Indian Metals & Mining
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Foreword

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The rise in infrastructure development and automotive production is driving growth in the metals and mining sector in India. India has a vast mineral potential with mining leases granted for longer durations of 20 to 30 years. India holds a fair advantage in cost of production and conversion costs in steel and aluminum. The country is the third largest steel producer with a production of 97.38 million tons of crude steel in FY17. Crude steel and finished steel production during April-December 2017 was 75.50 million tons and 79.29 million tons respectively. India is also a large producer of sheet mica and has the seventh largest bauxite reserves worldwide at around 2,908.85 million tonnes in FY17.

The Government of India has allowed 100% Foreign Direct Investment (FDI) in the mining sector and exploration of metal and non-metal ores under the automatic route, which will propel growth in the sector. Power and cement industries are also aiding growth in the metals and mining sector. Demand for iron and steel is set to grow, given the strong growth expectations for the construction sectors.

The capital-intensive steel industry, however, is considered to be the largest contributor to the banking system’s overall non-performing assets (NPAs). The Steel Ministry is aiming to resolve the NPA issue in the steel sector with the Finance Ministry, Steel Ministry and PMO coming together to solve the problem to clear the major roadblock for the banking sector to disburse loans. Further, the Indian steel industry is now more dependent on government policies based on anti-dumping duties and rationalization of import duties. Further, there are several instances of forest clearances and environment clearances pending with both, state and central governments, which need to be addressed to expedite the requisite clearances for the mining sector.

In this context, the Indian Chamber of Commerce (ICC) to further strengthen its support of industry representatives and policy makers, presents the 7th India Minerals and Metals Forum on 21 June 2018 at New Delhi. The Forum, over the years, has evolved to be one of the most prominent conferences on the metal and mineral Industry in the country.

Ernst & Young is the Knowledge Partner of this initiative. I trust the conference would be able to generate new ideas and new thoughts among the various stakeholders to discuss, share and evolve suitable strategies and development models.
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Executive summary

The overall global economy is gradually moving ahead with steady growth forecasts. Growth in major industrial economies witnessed a recovery with their GDP growth rates expected to remain strong in 2018 and 2019. The US’s GDP growth is forecasted at 2.3% in 2019, slightly moderating thereafter. GDP in developing Asia has seen strong expansion to around 6% plus, due to both domestic and external demand. The EU region may slow down in coming years. Growth in China which accelerated on account of robust consumption and still rising exports, is likely to moderate to 6.6% in 2018. In India, growth is emerging from the recent slowdown in 2017 to 7.3% in FY 19, further rising to 7.6% in FY 20. However a fall in central government’s capital expenditure in FY 18 and fall in investment poses a challenge for future growth.

Globally, central banks are realigning from an accommodative stance to normalizing their monetary policies for tackling growth and inflationary risks as investment levels take off. However, they continue to remain alert as the ever changing global dynamics and political and social compulsions across the world impact trade and investments. The recent crude price spike, geo-political developments and heightened global trade tensions will alter the global economic indicators such as trade and current account deficits, fiscal deficit, inflation, exchange rates, etc. Different regions and nations will be differently impacted. As global and local opportunities and challenges become intertwined, companies will need to be agile and continuously review their strategies and business models in order to remain competitive and leverage the disruption to their advantage.

Mining and metal companies are seeing a cyclical upside as demand improves and commodity prices see an uptick. While the positive sentiment is slowly reflected in rising production volumes and capacity utilization rates, investments in expansion activities have not yet been committed in a big way. For most metals & minerals, there is an encouraging sentiment underlying this growth with expectations it will last a while. Base metals and steel are expected to witness robust growth, but outlook for a few commodities such as coal is slightly negative due to the threat from alternate energy and green technologies.

In case of India, the government is focused on tackling long term macro issues such as tax reforms, creating an enabling infrastructure and resolving the NPA conundrum to enable the industry and stakeholders to plan forward for a brighter future. The broad economic indicators supported by a normal forecasted monsoon, point towards a sustained recovery in the urban and rural areas. Despite robust IIP growth and a rising PMI for several months now, the Indian economy is still at cross-roads with growth opportunity being challenged by oil prices, rising inflation, policy implementation issues and challenges on monetary front coupled with global economic protectionist measures widening the trade deficit. Managing these issues will determine the direction and pace of growth for all sectors in India and especially for the mining sector, which is still seen as struggling even after passing of the MMDR Act and enabling legislation. Stakeholders need to be aware that growth in the mining and metals industry still lags behind the country’s overall economic growth primarily due to infrastructure bottlenecks, land acquisition and environment challenges, governance issues and mining bans that are in force, financial distress and potential access to growth capital.
Insolvency And Bankruptcy Code – a game changer for the metals industry

The government enacted a new corporate Insolvency and Bankruptcy Code in 2017 to resolve the mounting NPA issue and create an enabling environment for financing growth activities. Many of the initial companies referred to in this process are large players from the steel sector. For the past few years, steel producers, amidst slow domestic demand, had faced onslaught of low priced imports thereby undergoing significant financial distress. Now with the turnaround in industrial growth and a supportive trade policy, the domestic growth story is strong, providing amongst the best fundamental scenarios globally for the sector. Successful resolution of a few companies will not only provide a ground for consolidation in the domestic industry, but also, with likely entry of global players, help broaden the industry ownership, introduce new technology, expand its product profile and put it back on a growth path. Amidst expanding market opportunities, healthy competition will put the focus back on efficiency, productivity, good governance and sustainability, etc.

Interestingly, a certain degree of relative imbalance amongst the players will probably emerge. The assets undergoing resolution would emerge stronger with a sustainable financial structure due to significant debt reduction. As compared to this, the businesses which are not in any such financial restructuring would continue with the full debt burden. Given the high interest rates in India and low capital turnover ratios in the industry, this cost differential between the two set of business units is likely to be a material differentiator in their profitability going forward.

The impact on diverse sets of stakeholders will be around the following themes:

Current producers: The industry will see exit of some owner managements, as the Committee of Creditors (CoC) seeks to maximize value through higher upfront cash commitments and infusion. Current incumbents having financial resources and credibility will be able to consolidate their position in the industry. Apart from the advantage of size and scale, the source-to-market networks and supplier-customer relationships will be redrawn, boosting producer margins.

New strategic entrants: For the global players hitherto struggling to enter India, the Code presents a rare opportunity significant enough to re-engage and expand their footprint here relatively quickly, with an already operating business. Most of them would seek to leverage the asset for further expansion and also play to their sectors of strength. Constantly evolving material needs of customer segments such as automotive, can be fulfilled by domestic production. The experience of servicing global automotive customers will be quite useful for new entrants in extending their global supply chain arrangements to India.

Customers: Post this round of restructuring, the producing company’s focus will likely be back on research & development, new product development, import substitution, etc., leading to expanded product portfolio produced locally. This will impart stability to sourcing by their customers particularly for import substitutes. Factors like consolidation, stronger set of producers and renewed focus on margins will play out on the producer prices (costs to their customers).

Lenders: The IBC process being a fast track resolution mechanism, a substantial part of the debt will be quickly realized or renewed and moved to more sustainable cash flow structures. The intense competition amongst bidders also bodes well for potential write backs of the provisions by lenders. A healthier banking industry, with unlocked flow of capital, will now be in a position to fund the huge investments required to build new capacity for meeting future metals demand for the country.

Society, community, employees: This augurs well for human capital and society in general. Job security will improve but with a sharper focus on performance and greater adaptability to changing management, operating environment and technology interventions, etc.

Economy: A healthier metals industry will set sight on growth and development. Most players will pursue brown field expansions at economic costs. This itself will kick start a wave of capital expenditure with a multiplier effect on economy. Successful implementation of the Code will also help develop the credit and bond market, and boost investors’ confidence. All these bode well for a fast growing emerging economy as India.

India has immense growth potential for demand for metals. The supply side response will now improve with a healthier metals industry – not only catering to domestic demand but also strengthen its position further as a formidable global player.
1 Introduction

Global economy steady but disruptions ahead
The global economy is steadily moving ahead with a growth forecast of 3.1% in 2018 projected by the World Bank\(^1\). It further says that growth in advanced economies is expected to moderate slightly to 2.2% in 2018, as central banks gradually remove their post-crisis accommodation and as an upturn in investment levels takes off. Growth in emerging markets and developing economies as a whole is projected to strengthen to 4.5% in 2018, as activity in commodity exporters continues to recover\(^1\). However, the global dynamics are ever changing as local political and social compulsions are driving policy decisions.

Disagreement in economic policies and performance across regions will therefore be the key theme for 2018. Investors will react and rebalance their portfolios in light of continued volatility in currency, commodity and capital markets. Companies will therefore need to review their strategies, business models and portfolios in order to remain competitive and seize unique opportunities presented by these disruptions.

