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## INDUSTRY OVERVIEW

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*The information presented in this section, including certain facts, statistics and data, is derived from the market research report prepared by Frost & Sullivan, which was commissioned by us, and from various official government publications and other publicly available publications, unless otherwise indicated. We believe that these sources are appropriate for such information and we have taken reasonable care in extracting and reproducing such information. We have no reason to believe that such information is false or misleading in any material respect or that any fact has been omitted that would render such information false or misleading in any material respect. The information derived from official government publications has not been independently verified by our Company, the Sole Sponsor, the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], the [REDACTED], any of our or their respective directors, officers or representatives or any other person involved in the [REDACTED] (except Frost & Sullivan) and no representation is given as to its accuracy.*

### SOURCE OF INFORMATION

We have commissioned Frost & Sullivan, an independent market research and consulting company, to conduct an analysis of, and to prepare a report on the global and the PRC maritime shipping market. The report prepared by Frost & Sullivan for us is referred to in this document as Frost & Sullivan Report or F&S Report. We agreed to pay Frost & Sullivan a fee of HK\$750,000 which we believe reflects market rates for reports of this type.

Founded in 1961, Frost & Sullivan has 40 offices with more than 2,000 industry consultants, market research analysts, technology analysts and economists globally. Frost & Sullivan’s services include technology research, independent market research, economic research, corporate best practices advising, training, client research, competitive intelligence and corporate strategy.

We have included and quoted certain information from the F&S Report as well as other economic data in this document because we believe this information facilitates an understanding of the global and the PRC maritime shipping market for prospective investors. Frost & Sullivan’s independent research consists of both primary and secondary research obtained from various sources in respect of the global and the PRC maritime shipping market. Primary research involved in-depth interviews with leading industry participants and industry experts. Secondary research involved reviewing company reports, independent research reports and data based on Frost & Sullivan’s own research database. Projected data was obtained from historical data analysis plotted against macroeconomic data with reference to specific industry-related factors. Except as otherwise noted, all of the data and forecasts contained in this section are derived from the F&S Report, various official government publications and other publications.

In compiling and preparing the research, Frost & Sullivan assumed that the social, economic and political environments in the relevant markets are likely to remain stable in the forecast period, which ensures the steady development of the global and the PRC maritime shipping market.

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### OVERVIEW OF THE GLOBAL AND THE PRC MARITIME SHIPPING INDUSTRY

#### Definition and classification

According to Organisation for Economic Co-operation and Development (OECD), maritime shipping refers to any movement of goods and/or passengers using seagoing vessels on voyages which are undertaken wholly or partly at sea. During the Track Record Period, we are primarily engaged in the provision of maritime shipping services with a focus on dry bulk carriers as well as the provision of ship management services.

#### Major vessel types in the maritime shipping industry

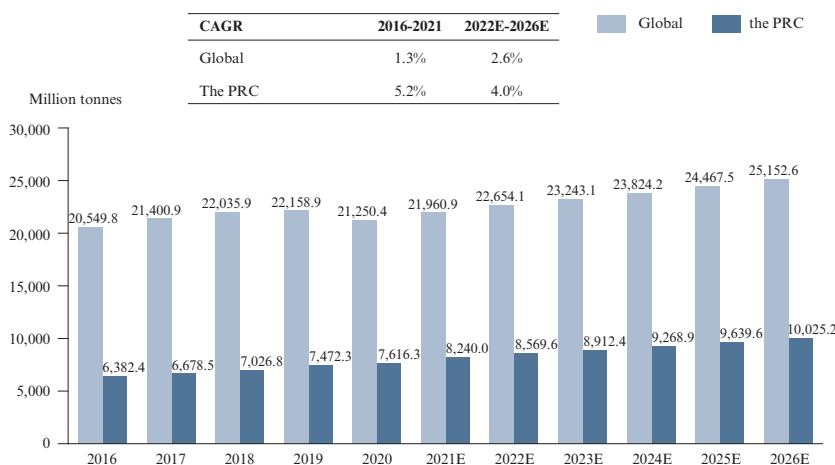
- *Bulk carrier*: A ship primarily used to transport dry bulk cargoes, which are shipped in large quantities. The principal dry bulk cargoes include coal, iron ore, bauxite, phosphate, nitrate and grains such as wheat.
- *Oil tanker*: It is a ship designed for the bulk transport of oil or its products. There are two basic types, namely crude tanker and product tanker. Crude carriers carry crude oil from oil production countries to where oil is refined into its products. Product tankers are often designed to be able to also carry chemical cargoes and this often requires special forms of construction and equipment such as the use of stainless steel in cargo tank construction, corrugated bulkheads and deep well pumps and more complex piping systems.
- *Chemical tanker*: A vessel designed to transport chemical products in bulk.
- *Containership*: A cargo ship that carries all of its load in truck-size shipping containers, in a technique called containerization.

