCRED RESEARCH, COMPANY REPORTS

**EAF profits are at highest-ever in both China and Europe ➤**

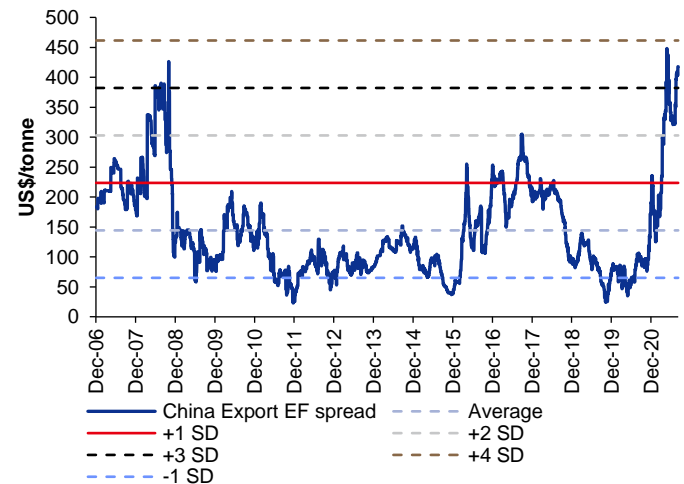
As scrap prices are not rising, EAF margins are the highest-ever in China as well as Europe. In fact, European steel gross profits are at the highest level in the last 30 years.

**Figure 12: European EAF spreads are near their all-time high**



SOURCES: INCRED RESEARCH, STEELMINT

**Figure 13: Chinese EAF spreads have also topped their all-time high**



SOURCES: INCRED RESEARCH, COMPANY REPORTS

**What does this mean for iron ore? A fall in prices? ➤**

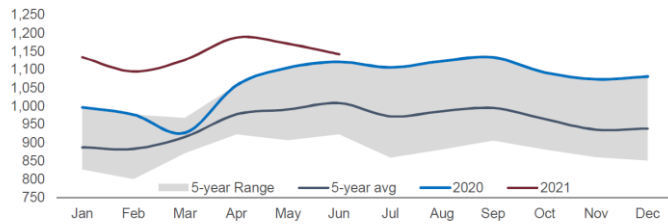
Shipping constraints are keeping iron ore prices high by at least US\$ 30/tonne. It is not that the world is suddenly growing too fast and there are not enough ships to carry the cargo, but is just COVID-related congestion at ports. There is no reason for iron ore prices to remain so high. Once the world gets over this COVID pandemic, learns to live with it and heightened COVID protocol at ports is relaxed, there will be smooth and decongested ports, which will lead to 62% CFR China prices - at US\$ 100/tonne or lower.

**Does this mean that iron ore prices will fall from tomorrow? We don't know ➤**

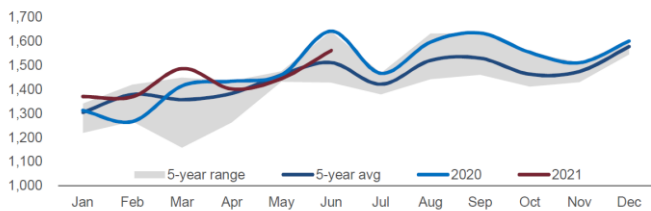
Iron ore is up on speculative interest, which wanes in a jiffy and can go on for a long period of time. For the last six months, we have heard multiple comments like “what are we missing?” and “let’s not hide behind the saying that BULL market is inflating all asset prices.” While we will know whether we were right or wrong only in hindsight, it is suffice to say that fundamentals don’t support the current bullish environment.

**Figure 14: As per a Rio Tinto presentation, global iron ore supply is trending upwards**

**China’s crude steel production (Mt annualised)**



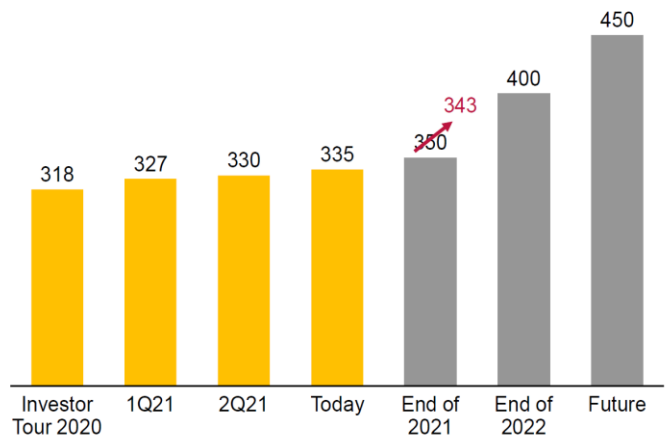
**Seaborne Iron Ore supply run rate (Mt annualised<sup>2</sup>)**