Mining and metal companies are seeing a cyclical upside as demand improves and commodity prices see an uptick. Supply side shortage in select commodities is also helping prices remain firm. While investment in expansion activities is still a while away, companies are experiencing high utilization rates which points to a revival in the economic scenario. The positive sentiment is slowly but surely being felt in the production volumes. While the sector is still recovering there is an encouraging sentiment underlying this growth with expectations that this growth will last awhile. While base metals are expected to witness growth, outlook for select commodities, such as coal, is slightly negative due to the threat from alternate energy and green technologies.

Prices of all major commodities have registered a sharp uptick for the past couple of years. Global demand and economic uncertainty have played their part in the increase in prices. Global oil prices are spiking again touching US$80/bbl. recently for the first time since 2014. A Bloomberg Economics Model has suggested that both demand and supply side factors, each account for half of this increase. Supply shocks are arising because of the US sanctions on Iranian oil exports and the crisis in Venezuela. Rising crude prices may adversely affect most global economic indicators such as trade and current account deficits, fiscal deficit, inflation and exchange rates.

### Global commodity prices indexed

![Graph showing global commodity prices indexed](image)

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2. Simple average of three spot prices, namely, Dated Brent, West Texas Intermediate and Dubai Fateh.
3. Simple average of Australian, Columbian and South African coal prices
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Indian economic scenario: Oil threatening to off-set gains of a stable GDP growth over the past 3-4 years

India has been experiencing political stability for the past four years. The thrust of the government has been to tackle long term issues such as tax reforms, creating enabling infrastructure and resolving the NPA conundrum. Initiatives like the GST, accelerated infrastructure investments by the government, bank recapitalization and the bad loan resolution framework are all helping the industry and stakeholders look forward to a better tomorrow. However, in a country like India, which is so complex and diverse in all respects, results take time to be visible.

Even as broad economic indicators point toward sustained recovery and improving optimism, the Indian economy is still at cross-roads with growth and opportunity being challenged by policy issues, global economic protectionist measures, oil prices and subsequent challenges on the monetary front. Managing these issues by the government and the central bank adroitly will determine the pace and direction of growth for all sectors in India and especially for the mining sector, which is still seen as struggling even after passing of the MMDR Act and enabling legislation.

Policy makers and all stakeholders need to be aware that growth in the mining and metals industry still lags behind the country’s overall economic growth. Growth in major commodities, especially iron ore, coal and steel is considerably constrained primarily due to infrastructure bottlenecks, use of outdated technology, governance issues and mining bans that are in force. Furthermore, social unrest and land acquisition and environmental issues have constrained the growth of mining and metal producers.

Indian GDP growth

In 2016-17, Gross Domestic Product (GDP) growth moderated due to a slow down caused by weak business confidence and the impact of demonetization. On the other hand, a favorable monsoon aided agriculture growth which paved the way for a pick-up in rural demand, while urban demand remained resilient. Growth is expected to emerge from the slowdown witnessed in 2017 and is projected at 7.3% in 2018 (FY19), increasing to 7.6% in 2019 (FY20) aided by measures to spur rural incomes and a modest pickup in investment.

Data and sentiment point to surge in demand: Is the Indian metals sector ready to fulfil?

The Indian economy is expected to maintain its high growth trajectory, with rising urbanization, a flourishing service sector and concrete steps to address infrastructure bottlenecks. Further, rapid growth in user industries such as infrastructure, power, construction and automobiles and policy measures to safeguard Indian players is expected to drive growth in the Indian mining and metals industry. The Government of India planned to spend US$1 trillion on infrastructure development during the Twelfth Five Year Plan. This, coupled with favorable growth from end user industries and infrastructure growth, are expected to translate into sustained demand growth for steel, zinc, aluminum and copper for a long period of time.

We have analyzed key trends, current events around the world as relevant for the key metals and minerals. The risks, challenges and implications for the Indian players and the opportunities that lie ahead in the Indian context are also summarized.
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2 Steel
Global steel industry

During 2017, global steel consumption registered a growth of 2.8%, driven by strong demand from China. Most of the large steel consuming nations registered an acceleration in demand on account of rapid urban population growth, substantial government investment in infrastructure, housing and urban development and the expansion of the manufacturing sector. Going forward, 2018 may witness a relatively muted growth of 1.6% y-o-y due to slower demand growth in China but the US may continue to witness a rise in steel demand, growing 2.7% y-o-y in 2018. During 2017, crude steel production reached 1,691mt, up 5.3% y-o-y. Production increased in all the major regions with China producing 832mt of steel, up 5.6% y-o-y. India remains one the fastest growing market with production rising 6.2% to 101mt. Steel production in the EU and North America increased 4.8% and 4.1% to 116mt and 169mt respectively. Going forward, China’s steel production is projected to gradually decline due to slowdown in construction activities, stricter environmental policies and supply side reforms. India and other large emerging economies are expected to increasingly drive production growth in world steel.

Steel consumption and growth

Source: Resources and Energy Quarterly - March 2018

Crude steel production and growth

Source: Resources and Energy Quarterly - March 2018

4. “Worldsteel Short Range Outlook April 2018,” World Steel Association
5. Resources and Energy Quarterly, March 2018; “World crude steel output increases by 5.3% in 2017,” World Steel Association, January 2018
## Global outlook for steel

**Ongoing rationalization of steel capacity combined with improving steel demand may push plant utilization rates higher.**

Ongoing Chinese reforms, including regulations on new capacity and the removal of a further 30mt in 2018, mean that net crude steel capacity is likely to decline further in 2018. The focus of Chinese steelmakers is shifting to improving capacity utilization and on improving the quality of steel.

**Steel prices have risen on a tighter market but there may be some downward pressure once Chinese production comes back online.**

The removal of Chinese capacity combined with winter production cuts have resulted in significant improvement in Chinese steel prices. Steel prices may, however, feel some pressure as production controls are relaxed after winter. This decline should be cushioned by declining raw material prices.

**Trade actions are likely to continue even though Chinese steel exports have declined significantly and sector profitability has improved.**

The combination of weaker Chinese demand and the large gap between current production and available capacity may incentivize higher exports from China in 2018. Therefore, steelmakers and governments continue to seek trade protection for their domestic markets. The US is imposing a 25% tariff on steel imports and the European Commission has also decided to levy duties on steel coming from Brazil, Iran, Russia, Ukraine and China. India may again consider protection measures on steel products after imports starting to rise again over last few months.

**India remains a high-growth region, there is potential for an increase in infrastructure spend in the Philippines, Indonesia and Africa.**

India has already committed US$94 b to infrastructure up to 2020\(^1\), which will see robust steel production and usage growth rates. Indian steel production is forecast to increase to reach 115mt in 2019, making it the second-largest steel producer after China.\(^2\)

**Steel margins will continue to improve with ongoing investment momentum, higher effective utilization rates and low inventories.**

Steelmakers have benefitted from higher prices to reduce debt and achieve better cash flows. This will enable steelmakers to invest in improving competitiveness, improving productivity and enhance product portfolios.

**Continued focus on improving competitiveness will increase consolidation in some regions as well as deals to expand portfolios.**

Consolidation in Europe is continuing and there have been some strategic deals to expand steelmakers' product portfolios in the US. Restructuring in China will continue with focus on moving steel mills further up the value chain to produce higher quality steel products. There could be further consolidation in the Chinese steel industry with cost synergies being the focus of deals.

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6. “Resources and Energy Quarterly,” BREE, December 2017
Chinese steel demand

Chinese PMI data indicates that manufacturing activities have slowed down in China over last few months. Slowdown in construction activities could impact domestic steel demand. World Steel has projected flat steel growth for China in 2018.

Chinese steel production has stabilized over last few months. Focus is now more on improving quality than quantity. Trade barriers are rising and there has been a continuous decline in Chinese exports. Recent trends indicate that Chinese steel exports for 2018 are likely to remain in the range of 60-70mt.

Crude steel production and growth

Source: Resources and Energy Quarterly – March 2018

Steel industry in India

India’s steel production grew 6.2% y-o-y to 101mt in 2017 in line with ongoing expansion in steelmaking capacities. National Steel Policy 2017 has projected steel production to reach 255mt by 2030-31, implying a 7.4% annual average growth. Considering the projected expansion plans of Indian companies and project implementation time, this target might be difficult to achieve. However in the short term, production and capacities will grow and India is expected to surpass Japan to become the second largest producer of steel in 2018.

During 2017, steel consumption grew by around 5.2%. Lag in consumption growth was mainly due to implementation of economic policies like demonetization and GST, which impacted demand for short period of time. Going forward, steel consumption is expected to grow by an average of 6.3% to reach 140mt by 2023, implying steel intensity to increase to 97kgs per capita as compared to 73kgs in 2017. Rapid urban population growth, substantial government investment in infrastructure, expansion of housing and manufacturing sector will aid steel consumption growth in India.

