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International Dry Bulk Shipping Trend in China's Perspective

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Foreword

China has gradually become a big energy and resource user in the global scale into the 20th century. China's iron ore and coal imports are taking rapidly rising shares in global seaborne trade, with "China factors" getting predominant for determining the global dry bulk market. In recent years, the shipping industry has been suffering, and China's dry bulk shipping market is also changing quietly. This article analyzes the changes of China factors and the resulting impact on the global shipping market from perspectives of industrial chain structures of various cargoes.

The years-lasting economic downturn following the financial crisis led to sustained lack of consumer demand, falling major bulk prices and a rise of trade protectionism.

The global import and export trade volumes fell across the board. The trends of global seaborne shipping and global economic and trade converged with each other, with the former by a wider margin. After 2016, the global economic recovery continued, the international dry bulk shipping trade maintained steadily rising growth, and the market entered a period of long-term recovery and adjustment. The seaborn dry bulk trade volume recorded around 5.206 billion tonnes in 2018, a year-on-year increase of 2.1%, about 1.993 billion tonnes of which was contributed by China.

Global Seaborne Trade Volumes v.s. GDP Growth Rates in 2001-2018

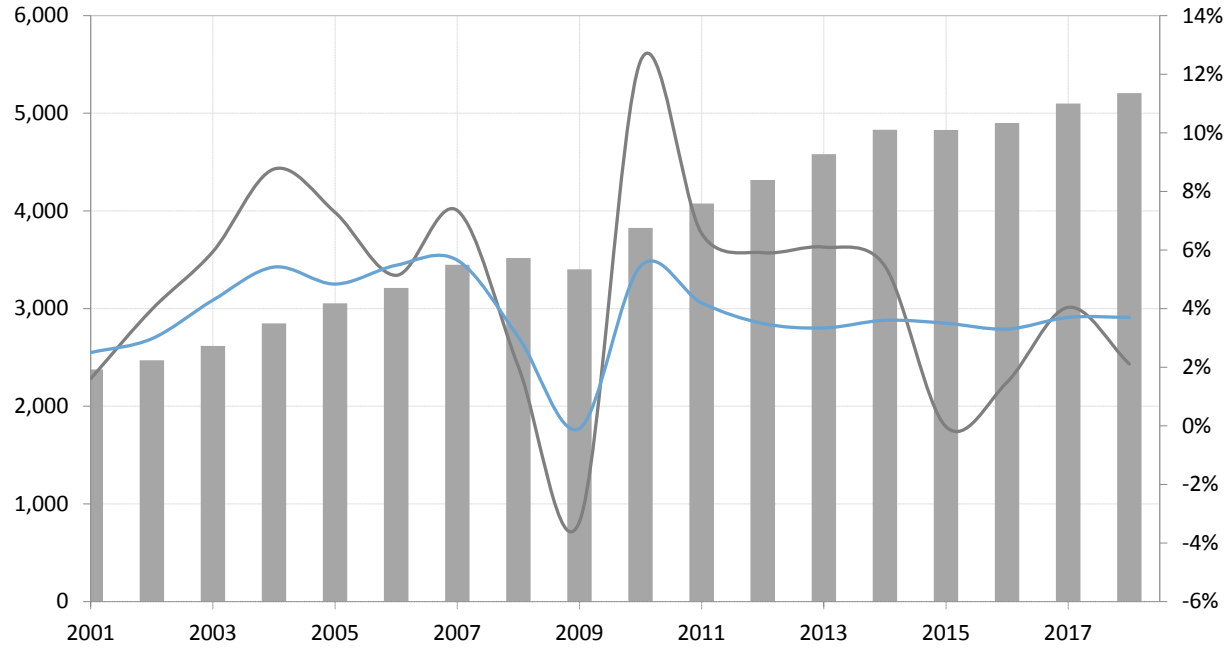

FIGURE 1 - DATA SOURCE: Clarksons, prepared by the Shanghai International Shipping Institute

In the past decade or so, China's seaborne trade volume has been taking a rising share in the global total, though the share in 2018 fell slightly to 38.2% compared with 2017. Specifically, seaborne iron ore trade volume accounted for 71% of the global total, that of coal accounted for 19.4%, and grain, 22%.

