

International Shipping Market Report

(Review of 2018 and Prospect for 2019)

International Dry Bulk Shipping Market

Shanghai International Shipping Institute

January 2019

Table of Contents

INTERNATIONAL DRY BULK SHIPPING MARKET	2
1. REVIEW AND PROSPECT OF WORLD ECONOMIC AND TRADE DEVELOPMENT	2
1.1 REVIEW OF WORLD ECONOMIC AND TRADE DEVELOPMENT IN 2018.....	2
1.2 PROSPECT FOR WORLD ECONOMY AND TRADE IN 2019.....	6
2. PRODUCTION AND PRICES OF MAJOR INTERNATIONAL DRY BULK IN 2018... 7	7
2.1 IRON ORE PRODUCTION AND PRICES.....	7
2.2 COAL PRODUCTION AND PRICES	8
2.3 CEREAL PRODUCTION AND PRICES.....	10
2.4 MINOR BULKS PRODUCTION AND PRICES	11
<i>2.4.1 Production and prices of bauxite.....</i>	<i>12</i>
<i>2.4.2 Production and prices of nickel minerals.....</i>	<i>12</i>
3. REVIEW OF INTERNATIONAL DRY BULK SHIPPING MARKET IN 2018	14
3.1 INTERNATIONAL DRY BULK SHIPPING MARKET – VOLUME.....	14
3.2 REVIEW OF BULKCARRIER FLEET	16
3.3 REVIEW OF INTERNATIONAL DRY BULK SHIPPING FREIGHT MARKET	18
3.4 LEADING BULK CARRIERS AND THEIR COMPETITIVE STRATEGIES.....	18
4. CONSUMPTION OF MAJOR BULKS IN 2018	20
4.1 CONSUMPTION OF IRON ORE	20
<i>4.1.1 Steel Production</i>	<i>20</i>
<i>4.1.2 Consumption of iron and steel.....</i>	<i>22</i>
<i>4.1.3 Steel trade.....</i>	<i>23</i>
4.2 COAL CONSUMPTION	25
4.3 GRAIN CONSUMPTION.....	26
4.4 CONSUMPTION OF MINOR BULKS.....	26
5. PROSPECT FOR INTERNATIONAL DRY BULK SHIPPING MARKET IN 2019 ...	27
INTERNATIONAL SHIPPING MARKET ANALYSIS REPORT COMMISSION	29

International Dry bulk Shipping Market

Review of 2018 and Prospect for 2019

1. Review and Prospect of World Economic and Trade Development

1.1 Review of World Economic and Trade Development in 2018

◆ Global economic growth stabilized and escalated trade tensions slow down commodity trade growth

The global economy continued its moderate growth in 2018, but the growth lost some steam. The global economic growth rate in 2018 is expected to be 3.7%, which is the same as that in 2017, 0.2 percentage points lower than the projections in April. After the economic activities in developed economies peaked in the second half of 2017, the growth momentum in the first half of 2018 weakened. Growth in the euro zone and Britain was lower than expected, and world trade and industrial production growth slowed. Asian emerging economies outperformed expectations in this short-term recovery, but the negative impact of trade friction escalation was also evident.

Table 1-1 GDP Growth Rates in Major Economies/Countries in the World (Unit: %)

Economy/Country	2016	2017	2018 (P)
World Economy	3.3	3.7	3.7
Developed Economies	1.7	2.3	2.4
Emerging Markets and Developing Economies	4.4	4.7	4.7
United States	1.6	2.2	2.9
Euro Zone	1.9	2.4	2.0
Japan	1.0	1.7	1.1
China	6.7	6.9	6.6

Data source: IMF (October 2018), prepared by Shanghai International Shipping Institute

Although global commodity trade maintained strong growth in 2018, the high base number from global trade growth in 2017 created pressure on growth in 2018. In addition, the US unilateralism and protectionism escalated global trade frictions, affecting business confidence and investment decisions of enterprises. The currency market and stock market turbulence triggered by monetary tightening also interfered with trade activities to varying degrees. The World Trade

Organization (WTO) estimated that commodity trade volume in 2018 will increase by 3.9%, down by 0.8 percentage points year-on-year.

Table 1-2 World Commodity Trade Volume Growth in 2014-2018 (Unit: %)

	2014	2015	2016	2017	2018 (P)	Year-on-year
World Commodity Trade Volume	2.7	2.4	1.8	4.7	3.9	↓0.8
Exports						
Developed Economies	2.1	2.2	1.1	3.4	3.5	↑0.1
Developing Countries and Economies	2.7	1.9	2.5	5.3	4.6	↓0.7
Imports						
Developed Economies	3.3	4.3	2.1	3.0	3.2	↑0.2
Developing Countries and Economies	2.6	0.7	1.6	8.1	4.8	↓3.3

Data source: WTO (September 2018), prepared by Shanghai International Shipping Institute.

◆ **The US economic growth outperforms expectations and China's economic growth slows down steadily**

The International Monetary Fund (IMF) projected a GDP growth rate of 2.9% for the United States in 2018. Trump's expansionary fiscal policy, tax reform policy and infrastructure projects valued at trillions of US dollars are the stimulants to the current round of economic growth. The annual manufacturing purchasing manager's index (PMI) stayed high on the demarcation line, fueling a sharp rise of business confidence. The unemployment rate fell to a low since the late 1960s. Salary is increasing, and the MCSI remained at a high level since 2000. However, underlying concerns lurk in the growing US economy. The overheated economy aggravated inflation, and the Fed was forced to accelerate interest rate hikes. Trade frictions enabled US dollar to strengthen apace, generating debt risks to the high US dollar indebtedness. At the same time, large-scale tax cuts skyrocketed the government's fiscal deficit. In the fiscal year of 2018, the US federal government's fiscal deficit approximated 779 billion US dollars, a record high since 2012. The infrastructure plan was in trouble due to insufficient funds. Since Q4, various indicators of the US economy showed signs of slowdown, and the consumer confidence index declined to some extent.

The IMF projected China's GDP growth rate to be 6.6% year-on-year in 2018, and that China's national economy will run stably, with the growth rates of major economic indicators beginning to slow down but remaining reasonable. Production demand will stay stable on the whole, and employment and prices of commodities will be smooth and steady. The growth of industrial added

value and consumption will both remain on an even keel.

Table 1-3 Growth Rates of Major Economic Indicators of China

	Year-on-year Increase (%)	
	Jan - Nov 2017	Jan - Nov 2018
Total Retail Sales of Consumer Goods	10.3	9.1
Service Production Index	8.2	7.7
Industrial Added Value of Industrial Enterprises above Designated Size	6.6	6.3
Fixed-asset Investment (excluding peasant households)	7.2	5.9
Total Imports and Exports	15.6	11.1
including: exports	11.6	8.2
Imports	20.9	14.6

Data source: National Bureau of Statistics and General Administration of Customs, prepared by the Shanghai International Shipping Institute

In addition, China's supply-side structural reforms in the steel and coal industries fruited remarkable results. According to preliminary figures, China's steel industry resolved 15.31 million t of ironmaking overcapacity and 23.35 million t of steelmaking overcapacity as of December 15, 2018. Previously in 2016 and 2017, more than 120 million t of excess capacity was resolved. The upper limit of cutting 150 million t of overcapacity of the steel industry during the “13th Five-Year Plan” period has been almost completed two years ahead of schedule.