#### Global and the PRC seaborne trade volume

The global seaborne trade volume increased from 20,549.8 million tonnes in 2016 to 21,960.9 million tonnes in 2021, representing a CAGR of 1.3% during the period. The global seaborne trade volume is expected to increase at a CAGR of 2.6% during 2022 to 2026. The spread of Omicron coronavirus variant in March 2022 has led to movement controls across the PRC, including key manufacturing hubs in Shenzhen and Dongguan. While the PRC’s main ports remain open and vessels are continuing to dock, congestion is building up and some ships are re-routing to avoid expected delays. The PRC seaborne trade volume increased from 6,382.4 million tonnes in 2016 to 8,240.0 million tonnes in 2021, representing a CAGR of 5.2% during the period. Driven by the recovery of global trade after the COVID-19 outbreak, the PRC seaborne trade volume is expected to reach 10,025.2 million tonnes by 2026, at a CAGR of 4.0% during 2022 to 2026.

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### Global and the PRC Seaborne Trade Volume, 2016–2026E



Source: UNCTAD, National Bureau of Statistics of China, Frost & Sullivan

Notes:

1. The global and the PRC seaborne trade volume refers to the volume of total goods loaded and discharged in world and the PRC seaborne trade, respectively.

The Guiding Opinions on the Promotion of High-Quality Development of the Maritime Shipping Industry\* (《關於大力推進海運業高質量發展的指導意見》) was introduced by the PRC government in 2020. The guiding opinions put forward phased goals to enhance the competitiveness of the PRC maritime shipping industry in terms of safety, green initiatives, and technological aspects, with an ultimate goal of establishing the PRC maritime shipping industry as a global leader in these aspects by 2050. The maritime shipping industry in the PRC is expected to benefit from supportive government policies such as the aforesaid guiding opinions and grow accordingly in the near future.

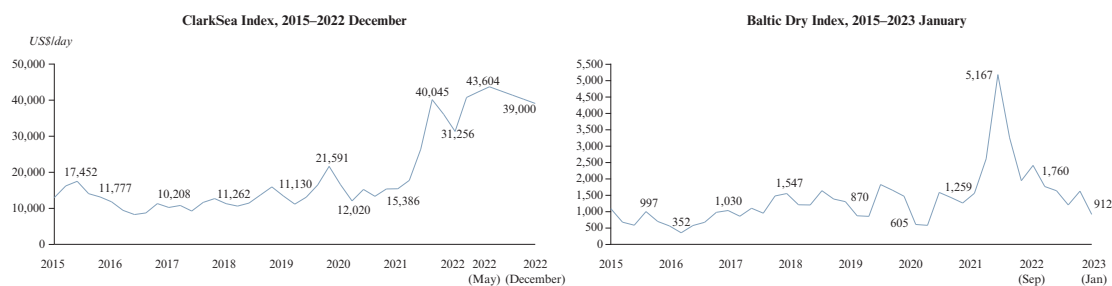
### ClarkSea Index, Baltic Dry Index and Baltic Clean Tanker Index

The Baltic Dry Index, ClarkSea Index and Baltic Clean Tanker Index are the major indicators of the demand and supply of the maritime shipping industry, and they are positively correlated to the charter rates charged by shipping companies.

The ClarkSea Index is often seen as a key shipping barometer which shows the weighted average earnings of all major types of vessels including tankers, bulk carriers, containerships and gas carriers. It is a cross-sector index managed by Clarkson Research. The ClarkSea Index was relatively stable during 2015 to 2019. However, since the advent of the COVID-19 pandemic in early 2020, the ClarkSea Index has experienced fluctuations, in particular, it first dropped in early 2020 due to the pricing pressures caused by lowering of oil prices and worldwide lockdown measures, but it then rebounded and increased significantly as demand surged for maritime trade owing to the re-opening of economy and growing demand for container transportation.

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The Baltic Dry Index is a shipping and trade index that measures the average prices paid for the transport of dry bulk materials such as coal and steel. Historically, the index fluctuated at around 1,000 points during 2015 to 2019. Similar to the ClarkSea Index, the Baltic Dry Index declined in early 2020 due to lockdowns and restrictions introduced during the COVID-19 pandemic but quickly rebounded due to rising demand for industrial commodities as well as the broader economic recovery. The restocking of products and raw materials with volumes above pre-pandemic levels by various industries have further boosted the demand for global shipping, resulting in a surge in the Baltic Dry Index in the first half of 2021. The spread of the Omicron coronavirus variant impacted the maritime shipping industry in the second half of 2021. In Europe, pre-Christmas lockdowns and more restrictions in social distancing have shaken the demand for maritime shipping. The PRC continues to adopt a ‘zero-COVID-19’ policy and included mass lockdowns in several cities, mandatory quarantines and stringent controls at ports in the past. Following a national zero-COVID-19 policy, more stringent quarantines measures were carried out in the PRC, which affected the operations of container ports in the PRC. As a result, ClarkSea Index and Baltic Dry Index recorded a moderate decline in the second half of 2021. The BDI typically exhibits a certain degree of seasonality during the first quarter during any given year primarily due to lower demand for shipping services during Chinese New Year. For the years ended December 31, 2019, 2020, 2021 and 2022, the daily average BDI for the first quarter was approximately 798 points, 592 points, 1,739 points and 2,041 points, respectively, whereas the daily average BDI for the entire year was approximately 1,365 points, 1,068 points, 2,943 points and 1,934 points, respectively.