China's Seaborne Dry Bulk Trade Volumes and Shares in Global Market in 2001-2018

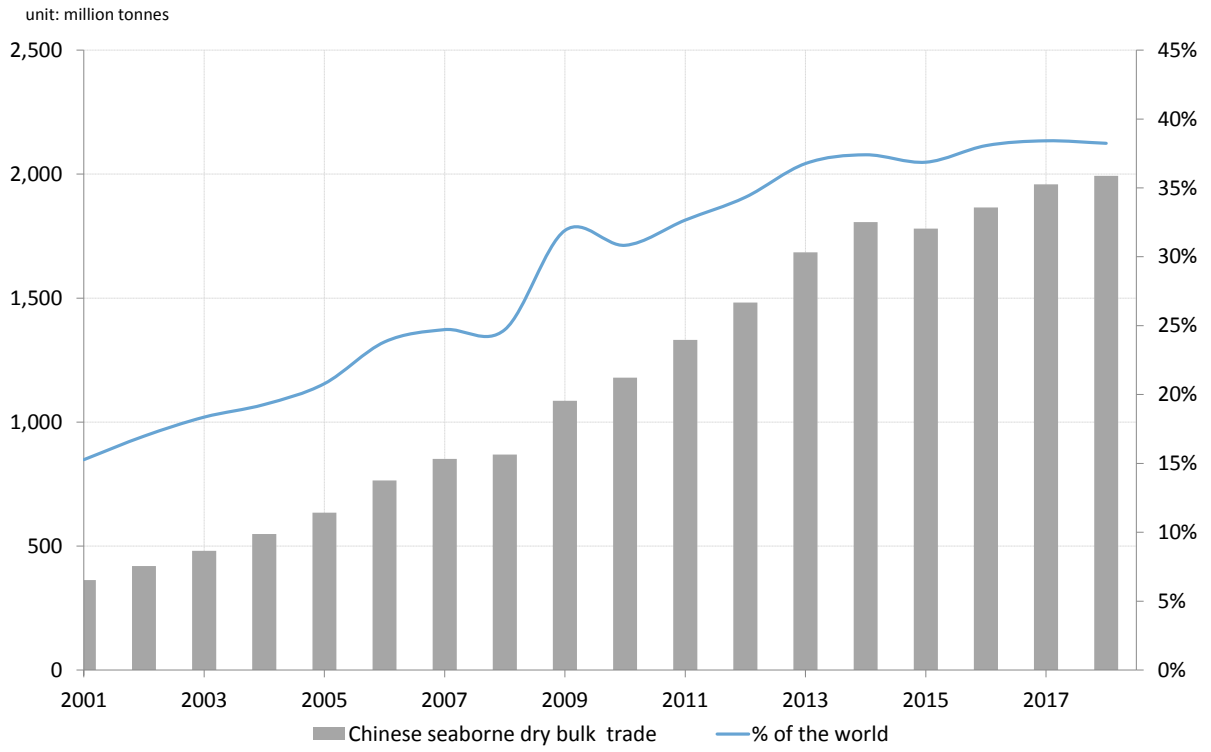

FIGURE 2 - DATA SOURCE: Clarksons, prepared by the Shanghai International Shipping Institute

Supply and demand of steel industrial chain and dry bulk trade

Steel Production

China's steel production surpassed Japan in 1996, and then recorded 152 million tonnes in 2002, making China the biggest steel producer in the world followed by the 12-nation EU. After the financial crisis, China's crude steel production growth plummeted. However, China's iron ore imports soared because of the investment boom in infrastructure projects in the country propelled by Chinese government's 4 trillion yuan of investment proposal during 2009-2010. At the end of 2010, China's manufacturing and real estate industries developed in leaps and bounds, with the floor area and newly constructed area skyrocketing year-on-year.

China's domestic steel prices also stayed buoyant, and ports' imported iron ore inventories began to climb. Since 2015, China's economy has entered a new stage, featuring dramatic slowdown in fixed asset investment growth, and the power pushing demand for steel products lost steam significantly. The "supply-side structural reform" has been carried out step by step to improve supply efficiency and supply system quality, which has greatly trimmed the crude steel production in China.

In recent years, with the closeout of the "substandard steel" capacity, the reform dividend became visible, as evidenced by the improving profit rate of the steel industry, and the climbing utilization of steel capacity. The crude steel production in 2018 reached 928 million tonnes.