Table 1-4 Imports and Exports Dynamics of Major Dry Bulk in China in 2018

Imports and Exports	Product Name	Total (Jan to Nov)		Year-on-year Increase/Decrease (%)	
		Quantity (10,000 t)	Value(million US dollars)	Quantity	Value
Imports	Iron Ore and concentrates	97789.1	68882.5	1.3 ↓	2.8 ↓
	Copper ore and concentrates	1825.4	30250.4	16.4 ↑	26.0 ↑
	Steel	1216.0	15217.6	0.5 ↑	11.2 ↑
	Mineral fertilizers and chemical fertilizers	837.1	2366.9	1.3 ↑	12.5 ↑

	Coal and lignite coal	27118.7	23877.5	9.3↑	15.7↑
	Cereals and cereals flour	1937.5	5535.3	18.2↓	6.4↓
	Soybean	8231.2	35521.5	4.3↓	0.4↓
Exports	Rare earths	47690.0	473.2	3.6↑	25.3↑
	Steel	6377.8	55737.1	8.6↓	12.4↑
	Unwrought aluminium and aluminium products	527.0	15040.7	21.1↑	27.4↑
	Mineral fertilizers and chemical fertilizers	2182.9	6416.1	0.2↓	17.9↑
	Coal and lignite coal	462.3	733.8	37.4↓	26.1↓
	Coke and semicoke	863.6	2624.0	22.5↑	41.4↑
	Paddy and rice	181.3	751.3	60.9↑	38.0↑

Data source: General Administration of Customs of China and Mysteel data, prepared by Shanghai International Shipping Institute

◆ **India achieves high-speed economic growth and Brazil economy trends a steady course of recovery**

India welcomed robust economic growth with the receding impact of the currency exchange policies and products and services tax policies, coupled with strong growth in investment and personal consumption. According to the IMF, India's GDP growth rate was 7.3% year-on-year in 2018, up by 0.6 percentage points year-on-year, and its economic growth exceeded China's for the first time.

After Brazil experienced a critical period from negative economic growth to positive growth in 2017, the country's GDP growth rate is forecast at 1.4% in 2018, indicating a steady trend of economic recovery. Sino-US trade frictions are conducive to the export of Brazilian agricultural products and promote the cultivation and output of agricultural products. In 2018, Brazil exported a total of 82.8 million t of soybeans, hitting a historical record. Despite the gradual recovery of Brazil's economy, the country's economic growth is still lagging far behind the average economic growth of emerging markets and developing economies, posing a long and arduous task for the new government to boost the economy.

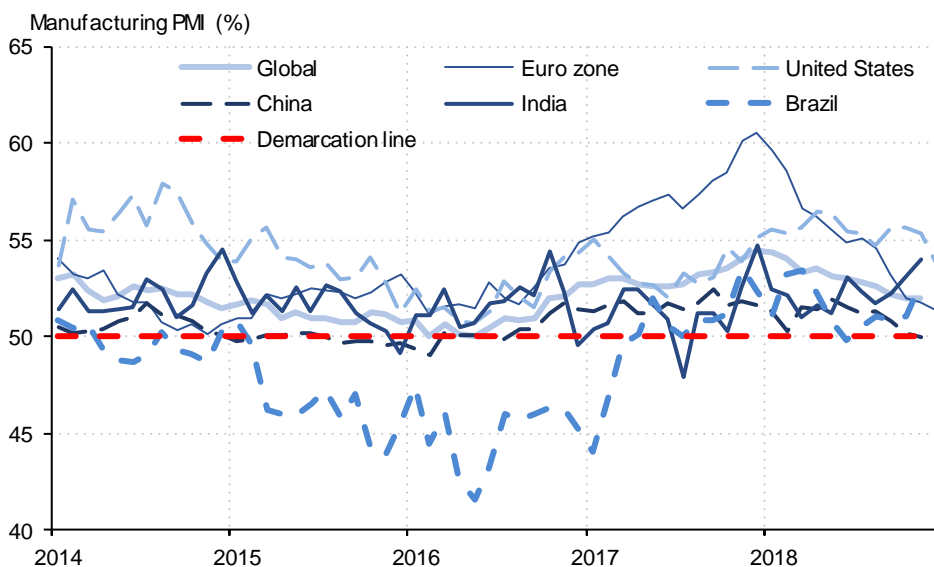


Figure 1-1 Manufacturing PMIs of Global Major Economies

Data source: Wind, prepared by Shanghai International Shipping Institute

1.2 Prospect for World Economy and Trade in 2019

The world economic environment is subject to aggravated risks and challenges in 2019. The risks primarily come from the increasing trade protectionism, the escalated political and trade tensions and the aggravated uncertainties and threats in economic policies. The “anti-globalization” trade and investment policies as well as influences from macro economic policies such as the Fed rate rises and tax cuts shook the global business and consumer confidence. The International Monetary Fund (IMF) estimated that the world economy may grow by 3.7% in 2019, running flat with 2018. The World Trade Organization estimated that global trade volume will increase by 3.7% in 2019, down by 0.2 percentage points from 2018.

Table 1-5 Projections of World Economy in 2019 by Major Organizations (Unit: %)

Organization	Developed Economies	Developing Economies	World Economy
IMF	2.1	4.7	3.7
World Bank	2.0	4.2	2.9

Data source: IMF and World Bank, prepared by Shanghai International Shipping Institute

2. Production and Prices of Major International Dry Bulk in 2018

2.1 Iron Ore Production and Prices

1) Global iron ore miners become more concentrated and supply of high-grade ore on a rise

According to Mysteel statistics, the gross output of global iron ore in 2018 was 2.21 billion t, down by 4.7 million t year-on-year. The cumulative output of iron ore in China from January to November 2018 was 695 million t, down by 3.3% year-on-year. The output of five major international miners increased by about 53.59 million t, primarily contributed by high-grade ore fines. But medium-sized and small miners witnessed obvious reduction of production. Concentration of mineral resources was on a constant rise. Australia's high-cost miners faced cost pressures, and some miners at marginal cost such as Cliffs and Atlas were forced to cut output or resort to acquisitions. In terms of the grades of ore with expanded production, (1) Vale: The average grade of the S11D Mine that was put into operation in 2016 was as high as 66.5%, and 98% of its production goal was already fulfilled in Q3 2018. Its production is expected to continue the rise. (2) RioTinto: The Koodaideri Mine, which is scheduled to be put into production in 2021, is 62.2%. (3) BHP Billiton: The South Flank Mine to replace the Yandi Mine has an iron ore grade of 63% and is expected to go into production in 2021. (4) FMG: The average grade of the Eliwana high-grade mine, which is expected to enter mass production in 2021, is 60%. It is expected that the average grade of iron ore produced by the four major miners will continue to increase.

Table 2-1 Output of Major Miniers (million t)

Unit: million t	Q1 2018	Q2 2018	Q3 2018	Q4 target	Estimated output for 2018	Increase/Decrease
VALE	81.95	96.76	104.85	106.45	390.00	23.48
Rio Tinto	83.12	85.50	82.50	84.88	336.00	6.20
BHP	67.05	72.15	69.34	69.47	278.00	10.21
FMG	39.10	44.10	43.87	42.93	170.00	1.20
ROY HILL	10.30	14.30	13.50	16.90	55.00	12.50
Atlas	2.10	2.50	2.00	2.00	8.50	-4.20
Anglo American	13.90	11.70	10.50	10.90	4.70	-14.80

Data source: Mysteel.com, prepared by Shanghai International Shipping Institute

2) Port inventories fall and trends of raw materials and steel prices convergent

In 2018, the inventories of China's imported iron ore in ports fell from a high level. As of the end of 2018, the total inventory was 142 million t, a decline of 7.67 million t from the 149 million t at the beginning of the year. Overall, iron ore prices fluctuated in a narrow range in 2018 and converge with the trend of steel prices. At the beginning of the year, iron ore prices fell from a high level to the yearly low, followed by a rise because of the marginal cost increase from surging shipping freights and a sharp devaluation of yuan. At the end of the year, steel prices fell apace, raw material demand slowed down, and iron ore prices fell slightly.

