Metallurgical Coal: 2016's Best-Performing Commodity

By **Ryan Ramos**

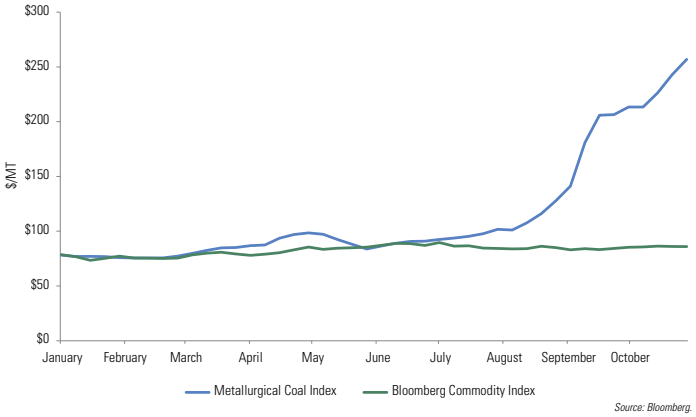
2016 has been a year of rebalancing for many commodities. Bloomberg's Commodity Index had risen nearly 8% year to date through early November, a contrast to the past five consecutive years of annual declines. While many commodities emerged from the doldrums in 2016, metallurgical coal – also known as coking coal, met coal or simply "met" – has been a standout, nearly quadrupling in price this year. Met coal is an essential input in the traditional basic oxygen furnace (BOF) steelmaking process, so its re-pricing is affecting steelmaking economics across the globe. This article explores the supply-side rebalancing of the met coal market and its likely effect on steel production economics.

Bituminous Coal: Metallurgical vs. Thermal

Bituminous coal, which represents 52% of the world's coal reserves, is one of four types or "ranks" of coal found in the earth's crust. Coal is ranked according to where it stands in its natural development process, with bituminous coal being one of the highest-ranked, or most developed, types of coal. It is characterized by higher carbon content, lower moisture and higher calorific value (that is, the amount of heat released during combustion) compared with other coal types.

Bituminous coal has two subtypes: thermal and metallurgical coals, which are most commonly used in electricity generation and steel manufacturing, respectively. Thermal coal is the more abundant of the two subtypes, and is higher in moisture and lower in carbon content and calorific value. Thermal coal is burned to generate electricity – the burning process creates steam that powers electricity generating turbines. Met coal, on the other hand, is solely used in steel manufacturing. Its higher carbon content and calorific value are vital in turning met coal into coke, a substance of almost pure carbon that is needed to make molten iron.

Commodity Price Movements in 2016



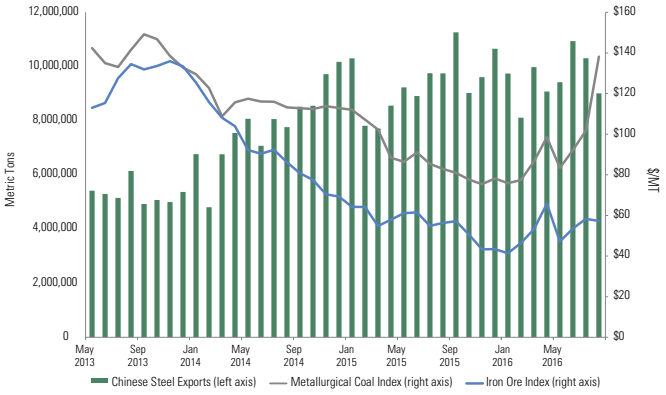
Source: Bloomberg.

Tracing back to the beginning of the year, spot prices for met coal opened 2016 at $78 per metric ton (MT) and have since risen to $307 per MT. With demand fairly stable, the price increase has been driven by a supply deficit.

As the world's largest producer and consumer of met coal, China plays a leading role in the story. Prior to 2016, an inventory surplus in the met coal market depressed the price of the key steelmaking input. Low raw material prices pushed down the cost to produce steel, leading China to produce 804 million metric tons (MMTs) in 2015 and export 33.4 MMTs more than the entire United States produced last year, according to the World Steel Association. While low raw material prices helped steel producers manage in the face of weaker demand and overcapacity, met coal's lower price severely affected the profitability of Chinese coal mining companies, many of whom are controlled by the government.

In February, China adopted a top-down strategy to reduce overcapacity in the domestic coal mining industry by ordering its coal mining companies to cut annual production by 500 MMTs, or 9%, between 2019 and 2022 and to consolidate production by transferring roughly 500 MMTs of coal mining capacity from the hands of smaller to larger coal mining companies. The linchpin of implementing the policy was drastically reducing the number of working days in a calendar year for coal miners from 330 to 276.

Chinese Steel Exports vs. Steel Input Costs



Source: Bloomberg.