Source: “UBS Global steel meltdown;” UBS Research, March 27th 2018

India finished demand and growth

Source: “Resources and Energy Quarterly,” BREE, March 2018
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Steel industry - challenges in India

Implementation hurdles slow down progress and adversely impact investment in steel projects:

Difficulty in land acquisition for green field projects has been a primary hindrance in new steel projects in India. Examples include POSCO and Arcelor Mittal. Besides land acquisition, obtaining mining leases, approvals, transfer of title, etc. are still cumbersome. The government is working towards streamlining these issues. Government plans to set aside 2.68 million hectares of land across eight states which will provide readymade land parcels for steel plants willing to invest or expand capacities in India.

Access to infrastructure:

Infrastructure and logistics - availability and costs - also hinder competitiveness of the iron ore and steel industry. As per National Steel policy projections of 300mt capacity base in 2030-31, iron ore requirement will be around 437mt, coking coal 161mt and non-coking coal 136mt to achieve production of 255mt of crude steel. At present there are significant deficiencies in infrastructure to support the material movement of this volume. In fact, the two major iron ore producing states - Odisha and Jharkhand are suffering from infrastructure bottlenecks for the movement of material. Railways have reduced the daily allocation of rakes leading to stocks at mines heads reportedly climbing to around 100mt. Much of the planned new steel capacities through greenfield and brownfield routes are in states of Odisha, Jharkhand and Chhattisgarh due to iron ore availability and hence, infrastructure in these states needs significant investments to be ready to support the 2030 steel production target.

Raw material availability:

Indian steel industry continues to struggle with uncertainties owing to availability and consistent supply of coking coal and iron ore.

Coking coal: During FY17, India imported 45.5mt of coking coal, up 12.1% y-o-y. India currently imports around 85% of its total annual coking coal requirement and will continue to witness rise in coking coal requirements due to lack of quality deposits, lack of technical capabilities to extract underground coking coal and depleting reserves.

Iron ore: Despite having sufficiently high reserves, iron ore production in India may witness a slowdown in 2018. The reasons include cancellation of all mines’ permits in Goa and the suspension of some mines in Odisha for not paying fines imposed by courts. Ramping up production is becoming difficult in India mainly on account of difficulty in accessing land (including for storing associated waste output), insufficient infrastructure to transport ore, complexities in interpretation of myriad regulations and in many cases community objections.

Competition from global trade diversions

India may be a destination for imported steel flows diverted from global trade, consequent to trade protection measures adopted by many importing countries. Particularly, steel imports from South Korea and Japan may surge due to the US imposition of a 25% duty. Together both countries having free trade agreements (FTA) with India, exported 5mt of steel to US in 2017, a part of which may now get diverted to India. Also Chinese exports have slowed down considerably from 112mt in 2015 to 75mt in 2017. In the current scenario where steel demand is slowing down in China and exports to the US are restricted, Chinese exports may seek to re-enter a growing Indian market, again directly or indirectly.

Source: “Bulking up;” RBC Capital Market, April 25th 2018

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B. “Govt. to roll out red carpet to foreign players for steel projects in India;” Business Standard, April 22nd 2018
Steel industry – opportunities in India

Steel industry – Infrastructure growth especially in India to drive near term demand

India is emerging as a global manufacturing hub:

Manufacturing contributes around 16% of the country’s GDP. Over the year, India’s low-cost skilled manpower has attracted a number of manufacturing companies from various industries including petroleum products, machinery and equipment, textiles and leather products. Several companies in these industries have announced expansion plans (including building new manufacturing plants/facilities) to address the growing demand, leading to a higher intake of steel. India’s manufacturing sector could touch US$1 trillion by 2025. There is potential for the sector to account for 25-30% of the country’s GDP.

Growth in the automobile industry:

The automobile industry in India is the world’s fourth largest, with the country currently being the world’s fourth largest manufacturer of cars and seventh largest manufacturer of commercial vehicles in 2017. Overall, domestic automobiles sales increased at 7.01% CAGR between FY13-18 with 24.97 million vehicles being sold in FY18. The passenger vehicle sales in India crossed 3.2 million units in FY18 and is further expected increase to 10 million units by FY20. The country’s key strengths such as a large domestic consumption base, a cost competitive value chain (that includes low design, testing and validation costs, frugal engineering capabilities and low labor costs) and strategic geographical location shall help in developing the country as a world class automotive manufacturing base. Also, higher manufacturing of auto grade steel shall help in import substitution, pushing demand for domestic steel.

Increased capacity expansions and investments in the oil and gas and power industries:

India’s energy demand is expected to double to 1,516Mtoe by 2035 from 721Mtoe in 2016. The pipeline network for transporting petroleum products is on an expansion path as all major oil companies are looking to increase long distance pipeline for petroleum products in line with the government’s aim to increase the pipeline network to around 32,000 km by 2030. Strong domestic growth, coupled with an anticipated recovery in export demand, is expected to drive steel pipe production and steel requirement for infrastructure development in refineries.


Infrastructure growth:

Over the next 25 years, India will require around US$4.5 trillion for infrastructure development in the country. Investment will be required across all sectors ranging from road, airports, shipping, power, logistics and telecom. Steel consumption for housing construction is also likely to rise due to the “housing for all” initiative which aims to build around 12 million units in urban areas over next three years and 10 million units in rural areas by 2019.

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<th>Country</th>
<th>Steel Consumption (Kilograms per Person)</th>
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<td>South Korea</td>
<td>1139</td>
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<tr>
<td>Japan</td>
<td>534</td>
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<tr>
<td>China</td>
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<td>India</td>
<td>69</td>
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Source: “Bulk up,” RBC Capital Market, April 25th 2018
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3 Coal
Global coal industry

The global coal supply is forecast to grow 0.8% on an average by 2020 on higher production from non-OECD countries. India is expected to become the second largest coal producer by 2020 after overtaking the US and Australia, China will remain the largest coal producer in the foreseeable future. World coal demand is forecast to grow at 0.5% annually to 5.534bt by 2022, driven by increased consumption in Southeast Asia and India but partially offset by lower demand from Europe, Canada and the US. In the long term, coal’s share in the world power output will decline due to increasing adoption of renewable sources of energy.

China: A large influencer

Major reforms to reduce pollution and improve competitiveness of China’s coal industry have impacted global coal markets. China’s coal-fired contribution to total power generation has declined from 75% to 65% over the past five years, creating uncertainty around near term outlook.

- China is restructuring its coal sector to create large 100 million tonne per year coal miners through mergers by 2020. Smaller, less competitive mines will face closure and be replaced.
- Introductions of market-set electricity prices and the ongoing investment in renewable capacity are already moderating coal demand growth.
- Restrictions on coal imports ranging from bans on unloading to tightening customs clearances, have already seen a 17% decline in coal imports in April 18.

With China’s coal demand and imports set to flatten going forward, ASEAN demand will absorb much of the coal which would have been consumed by China in the past. ASEAN thermal coal consumption is forecast to grow by 40% over the next five years, driven by an increase in demand from Indonesia Malaysia, Vietnam and Philippines, on easy availability of coal and its cost effectiveness. This in turn could see Indonesia’s role as a key global thermal coal exporter ease as it focuses on the domestic market.

11. "Growth in global coal demand subdued over next five years - IEA," Reuters, 18 Dec 2017
12. "Resources and Energy Quarterly," BREE, December 2017
13. Commodities compendium, Macquarie Research, March 2018, via Thomson One
14. Commodities compendium, Macquarie Research, March 2018, via Thomson One
15. “ASEAN Coal,” HSBC Research, 21 April 18, via Thomson One
Thermal coal will remain a dominant source of energy through to 2040. The changing energy mix, however, will require adjustments, e.g., the commercialization and implementation of CCS technologies.

Supply disruptions heavily impacted the metallurgical coal market in 2017, reducing seaborne supply by 1% to 279mt in 2017. Impact of Cyclone Debbie as well as port and rail disruptions on Australian output and production cuts in China kept supply tight. The trend is expected to continue in 2018 with Aurizon planning rail maintenance which could impact 2% (~20mtpy) of Australia’s seaborne met coal supply.

Additionally China’s 2018 metallurgical coal output will continue to be restricted by ongoing mine safety inspections across Shanxi province and coal transport restrictions in northern China.

While supply growth is expected to keep up with new demand in 2018, the ongoing rationalization of the Chinese coal industry poses a risk to world supply. Australia, Russia and the US are increasing imports to compensate for shortfalls. India’s metallurgical coal imports, on the other hand, are forecast to grow on rising domestic steel output and lack of significant domestic deposits and production. India is estimated to become the world’s largest metallurgical coal importer by 2020.