SOURCES: COMPANY REPORTS, RIO TINTO INVESTOR PRESENTATION

**Figure 15: Vale’s production is also likely to increase in the coming quarters**

**Iron ore capacity (Mtpy)**

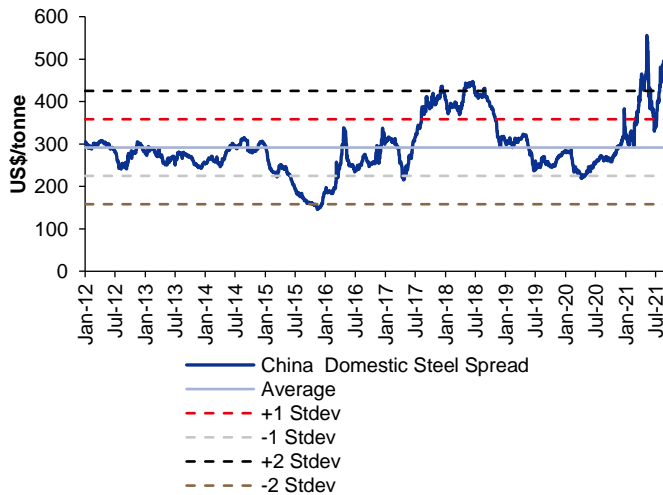


SOURCES: COMPANY REPORTS, VALE INVESTOR PRESENTATION

**What about steel prices? — Its the same fate - prices will fall to at least US\$ 300/tonne ➤**

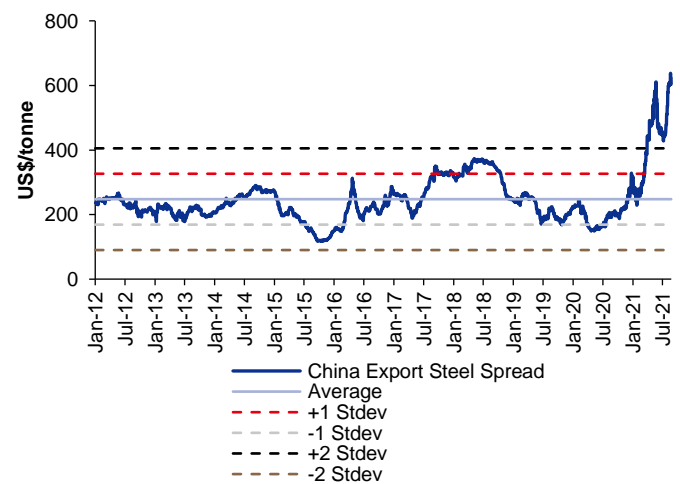
As we have highlighted many times earlier in this report, the current rally has no fundamentals – it is just the supply chain filling. The fear of scarcity has created a shortage of steel as users have hoarded the metal. While we don’t have data to back this claim, as getting this on a real time basis is impossible, multiple anecdotal evidence points to this direction. However, now the signs are imminent as first raw material prices corrected and now steel prices are falling. The economics of domestic and export markets indicate that steel exports won’t come down from China until an elusive equilibrium is established between export and domestic prices.

**Figure 16: With the recent price correction, domestic steel spreads in China have fallen**



SOURCES: COMPANY REPORTS, INCRED RESEARCH

**Figure 17: However, export spreads are near all-time high**



SOURCES: COMPANY REPORTS, INCRED RESEARCH

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|                     |           |           |         |          |                  |
|---------------------|-----------|-----------|---------|----------|------------------|
| <b>Score Range:</b> | 90 - 100  | 80 – 89   | 70 - 79 | Below 70 | No Survey Result |
| <b>Description:</b> | Excellent | Very Good | Good    | N/A      | N/A              |

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**Corporate Governance Report of Thai Listed Companies (CGR). CG Rating by the Thai Institute of Directors Association (Thai IOD) in 2020, Anti-Corruption 2020**