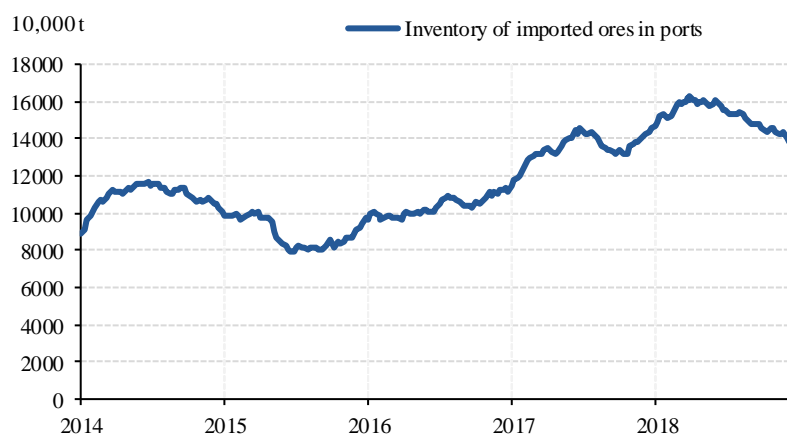


Figure 2-1 Inventories of Imported Iron ore in Ports in China

Data source: Mysteel data, prepared by Shanghai International Shipping Institute

2.2 Coal Production and Prices

1) China and India enjoy faster growth in coal production against global slowdown of coal production growth

Among the several major coal producers, China enjoyed continued growth in industrial raw coal production in miners of a designated scale or above thanks to its vigorous effort in weeding out backward production capacity, optimizing coal production structures and accelerating the release of high-quality production capacity. China's raw coal production from January to November was 3.21 billion t, an increase of 5.4% year-on-year. India continued to enhance domestic coal production. From January to November, its national coal production approximated 682 million t, up by 7.6% year-on-year. Since the shale gas revolution, much of coal for consumption in the United States was replaced by low-cost natural gas, shrinking domestic demand for electricity-coal. According to the US Energy Information Administration, the coal production in the United States

from January to November was 692 million short tons, down by 2.7% year-on-year. The annual production is estimated at 756 million short tons, down slightly by 2.4% year-on-year.

Table 2-2 Production of Major Coal Producers in the World from January to November 2018

Serial No.	Country	2017	Year-on-year Increase (%)	Jan - Nov 2018	Year-on-year Increase (%)	Note
		(100 million t)		(100 million t)		
	Global	75.49	3.1			(IEA data)
1	China	35.20	3.3	32.10	5.4	
2	India	7.16	3.6	6.82	7.6	
3	United States	7.75	6.3	6.92	-2.7	Unit: short ton
4	Australia	5.58	-1.6	4.29	2.3	Q1 - Q3
5	Indonesia	4.61	1.3	4.56		As of December 28, 2018
6	Russia	4.08	6.3	3.94	5.9	
7	South Africa	2.54	1.0	-	-	
8	Germany	1.75	-0.2	-	-	Coal mine closed and production reduced
9	Poland	1.27	-3.0	1.13	-3.8	
10	Kazakhstan	1.11	7.8	1.06	4.8	

Data source: China Coal Economics Research Association, prepared by Shanghai International Shipping Institute

2) Global coal demand lifts and coal price fluctuates high

Due to the improving global economic performance, global coal demand was lifted in 2018 driven by the accelerated pace of infrastructure construction and industrial production in Southeast Asia and India.

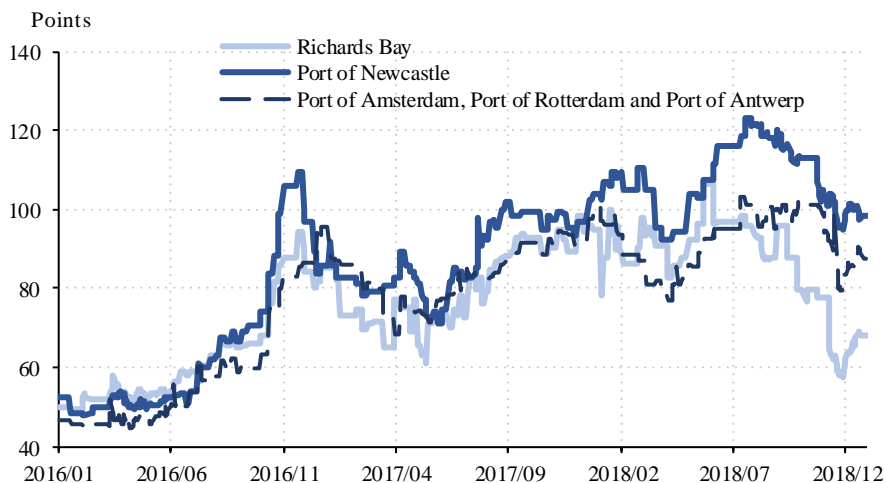


Figure 2-2 International Thermal Coal Price Index in 2015-2018

Data source: Mysteel data, prepared by Shanghai International Shipping Institute

2.3 Cereal Production and Prices

1) Global production of principal cereals¹edges down and soybean supply underperforms expectations due to climate factors

According to the supply and demand estimates report by the United States Department of Agriculture (USDA) in December, global cereal production in 2017/18 (October to September of the next year) was estimated at 2.62 billion t, a decrease of 45.61 million t from the previous year. Specifically, wheat production was expected to run flat with the previous year at 763 million t, the coarse food grain ²production may edge down by 4.0% to 1.36 billion t, of which corn production is expected to reach 1.08 billion t, a year-on-year decrease of 46.23 million t or 4.1%.

Global soybean production in 2017/18 is expected to fall by about 9.5 million t year-on-year, with the drought in Argentina and Uruguay bringing down soybean production by more than the production increase in Brazil, the United States and other countries. Estimated soybean production for the year 2018/19 increased significantly. According to the supply and demand estimates report by the USDA in December, the global soybean production was expected to reach 369 million t, up by 8.8% year-on-year, with the United States, Brazil and Argentina contributing nearly 82%. Specifically, Argentina was expected to resume soybean production growth to 55.5 million t, the US soybean production was expected to rise steadily to 125 million t, and Brazil's soybean production

¹Cereals include wheat, coarse food grains and milled rice.

²Coarse food grains include corn, sorghum, barley, oats, rye, millet and mixed cereals.

was expected to reach 122 million t, an increase of 1.4% year-on-year.

Table 2-3 Increases of Wheat and Corn Production in Major Producers

Unit: million t		2018/19 Production	2017/18 Production	Increase/Decrease
Wheat	Total	733.41	763.06	-29.65↓
	China	132.50	134.33	-1.83↓
	European Union	137.60	151.26	-13.66↓
	United States	51.29	47.35	3.94↑
	Canada	31.80	29.98	1.82↑
	Argentina	19.50	18.50	1.00↑
	Australia	17.00	21.30	-4.30↓
	Other countries	343.72	360.34	-16.62↓
Corn	Total	1099.91	1076.18	23.73↑
	China	256.00	259.07	-3.07↓
	United States	371.52	370.96	0.56↑
	Argentina	42.50	32.00	10.50↑
	Mexico	26.00	27.45	-1.45↓
	Brazil	94.50	82.00	12.50↑
	European Union	60.40	62.10	-1.70↓
	Other countries	248.99	242.60	6.39↑

Data source: The U.S. Department of Agriculture, prepared by Shanghai International Shipping Institute

2) International inventories of cereals edge down from a high level and soybean prices vary among regions

According to the December issue of the Cereal Supply and Demand Brief released by the Food and Agriculture Organization of the United Nations, the 2017/18 ending inventories may soar to 815 million t, and the global cereal inventories may fall to 762 million t in 2018/19. Specifically, coarse food grain inventories fell the most by 12.4% year-on-year. From May to September 2018, the volatile trade frictions between China and the United States, coupled with the increased soybean supply from South America, led to a sharp rise in Brazil's soybean prices, and the spot prices of the US soybeans continued to fall. South American soybeans have been in the growing season since October, and the supply of soybeans in the Chinese market has been tight, allowing a rise in the US soybean prices.

2.4 Minor Bulks Production and Prices

2.4.1 Production and prices of bauxite

◆ Global bauxite production keeps climbing, with that in Guinea on rapid rise

Global bauxite production was 300 million t in 2017, a significant increase of 9.1% from the 275 million t in 2016. Global bauxite production is expected to continue the growth at a high level in 2018 driven by favorable factors such as the launch of new bauxite projects in Australia, the expansion of bauxite exports and production enhancement in Indonesia, as well as the growth of existing bauxite projects in Guinea.

According to the statistics of the Ministry of Geology and Mineral Resources of Guinea, from 2010 to July 2018, Guinea produced a total of 220 million t of bauxite, and the production increased by 278% during the period from 2010 to 2017. Guinea's rich mineral reserves and low mining costs have attracted more and more companies for investment and exploitation, intensifying the mineral resources competition. Meanwhile, the three bauxite suppliers of CBG, Rusal and SMB will continue to expand production to defend their market shares.