Thermal Coal industry in India

Commercial energy consumption in India has grown by ~700% in the last four decades. A growing population, expanding economy and urbanization will continue to drive up energy usage with coal being the dominant source in the fuel mix. The Indian Government has been focussing on effectively exploiting its 315bt of domestic coal reserves, to achieve an output of 1btpa by 2020 and cut non-coking coal imports to zero. India’s coal output grew 4%y-o-y to 676.5mt in FY18.

There are ongoing reforms to expand domestic coal output including easing of policies and regulatory processes to acquire land, obtain environmental clearances and procure coal blocks etc., along with a focus on improving infrastructure, to optimize operations and enhance productivity.

India approved a plan permitting private companies to bid for coal mines for commercial production, deregulating the coal sector. This reform is expected to drive productivity, increase cash inflows to the sector and streamline irregularities in coal supplies and linkages. However, as of now, the consultation with and acceptances from current stakeholders in the incumbent monopolistic situation are still not fully secured.

Recent measures to promote sector output

Focus on enhancing productivity

- Coal India (CIL) will undertake commercial extraction of coal bed methane from all new mines, following the government’s waiver of licensing requirement. Commercial sale will not only add to revenues for the miner but also improve safety in mining seams, bringing gaseous deposits to near zero.
- CIL raised its FY19 capex by 10% to INR95 billion to boost productivity and expand mining operations, following spend of an additional INR1 billion to its projected Capex in FY18.
- A new transfer program initiated in CIL focuses on skill development

Recent measures to promote sector output
Improving supply availability

- CIL will forward auction 45mt of coal to power companies without regular supply contracts to help stressed power producers plan their coal procurement, source-wise, grade-wise, size-wise, quantity-wise and mode-wise.
- Possibility of restart of coal mining in Meghalaya, will bring the sector closer to its target of energy sufficiency.

Minimizing logistical issues

- Developing transport infrastructure with a consistent increase in rake availability from 195/day in FY15 and 211/day in FY16 to 219/day in FY17, followed by a plan to add three critical railway lines to augment off-take.
- Coal India will invest US$3.08 billion over the next five years to build its own product transportation system increasing independence and control over coal distribution with at least 1700 rakes.
- CIL is strategizing to prevent stockpiles from exceeding regulatory limits to prevent losses as piled up inventories deteriorate in quality, sometimes are lost through self-ignited fires, apart from adding to holding costs.

Other key value and profit drivers include:

- Increasing coal demand from power, cement and steel industries, on expanding infrastructure and construction sector. The push for rural electrification will also add to power demand further exerting supply pressure on coal.
- Coal-fired power plants with supercritical technology can result in significant efficiencies. Advanced ultra-supercritical thermal power plants will drive down costs and cut down pollutants discharge, thereby sustaining coal usage despite the clean energy movement.
- Growing focus on automation and digitalization, along with adoption of modern mining methods will be a key enabler of productivity.

Favorable coal consumption trends for medium-term have led to upward price revisions and introduction of levies like evacuation facility charge. However the effect of recent introduction of a calorific value-based pricing policy, which moves from rupees/tonne to paise/unit of energy for different grades of coal, for power sector remains uncertain.

Thermal coal imports - India

Source: “Coal India: Restocking driving imports,” Macquarie research, 13 December 2017, via Thomson One

20. “CIL to extract methane before mining coal,” Economic Times, 18 April 2018, via FACTIVA
21. “Coal India misses FY'18 output target by 5%, earmarks 10% higher FY'19 CapEx;” SNL, 04 April 2018, via FACTIVA
22. “Coal India to auction over 45 million tonnes of coal to power producers,” SNL, 24 April 2018 via FACTIVA
23. “Railways’ first coal corridor to unlock Rs 10,000 cr revenue window;” Times of India, 08 March 2018; “Coal India,” IDFC securities, 29 September 2017, via Thomson One
24. “Coal India to auction over 45 million tonnes of coal to power producers,” SNL, 24 April 2018 via FACTIVA; “Coal India investing US$3.08B over 5 years to build transport system;” SNL, 06 April 2018 via FACTIVA
25. Favorable coal consumption trends for medium-term have led to upward price revisions and introduction of levies like evacuation facility charge. However the effect of recent introduction of a calorific value-based pricing policy, which moves from rupees/tonne to paise/unit of energy for different grades of coal, for power sector remains uncertain.
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Issues/Challenges

Despite the progress, India is struggling to resolve some persistent challenges impacting supply targets. CIL’s FY18 output of 567.4mt fell short of revised target of 600mt, which earlier was set even higher26. Following two consecutive years of declines, India’s thermal coal imports rose by more than 15% y-o-y to 39.6mt in the first three months of 201827.

Issues and challenges for Indian coal sector include:

- Multitude of approvals and clearances from various state and central level agencies, necessitate the need for streamlining the statutory approval process through single window clearance, to minimize project delays
- Local conflicts and rehabilitation and resettlement issues need resolution to achieve targeted growth in coal production
- Logistic bottlenecks and rail connectivity- while synergistic efforts between CIL and railways saw a 10.4% increase in rake loading per day in April 2018 to 246 rakes/day, India needs a total of 332 coal trains/day to meet end-user demand28
- Operational inefficiencies and gap in productivity- average energy efficiency of Indian coal-fired plants is well below global efficiencies leading to more coal burn and higher volumes of carbon production29
- Conflicts in Naxalite-prone areas including Odisha, Jharkhand and Chhattisgarh, impact coal operations

Outlook

- Despite improving competitiveness of renewables and gas-fired technology, coal is likely to remain the dominant source of energy in India through to 2035. This is due to increased availability of domestic coal, sector optimization via regulatory changes and limited gas availability. While expanding solar and wind capacity will cut the share of coal in energy mix in long term, the demand for coal will remain strong.
- As a result, despite the ramp-up in domestic output, supply will remain tight. In addition, one-third of the mine capacity, currently auctioned or allocated and scheduled to be completed by FY20 faces a risk of delay thus increasing a possibility of deficit in FY20-2230. Thus coal miners need to ensure continuous monitoring and portfolio planning to maintain output in line with the consumption.

25. “Coal India,” CIMB research, 30 January 2018, via Thomson One
26. “Coal India misses FY’18 output target by 5%, earmarks 10% higher FY’19 CapEx,” SNL, 04 April 2018, via FACTIVA
27. “India’s thermal coal imports rise over 15 pct in Q1 - trader,” Reuters, 11 May 18 via FACTIVA
28. “Coal India achieves 17% production growth in April,” Economic Times, 03 May 2018, via FACTIVA; “RPT-ANALYSIS-Train shortage, power demand to drive resurgence in India’s coal imports,” Reuters, 23 February 2018, via FACTIVA
29. “The twin problems that India’s thermal power sector must overcome”, The Economic Times, February 2017
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4 Copper
Global copper sector

After rallying ~30% in 2017, copper prices dropped 7.3% within the first quarter of 2018 to US$6,680/t\(^{31}\). Increase in exchange inventories, potential impact of US-China trade tension and weaker Chinese demand owing to slowdown in property sector activity exerted downward pressure on prices. There continues to remain uncertainty on price movement as supply disruptions from upcoming wage contract negotiations and impact of geopolitical factors may drive prices upwards, whereas incremental supply from new projects and possibility of resumption of operations in Zambia and the Democratic Republic of Congo, is likely to cap price growth.

The contract TC/RCs have been following an overall downward trend with the China Smelter Purchase Team setting 1Q-18 margins at US$87/8.7¢, 8.4% lower than the fourth quarter of 2017, on tighter mine supply\(^{32}\). While the larger Chinese smelters have been adequately supplied in 1Q, others are low on concentrate stocks and eager to sign deals. The CSPT further cut the minimum fee by $9/mt and 0.9 cents/lb in 2Q-18 to US$78/7.8c\(^{33}\).

The ramp up of new Chinese smelters on the other hand, is a key driver for spot TC/RCs movements. In addition, the closure of Vedanta’s Tuticorin smelter has eased mine supply pushing a spike in spot margins.

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31. SNL; “Metals Quarterly Q1 2018,” HSBC, 15 January 2018, via Thomson One
32. “China’s copper smelters cut treatment, refining charges for first-quarter 2018.” Reuters, 29 December 2018
33. “China’s imported copper conc demand weak, TC/RCs flat at $71-78/mt,” Platts, 14 May 2018
Supply: Mined output is set to decline post 2020

A series of disruptions from strikes, weather conditions, the Indonesian government’s restrictions on exports and technical issues—power outages in 2017 led to a 0.3% y-o-y decline in copper mined supply in 2017. The tightened concentrate market will however ease in 2018, with mine output forecasted to expand by 3% y-o-y supported by recovery in output from Chile and Indonesia. Although estimated to be lower, the threat of supply disruptions from the remaining wage contracts for negotiation, including BHP’s Escondida mine and from China’s plans to bring forward its ban on category 7 scrap imports still shadows the market.