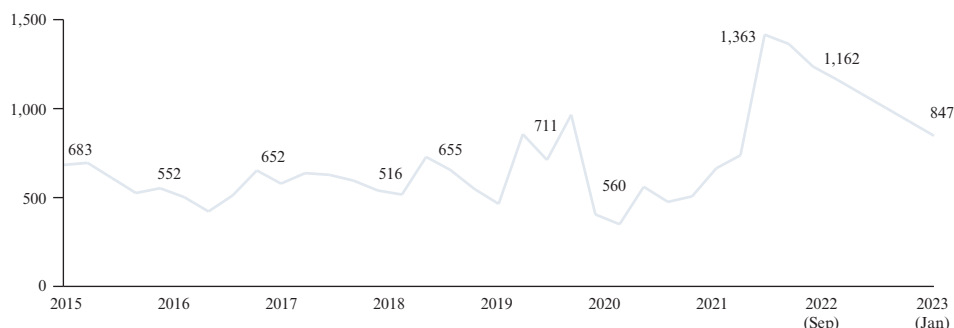


Source: Baltic Exchange, Frost & Sullivan

The Baltic Clean Tanker Index (“**BCTI**”) measures the price trend of charter rates charged by shipping companies in regards to clean oil products, taking into consideration of the major clean product tanker voyage around the globe. It is highly associated with factors including the shipment capacity of crude oil tankers, oil production volume, demand for crude oil and crude oil price index. On the back of the Russia-Ukraine crisis and the subsequent shortage of oil, the international crude oil price has surged drastically. Coupled with the robust demand for oil products, the BCTI has surged in recent times and attained 1,162 in September 2022 and it dropped to 847 in January 2023.

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**Baltic Clean Tanker Index, 2015–2023 January**

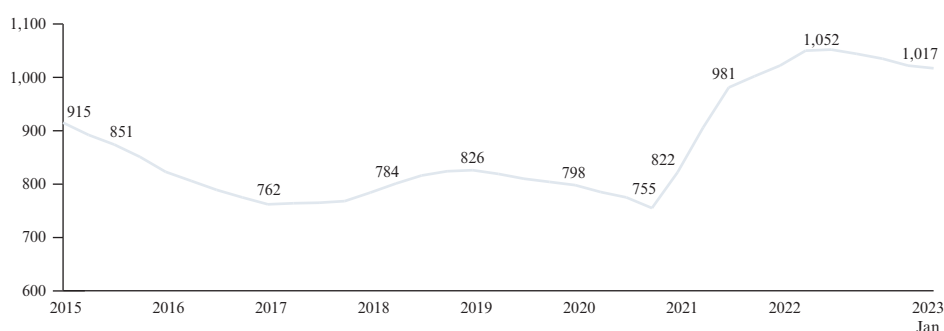


*Source: Baltic Exchange, Frost & Sullivan*

### China Newbuilding Price Index

China Newbuilding Price Index is a renowned industry index in China that assesses the shipbuilding price developments of 20 member companies which in sum, accounted for approximately 70% market share of the Chinese shipbuilding industry. The index provides an indication of the overall price developments of the shipbuilding industry in China. New shipbuilding price may be associated with a number of factors, including construction cost, raw material cost, the outlook of shipping industry and contract lead times. The China Newbuilding Price Index increased significantly in 2021 mainly due to the continued increased in raw material cost. The shipbuilding price essentially reflects the supply-demand dynamics of the shipping industry, when there is low demand for the shipping industry, shipbuilding slows and more vessels become idle, and vice versa. As such, rising shipbuilding price may indicate an increase in demand for ships and thus a prosperous outlook for the shipping industry.

**China Newbuilding Price Index (CNPI), 2015 – 2023 January**

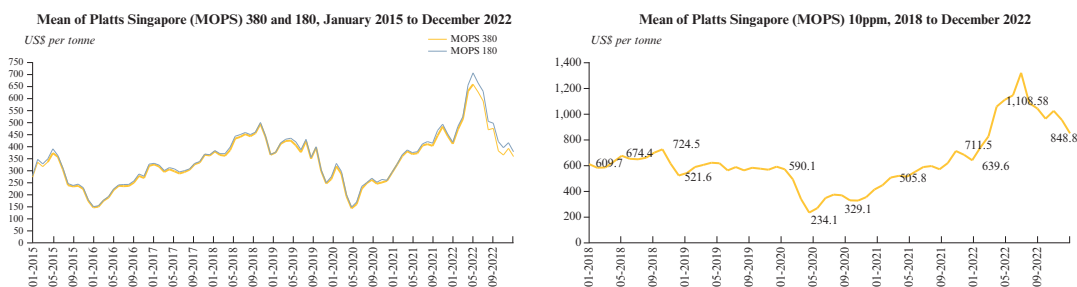


*Source: China Newbuilding Price Index Co., Ltd., Frost & Sullivan*

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### Historical Price Trend of Bunker Fuel

MOPS 380 and 180 generally represents the price of heavy sulphur fuel oil (HSFO) and MOPS 10ppm generally represents the price of very low sulphur fuel oil (VLSFO). Owing to the crisis between Russia and Ukraine in early 2022, the international crude oil price has surged as significant numbers of traders refused to purchase crude oil originated from Russia, resulting in a shortage of supply around the globe.