Table 2-4 Bauxite Production in Guinea in 2010-July 2018

Unit: 10,000 t	CBG		Rusal Kindia		Rusal Dian-Dian		SMB		CDM		Total	
	Yield	Exports	Yield	Exports	Yield	Exports	Yield	Exports	Yield	Exports	Yield	Exports
2010	1367	1260									1367	1260
2011	1455	1294									1455	1294
2012	1613	1451									1613	1451
2013	1661	1517									1661	1517
2014	1692	1524	337	337							2029	1861
2015	1644	1533	360	360			87	80			2090	1972
2016	1771	1544	354	335			1118	1067			3242	2945
2017	1750	1451	312	307			2956	2956	151	150	5170	4864
Jan-July 2018	872	813	254	257	57.7	22.8	1967	1967	401	401	3553	3462
Total	13800	12400	1618	1596	57.7	22.8	6128	6070	552	551	22200	20600

Data source: Ministry of Geology and Mineral Resources of Guinea and the Commercial Section of Chinese Embassy in Guinea, prepared by Shanghai International Shipping Institute

2.4.2 Production and prices of nickel minerals

◆ Nickel mineral supply increases with nickel mineral prices falling from a high level

Global nickel mineral ³production was 2.1 million t in 2017, an increase of 10,000 t over 2016, achieving positive growth for the first time since 2014. Specifically, the production of six major nickel mineral producers including Indonesia and the Philippines accounted for about 70% of the global total, and the supply of nickel minerals was relatively concentrated. Indonesia reclaimed the throne of the world's largest nickel mineral producer in 2017, with a total production of 400,000 t, primarily creditable to the government's lift of ban on nickel mineral export in early 2017. The nickel mineral production in the Philippines in 2017 shrank to 230,000 t, down by 33.7% year-on-year. From January to October 2018, the global nickel mineral production totaled 1.92 million t, an increase of 227,000 t year-on-year.

Nickel prices rose first and then fell in 2018, presenting a reversed "V" shape on the whole. The nickel price in London rose strongly in the first half of the year. In June, it reached the highest price of 15,687 US dollars/t since 2015 in June. In the second half of the year, London's nickel prices stepped down and approached the price level at the beginning of the year because of multiple bearish factors such as the enhanced macro uncertainty, the new energy estimate revisions from changes in China's new energy vehicle subsidy policies, and the advancement of new ferronickel projects.

³In this article, nickel minerals are calculated by the amount of metal, and nickel ores are calculated by the amount of ore.

3. Review of International Dry Bulk Shipping Market in 2018

3.1 International Dry Bulk Shipping Market – Volume

The global seaborne dry bulk trade volumes in 2018 was about 5.21 billion t, up by 2.3% year-on-year, the growth rate declining to some extent. Specifically, iron ore accounted for 28.2% with 1.47 billion t, coal accounted for 23.8% with 1.24 billion t, cereals accounted for 9.3% with 486 million t, and minor bulks accounted for 38.6% with 2.01 billion t.

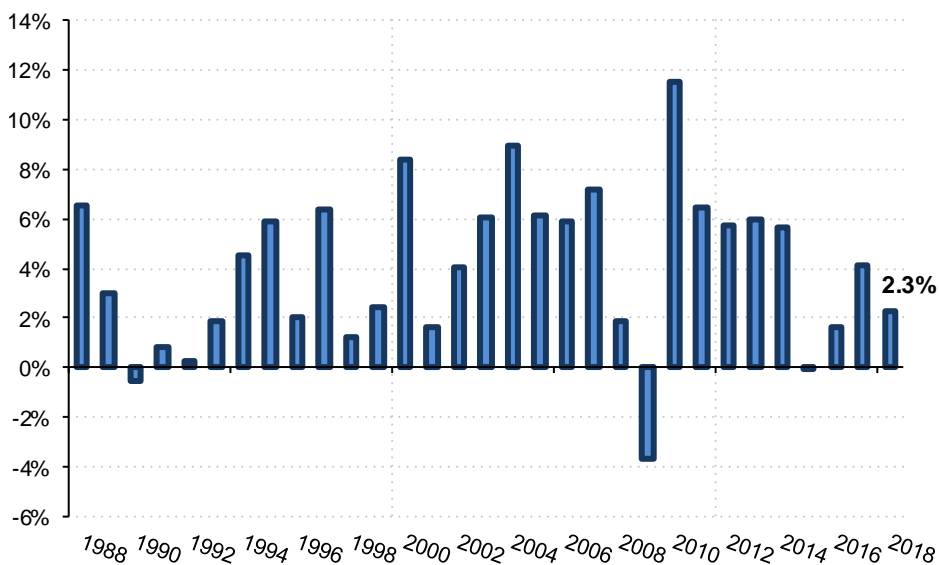


Figure 3-1 Global seaborne dry bulk trade growth in 1987-2018

Data source: Clarksons, prepared by Shanghai International Shipping Institute

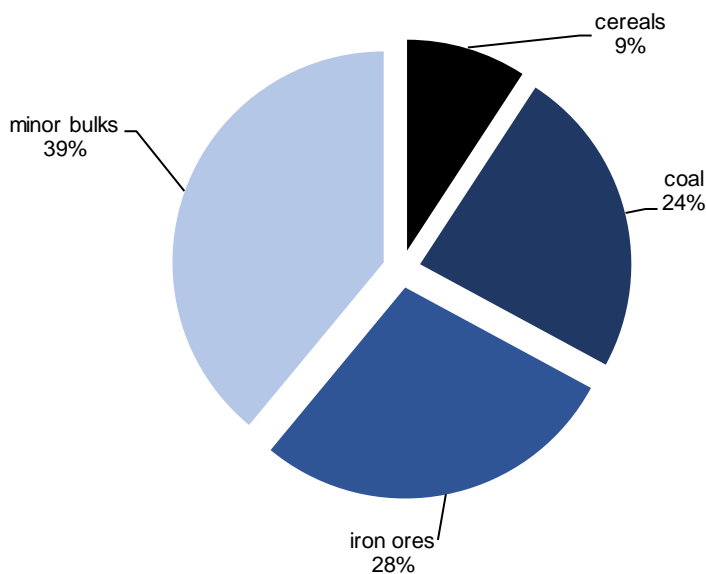


Figure 3-2 Shares of International Dry Bulk in 2018

Data source: Clarksons, prepared by Shanghai International Shipping Institute

The global seaborne iron ore trade volume was 1.47 billion t in 2018, running flat with 2017. Chinese mainland imported 1.05 billion t of iron ore, down by 1% year-on-year. The seaborne exports of iron ore of India was slashed by 41% to 17.1 million t, while its seaborne imports soared by 110% to 14.5 million t.

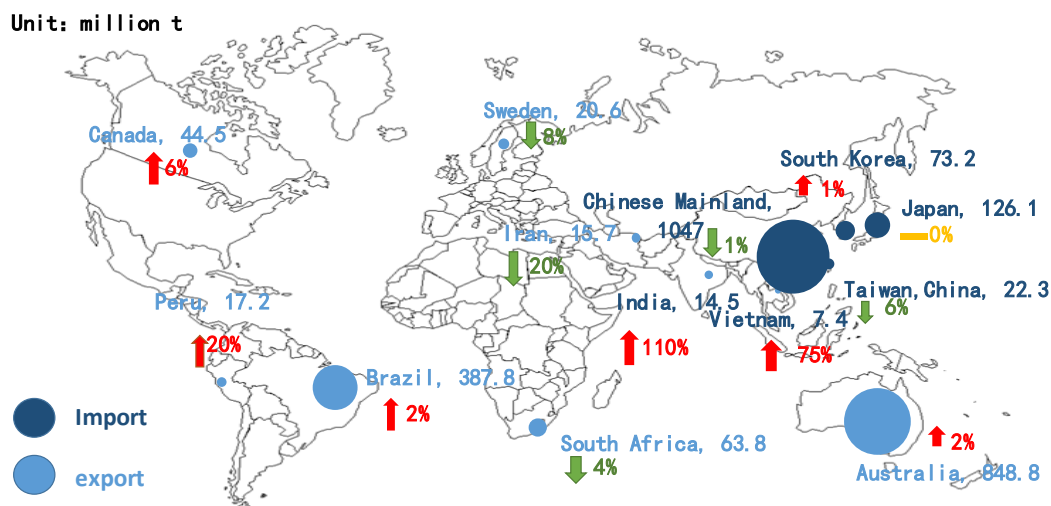


Figure 3-3 Seaborne Trade Volumes of Global Major Seaborne Iron Ore Trading Economies in 2018

Data source: Clarksons, prepared by Shanghai International Shipping Institute

The global seaborne coal trade volume in 2018 was 1.24 billion t, a year-on-year rise of 3.3%. The seaborne trade volume of steam coal totaled 976 million t, an increase of 2.4% year-on-year. Asia was the biggest driver of steam coal imports growth. The Trump administration relaxed its control over coal and other industries. From January to October, the US coal exports totaled 97.84 million short tons, an increase of 19.94 million short tons, or 25.6%, year-on-year.