The upward trend in global mine supply growth is expected to taper off towards the end of the decade owing to a lack of strong project pipeline, pushing the market into deficit. Output growth is likely to decline post 2020 owing to:

- Lack of new discoveries: Tier-I discoveries have been scarce with an additional slowdown post GFC. Absence of a strong pipeline of new Tier-I assets will leave lower quality and higher cost deposits to fill the gap.

Apart from changes in market fundamentals, the global copper supply growth will also be constrained by water scarcity as major copper producing regions including the Atacama region of Latin America, the south west of the US, Central Asia and southern Africa are either arid or projected to suffer high water stress. While miners are adopting desalination solutions to preserve ground water levels, it requires a large capital allocation and considerable energy supply.

While miners are increasingly exploring for resources and collaborating with junior miners to increase exposure to copper, the supply deficit and associated price rise will lead to an increase in scrap supply and risk substitution to other materials like aluminum.

- Average copper grade mined fell from 1.8% to 0.59% in 2017, over the past 12 years. Further, decline in ore grades at some of the largest, long-life mines and newer low-grade mine developments, will supplement the current downward trend.

Source: “Metals Quarterly Q2 2018,” HSBC, 18 April 2018, via Thomson One

34. “Metals Quarterly Q2 2018,” HSBC, 18 April 2018, via Thomson One
35. “FORECAST: Copper market to rebound in 2018, ICSG,” Metal Bulletin, 30 April 2018, via FACTIVA
36. “Copper’s golden era,” Financial Times, 26 October 2017
Demand: Renewable energy sources and EVs to drive consumption in future

Global refined copper consumption expanded 2.2% in 2017, on strong demand from China as a result of growth in its domestic transport, appliances and machinery sectors along with higher infrastructure spend on the power grid and rail network. While 2018 may see moderate growth across the end-user sectors, the copper scrap import ban is likely to lift refined copper consumption during the year.

In longer term however, copper market is set to witness incremental demand from new drivers.

Copper’s demand drivers in medium to long-term:

- Electric vehicles’ (EV) penetration in global markets could result in an incremental copper demand of 1.2mtpa, which is 5% of annual consumption by 2025.

- Pure battery-powered electric vehicles use ~80-90kg of copper per vehicle and hybrids 40-60kg of copper, in comparison to an internal combustion engine powered automobile which requires an average 20kg of copper.

- Charging stations are likely to demand ~1-5kg of incremental copper, in 1:1 or 1:2 ratio with car sales

- Higher transformer capacity may be required in streets having higher penetration

- Rising demand from renewable energy sources: Growing competitiveness of renewable energy sources will see increased penetration across global markets, with solar generation capacity forecast to triple and wind capacity to double by 2025. This will be a major driver of increasing copper consumption given the per megawatt/hour demand coefficient for offshore wind generation is ~five times and solar is two and a half times, than that associated with coal generation.

India’s domestic copper sector

India’s refined copper supply in 2018, will be adversely impacted by the Tamil Nadu state government’s decision to shut down Vedanta Sterlite’s copper plant at Tuticorin, which accounted for 48% of the country’s output. This move came after local protests against the environmental clearance for doubling copper-refining capacity to 800kt led to unfortunate human casualties. As a result, India’s refined copper output is now forecasted to drop to 540kt in FY19, from 843kt in FY18, which may require the country to import copper.

While Hindalco will see an increased demand, it already operates at 85% capacity utilization, leaving little scope to ramp up output.

With the Indian copper market forecasted to grow at 8-10% in 2019-20, driven by upcoming infrastructure projects and increased rural and railway electrification, there is a simultaneous focus on ramping up mine supply. Hindustan copper is in the process of raising mine capacity from 3.2mtpa to 12mtpa over the next four years, across its captive mines at Madhya Pradesh and Jharkhand. Given India’s mining production is only 0.2% of the global output, there exists a massive opportunity for greenfield exploration and brownfield expansion.

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38. “Copper: Electric Vehicles & Charging Infrastructure to Accelerate Demand,” UBS research, 29 August 2017, via Thomson One
40. “Renewable energy: A green light to Copper Demand,” BMO capital Markets, May 2018, via Thomson One
41. “Ten reasons why we like copper,” BHP Billiton, 28 Nov 2017
42. “Sterlite closure: No immediate crisis but concerns on future copper supply,” Economic Times, 02 June 2018
43. “Sterlite’s copper unit closure to roll domestic industry,” Business Standard, 30 May 2018, via FACTIVA
44. “Sterlite’s copper unit closure to roll domestic industry,” Business Standard, 30 May 2018, via FACTIVA
45. “Hindustan Copper reaping benefits of global price surge,” The Economic Times, 08 November 2017
5 Iron Ore
Global iron ore sector

Since 2017 the iron ore market has been characterized by price volatility and the trend will continue in the near term. While growing supply and easing demand have been putting a pressure on prices, China's ongoing steel capacity reduction plan is boosting steel and consequently iron ore prices. This coupled with the ongoing trade tension between China and the US will further add to uncertainty in 2018. Despite a very significant surge in Chinese steel prices during 2017, iron ore prices declined by 8% during the year supported by record inventories. The downward trend is likely to continue in 2018 with prices forecasted to drop 9% y-o-y to an average US$65/t as a result of rising global supply and moderating Chinese demand.

Demand: China’s environmental policy impacts consumption

While Chinese iron ore imports have been under pressure with the implementation of stringent environmental regulations on steel industry, the domestic demand for steel is likely to expand in near term on improving construction activity, in turn boosting iron ore consumption. Additionally, Chinese policy changes are favoring the implementation of electric arc furnaces (EAFs), which will use scrap rather than iron ore when new capacity is constructed. In the short- to medium-term higher scrap prices and increased Chinese steel production mean this policy will have a limited impact on iron ore demand. However, in long term, growing scrap reservoirs and rising uptake of EAF plants may have a significant impact, posing a potential substitution risk for iron ore.

Iron ore prices- NYMEX 62% Fe

Source: SNL

46. “Under steel's shadow, iron ore seen tumbling 13 percent in 2018: Reuters poll,” Reuters, 26 January 2018
47. “Metals Quarterly Q2 2018,” HSBC, 18th April 2018, via Thomson One
Price differential between high grade and low grade iron ore

Improved steel profitability and environmental restrictions in China have led to a clear-growing preference for higher quality iron ore and pellets. The structural shift in favor of high grade iron ore, which commenced in 2017, has resulted in premiums for high-grade 65% and 62% iron ore and discounts for 58% lower grade iron ore products. The shift has been driven by:

1. Anti-pollution policies, which forced steelmakers to adopt higher iron ore grades, lowering coking coal consumption and reducing emissions

2. Increased coking coal prices made economics of using higher-grade iron ore to lower quantity of coking coal used more favorable

During 2017, the Metal Bulletin (MB) 65% Fe iron ore prices grew 36% y-o-y averaging $88/t compared to the MB 58% Fe iron ore which grew only 1% y-o-y to $46.70/t. The gap between 62% Fe and 58% Fe index widened to over $30/t in 2017. The bifurcation in prices will continue in 2018, for example, Vale’s Carajas-origin 65% iron ore is likely to sell at a premium of $14-15/t over its 62% Fe product. While the price divergence is expected to narrow with declining steel prices, it is unlikely to revert to historic levels.

Two-thirds of the increase in Chinese steel making utilization rates and margins since the introduction of supply side reforms are expected to be sustained in the long term. Thus, low grade miners will need to increase the proportion of high grade products.

For instance, Fortescue Metals Group is aiming to make bulk of its iron ore production above 60% Fe through its "Firetail replacement project", which will be implemented without the company losing focus on minimum mine lives of 20 years.

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50. "BHP sees long-term benefits for high-grade iron ore, coal suppliers amid China's steel industry reforms," Metal Bulletin, 08 May 2018, via FACTIVA
51. "Fortescue targets high-grade iron ore production," American metal market, 31 Jan 2018 via FACTIVA
Supply: Increasing output to pose downside risk to market balance

Global iron supply grew 4% y-o-y in 2017 and the market will continue to be well supplied in 2018 as major projects start delivering and miners capitalize on price opportunity. The top 20 iron ore producers increased output by 1.5% y-o-y in 1Q18 with the top three players raising production by 2.7% to 236mt. Despite China’s continuing crackdown on pollution and curbs on steel output, the disruption to the steel and iron ore industry will be less than last year, evident from a 1.9% growth in China’s domestic iron ore output in 1Q 2018.