Fixed Asset Investment Growth and Crude Steel Production Growth in 2001-2018

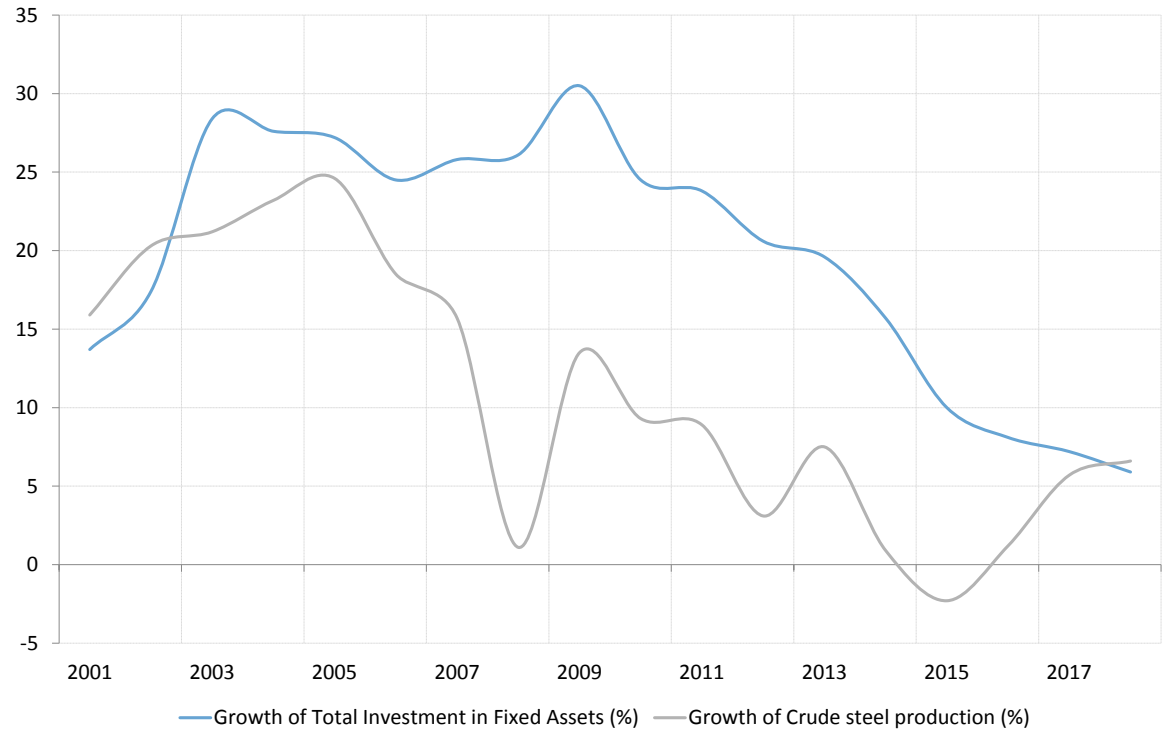

FIGURE 3 - DATA SOURCE: National Bureau of Statistics of China, prepared by the Shanghai International Shipping Institute

Since the beginning of the autumn of 2017, environmental protection production restriction has been carried out in various places in the heating season. In autumn and winter of 2017, the production limit of pig iron is about 51 million tons, and that of steel is about 50 million tons.

The productivity utilization rate of blast furnaces in 163 steel mills across the country has dropped sharply to a historical low of 71%.

With China's continued effort in implementing environmental protection and production curtailment policies and the three-year plan to fight air pollution, the production curtailment expanded to more regions and such actions for the purpose of environmental protection have become routines. However, the production curtailment in the autumn and winter of 2018/19 fell short of expectations. Overall, the 2018/19 autumn and winter curtailment cut 280,000 t, around 34%, of crude steel production on average per day. The production curtailment was eased to a certain extent. Meanwhile, steel mills have become accustomed to the curtailment pattern, with the monthly average crude steel production fluctuating up and production rebounding sharply.

The cumulative production of China's pig iron was 708 million t. from January to November 2018, up by 2.4% year-on-year. The production of crude steel was 857 million t, a substantial increase of 6.7% year-on-year, the growth rate increasing by 3.5 percentage points year-on-year and hitting a high since 2014. The steel production was 1.01 billion t., surging by 8.3% year-on-year, the growth rate rising by 7.2 percentage points.

Growth rates of pig iron and crude steel production are differentiated primarily because of the increases in scrap ratio and production of electric furnace steel. The proportion of scrap in China's converters was only 18% before 2017, and the proportion of scrap in steel mills in 2018 was already increased to around 30%.

Increased production of electric arc furnaces is another driver of China's crude steel production. Benefiting from the cost advantage of scrap steel and the increased profit per ton of steel, production of an increasing amount of electric-arc furnaces continued to be restarted or newly launched.

In 2018, newly-produced electric arc furnaces approximated 15.55 million t. Meanwhile, capacity utilization of independent electric arc furnaces was significantly improved, with the average capacity utilization rising from the 50% in 2017 to 63% in 2018. Production capacity was better unleashed and leveraged. In addition, technical transformation of old and outdated electric arc furnaces also contributed to the faster production increase.

Consumption

As the market demand unleashed from the removal of the substandard steel capacity become included in statistics, the apparent consumption of iron and steel of China in 2018 was on a constant rise, but at a lower growth rate.

The apparent consumption of China's steel from January to November 2018 was 807

million t, rising by 8.8% year-on-year, yet the growth rate being 2.5 percentage points lower year-on-year. The apparent consumption of crude steel in China increased from 170 million tonnes in 2001 to 870 million tonnes in 2018(Jan-Nov), reaching a historical high, with the domestic self-sufficiency rate exceeding 98%.