Table 3-1 Changes in Destinations (Countries/Regions) of Coal Exports from the United States

Country and Region	Q1 - Q3 2018	Q1 - Q3 2017	Change (%)
North America	897	731	23
South America	775	640	21
Europe	3,192	2,840	12
Asia	3,175	2,330	36
including: China	247	280	-12
India	1,372	712	93
Japan	740	565	31
South Korea	751	717	5
Others	677	333	7
Total	8,716	6,875	27

Data source: the US Energy Information Administration, prepared by Shanghai International Shipping Institute

The global seaborne trade volume of cereals in 2018 was 486 million t, a year-on-year rise of 1.7%. 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 87.05 million t, down by 8% year-on-year, and its total cereal imports were 107 million t, down by 7% year-on-year. As a result of the severe drought, Australia's total cereal exports were 21.7 million t, down by 25% year-on-year, and Argentina's soybean exports plummeted by 60% to 3 million t, while Argentina's cereal imports were 7 million t, a sharp rise by 269%.

The global seaborne trade volume of minor bulks in 2018 was 2.01 billion t, an increase of 3.6% year-on-year. Cargo type specific, the shipping volume of sugar was 55.4 million t, down by 7% year-on-year, that of fertilizers was 175 million t, up by 3% year-on-year, that of bauxite was 115 million t, up by 14% year-on-year, and that of nickel minerals was 55.3 million t, up by 25% year-on-year. From January to November 2018, China's bauxite imports totaled 75.49 million t, an increase of 22.6% year-on-year and imported nickel ores totaled 44.63 million t, a surge of 37% year-on-year.

3.2 Review of Bulkcarrier Fleet

◆ Bulkcarrier Fleet grows by a narrow margin and Capesize fleet welcome significantly faster growth

The bulkcarrier fleet grew by a narrow margin in 2018 and Capesize fleet welcomed significantly faster growth in shipping capacity. The bulkcarrier fleet stood at 11,351 vessels of 841 million dwt, 2.9% higher than at the same point a year earlier in dwt terms.

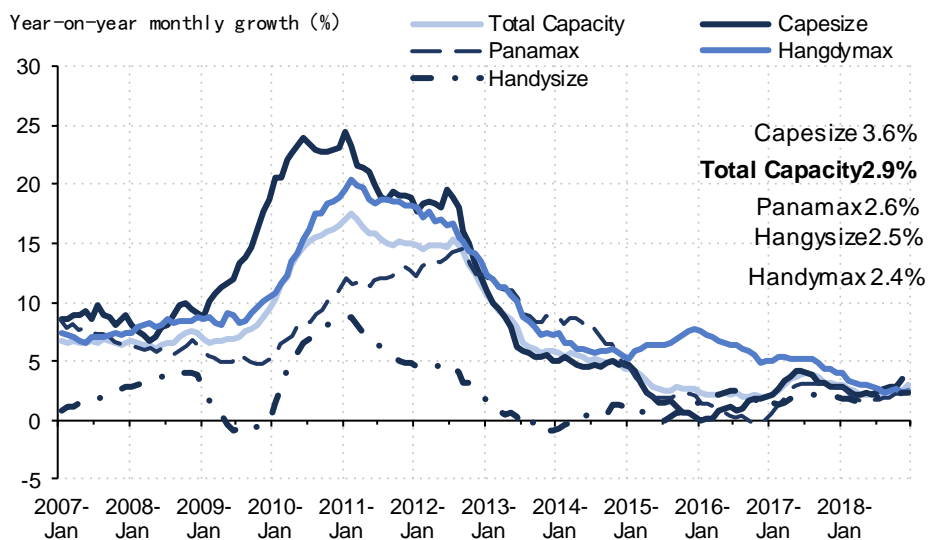


Figure 3-4 Growth Structure of Global Dry-bulk Cargo Shipping Capacity (DWT) in 2007-2018

Data source: Clarksons, prepared by Shanghai International Shipping Institute

In the year, the number of contracting orders was 279 of 30.88 million DWT, a year-on-year decrease of 24.7%. With the structural demolition drawing to a close, the demolition fleet continued to slump to 4.04 million DWT, down by 72% year-on-year. The orderbook volume picked up, totaling 88.52 million DWT, a year-on-year increase of 0.6%. Specifically, the orderbook capacity of Capesize ships rose to accounting for 14.9% of the existing capacity, much higher than the 4.1% of Handysize ships.

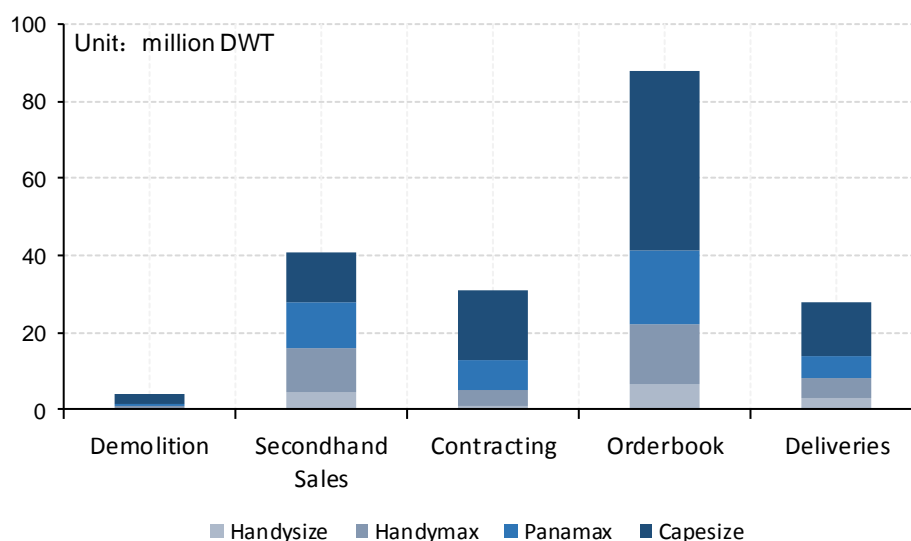


Figure 3-5 Current Values of Capacity Indicators for Different Types of Dry bulk Ships in 2018

Data source: Clarksons, prepared by Shanghai International Shipping Institute

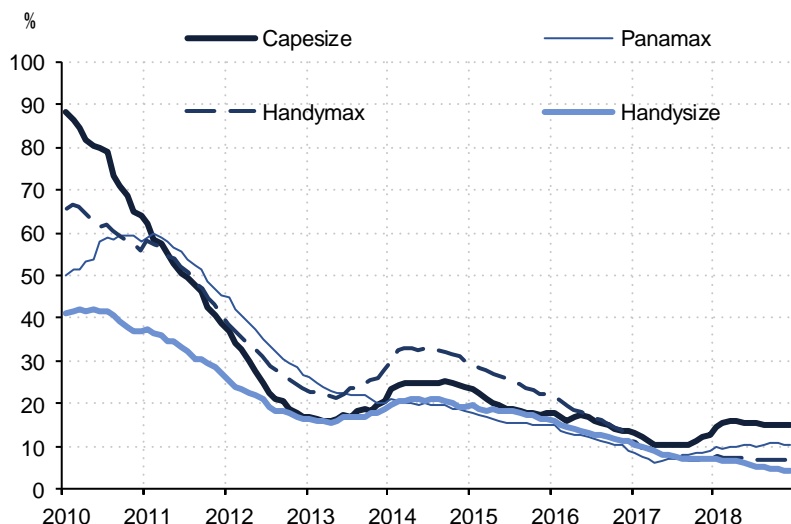


Figure 3-6 Orderbook % Fleet for Four Ship Types in Current Capacity

Data source: Clarksons, prepared by Shanghai International Shipping Institute

3.3 Review of International Dry Bulk Shipping Freight Market

◆ Market remains in modulating recovery in the long term

BDI in 2018 was averaged at 1,353 points, rising by 18.1% year-on-year. In the long term, the average BDI value was recovering slowly, and the freight rates in the market remained in modulating recovery and growth.