Seaborne supply is expected to grow by 2.2% y-o-y in 2018, to 2,200mt, with Vale adding the most incremental output as production at its S11D mine is estimated at 58mt, above the 2018 forecast of 50-55mt. The upward trend in supply growth is forecast to continue with production gradually ramping until 2020, led by upcoming projects including:

- Ramp up of Vale’s S11D project will bring Vale’s capacity to 400mt by 2019
- Anglo American’s Minas-Rio expansion is forecast to reach full capacity of 26.5mt by 2020
- Completion of implementation of driverless trains at Rio Tinto’s Pilbara operations by end-2018

However, post 2020, iron ore output and export growth is projected to slow to an average annual 0.3% from 2020 to 2023, reflecting a diminishing pipeline on lack of investment over years of depressed commodity prices. With China’s run-of-mine production declining 12% CAGR over 2018-22e, Australia and Brazil are likely to maximize output, thus solidifying their market share and displacing high-cost production.

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52. “Metals Quarterly Q2 2018,” HSBC, 18 April 2018, via Thomson One
53. “Iron ore Q1 supply update – fortune favors high Fe,” SNL, 17 May 18
54. “China’s run-of-mine iron ore output rises 1.9% in Q1,” Metal Bulletin, 20 April 2018, via FACTIVA
India’s domestic iron ore sector: May reach previous peak supply

In FY18, the Indian iron ore output grew 9% y-o-y to exceed 200mt for the first time since FY11, on the back of increased production in Odisha and Karnataka. Odisha maintained a steady increase in output despite a ruling which shut down capacity of around 20mtpa. The Supreme Court imposed a fine of INR180 billion on miners for illegal mining, the non-payment of which led to mine closures and operations resumed only after penalty payment57. Karnataka’s production increase, on the other hand, was as a result of the Supreme Court’s relaxations of the mine output cap, increasing it from 30mt to 35mt, on iron ore excavations for Category A and B mines58.

Supply growth will however, slowdown after the cancellation of 88 renewed mining leases in Goa, halting iron ore extraction activities in the state. This move comes after the ban to curb illegal mining in October 2012, which was partially lifted in April 2014. Given that most of Goa’s production is exported, iron ore exports declined to 15mt in FY18, from 24mt in FY17. Aside from the impact of the ban, exports will remain subdued as global trading environment is not incentivizing low-grade iron ore sales. Considering India’s exports majorly comprise of low grade iron ore, it is unlikely that an increase in exports will have a major impact on global markets.

Despite having a reserve potential to be net sufficient in iron ore, India faces challenges in extracting complete value, with ongoing uncertainty being a major impediment. Other challenges including higher domestic freight costs, insufficient infrastructure and lack of economies of scale (as compared to global Tier 1 assets) need to be addressed by miners and authorities alike.

Domestic iron ore production

Source: “Iron and Steel Industry,” ICRA, Jan 2018, via Thomson One

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57. “Iron ore prices should come down in 2018,” CIMB, 09 January 2018, via Thomson One
58. “Iron ore production in India crosses 200 million tonnes after 7 years,” Business Standard, 03 May 2018
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6 Aluminum
Global aluminum demand and supply

Global aluminum production stood at 63.4mt (up 7.5% y-o-y) while consumption was 62.4mt (up 6.4% y-o-y). The aluminum production growth is expected to decelerate as outdated and higher-cost production facilities are taken offline in countries like China. China’s aluminum production growth will slow down in the near term, as the government’s push for consolidation and stricter environmental regulations to bring high cost capacity and illegal capacity offline. Outside of China, production growth will essentially come from capacity restarts in the US and production growth in UAE, driven by Emirates Global Aluminum capacity expansion plans.

The global aluminium demand is expected to grow driven by steady demand growth in Asia and the growing application of aluminium in automotive and aerospace industries.

Aluminum regional demand breakdown

Source: Morgan Stanley
Aluminum Prices

Average aluminum prices increased 17% y-o-y to US$2197/t year till May 2018, supported by supply reforms in China, the US trade actions and raw material cost inflation.

**LME Prices (US$/t)**

Supply reforms in China: China’s cuts of illegal capacity and production amid environmental concerns during November 2017 – March 2018 supported the prices on anticipation of probable supply deficit in the market

US section 232 Implementation: In March 2018, the US announcement of 10% import duties on all aluminum imports into the country led to increase in prices. This has led to retaliation from US trade partners and allies, e.g., EU has opened a case at the WTO

US Sanctions on Russia: In April, the US imposed sanctions on Russia which means that all US and non-US entities are prohibited from transacting for or on behalf of Russian aluminum producer, Rusal. The LME have also announced that Rusal metal produced after 6 April 2018 will no longer be deliverable into their warehouses. Rusal accounts for 6% of aluminum and exports 63% to western markets. This material reduction in Russian supply may result in significant tightening

Raw materials cost inflations: Alumina prices increased from US$448/t in 4Q 2017 to US$565/t on 30 April 2018, on global trade sanctions impacting the aluminum supply chain along with the continued 50% curtailment at the world’s largest refinery, Alunorte (~4% global production). Also, US sanctions on Russia, will hamper two thirds of Rusal’s alumina production

Aluminum US Midwest regional premium climbed 18% in April to US$477/t as the implementation of Section 232 and trade sanctions began to strain North America’s primary aluminum supply. In line with this, the European premium jumped by 37% to US$230/t while the Japanese premium increased 12% to US$140/t. Aluminum prices, however, corrected in May 2018 as the US provided producers more time to wind down businesses with Rusal and signaled possible relief on sanctions if Deripaska (owner of En+ Group) divests control in Rusal. Aluminum premiums in both Asia and Europe fell, in tandem with the prices.

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59. “Aluminum tracker: Volatile April following possible trade sanctions,” Deutsche Bank, 30 April 2018 via ThomsonOne
60. ibid
Key trends in the aluminum market

Producers focusing on lowering carbon footprint:
Sustainability is in focus on a number of fronts, including operational performance, regulatory compliance, commercial relationships and broader reputation. Producers of “green” aluminum - made using renewable energy rather than fossil fuels - are starting to charge premium prices as the demand from industrial customers is rising under pressure to reduce their carbon footprints. Key drivers of sustainability are:

Customers: Leading brands such as Apple, Coca Cola are expecting materials with lower CO2 footprints. To promote this, Rio Tinto and Alcoa entered into a JV with support from Apple and the Canadian government, to make aluminum without carbon anodes by 2024

Regulations: With increasing focus on responsible sourcing, producers are receiving certification under the Aluminium Stewardship Initiative (ASI), to demonstrate their commitment to a sustainable supply chain. Rio Tinto is reported to be the first company to receive certification under ASI

Brand reputation: In an effort at capturing a segment of the sustainable aluminum market, Norsk Hydro has developed two aluminum products, selling at a premium. One has a maximum CO2 emission of 4kg per 1kg of metal produced, the other has a minimum recycled content of 75%. The power used in manufacturing comes from hydroelectric sources. National Aluminium Company (Nalco) has decided to turn to renewable energy to satisfy its growing power needs as part of its cost cutting exercise. The company has commissioned two wind power plants with 50MW capacity

Recycling is becoming more important as the generation of scrap material gains momentum

Given the amount of energy saved in recycling aluminum along with the lower carbon emissions, countries are focusing on increasing their recycling capabilities. Europe and North America have advanced recycling industry while China, India and Russia have started increasing their recycling activities

Key drivers of recycling

- Low energy requirements: Manufacturing aluminum from post-consumer scrap uses ~5% of the energy required to produce it from newly mined bauxite
- 100% recyclability properties: Given that the metal can also maintain its original properties even after being recycled, further encourages the recycling of aluminum
- Global support for aluminum recycling: Companies are showing an appetite for expanding their recycling. E.g., Novelis has launched a new partnership with the Instituto Coca-Cola Brasil to support the development of recycling cooperatives in Brazil

Challenges in recycling

- Legislation: Government support is required to bolster appropriate collection of products with aluminum in them once these said products reach the end of their usable life
- Waste collection: Efficient collection system is required to ensure that aluminum scrap is collected in an efficient manner

62. “Norsk Hydro Debuts Two New Low-Carbon Aluminium Products,” Aluminium insider, accessed 25 May 2018
Aluminum industry in India:

India was the fourth largest aluminum producer and consumer in the world in 2017. Aluminum production grew 17% y-o-y to 3.2mt in 2017 while consumption grew 9% y-o-y to 2.4mt. Indian aluminum demand will essentially come from the automotive, construction and packaging sectors. The long term growth prospects in the construction industry are driven by the country’s sizable infrastructure deficit and the government’s development plans, which encompass projects ranging from rail and power networks to smart-city infrastructure. Major aluminum producers in the country include state-owned NALCO and private sector units such as Hindalco Industries and Vedanta. Aluminum exports from India have recorded a sharp rise of 34% y-o-y during April-January, 2017-18 on expanding domestic production and fall in domestic consumption.