The Chinese policy of stemming the supply glut appears to be working its magic. As evidenced by the 20% price rally during the first week of November – from $257 per MT to $307 per MT – the met coal market is still seeking equilibrium. As supply capacity comes out of the market, the market has struggled to rebalance in the face of consistent demand.

According to the Reserve Bank of Australia's August 2014 *Statement on Monetary Policy*, the largest Australian met coal

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miners, who produce more than 300 MTs annually, have production costs from approximately $125 per MT to above $150 per MT. This means met coal was sold for a loss in the seaborne market, as the average spot price for 2014 was just $116 per MT. Met coal miners today are incentivized to ramp up production and take advantage of a price that is likely well above their production costs.

But how quickly can met coal producers respond to the higher prices? The Chinese government has relaxed some of the rules in its supply reduction policy by reopening a few shuttered mines, but the reopening process takes time. In addition, current producers now have to compete with new met coal suppliers around the world, who previously exited the market because of low prices but are now re-entering the space with expectations that prices will stabilize at the level seen over recent months. In Mozambique, Canada, the United States and other places with met coal reserves, mines are gradually reopening, and it is a competitive race to see who can fill the void in supply left by China's met coal producers.

Impact on Steelmakers Worldwide

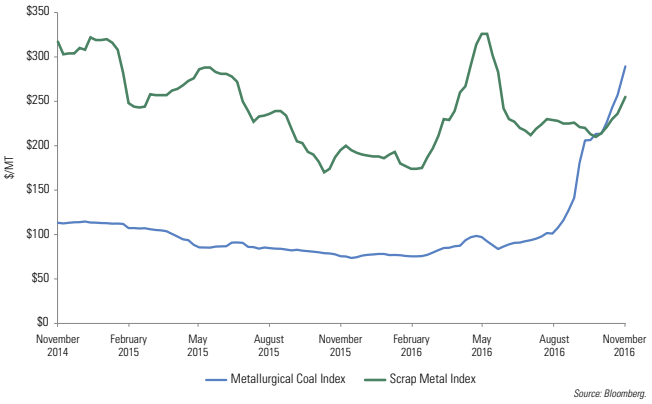
Thus far, the Chinese government's labor adjustments appear to have had the intended impact on raw material prices. Having said that, if finished steel prices do not increase commensurately, in the face of rising raw material costs, BOF steelmakers – representing 67% of global steel producers – are likely to see compressed margins until they are able to pass cost increases through to the end consumer. BOF steelmakers negotiate quarterly contracts to acquire met coal, and with a third quarter 2016 contract of $92 per MT, those buying from mines tied to the

contract have been able to avoid the drastic rise in spot price since August. However, the contract price settled for the fourth quarter is around $200 per MT, and the higher input costs will now affect steelmakers' profits through early 2017. For a typical steel mill, met coal represents approximately 33% of the cost structure.

China's steel production industry may be less exposed to the rise in met coal. For China's steel mills, while half of the country's met coal needs come from imported Australian product at the new higher contract price, the other half is imported from Mongolia at a severe discount of $34.20 per MT. As the sole buyer of Mongolia's met coal production, China's steelmakers benefit from competitively priced Mongolian coal.

As the third-largest crude steel producer and the fastest-growing steelmaker worldwide, India is also a key player in the met coal story. Indian steelmakers benefit from an abundant and inexpensive supply of iron ore, resulting in steel production costs of $325 per MT, which is lower than the global average of $390 per MT, according to a member of the National Institution for Transforming India. However, the country's BOF steelmakers must import 75% of met coal required for steel production, and this exposure to met coal import prices will affect their profitability in the near future. According to Fitch Ratings, a $50 per MT increase in the met coal contract between the third quarter and fourth quarter will reduce the EBITDA of one of India's largest steelmakers by up to 35%.

Metallurgical Coal vs. Scrap Metal Prices



Source: Bloomberg.

Responding to Higher Prices

To the extent they can, BOF steelmakers are changing their mix of raw material inputs now that coal is the most expensive ingredient in the steelmaking process. Coal now amounts to 60% of total production costs, according to S&P Global Platts, when historically, iron ore has been the primary cost input. As a direct result of high met coal prices, steelmakers are using higher quality iron ore, which reduces the necessary amount of met coal. They are also exploring the option of maximizing scrap metal in their processes, which can substitute up to 25% of hot metal produced by a blast furnace in the BOF process. While the cost to produce hot metal has normally been cheaper than the price of scrap metal, met coal's recent price movement has shifted production economics toward steelmaking mixes more heavily reliant on scrap metal.

Conclusion

China has enforced policies to reduce the size of its coal mining industry, and met coal has appreciated by four times since the beginning of the year, largely in response to Chinese policies. This commodity's price rally has occurred during the second half of 2016, and BOF steelmakers globally are expected to see the impact of higher input costs on profitability through 2017. The market for met coal is still rebalancing, and the uncertainty around future changes to supply make it one of the most closely watched commodities moving into next year.

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