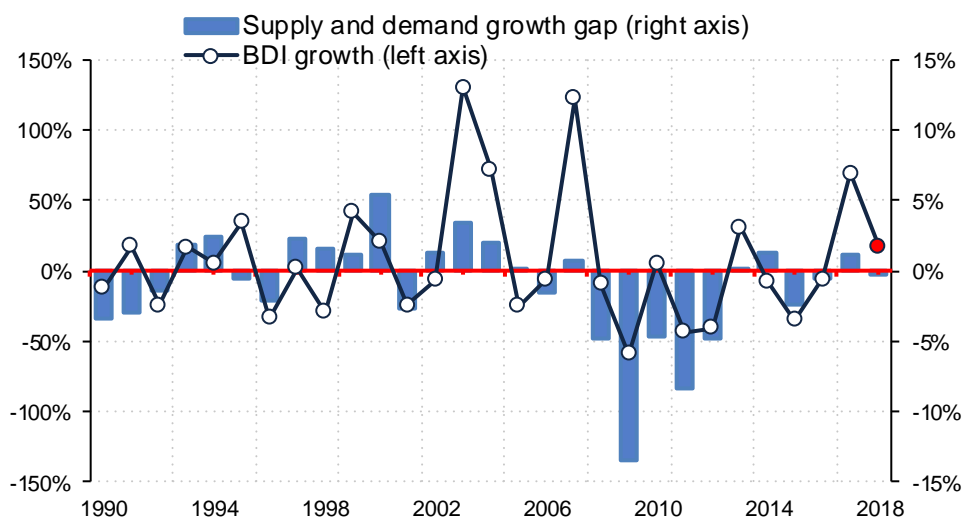


Figure 3-7 BDI Growth and Supply-Demand Growth Differences in 1990-2018

Data source: Clarksons, prepared by Shanghai International Shipping Institute

Note: Supply-demand growth gap = seaborne dry bulk trade volume growth - dry bulk fleet capacity growth.

3.4 Leading Bulk Carriers and Their Competitive Strategies

◆ Capesize fleet enter low-concentration market of competition

As of December 2018, the CR₈ (the total market share of the eight largest bulk carriers) of capacity operated in the Capesize fleet market reached 23.7% (in DWT), indicating that Capesize ships had entered a low-concentration market of competition.

To hold the costs and benefits of both parties of chartering stable, long-term chartering agreements between shipowners and large cargo owners gained increasing predominance. At present, Vale used a total of about 300 ships to transport iron ore, with as high as 70% transported through long-term cooperation agreements. In addition, to improve ship operation efficiency and stabilize revenue, the proportion of joint operation pools and long-term charters was constantly rising, and the proportion of ships in the traditional spot market plummeted.

Table 3-2 Top 8 Ship Owners by Capesize Ship Capacity Operated in 2018

Rankings	Ship Owner	Capacity Operated (ships)	Tonnage (10,000 DWT)
1	COSCO Shipping Bulk Co Limited	76	1765.18
2	Berge Bulk	45	1082.43
3	Angelicoussis Group	52	916.84
4	Fredriksen Group	48	869.21
CR₄		12.8%	13.8%
5	Nippon Yusen Kaisha	30	846.92
6	China Merchants Group	43	839.38
7	K-Line	41	815.76
8	Polaris Shipping Co	30	794.14
CR₈		21.1%	23.7%
Total Capesize ships		1728	33493

Data source: Clarksons, prepared by Shanghai International Shipping Institute

◆ **Quasi-liners shipping enjoys significant performance and active business expansion in overseas markets**

Since COSCO Shipping Bulk Co Limited signed the first quasi-liner shipping agreement for cereals on September 27, 2016, the implementation of the quasi-liner shipping model for domestic trade has fruited significant results. After initiating the quasi-liner shipping model for domestic trade, the company worked with China Resources Power Holdings to open the first quasi-liner shipping route for foreign trade, namely the imported coal shipping quasi-liner route from Indonesia to Guangdong. Compared with the quasi-liners for domestic trade, quasi-liners for foreign trade

involve more complicated businesses and more precise management and control over logistics processes. Based on the original service concepts, the company launched two-way quasi-liners at the end of Q2 2018, in an aim to improve the level of standard operation and management and deepen the upstream-downstream cooperation.

◆ **Binding of interest of “large ship owners – large clients” gathers speed as large ore carriers and new ship types emerge**

Vale adjusted its development strategy in 2016 and signed COAs to charter ultra-large ore carriers in the market to transport iron ore. Shipping enterprises placed shipbuilding orders targeting Vale’s iron ore shipping projects. In the second-generation Valemax orders, 30 ships were ordered by Chinese shipowners, and China Merchants Energy Shipping (CMES) as well as China Ore Shipping and ICBC Financial Leasing under COSCO Shipping Holdings ordered 10 ships each.

Vale continued to seek capacity expansion from September 2017 and will order at least 30 third-generation VLOCs. A third-generation VLOC is not a 400,000-DWT-class Valemax, but a 325,000-DWT-class one. Vale calls it Guaibamax (Guaiba is a port in southern Brazil which can berth 325,000-DWT ships at the maximum. Guaibamax ships are loaded at the Port of Guaiba). Guaibamax ship is also a VLOC, though with a smaller DWT than Valemax, but has more flexibility. At present, almost all ports in China can berth Guaibamax ships, but Valemax ships are only accepted at four ports: Dalian Port, Dongjiakou Port Area of Qingdao Port, Caofeidian Port and Shulang Lake Port.

4. Consumption of Major Bulks in 2018

4.1 Consumption of Iron ore

4.1.1 Steel Production

◆ **Global crude steel production hits historical high and China’s production curtailment in the heating season falls short of expectations**

The crude steel production of 64 major steel producers in the world totaled 1.65 billion t from January to November 2018, an increase of 7.3% year-on-year in the cumulative term, demonstrating a modest increase in the year-on-year growth rate. According to the World Steel Association, the global crude steel production in 2018 will reach a record high of 1.8 billion t, with China and India being strong drivers. China's crude steel production reached 860 million t, a substantial increase of

6.7% year-on-year, and India's crude steel production was 96.92 million t, an increase of 4.9% year-on-year.

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.

◆ **Growth rates of pig iron and crude steel production differentiated and electric-arc furnaces production restarted and newly launched**

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.

◆ **India becomes the world's second largest steel producer, and Vietnam achieves high-**

speed growth of iron and steel production

India's crude steel production exceeded Japan's for the first time in 2018, becoming the world's second largest steel producer after China. From January to November, India's crude steel production totaled 96.92 million t, registering a year-on-year growth rate of 4.9% and higher than Japan's 95.86 million t (with the year-on-year growth rate being -0.1%).