Opportunities in the aluminum sector

Demand from EVs-

The growth of the EV market will have positive consequences for aluminum producers. The Aluminium Association estimates aluminum’s consumption will rise by 50kg/vehicle over the next ten years. Apart from current applications such as in the vehicle’s chassis, body and wheels – aluminum will be used in the structures (cases) that carry electric batteries in EVs. Demand for aluminum will also rise on account of infrastructure for serving EVs, since aluminum is commonly used as housing material for EVs charging stations. Global installation base of EV charging stations is forecast to grow to more than 12.7m by 2020 from ~2m in 2016. Aluminum demand in EVs will be compounded by growing demand in ICVs in general. CRU expects aluminum demand for cars in Europe to grow 12% CAGR 2016-2021, while growth in North America will be even higher, 19% CAGR over the period.

Key constraints:

• Lack of charging infrastructure: The pace of EV adoption will depend on the availability of charging infrastructure in the country. EVs may make up just 7% of new car sales in India by 2030 owing to a shortage of charging infrastructure and a lack of affordable models. By comparison, it is expected EVs will make up 44% light-duty vehicle sales in Europe, 41% for China, 34% in the US and 17% in Japan.

• Steel vs. aluminum: AHSS (Advanced High Strength Steel) will most likely maintain its dominance in smaller (and lighter) vehicles, while aluminum will be the winner in bigger vehicles (SUVs and light trucks) as it’s cost effective. E.g., Tesla launched its smallest and cheapest model, Tesla Model 3, which is a steel intensive vehicle, after two aluminum intensive models.

Aluminum demand in India is poised to grow at a faster pace than the country’s GDP. Moreover, India’s per capita consumption at 2.4 kg is also much lower than Germany’s 43 kg and China’s 25 kg, reflecting significant potential to grow. The aluminum demand forecast is predicated on more business from packaging, transportation, affordable housing and infrastructure industries and consumer-electrical cables sector.
### Key risks and implications for Indian aluminum industry:

<table>
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<tr>
<th>Key risk</th>
<th>Description</th>
<th>Implications for Indian producers</th>
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<tr>
<td>Supply disruptions</td>
<td>The global aluminum market could face supply shortages because of the US sanctions on Russia and Norsk Hydro’s production cuts in Brazil. With restrictions on Rusal, which produced 3.7mt of aluminum in 2017, about 2mt of the supply will be impacted. Moreover, Hydro plans to cut 50% (230kt) of capacity at its Albras plant until Alunorte alumina refinery is back to full capacity. These supply disruptions will be partially offset by China’s plans of increasing capacity by 3-4mt in 2018.</td>
<td>It is estimated that about 2mt of its supply could be affected due to sanctions, which is about 3% of the total global aluminum production. Indian aluminum producers may therefore benefit from lower global supply pushing international prices higher.</td>
</tr>
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| Trade protection measures     | • **Section 232:** The US imposed a 10% duty on aluminum on import from a handful of countries, to enable the US producers to operate at 80% capacity utilization  
• **US sanctions on Rusal:** The US imposed sanctions on United Company Rusal due to which Rusal cannot supply aluminum to the US, Europe and other markets  
• This could incentivize higher aluminum production within the US, thereby impacting the world ex China balance. Also, it may have a significant impact on global trade, as the relative cost structure of exporting nations may change and markets compete for aluminum imports | Impact on Indian aluminum industry is expected to be minimal in short-medium term as the US accounts for merely 1% of India’s total exports. However, imports now cater to 54% of total aluminum consumption in India, up from an earlier 52%. And while the increase may seem small, it is worrisome, given the 0.5mtpa excess capacity in India. Also, Chinese and Middle Eastern producers are likely to move their additional metal to the Indian market. |
| Access to raw material        | • **Increase in domestic coal prices:** Coal India has raised prices of thermal coal by an average 9%, effective January 2018. Moreover, Mahanadi Coalfields issued orders to halt deliveries to all non-power customers following a government directive to prioritize supplies to the electricity industry | The increase in coal prices will have a negative impact on Indian producers as the electricity costs will rise significantly, of which a small part may be off-set by efficiency gains |

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63. “Aluminium exports surge 34% on higher output, fall in consumption,” Business Standard, accessed 4 June 2018
64. “EV infrastructure,” Morgan Stanley, October 2017 via ThomsonOne
65. “Affordability and lack of charging points stalls electric vehicle take-up in India: Bloomberg,” PV Magazine, accessed 25 May 2018
Insolvency and Bankruptcy Code

Implications, risks & opportunities for metals industry

Among the most significant reforms undertaken by the current government relevant to the Indian metals industry is the new Corporate Insolvency and Bankruptcy Code introduced in 2017. Key features of the code as amended are as follows:

- A single framework for the entire ecosystem supported by new institutional framework
- Distinction between insolvency and bankruptcy
- Time bound resolution
- Creditors in control model and recovery maximization
- Process supplemented by role of Judiciary
- Offers genuine business failures a second chance
- Opportunity for incumbent owner managers to return and retain
- Fair degree of transparency and certainty

Many of the corporates notified under the process are in the metals sector, particularly steel and allied businesses, as a large number of players in the industry had, over past few years, undergone significant stress imposed by the global meltdown of steel margins and negative profitability. Interestingly, the notified assets have witnessed fairly high degree of competitive interest for various reasons including a turnaround in the industry fortunes and challenges of green field expansion in the country making the operating assets an attractive route for inorganic growth. Some of the assets have successfully been resolved. The process has already seen successful acquisitions by Tata Steel and JSW group thereby consolidating their already leading positions in the industry. Interestingly, Vedanta, so far a non-ferrous metals major has also successfully entered the steel sector. Arcelor Mittal has also demonstrated commitment to set a firm foot in the promising Indian steel industry leveraging this process.

This event has turned out to be disruptive for some while for many gives a chance to survive and sustain. On the other hand, this has undoubtedly presented a major opportunity to many others. We believe, the implications, risks & opportunities for the industry and its various stakeholders will be around the following themes:

The industry

- There has been a wave of consolidation in the metals industry globally but not reflected within India as yet. The IBC process has triggered this and India will also witness the theme playing out domestically
- Over a period of a year or so, several key players that are already in this process or are on the cusp, would have undergone a resolution. With the balance sheet problem having been resolved (or deferred), a stronger metals industry will emerge post this restructuring with sustainable debt levels
- Stronger players are already using this opportunity to consolidate their position here. Some new players from other sectors are also entering the fray thereby broadening the canvas
- Almost all current producers of metals in India have been Indian entrepreneurs. An industry hitherto almost entirely promoted and controlled by domestic players, is likely to see successful entry of multi-nationals
- With the profile of steel industry players changing and focus moving from survival to growth, it is envisaged that introduction of new technology, new products, R&D, etc. will gain attention. That will impart greater sustainability and competitiveness to the industry to improve its positioning in global market
• Business landscape for the industry will be disrupted due to the entry of new players, new business relationships across supplier–customer industries and also due to new alignments that would evolve in the supply chains, new source-to-destination networks, etc.
• It is expected that the governance standards are likely to improve across the industry
• Several players who hitherto had to resort to distress sales, cash flow cycling, un-remunerative pricing would have been eased. That would reduce the pressure on prices by removal of weaker section of competitors from market
• Given the immense growth potential India offers in long term demand growth, industry participants will be more confident of committing investments for capacity additions. Some ambitious plans of Government of India like the 300 MTPA steel target may be realizable
• It is likely that with stronger market participants in fray, competition may intensify
• However, on the other hand, with balance sheets under lesser stress, businesses may seek to adopt more sustainable business practices and seek healthier margins
• A significant part of the manufacturing and business processes adopted by different metals players are common across ferrous and non-ferrous sectors. It is possible to envisage there could be more cross interest amongst these two segments of industry players
• Amidst all these, interestingly, a certain degree of relative imbalance amongst the players will probably emerge. The assets undergoing resolution would emerge stronger with a sustainable financial structure due to significant debt reduction. As compared to this, the businesses which are not in any such financial restructuring would continue with the full debt burden. Given the high interest rates in India and low capital turnover ratios in the industry, this cost differential between the two set of business units is likely to be material differentiator in their profitability going forward