The downstream demand for steel was primarily from the construction industry which directly drove 57% of steel consumption. The industry also pushed indirect steel consumption by engineering machinery, heavy trucks and home appliances among others.

The demand of machinery industry contributed 17% of steel consumption, and the automobile industry, 9%. In this sense, the construction industry acts as a dominant steel consumer, with infrastructure and real estate being major players.

Projected Steel Consumption Structure for China in 2018 (Jan-Nov)

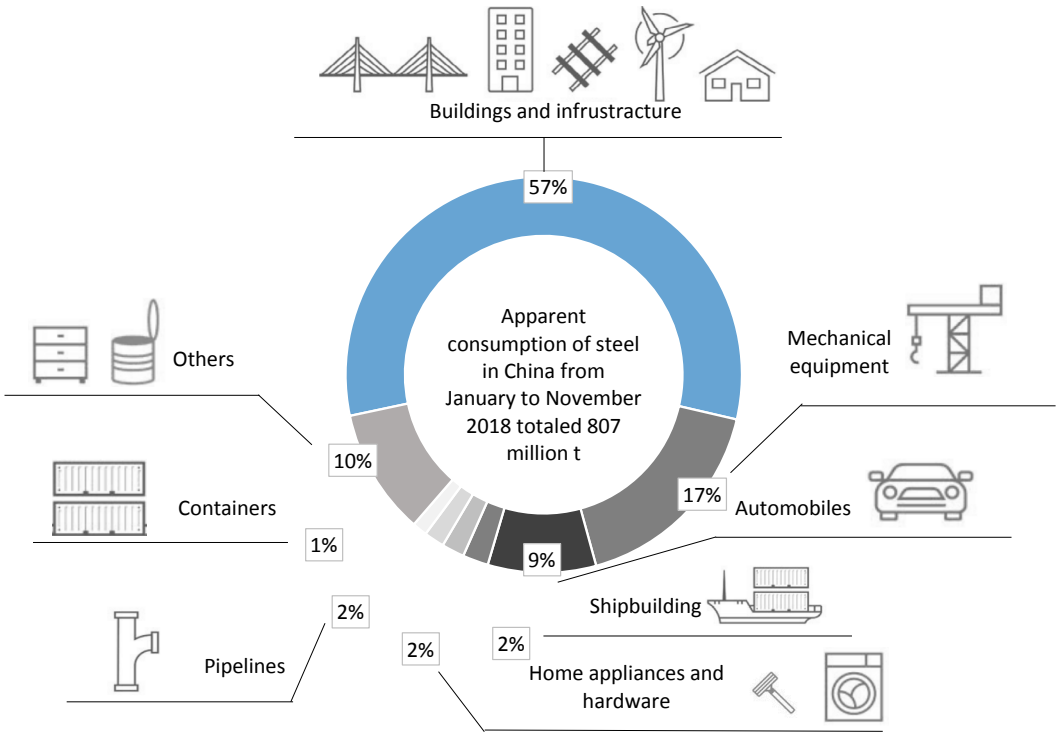

FIGURE 4 - DATA SOURCE: Mysteel.com.cn, World Steel Association (WSA), prepared by the Shanghai International Shipping Institute

Industry specific, real estate has become a top driving force for China's fixed asset investment to sustain growth in 2018. The real estate destocking campaign in 2017 produced a pronounced effect, with real estate companies pushing sales to raise cash.

In 2018, the tight financing constraints forced real estate developers to sustain liquidity through quick turnover and pre-sales, and the growth rate of new construction

projects stayed high. Subject to the impact from local liquidation of claims and fiscal expenditure declines in 2018, the PPP policies were tightened and the investment growth in fixed assets (excluding farmers) and infrastructure stepped down. The cumulative growth rate of infrastructure investment in 2018 was only 3.8%, much lower than the 19% in the same period last year. Machinery was the second largest source of end-use demand for steel, and the prosperity of development played an important role to steel consumption.

The steel consumption experienced explosive growth in 2017 thanks to the high growth of construction investment and industry updates and replacement. The steel consumption in 2018 continued the growth, yet the growth rates of production of most machinery categories fell from high levels.