Source: Frost & Sullivan

## OVERVIEW OF THE GLOBAL AND THE PRC MARITIME SHIPPING SERVICES INDUSTRY

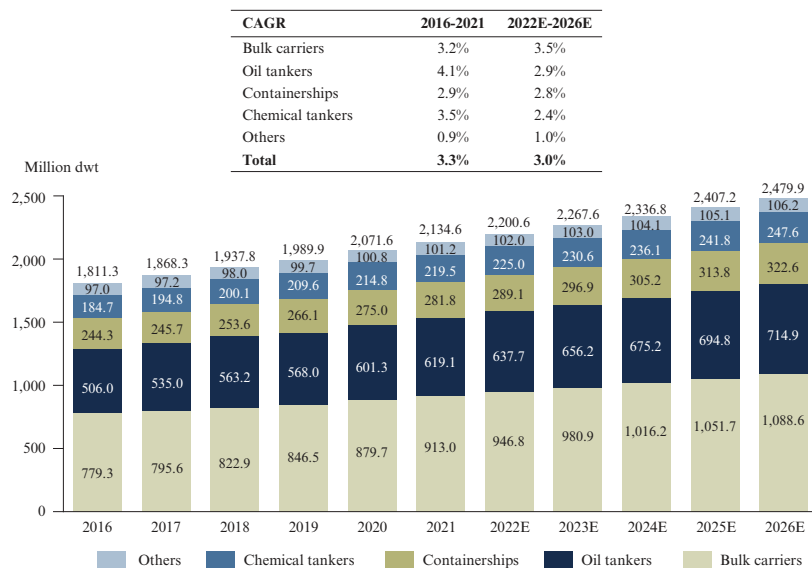
### Market size of the maritime shipping services industry

#### *The globe*

The global maritime shipping services industry has experienced considerable growth over recent years in all segments in terms of the total carrying capacity, mainly due to the increasing maritime trade volume and corresponding demand for marine transportation. The total market size increased from 1,811.3 million dwt in 2016 to 2,134.6 million dwt in 2021, representing a CAGR of 3.3% during the period. As global maritime trade activities recovers from the COVID-19 pandemic and continues to grow, the market size of the global maritime shipping services industry is forecasted to increase to 2,479.9 million dwt in 2026, representing a CAGR of 3.0% from 2022 to 2026. The demand for the transportation of cargo through waterways is growing owing to factors such as cost-efficiency and secured way of moving goods as compared to other means of transportation. An economic reopening after COVID-19 outbreak has also spurred surging demand for goods and raw materials.

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### Market size of Global Maritime Shipping Services Industry by Vessel Type, 2016-2026E



*Note:* Deadweight tonnage (dwt) is a measurement of weight carrying capacity of a ship and excludes the weight of the ship itself. The market size excludes ships with below 100 gross tonnage.

*Source:* UNTCAD, Frost & Sullivan

### The PRC

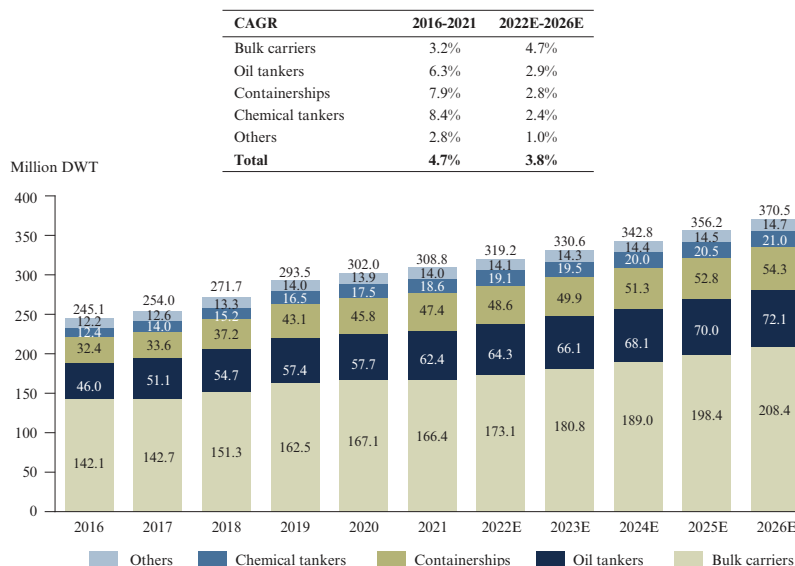
Owing to the growth in seaborne trade volume, the maritime shipping services industry in the PRC displayed a steady growth during 2016 to 2021 with market size having increased from 245.1 million dwt in 2016 to 308.8 million dwt in 2021, representing a CAGR of 4.7%. Going forward, as the growth in seaborne trade activity continues, the market size of maritime shipping services industry in the PRC is expected to grow at a CAGR of 3.8% from 319.2 million dwt in 2022 to 370.5 million dwt in 2026.