Current producers

• Under the IBC process, while the producing assets may be revived and continued, the industry will see exit of a number of owner managements. The focus on value maximization by the Committee of Creditors (CoC) necessitates higher upfront cash commitments and infusion which a relatively weaker incumbent finds hard to commit
• Given the recently inserted section 29A, some incumbent promoters with governance challenges or deemed willful defaulters, will be prevented from bidding back their businesses thus ceding the business to new (and hopefully stronger) players
• The steel industry has, over the last few years, faced losses or margin shrinkage. A large part of the issue has been high cost of capital in India, which coupled with relatively low capital turn over ratios typical of the industry is a major cost element. In the current IBC process, a significant part of the debt is likely to be eliminated, thereby improving financial sustainability
• The ongoing IBC process offers an exciting opportunity to some current incumbents who have the financial resources and credibility to expand their footprint and consolidate their position in the industry. Apart from the advantage of size and scale, the redrawn source-to-market network will improve customer service and boost their margins, given the high cost of logistics in the Indian economy
• Internally, the corporates would have to enhance focus on liquidity, forecasting, risk management and governance processes
New strategic entrants

- Despite long term domestic demand growth projections, the Indian metals industry has not yet witnessed the entry of any major global strategic player, barring a very few minority investments in joint ventures or a limited downstream play. Their efforts to enter India on a scale have been unsuccessful, due to myriad challenges including land acquisition, regulatory processes, uncertainties and lack of access to resources. The Code presents a rare opportunity significant enough for global players to re-engage and expand their footprint to India relatively quickly with an already operating business.
- Most new MNC entrants would seek to leverage the asset under bidding to expand so as to access a large market with huge potential upside over next several years.
- Amongst the most interesting opportunities for global players in India are the demand from automotive, consumer durables and infrastructure sectors. These customer segments, particularly automotive, are undergoing transformation of their own products which have material needs that can be fulfilled by global metal players. Their experience of servicing their global automotive customers will be quite useful in extending their global supply chain arrangements to their automotive counterparts in India.
- Metals is a capital intensive industry with capital turnover ratio below 1. Thus cost of capital is a significant factor of cost to serve. Global players with access to capital with lower cost, therefore stand to gain.
- Many of the assets struggle for want of adequate working capital and hence a fair assessment of fresh working capital to sustain and support expansion will be imperative.
- Given the financial stress the assets would have gone through, it is natural to expect issues around health of the plant and equipment, regulatory compliances and in general corporate governance. A new entrant must therefore conduct extensive due diligence and proactively address above matters.
- Many of the assets undergoing the IBC process have drawn good interest from potential industry participants as well as funds. While that is a healthy sign, unexpected legal battles have delayed closure thereby intensifying the competitive build up. The multiple rounds of bids have witnessed higher bid values/commitments. In such an environment, there is a case for constantly re-evaluating the scenarios, assumptions, sensitivities and valuations and controlled exuberance by the bidders.

Suppliers to the industry

- The suppliers to the steel industry particularly, in the recent stressful environment in steel sector, had been challenged on their receivables front. When the process fully plays out with resolutions of the stressed assets, there will be an improvement in general credit health of steel producers and hence a more visible financial supply chain for their vendors.
- A part of the steel industry had been struggling to maintain production thereby impacting the volumes. Over a period of time, these units are expected to operate to capacity thus providing a more stable and growing market opportunity for their vendor community.
- However, under the current code, unsecured creditors stand much lower in order for recovery. While some resolution plans do recognize the need to protect the MSME suppliers, much of the others may stand to lose, unless they have critical influence on operations of their customers.
Customers of the industry

- As a large part of the steel industry was struggling with debt servicing, much of their management attention was diverted from developmental issues. Post this restructuring wave, in some time, we are likely to see focus back on research & development, new product development, import substitution, etc., leading to an expanded basket of products hitherto not produced locally. This will impart stability to the inbound supply chain of customers particularly for import substitutes.

- With more value added products being produced locally (i.e., AHHSS) it will boost India’s competitiveness as a global source for such and their downstream products in the value chain.

- Factors like consolidation, stronger set of producers, renewed focus on margins, wider product portfolio will play out on the producer prices (costs to their customers). However their impact and trajectory may be quite diverse.

Lenders to the industry

- The IBC process is surely a fast track resolution mechanism for recovering non-performing assets for the banking industry as a substantial part of their debt will be realized, renewed and likely to move to more sustainable cash flow structures. The overall risk profile is likely to improve further aided by improving ROI in the industry.

- Going by the intense competition amongst bidders, it is probable that the lenders will have the opportunity for potential write backs of a part of the provisions already made.

- Another very positive outcome lies ahead due to these developments. A healthier banking industry, with unlocked flow of capital, will now be in a position to provide capital for the huge investments required to build new capacity for meeting future metals demand for the country.

Society, community, employees

- While all the above play out, there are implications for another set of stakeholders as well. Employees will have an improved sense of security and certainty around the businesses they work with. With stronger industry players running the businesses, this augurs well for employment and human capital in general.

- However, performance will be under sharper focus thereby creating pressure on a set of employees who may find it challenging to adapt to the new management, operating environment and technology interventions, etc.

- Society and communities in general are likely to benefit due to improved focus on health, safety and environment, job creation, CSR spend, etc.

- We should hope to see greater adoption of healthier business practices across the sector which augurs well in general for all.
Government sector

- Under the code, government dues are subservient to those of secured creditors and other unsecured financial creditors. However, as a supplier of services to the metal industry, the government agencies and PSUs either operate with upfront payment security or are in a monopoly influential position not to lose anything in the IBC process although they may not be a “secured creditor”. They are only likely to be beneficiaries of this process as a healthier industry will pose increasing demands for their regulated / monopoly services.

- On the other hand however, the constraints of infrastructure and other monopoly services even currently faced by the industry will probably aggravate due to expanding needs of a resurgent industry. Hence the government agencies must plan and deliver in time to enable this growth.

Economy in general

- A healthier industry sets sight on growth and development. Most players who have bid for assets under the IBC process have expressed their intent to expand capacities beyond current name plates, at economic costs. This itself will kick start a wave of capital expenditure with a multiplier effect on economy.

- Successful implementation of the Code will address the NPA situation, eliminate confusion caused by a complex judicial framework, develop the credit and bond market, and boost investors’ confidence. All these bode well for a fast growing emerging economy.

- India, with an increase in the growth potential and demand for metals, faced a situation where the supply side response was struggling of late. However, there is reason for optimism that the challenges will now be better addressed by a healthier metals industry – not only to cater to domestic demand but also strengthen its position further as a major global player in the metals sector.

- This may further boost India’s competitiveness in the downstream industry to be a formidable hub for global sourcing of value added products (i.e., automotive, defense, industrial products, etc.)
Indian Metals & Mining
Ready to capitalise

ICC Profile

Founded in 1925, Indian Chamber of Commerce (ICC) is the leading and only National Chamber of Commerce operating from Kolkata, and one of the most pro-active and forward-looking Chambers in the country today. Its membership spans some of the most prominent and major industrial groups in India. ICC is the founder member of FICCI, the apex body of business and industry in India. ICC’s forte is its ability to anticipate the needs of the future, respond to challenges, and prepare the stakeholders in the economy to benefit from these changes and opportunities. Set up by a group of pioneering industrialists led by Mr G D Birla, the Indian Chamber of Commerce was closely associated with the Indian Freedom Movement, as the first organised voice of indigenous Indian Industry. Several of the distinguished industry leaders in India, such as Mr. B M Birla, Sir Ardeshir Dalal, Sir Badridas Goenka, Mr. S P Jain, Lala Karam Chand Thapar, Mr. Russi Mody, Mr. Ashok Jain, Mr. Sanjiv Goenka, have led the ICC as its President. Currently, Mr. Shashwat Goenka is leading the Chamber as its President.

ICC is the only Chamber from India to win the first prize in World Chambers Competition in Quebec, Canada.

ICC’s North-East Initiative has gained a new momentum and dynamism over the last few years, and the Chamber has been hugely successful in spreading awareness about the great economic potential of the North-East at national and international levels. Trade & Investment shows on North-East in countries like Singapore, Thailand and Vietnam have created new vistas of economic co-operation between the North-East of India and South-East Asia. ICC has a special focus upon India’s trade & commerce relations with South & South-East Asian nations, in sync with India’s ‘Look East’ Policy, and has played a key role in building synergies between India and her Asian neighbours like Singapore, Indonesia, Bangladesh, and Bhutan through Trade & Business Delegation Exchanges, and large Investment Summits.

ICC also has a very strong focus upon Economic Research & Policy issues - it regularly undertakes Macro-economic Surveys/ Studies, prepares State Investment Climate Reports and Sector Reports, provides necessary Policy Inputs & Budget Recommendations to Governments at State & Central levels.

The Indian Chamber of Commerce headquartered in Kolkata, over the last few years has truly emerged as a national Chamber of repute, with full-fledged offices in New Delhi, Mumbai, Guwahati, Ranchi and Bhubaneshwar functioning efficiently, and building meaningful synergies among Industry and Government by addressing strategic issues of national significance.
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Ready to capitalise

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EYN1806-004

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