Industry-specific Growth of Fixed Asset Investment

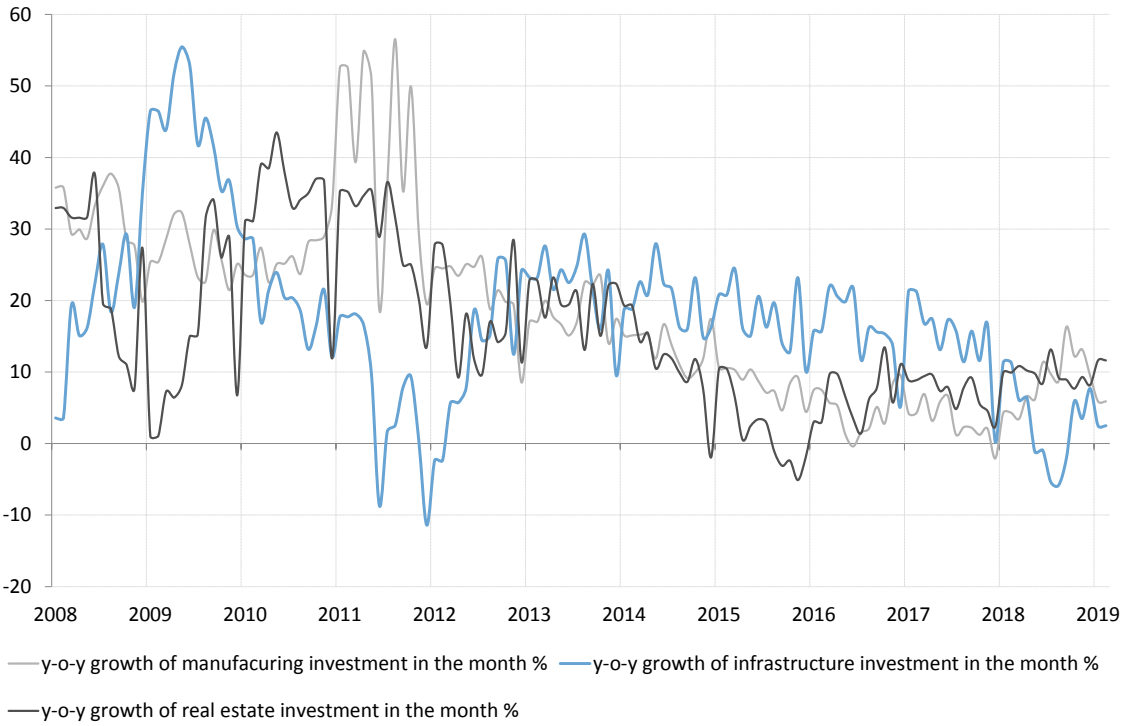

FIGURE 5 - DATA SOURCE: Northeast Securities, prepared by the Shanghai International Shipping Institute

Iron ore import and steel export

In the context of the economic growth, the rising steel production, and the low iron ore grades in domestic market, China's seaborne imports of iron ores have climbed from 91 million tonnes in 2001 to 1.058 billion tonnes in 2017. As environmental

policies got tightened and steel mill profits were substantially improved, the domestic demand for high-grade imported iron ores kept rising to improve production efficiency. Meanwhile, following the depletion of intermediate frequency furnaces, the supply of scrap steel increased, driving up the scrap ratio in steel mills and the steelmaking capacity of electric-arc furnaces. China's crude steel production increased by 6.6% in 2018, but the seaborne imports of iron ores fell by 1% year-on-year to 1.047 billion tonnes.

China's "Belt and Road" initiative is accelerating the formation of a new trade route in Eurasia and further speeding up infrastructure construction along the route. Among the current 1,000-plus ongoing projects, more than 400 are empowered by China's investment or technologies, with infrastructure projects accounting for 66%. Southeast Asia has become a key destination of investment flows for the steel industry in 2018, enabling a small rise in steel exports from China to Southeast Asia following the slump in 2017. From January to November 2018, China's steel exports to Southeast Asia totaled 22.23 million t, up by 1.7% year-on-year. Specifically, steel exports to Thailand reached 3.23 million t, a substantial increase of 10.3% year-on-year. Steel exports to Myanmar reached 1.55 million t, an increase of 5.5% year-on-year. But steel exports to Vietnam amounted to 6.46 million t, down by 10.7% year-on-year.

Steel Exports from China to Southeast Asia in the Month and y-o-y Growth in 2015-2018