The COVID-19 outbreak in 2020 caused disruption in global supply chains, choking up ports and delaying vessels. The maritime shipping industry in the PRC has been resumed since the second half of 2020 as the outbreak of COVID-19 is under control in the PRC while other countries were affected by border control and other quarantine measures. The growth in 2020 was particularly strong due to the rapid increase in global shipping cost as a result of insufficient shipping capacity caused by disrupted global supply chains during the COVID-19 pandemic and the stagnation of maritime shipping services in other countries. With the gradual recovery of foreign trade and global economy, the growth of maritime shipping services market in the PRC is likely to continue.



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### Market Size of Maritime Shipping Services Industry in the PRC by Vessel Type, 2016-2026E



Source: UNTCAD, Frost & Sullivan

### Trading volume of bulk carriers globally and in the PRC

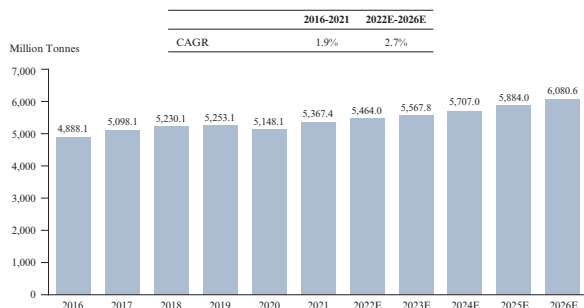
The bulk carriers market is mainly comprised of major bulks and minor bulks. Iron ore, coal and grain are classified as major bulks, which is responsible for the larger portion of the dry bulk trade, accounting for approximately 61.2% of the global total bulk carriers trading volume in 2021. In general, the global trading volume of bulk carriers has increased from 4,888.1 million tonnes in 2016 to 5,367.4 million tonnes in 2021, representing a CAGR of 1.9%. Going forward, consumables such as grain and agricultural products are expected to maintain the stable growth momentum, while commodities in relation to construction industry and manufacturing industry, such as iron ore and cement are expected to grow continuously at a CAGR of approximately 4.3% and 3.8%, respectively in light of the continuous rollout of infrastructural and industrial development plans across the globe.

The PRC is accountable for approximately 43.3% of the trading volume of bulk goods globally in 2021. The increased demand for related construction materials within the country in view of the rollout of major construction projects in the PRC has driven the demand for iron ore and cement in the past few years. Overall, the total trading volume of bulk carriers in the PRC has increased from 1,808.6 million tonnes to 2,326.6 million tonnes during 2016 to 2021, representing a CAGR of 5.2%. Attributed to the prompt containment of the outbreak of COVID-19, the export and trading activities in the PRC has regained the growth momentum and the trading volume in 2020 has surged by a year-on-year growth of 8.1%, contributing to the robust CAGR during 2016 to 2021. Along with the normalisation of the economic activities around the globe, the growth of the trading volume of bulk carrier in the PRC is expected to be milder during 2016 to 2021 compared to the historical period. Going forward, the trading volume is expected to attain 2,773.9 million tonnes in 2026 at a CAGR of 3.6% from 2022 to 2026, attributable to the continuous demand for pivotal commodities such as agricultural products, ores and minerals.



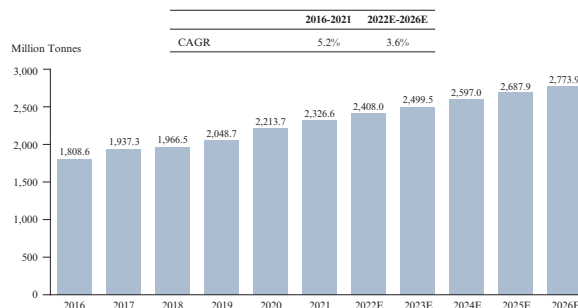
## INDUSTRY OVERVIEW

**Total Trading Volume of Global Bulk Carriers, 2016–2026E**



Source: Frost & Sullivan

**Total Trading Volume of Bulk Carriers in the PRC, 2016–2026E**



Source: Frost & Sullivan

### Export destination of commodities through bulk carriers in the PRC

In 2021, iron ore, coal and related products, steel products and cement were the four main categories transported through bulk carriers in terms of export volume. Among the selected commodities, iron ore, coal and related products and steel products are mostly exported to foreign countries and are dispatched along coastal ports in the cities along the southeastern coast of the PRC, such as Shanghai, Yangshan, Tsingtao and Zhoushan.

Major foreign export locations of iron ore, coal and related products are comparatively more consolidated, with Japan, South Korea, Taiwan and Indonesia being the major destinations. The export destinations of steel products and cement are fairly fragmented, with the top five locations accounting for approximately 35.9% and 47.1%, respectively.

The bulk carriers market is underpinned by the expedited urban development around the globe, which entails demand for various commodities. Expedited economic development in developing countries and infrastructural overhaul projects in developed countries contributed to the considerable demand for transportation of respective construction materials. As the world’s leading export country of major construction materials such as steel, wood, cement and sand, the PRC shall continue to benefit from continual urbanisation and industrialisation around the globe.