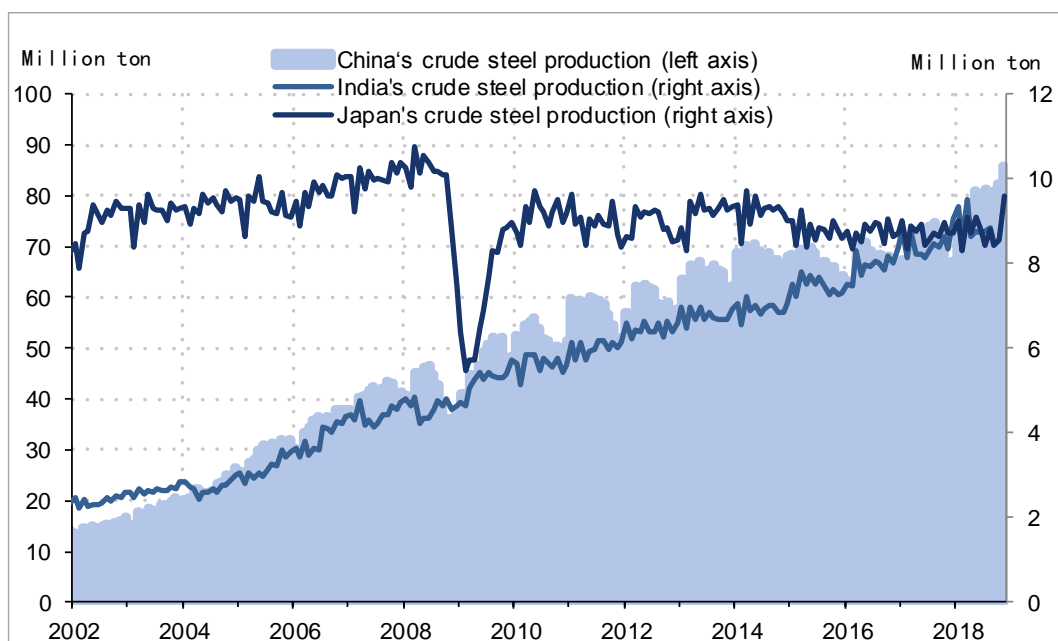


Figure 4-1 Monthly Crude Steel Production of China, India and Japan in 2002-2018

Data source: World Steel Association (WSA), prepared by Shanghai International Shipping Institute

Creditable to the rapid development of the construction industry and infrastructure construction, Vietnam has become the country with the fastest growing steel demand in the ASEAN region. From January to November 2018, Vietnam's crude steel production reached 12.84 million t, exceeding the annual crude steel production in 2017 and growing substantially by 21.2% year-on-year, and the growth rate was much higher than those of most countries in the world.

4.1.2 Consumption of iron and steel

◆ China's demand for crude steel grows steadily and India demonstrates stable downstream demand for iron and steel

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.

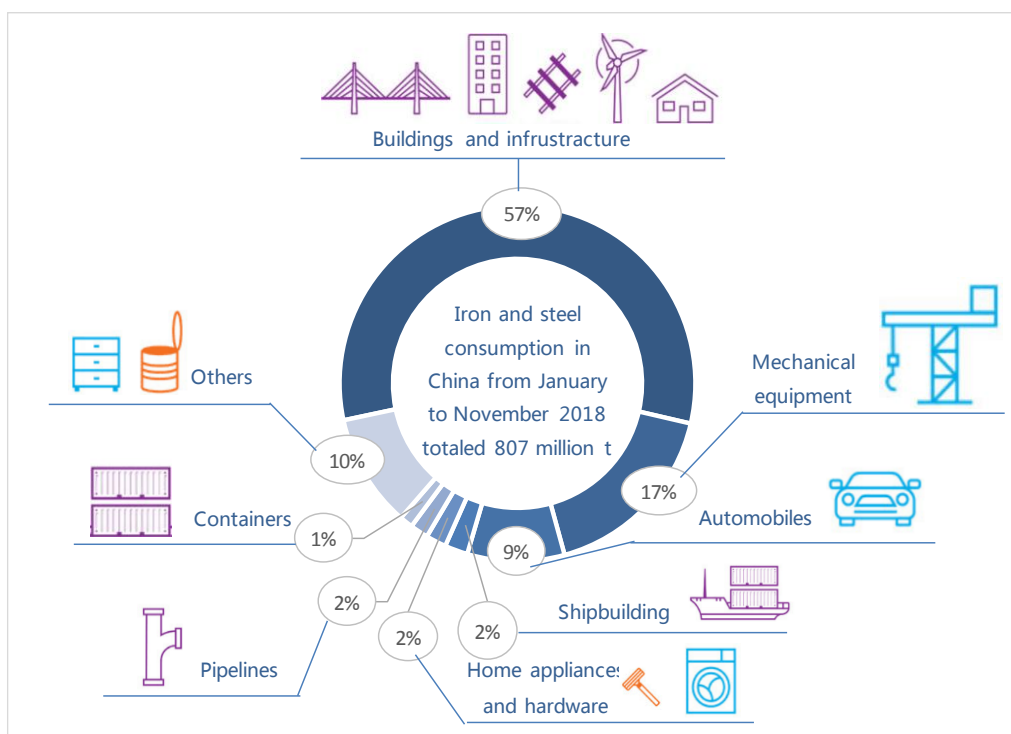


Figure 4-2 Projection of China's Steel Consumption Structure in 2018

Data source: Mysteel data and World Steel Association (WSA), prepared by Shanghai International Shipping Institute

Industry specific, PPP policies were tightened as a result of local purge of debt and fiscal expenditure fall in 2018, and the growth of fixed-asset infrastructure investment (excluding peasant households) stepped down. Suffering from the binding constraint of financing, real estate developers usually gain liquidity through high turnover and pre-sales. The substantial increase in new construction area provides a strong incentive for China's steel demand. The output of a majority of machinery types continued rapid growth but at a lower rate. After the cancellation of vehicle purchase tax concessions, the growth rate of automobile production declined slightly.

Driven by the accelerated economic growth, the augmented investment in infrastructure, urbanization and the increased demand for steel from the local automotive industry, India's steel consumption climbed. According to the World Steel Association, India's steel consumption in 2018 is expected to hit 95.4 million t, up by 7.5% year-on-year and registering the highest growth rate since 2011. The figure in 2019 is forecast to be 102.3 million t, up by 7.2% year-on-year.

4.1.3 Steel trade

◆ Steel exports from China to Southeast Asia pick up and China's steel exports declining trend abates

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.

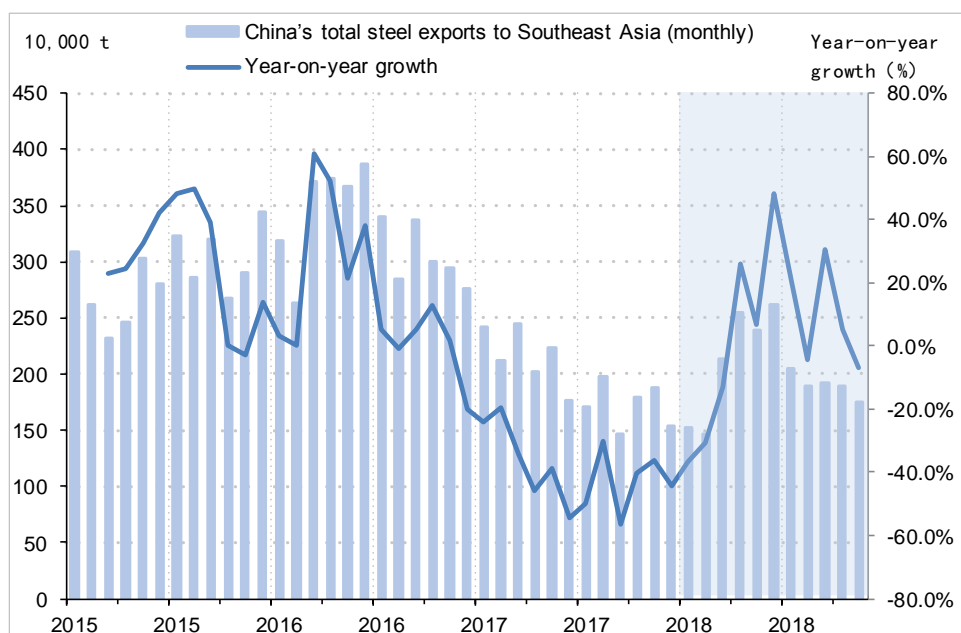


Figure 4-3 Steel Exports from China to Southeast Asia in the Month and Year-on-year Growth in 2015-2018

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.

4.2 Coal Consumption

◆ Global coal consumption rebounds and India and Southeast Asia see surging coal imports

Fueled by the growing demand for natural gas and renewable energy, global coal consumption in 2017 increased for the first time since 2013, and coal consumption rebounded. According to the BP World Energy Statistical Yearbook (2018), global coal consumption in 2017 was 3.72 billion oil equivalents⁴, an increase of 1.0% year-on-year. In 2017, India's coal consumption was 424 million oil equivalents, up by 4.8% year-on-year and higher than the global coal consumption growth, accounting for 11.4% of global coal consumption. Coal consumption in China, India and Southeast Asia has maintained growth since 2018.