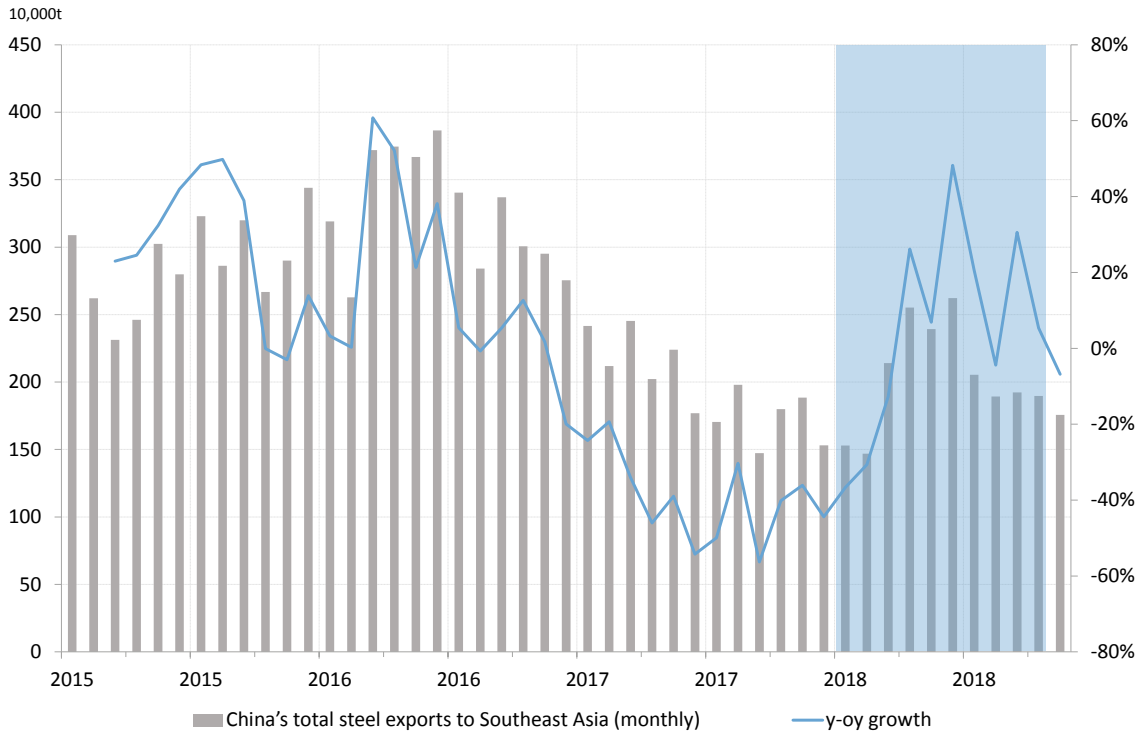

FIGURE 6 - DATA SOURCE: General Administration of Customs, prepared by the Shanghai International Shipping Institute

Chinese government removed the provisional duties for exports of rods and bars, deformed steel bars and wire rods and reduced the provisional duties for exports of some iron and steel products starting January 1, 2018, to encourage steel exports. However, the de-capacity and environmental protection moves and production curtailment in the country made the domestic steel prices stay high for a long time. As a result, enterprises were reluctant to export steel products. Adding to the situation the surging production in other countries in the world, the steel demand growth failed to cover the supply increase.

From January to November 2018, China exported 63.78 t of steel products, declining by 8.4% year-on-year. Despite the year-on-year decrease of steel exports, the decrease rate was slowed greatly, indicating the stabilizing iron and steel export trade.

Supply and demand of coal industrial chain and coal imports

China's coal was in oversupply before 2002. To enhance the competitiveness of coal in the international market and ease the production and operation difficulties in the industry, the country appropriately tuned up the export tax rebate rate for coal. After China's entry into the WTO, coal demand began to rise. Starting 2004, the government gradually lowered the export tax rebate rate and trialed export quota management. China abolished its coal import tariff in 2018, and shifted from a net coal exporter to a net importer in the next year. The period of 2002-2011 is a "golden decade" for the coal industry. In 2014, China canceled the zero import tariffs for various coal types, and restored the MFN tariff rate. Meanwhile, it put forward requirements on the quality of imported coal, encouraging the import of high-quality coal and strictly curbing the import of low-quality coal.

Starting 2017, China introduced multiple policies to implement dynamic control on coal imports. In the next year, China's coal imports totaled 280 million tonnes, a year-on-year growth rate of 3.9%. Boosted by favorable factors such as China's vigorous elimination of backward capacity, optimization of coal production structures and speedup of high-quality capacity unleashing in 2018, China's raw coal production by industries of above a designated scale continued to grow, with China's raw coal production standing at 3.68 billion tonnes, up 4.43% year-on-year.