In view of technological developments such as the increasing adoption of light-metal alternative fuel vehicle, advanced energy management system, and other related application in aerospace industry, the demand for various ores and minerals adopted in metallurgy in extracting metals and formulating alloys, chemical industry and electric module packaging is propelled.

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### The import of major commodities in the PRC

#### The Import Volume of Major Commodities in the PRC, 2015–2025E

(Unit: million tonnes)	2015	2020	2021E	2025E	CAGR (2015-2020)	CAGR (2021E-2025E)
Coal and related product	592.4	800.4	856.3	1,157.9	6.2%	7.8%
Petroleum, natural gas and related product	517.0	860.8	923.8	1,313.4	10.7%	9.2%
Metal ore	1,094.4	1,354.9	1,472.6	1,870.6	4.4%	6.2%
Steel	92.8	136.9	93.2	119.2	8.1%	6.4%
Mining construction materials	371.4	471.8	504.9	617.6	4.9%	5.2%
Cement	48.3	59.5	64.4	73.7	4.2%	3.4%
Wood	42.0	55.6	59.3	73.6	5.8%	5.6%
Non-metal ore	80.6	200.9	213.3	284.0	20.0%	7.4%
Fertilizers and pesticides	10.1	18.0	25.2	35.7	12.2%	9.1%
Salt	7.8	9.3	10.8	14.5	3.7%	7.6%
Food	126.9	144.4	157.5	228.6	2.6%	9.8%
Others	1,447.9	1,290.2	1,479.1	1,672.9	-2.3%	3.1%
<b>Total</b>	<b>4,431.5</b>	<b>5,402.7</b>	<b>5,860.3</b>	<b>7,461.6</b>	<b>4.0%</b>	<b>6.2%</b>

Source: National Bureau of Statistics of China, Frost & Sullivan

The import volume of commodities in the PRC has increased from approximately 4,568.7 million tonnes to approximately 5,536.9 million tonnes during 2016 to 2021, representing a CAGR of approximately 3.9%. With the rapid economic and industrial development as well as burgeoning population, energy and manufacturing related commodities including metal ore, coal and related product and petroleum, natural gas and related product have been major import categories, growing at CAGRs of approximately 2.9%, 7.0% and 8.5%, respectively during 2016 to 2021 and collectively accounting for approximately 59.7% of the total volume recorded in 2021. Principally, these unpackaged major bulk products are transported through bulk carrier, the stably growing throughput of these commodities shall contribute to the continuous development of the bulk carrier industry in the PRC. Going forward the import volume of commodities in the PRC is expected to grow at a CAGR of approximately 5.5% during 2022 to 2026, attaining 7,137.0 million tonnes in 2026.

#### Impact of key events to the bulk carriers market

The bulk carriers industry is highly associated with macroeconomic environments, international policies and maritime regulations. Key events namely international trade protectionism, outbreak of COVID-19 and U.S. infrastructure bill, have collectively impacted the bulk carriers industry both positively and adversely to respective extents during the recent years.

Since the trade conflict between the U.S. and the PRC in or around 2018 where tariffs were imposed on various commodities transferred through bulk carriers, significant tariff imposed has led to a plummet on trading volume between the two major economies, thereby dampening the demand for bulk carriers. The emergence of similar protectionism, such as Brexit, has also impacted global maritime markets in terms of, including foreign exchange rate and securities markets tariffs, treaties and other regulatory matters that in turn created uncertainties on the associated cost and risk in the bulk carriers industry.

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Further, the outbreak of the COVID-19 in 2020 has negatively impacted the global economy and disrupted global supply chains. The implementation of quarantine, lockdown and travel restrictions measures to limit human interaction, have led to temporary closures of factories and other facilities such as port terminals, which has resulted in temporary decline in supply of goods in warehouses and terminals. The volatility and slackened turnaround of vessels voyage have led to the plummet of bulk carriers trading volume in 2020 at a year-on-year decline of 2.0%. The bulk carriers trading volume in 2021 has regained growth momentum, with a year-on-year growth of approximately 4.3%.

Recently, a series of conflicts have escalated between Russia and Ukraine in February 2022 which had led to sanctions from a number of countries towards Russia targeting businesses, monetary exchanges, bank transfers, and imports and exports. The economic impact is significant to the globe and particularly to the bulk carriers market in the following aspects (i) Russia or Ukraine has been one of the largest exporters of commodities such as grains, wheats, natural gas, crude oil, while the conflict has led to stagnation of commodities production in the relevant areas and sanctions; (ii) the conflict has caused disruption to the supply chain and consequential inflation on commodities price level and subsequently unexpected influence to the shipping schedules and supply chain; (iii) shipping rates have risen on higher war premium and demand has increased in the short term, which has resulted in a more volatile spot earnings for bulk carriers, and some notable bulk carrier corporates registered considerable gains in view of the rising shipping rates; and (iv) commercial vessels including bulk carriers have been trapped in territorial waters around the conflict zone including the Black Sea, which poses considerable impact to the supply chain regionally around the area.