**ADVANC** – Excellent, Certified, **AMATA** – Excellent, Certified, **ANAN** – Excellent, n/a, **AOT** – Excellent, n/a, **AP** – Excellent, Certified, **ASP** – Excellent, n/a, **AU** – Good, n/a, **BAM** – Very Good, Certified, **BAY** – Excellent, Certified, **BBL** – Very Good, Certified, **BCH** – Good, Certified, **BCP** - Excellent, Certified, **BCPG** – Excellent, Certified, **BDMS** – Excellent, n/a, **BEAUTY** – Good, n/a, **BH** - Good, n/a, **BJC** – Very Good, n/a, **BLA** – Excellent, Certified, **BTS** - Excellent, Certified, **CBG** – Very Good, n/a, **CCET** – n/a, n/a, **CENTEL** – Excellent, Certified, **CHAYO** – Very Good, n/a, **CHG** – Very Good, n/a, **CK** – Excellent, n/a, **COM7** – Very Good, Certified, **CPALL** – Excellent, Certified, **CPF** – Excellent, Certified, **CPN** - Excellent, Certified, **CPNREIT** – n/a, n/a, **CRC** – Very Good, n/a, **DELTA** - Excellent, Certified, **DDD** – Very Good, n/a, **DIF** – n/a, n/a, **DOHOME** – Very Good, n/a, **DREIT** – n/a, n/a, **DTAC** – Excellent, Certified, **ECL** – Excellent, Certified, **EGCO** - Excellent, Certified, **EPG** – Excellent, Certified, **ERW** – Very Good, Certified, **GFPT** - Excellent, Certified, **GGC** – Excellent, Certified, **GLOBAL** – Very Good, n/a, **HANA** - Excellent, Certified, **HMPRO** - Excellent, Certified, **HUMAN** – Good, n/a, **ICHI** – Excellent, Certified, **III** – Excellent, n/a, **INTUCH** - Excellent, Certified, **IRPC** – Excellent, Certified, **ITD** – Very Good, n/a, **IVL** - Excellent, Certified, **JASIF** – n/a, n/a, **JKN** – Excellent, Declared, **JMT** – Very Good, Declared, **KBANK** - Excellent, Certified, **KCE** - Excellent, Certified, **KEX** – n/a, n/a, **KKP** – Excellent, Certified, **KSL** – Excellent, Certified, **KTB** - Excellent, Certified, **KTC** – Excellent, Certified, **LH** - Excellent, n/a, **LPN** – Excellent, Certified, **M** – Very Good, Certified, **MAKRO** – Excellent, Certified, **MC** – Excellent, Certified, **MEGA** – Very Good, n/a, **MINT** - Excellent, Certified, **MTC** – Excellent, Certified, **NETBAY** – Very Good, n/a, **NRF** – n/a, n/a, **OR** – n/a, n/a, **ORI** – Excellent, Certified, **OSP** – Very Good, n/a, **PLANB** – Excellent, Certified, **PRINC** – Very Good, Certified, **PR9** – Excellent, n/a, **PSH** – Excellent, Certified, **PTT** - Excellent, Certified, **PTTEP** - Excellent, Certified, **PTTGC** - Excellent, Certified, **QH** – Excellent, Certified, **RBF** – Good, n/a, **RS** – Excellent, n/a, **RSP** – Good, n/a, **S** – Excellent, n/a, **SAK** – n/a, n/a, **SAPPE** – Very Good, Certified, **SAWAD** – Very Good, n/a, **SCB** - Excellent, Certified, **SCC** – Excellent, Certified, **SCGP** – n/a, n/a, **SHR** – Very Good, n/a, **SIRI** – Excellent, Certified, **SPA** – Very Good, n/a, **SPALI** - Excellent, Declared, **SPRC** – Excellent, Certified, **SSP** - Good, Declared, **STEC** – n/a, n/a, **SVI** – Excellent, Certified, **SYNEX** – Very Good, n/a, **TCAP** – Excellent, Certified, **THANI** – Excellent, Certified, **TIDLOR** – n/a, n/a, **TISCO** - Excellent, Certified, **TKN** – Very Good, n/a, **TMB** - Excellent, Certified, **TOP** - Excellent, Certified, **TRUE** – Excellent, Certified, **TU** – Excellent, Certified, **TVO** – Excellent, Certified, **VGI** – Excellent, Certified, **WHA** – Excellent, Certified, **WHART** – n/a, n/a, **WICE** – Excellent, Certified, **WORK** – Good, n/a.

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**Recommendation Framework**

**Stock Ratings**

Definition:

|               |   |
|---------------|---|
| <b>Add</b>    | The stock's total return is expected to exceed 10% over the next 12 months.                     |
| <b>Hold</b>   | The stock's total return is expected to be between 0% and positive 10% over the next 12 months. |
| <b>Reduce</b> | The stock's total return is expected to fall below 0% or more over the next 12 months.          |

*The total expected return of a stock is defined as the sum of the: (i) percentage difference between the target price and the current price and (ii) the forward net dividend yields of the stock. Stock price targets have an investment horizon of 12 months.*

**Sector Ratings**

Definition:

|                    |  |
|--------------------|--|
| <b>Overweight</b>  | An Overweight rating means stocks in the sector have, on a market cap-weighted basis, a positive absolute recommendation.  |
| <b>Neutral</b>     | A Neutral rating means stocks in the sector have, on a market cap-weighted basis, a neutral absolute recommendation.       |
| <b>Underweight</b> | An Underweight rating means stocks in the sector have, on a market cap-weighted basis, a negative absolute recommendation. |

**Country Ratings**

Definition:

|                    |  |
|--------------------|--|
| <b>Overweight</b>  | An Overweight rating means investors should be positioned with an above-market weight in this country relative to benchmark. |
| <b>Neutral</b>     | A Neutral rating means investors should be positioned with a neutral weight in this country relative to benchmark.           |
| <b>Underweight</b> | An Underweight rating means investors should be positioned with a below-market weight in this country relative to benchmark. |