China's Coal Imports and Exports in 2001-2018

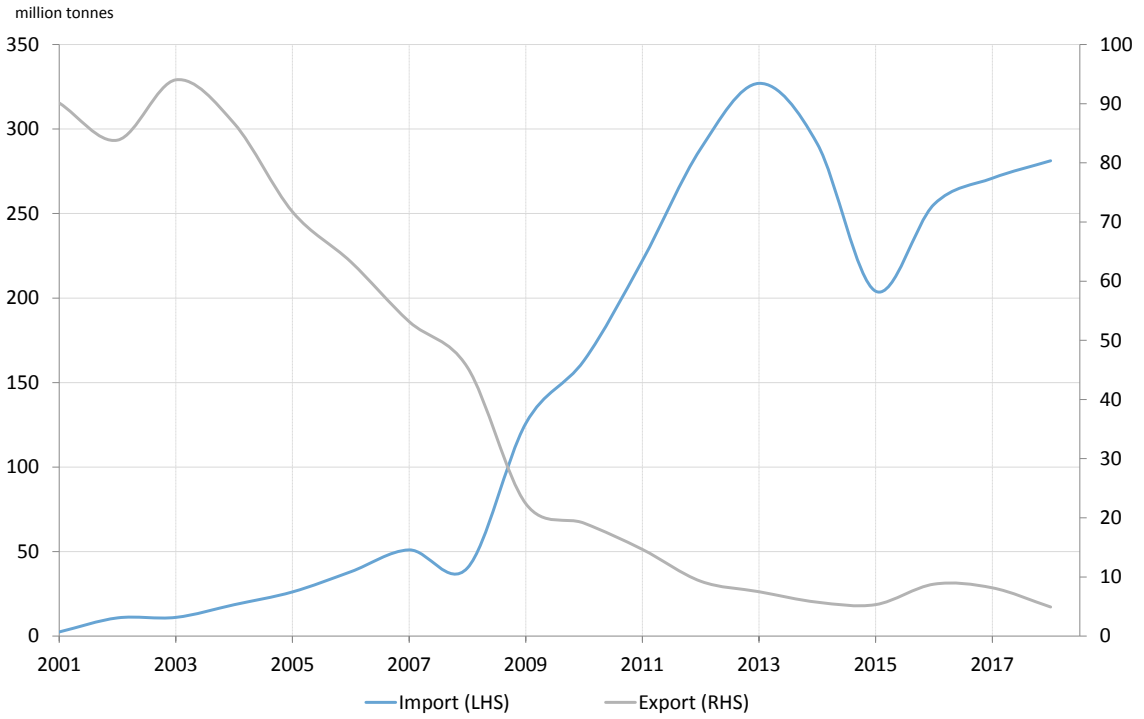

FIGURE 7 - DATA SOURCE: National Bureau of Statistics of China, General Administration of Customs of China, prepared by the Shanghai International Shipping Institute

China's imported coal primarily comes from 28 countries and regions around the world. Indonesia, Australia, Mongolia and Russia contributed 96% of coal imports to China. Indonesia was China's largest source of thermal coal imports, and Australia was China's largest source of coking coal imports.

Coal-fired power generation, steel, chemicals and building materials are four biggest users of coal in China. Despite China's promotion of coal use trimming and replacement since 2016, the energy consumption in the country in 2018 continued the growth from 2017, by virtue of the favorable macroeconomic stability and the rapid rise of power consumption across all social sectors, and witnessed positive growth for two years in a row. According to estimates, China's coal consumption edged up by 1% in 2018.

Specifically, the power industry consumed about 2.1 billion tonnes of coal in the year, the steel industry consumed 620 million tonnes, the building materials industry consumed 500 million tonnes, the chemicals industry consumed 280 million tonnes, and the other industries consumed about 60 million tonnes less of coal.