Nevertheless, the bulk carriers market is underpinned by a suite of alleviating factors and market opportunities including (i) the alleviation of trade war between the U.S. and the PRC as no new measures or tariffs had been issued or imposed as of late; (ii) the recovery of economy subsequent to the containment of the outbreak of the COVID-19 the rollout of mass vaccination, and the easing of lockdown protocols which has resulted in a booming demand for bulk carrier transportation. Particularly in early 2023, the PRC government has promulgated abandonment on majority of prevention and control policies, including travel restrictions, quarantine and lockdown policies, which is expected to propel economic rebound along with the resumption of manufacturing and logistics activities across the nation and around the globe; and (iii) accelerated global infrastructural development, especially consequential to the introduction of the US infrastructure bills, where the U.S. government is committed to investing \$1.2 trillion over the next 8 years on improving infrastructure across the U.S., hence driving the trading volume of considerable amount of construction materials from countries including the PRC. Further, the crisis between Russia and Ukraine has led to a surge in worldwide crude oil price as significant numbers of traders refused to purchase crude oil originated from Russia. It is estimated that approximately 70% of Russian crude oil exports do not have a matched buyer, such issue being further exacerbated by supply chain and payment difficulties arising from economic sanctions imposed on Russia. As a result, market rates for oil tankers have surged owing to the increase in fuel prices as well as the flourishing demand for fuel amidst the shortage in supply resulting from the crisis, which in turn is expected to benefit shipping companies with oil tankers in their vessel fleets. While concurrently, influx in oil price has led to increasing operating cost of bunkering, which has escalated the operating burden of shipping companies.

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### Market drivers and trends

#### *1. Digital transformation*

The maritime shipping industry is known to rely on paperwork for daily operation and has been relatively slow for transition to technology. However, as a result of the COVID-19 pandemic, many shipping companies were forced to adopt technology to solve restriction-related issues. Such digital transformation was embraced by the stakeholders and general public as it benefits the overall development of the industry. The prevailing trend of digitalization is likely to continue, for instance, industry leaders have been using digital-technology to streamline freight booking and utilized AI-based technology to automate manual processes and manage shipping demand. Data analytics, including the mining, collection and prediction of data, are increasingly used in the maritime shipping industry. This may include data regarding cargo types, weights and destinations, or data about the ship itself such as trim, stability, engine performance and communication. Data analytics sorts, arranges and attempts to correlate the multitude of information to draw useful conclusions. For example, data analytics could yield results about historic cargo trends, ocean conditions and ship response to various changing weather conditions. The use of data analytics enable companies to analyze various performance parameters that they can use to better efficiency and planning. On the other hand, the Internet of Things (IoT) allows vessel operations and charterers to remotely direct and/or operate a vessel without their physical presence aboard the vessel. For instance, on the vessels, individual cabins could be remotely accessed with the help of an app or remote controllers that crews would be provided with.

#### *2. Increased focus on sustainable development*

Studies have shown that the maritime shipping industry accounted for approximately 3% of all global greenhouse gas emissions. As the general public becomes increasingly environmentally-conscious and with the introduction of global initiatives to reduce climate change effects, the shipping industry is pursuing effort towards reducing greenhouse gas emissions. For example, on 1 January 2020, a new limit on the sulphur content in the fuel oil used on board ships introduced by International Maritime Organization came into force, with an aim to improve air quality, preserve the environment and protect human health. Known as “IMO 2020”, the rule limits the sulphur in the fuel oil used on board ships operating outside designated emission control areas from 3.5% to 0.5% m/m (mass by mass). Further, in response to the Paris Climate Change Agreement, 173 member nations of the International Maritime Organization have adopted an initial strategy to reduce the carbon emissions of global shipping by at least 50% by 2050.

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### Market opportunities

#### *1. Increasing seaborne trade volume*

Over the past years, increasing seaborne trade volume has led to the growth of the maritime shipping industry. While the outbreak of COVID-19 has caused disruptions in supply chain initially during the first half of 2020, the easing of restriction and lockdown measures in the latter half of 2020 have led to a surge in the demand for manufactured consumer goods and therefore the demand for shipping services and freight rates. In light of the positive market outlook, the shipbuilding industry has experienced a resurgence in orders since early-2021. However, due to the fact that new ship order takes approximately 3 years to be delivered, the short-term rising demand of seaborne trade will provide further opportunity for existing shipping services providers to capitalise on increased freight rates charged for shipping goods.

#### *2. Demand arising from global infrastructure projects*

The bulk carrier industry is closely related to global infrastructure and economic development as a majority of the transported goods are raw materials and commodities such as steel, coal, cement, wood and other construction materials. With growing infrastructure renewal and basic infrastructure development for developed and developing countries, respectively, the demand for the logistics of raw materials will provide opportunities for growth in the bulk carrier industry. For instance, the US government has rolled out a USD\$1.2 trillion plan to renew the country’s infrastructure. In addition, the One Belt One Road initiative by the PRC government has brought along major opportunities for infrastructure development in foreign countries, stimulating foreign trade growth and therefore demanding the shipping of raw materials and supporting the industry’s expansion.