India's coal imports increased due to the low grade of self-produced coal in India which failed to meet the needs of domestic infrastructure construction and industrial production. From January to October 2018, India imported about 188 million t of coal, up by 16.8% year-on-year. Thailand and Vietnam's coal imports soared, with their imports from January to October standing at 21.5 million t and 17.34 million t, respectively, up by 13.4% and 48.8% year-on-year. Thailand's imports were close to the import aggregate in 2017, while Vietnam's imports surpassed the 2017's total. The International Energy Agency (IEA) projected the energy demand in Southeast Asia to climb by nearly 60% from current levels by 2040.

Table 4-1 Imports of Major Coal Importers in January to October 2018

Country	2017 (100 million t)	Year-on-year Increase (%)	Jan - Oct 2018 (100 million t)	Year-on-year Increase (%)
World	13.87	5.2	-	-
China	2.71	6.1	2.52	11.5
India	1.98	-2.5	1.88	16.8
Japan	1.94	1.0	1.58	-0.9
South Korea	1.48	10.2	1.24	-0.5

⁴The conversion indicators of various energy sources are calculated by the calorific value of standard oil. The calorific value of a kg of oil equivalents is set to 42.62 MJ.

Thailand	0.22	3.0	0.22	13.4
Vietnam	0.15	9.8	0.17	48.8

Data source: China Coal Economics Research Association, prepared by Shanghai International Shipping Institute

4.3 Grain Consumption

◆ Cereal inventory declines and coarse food grains demand shines

The global cereal utilization forecast for 2018/19 was 2.65 billion t, rising by 1.3% year-on-year. The downstream cereal utilization growth was moderate against the 2.4% decline in upstream cereal supply, making the world cereal inventory hit a two-year low of 762 million t. The cereal utilization boiled up to new highs in 2018/19, mirroring the strong demand for forage and industrial use purposes, especially in China and the United States.

From the cargo type structure point of view, the utilization of coarse food grains, rice and wheat all increased, with the coarse food grains shining out. The utilization was projected to be 1.4 billion t, up by 2.0% year-on-year and higher than the average growth of cereals. The total rice utilization increased to 509 million t, an increase of about 1% year-on-year. The growth was primarily contributed by the increased usage for food purpose from population growth. The total wheat utilization was projected to be 740 million t, a slight increase of 0.2% year-on-year. Although wheat usage for food purpose was expected to match the demand from population growth and reach 510 million t, the wheat usage for fodder purpose hovered around 141 million t subject to constraints of gliding production and rising prices. The insufficient domestic supply in major cereal producers led to a decline in inventories/utilization, undermining global cereal trade. The global cereal trade volume in 2018/19 fell slightly by 0.9% to 416 million t.

4.4 Consumption of Minor Bulks

◆ China's aluminium products consumption structure constantly upgraded, with stainless steel and battery driving nickel consumption

China is the world's largest producer and consumer of aluminium products, and its production and consumption of aluminium oxides, electrolytic aluminium and aluminium products all account for more than 50% of the world total. Along with robust growth of China's aluminium consumption, the aluminium consumption structure is also undergoing changes. After nearly 10 years of rapid growth, China's aluminium consumption has embraced a period of shift, represented by its upgrading consumption structures and a rising proportion of aluminium in the mid-to-high-end

industries. By virtue of its superior properties such as lightweight, corrosion resistance, formability and recyclability, aluminium enjoys expanding application in China, and aluminium is replacing copper, wood and steel at a fast pace.

The global consumption of primary nickel in 2018 was 2.39 million t, an increase of 9.4% year-on-year. From the consumption structure point of view, the stainless steel industry remained the main contributor to the consumption increment. It is estimated that 67.4% of nickel consumption was contributed by the global stainless steel industry in 2018, followed by alloys (18.4%), electroplating (5.4%), and batteries (4.2%). According to the International Stainless Steel Forum (ISSF), the crude stainless steel production in the world in the first half of 2018 reached 26.1 million t, an increase of 13.3% year-on-year. The battery industry was up-and-coming and expected to consume a higher proportion of nickel in the next few years.

5. Prospect for International Dry Bulk Shipping Market in 2019

◆ International seaborne dry bulk trade delivers varied performance among cargo types, and emerging markets remain bullish

The international seaborne dry bulk trade volume may continue the narrow rise in 2019. As China's steel demand runs weak, steel prices will face higher pressure of decline, and the crisis of high inventories of imported minerals in ports will persist. Meanwhile, the rising ratio of scrap and the buildup of electric furnace refinery capacity will reduce the demand for imported iron ore. Shandong, Henan and other places in China have introduced alternative plans encouraging coal consumption reduction, and the import restriction policies will cast a huge impact on the import situation in 2019. Major emerging markets in Southeast Asia will continue to be bullish, and coal import demand there is expected to move up further. Fueled by the rapid economic development and obvious advantages of imported minerals, India's demand for high-grade mineral imports will continue to grow at a high speed, coupled with soaring coal imports. Steel mills in the Southeast Asian market will speed up capacity expansion, and the decline in China's steel exports will continue. Shanghai International Shipping Institute looks to a lower than 2.1% growth rate of global seaborne trade volume in 2019.

◆ Bulk carriers growth higher than shipping volume growth in 2019, with increasing capacity pressure from Capesize fleet deliveries

As the new shipbuilding orders at the beginning of 2017-2018 picked up, the pressure of fleet growth will begin to build up as subsequent deliveries. The capacity scheduled to be delivered in 2019 increases to 40.49 million DWT, and the growth of Capesize capacity will continue to mount, including 12 VLOCs of 400,000 DWT to be delivered in 2019 as estimated. Looking into 2019, the Clarksons projected that the international dry bulk fleet capacity may increase slightly by around 2.9%.

◆ **BDI average expected to be retraced to around 1,300 points**

To conclude, the international dry bulk shipping market is still in recovery and adjustment. Seaborne trade is booming in emerging markets. However, the growth rates of supply and demand of global dry bulk cargoes for seaborne shipping have been mismatched. Besides, China's iron ore imports will widen the decline and the move to cut coal consumption in China is in steady progress. As a result, it is expected that the BDI average in 2019 will be slightly retraced to around 1,300 points. As the concentration of large ship market and the proportion of long-term cooperation agreements climb on, the spot market volatility will be subject to a larger impact of long-term agreement price negotiations.

Table 5-1 Projected Trends of Some Shipping Routes in 2019

Imported from	Exported to	Cargo type	Trend
China	Brazil	Iron ore	↓
	Australia	Iron Ore	↓
	Guinea	Bauxite	↑
	Indonesia	Nickel minerals	↑
Vietnam	Indonesia and Australia	Coal	↑
India	Indonesia and Australia	Coal	↑
	Brazil and Australia	Iron Ore	↑
United States	Europe and Argentina	Soybean	↑

Data source: forecast by the Shanghai International Shipping Institute

International Shipping Market Analysis Report Commission

Director: Zhen Hong (secretary general of SISI and a professor of Shanghai Maritime University)

Members: Yin Ming (secretary and deputy secretary-general of Shanghai International Shipping Institute and a professor at Shanghai Maritime University)

Li Gang (deputy secretary-general of Shanghai International Shipping Institute and an associate professor at Shanghai Maritime University)

Zhang Jieshu (deputy secretary-general of Shanghai International Shipping Institute and a professor at Shanghai Maritime University)

Zhang Yongfeng (director of SISI International Shipping Research Office)

Review of 2018 and Prospect for 2019 of International Dry Bulk Shipping Market

Team lead: Zhang Yongfeng; deputy team lead: Shao Fei

Members: Gao Yunfei, Han Xiuju, Tan An, Wang Yu

Contact us:

Shanghai International Shipping Institute

International Shipping Research Office, Room 402 and 403, No 150 Huoshan Road, Hongkou District, Shanghai, China. Zip code: 200082

Contacts: Zhang Yongfeng, Zheng Jingwen, Shao Fei

Email: zhangyongfeng@sisi-smu.org

Tel: +86 21 65853850*8025/8061/8021

Fax: +86 21 65373125

Disclaimer

While Shanghai International Shipping Institute (SISI) has made every effort to ensure accuracy of sources and information, SISI does not accept any responsibility or liability for the accuracy or completeness of the content. The content of the report is for reference only, and SISI assumes no liability for any loss arising from the use of the content in this report. No institution or individual shall reprint, copy or publish the report in any form without the written consent of SISI.