Structure of China's Coal Imports by Region in 2018

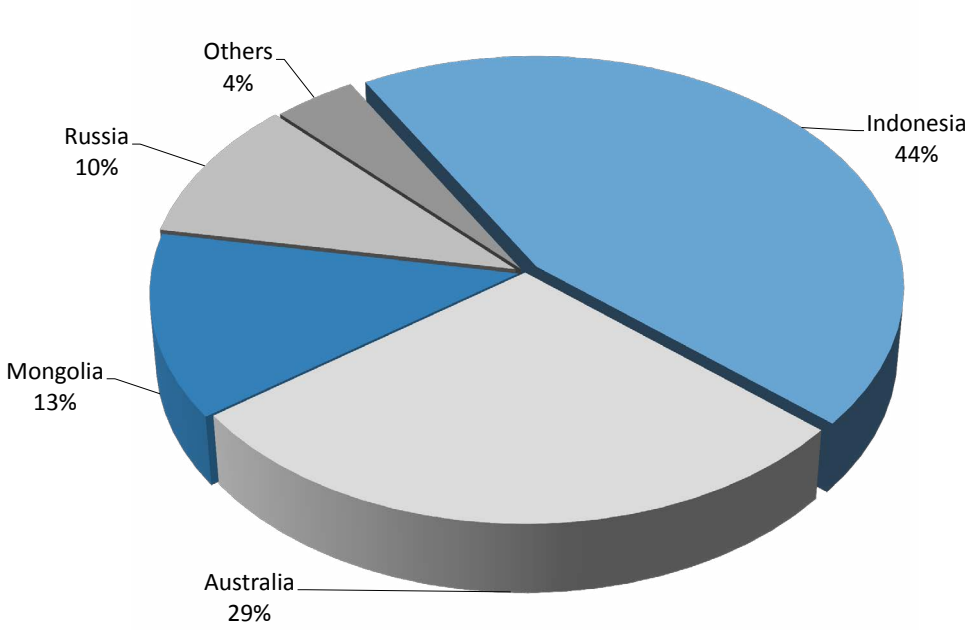

FIGURE 8 - SOURCE: Guotai Junan Securities

Industry specific, in terms of coal for power purposes, the power consumption growth across all social sectors exceeded expectations. In 2018, the total thermal power generation increased by 6.0% year-on-year, with the growth rate rising by 1.4 percentage points year-on-year. In addition, power plants adopted a high inventory strategy, and the inventory stayed high throughout the year.

The number of supply-available days with the coal inventory in the six major power plants rose from 13.8 days to 28.2 days. In the steel industry, the technical improvement brought about reduction in power coal consumption. Meanwhile, the surging utilization of electric-arc furnace capacity brought down the unit coal consumption, slowing down the coal consumption growth of the steel industry. In terms of coal for chemical purposes, as the oil price soared, more coal chemical projects were put into production, driving up coal consumption. The chemical industry consumed 212 million tonnes of coal in the first three quarters, an increase of 10.26 million tonnes, or 5.1%, year-on-year.

Grain and minor bulks imports and exports

China is a big agricultural country and a populous country with high production, high consumption and high imports of grain. Main grain imported to China include soybeans, corn, rice and wheat. Specifically, China tuned down its tariffs on imported soybeans in 1996 with no tariff quota imposed. As a result, China's soybean imports started to surge. China's soybean consumption was 111 million tonnes in 2017, with 95.53 million tonnes imported, the dependence on imports being as high as 86.2%. The United States, Brazil and Argentina were main sources of soybean imports for China. Affected by Sino-US trade frictions, the US soybean exports amounted to 47 million t, down by 12% year-on-year, and its total cereal exports were roughly the same as the previous year. China's soybean imports amounted to 88.03 million t, down by 8% year-on-year, and its total grain imports were 107 million t, down by 7% year-on-year. Major grain producers increased their soybean imports from Brazil and Russia to close up the gap. China imports 68 million tons of soybeans from Brazil, which account for 75% of the total imports. Brazil's soybean exports reached a record high of 83.6 million tons in 2018, and strong demand from the mainland of China was the main driving force.

In terms of minor bulks, aluminium materials won wide application in construction, electric vehicle manufacturing, electronics, mechanical equipment and other fields by virtue of their light weights, low prices and recyclability with the tailwind of China's energy conservation and environment protection move, and market demand continued to grow. China has become the world's biggest producer and consumer of aluminium products. The global bauxite trade flow pattern is changing. In the past two years, with China's "Belt and Road" Initiative benefiting African countries and driving the prosperity of mining development in Guinea, Guinea's production has risen sharply in 2017. Meanwhile, the "SMB-Winning Consortium", following the two-year three-phase infrastructure construction, has gradually opened up the China-Guinea bauxite transportation route. Guinea has surpassed Australia to become China's largest source of imported aluminium, taking a market share of nearly 45%.

Prospect

Iron ore: China's steel demand growth is expected to slow down as China's real estate experienced flameout, the infrastructure construction bottomed down and the manufacturing demand faced downside, if no new incentive policies are rolled out. Meanwhile, the fading marginal effects of de-capacity and production curtailment, coupled with the expected liberation of some effective capacity, may drive up supply

for steel mills and hence force down steel materials prices. The tumbling profit margins kept a majority of steel mills in operation in low inventories.

As China's environmental policies continue their assertiveness, the ratio of long-process scraps may go up, while the capacity of short-process electric furnace refineries may increase, which will negatively impact the raw materials demand for steel mills and cut down iron ore consumption.

China's demand for imported iron ores may further shrink.

Coal: China's macroeconomic stability remained unchanged and the coal balance will continue. However, Shandong and Henan among other places have introduced reduction or replacement plans for coal consumption. The import restriction policy will greatly affect the import landscape in 2019.

Grain and minor bulks: During the soybean planting period in South America, the Sino-US soybean trade is difficult to be replaced. Besides, Chinese and the US state leaders have reached a consensus after the meeting in Argentina in December. China will immediately put into practice the matters of consensus in agricultural products, energy and automobiles sectors. The Sino-US soybean trade will gain speed for recovery in the short term. In terms of bauxite, China's aluminium consumption will maintain its growing momentum, and China's investment cooperation with Guinea will gain speed. Chinese companies will successively put their bauxite and alumina investment projects in Guinea into operation, and the bauxite trade between the two sides will continue to develop at a high speed.

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