### Market challenges

#### *1. Changing trade and geopolitical climates*

The overall development of the maritime shipping industry largely depends on the global maritime trade, which in turn is affected by geopolitical, economic, and trade policies. For instance, inward-looking policies and rising protectionist sentiment in recent years could undermine global economic growth and restrict or shift trade flows. The recent trade dispute between China and Australia has caused disruption in the supply of raw materials and affected the shipping arrangement especially for bulk carriers.

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### **2. *Labor shortage***

One of the major challenges for the maritime shipping industry is labor shortage and aging workforce. Due to the tough condition onboard and other wellbeing concerns, it is difficult to recruit and retain workers in the maritime shipping industry. Local governments, industry leaders and educators are working to encourage more young people to join the industry, for example, the PRC government has established guidelines and frameworks on the training and education of sailors and optimise the onboard environment.

### **Entry barriers**

#### **1. *Capital investment***

Establishment of shipping business is capital intensive in nature. In particular, the investment in fixed assets such as different types of vessels and marine fuel, as well as working capital for daily operation pose a high financial barrier for new market entrants.

#### **2. *Economies of scale***

Benefitting from the large scale of business and operation, established and sizable shipping companies can enjoy higher bargaining power to negotiate with suppliers and cost synergies to provide comprehensive and value-added services to customers from different industries. Therefore, economies of scale can be a major setback for the new entrants with limited scale of operation, product and service offerings.

#### **3. *Market know-how and experience***

With the increasing demand for a variety of shipping services and stricter regulations on environmental protection, customers usually prefer shipping companies with in-depth understanding and abundant experience in the industry. In addition, it takes time for market participants to establish business network in order to provide flexible and effective shipping solutions to customers.

#### **4. *Track record and stable business relationships***

Established and reputable shipping company generally secure a stable relationship with customers and have a shipping network with an expansive geographic coverage. New entrants without a proven track record are unlikely to compete with existing market participants given the high switching cost for customers to change their shipping services provider to a new market entrant. Without industry connections, new entrants often face difficulties in building up relationships with both customers and suppliers.



## INDUSTRY OVERVIEW

### COMPETITIVE LANDSCAPE OF THE MARITIME SHIPPING SERVICES MARKET

#### Ranking and market share of maritime shipping companies for international routes headquartered in the PRC

The maritime shipping services market in the PRC is relatively concentrated in a small group of leading players with strong market reputation and brand awareness, with the top five large players in aggregate accounting for approximately 51.4% of the market share in terms of weight carrying capacity for international shipping routes in 2021. The remainder of the market is highly competitive, with more than 20,000 market participants globally in 2021 having shipped goods to and from the PRC via international shipping routes. We are the fifth largest maritime shipping company headquartered in the PRC in 2021 in terms of weight carrying capacity for international shipping routes involving the shipping of goods to and from the PRC, recording approximately 1.26 million dwt which accounts for 0.4% of the total market.

#### Leading Maritime Shipping Companies of International Routes by Weight Carrying Capacity Headquartered in the PRC, 2021

Market Participants	Weight Carrying Capacity (Million DWT)	Market Share
China COSCO Shipping Corporation Limited <sup>(1)</sup>	97.67	33.7%
China Merchants Group <sup>(2)</sup>	39.2	13.5%
Shandong Shipping Corporation <sup>(3)</sup>	9.02	3.1%
Shanghai Leading Energy Shipping Limited <sup>(4)</sup>	1.84	0.6%
Our Group	1.26	0.4%
Subtotal	148.99	51.4%
Total	290.00	100.0%

*Source: Ministry of Transport of the PRC, Frost & Sullivan*

*Notes:*

1. China COSCO Shipping Corporation Limited (中國遠洋海運有限公司) is an international corporation focused on maritime shipping services, covering the core industries of shipping, ports and logistics, shipping finance, equipment manufacturing, value-added service, etc. It operates globally, and provides shipping services principally through container liners and carries all types of goods transported through containers such as electronics, textiles, consumer goods etc. In addition to its fleet of container liners, it also operates a sizeable fleet of dry bulk carriers and general and specialized cargo vessels. It is a private company.
2. China Merchants Group (招商局集團) is focused on three core industries, namely integrated transportation, specialty finance, and integrated urban and industrial park development and operation. It operates across the globe through its sizeable fleet of oil tankers, ore carriers, dry bulk carriers, and chemical carriers. It also operates in the container liner business. It is involved in the transportation of oil, ore, dry bulk commodities, liquified natural gas and containerized goods. It is a private company.
3. Shandong Shipping Corporation (山東海運股份有限公司) is specialised in marine transportation of bulk cargo including mineral products, grain, energy resources, chemicals and general cargo. The voyage routes of company cover most of main ports around the world. It operates across the globe and its vessel fleet is principally comprised of dry bulk carriers, liquid bulk carriers and oil tankers. It is a private company.



## INDUSTRY OVERVIEW

4. Shanghai Leading Energy Shipping Limited (上海瑞寧航運有限公司) is engaged in general cargo transportation along coastal China and Yangtze River, international general cargo transportation, international ship management, goods and technology import and export, freight forwarding, shipping agency, ship equipment maintenance, coal trade and business consultancy, etc. Its vessel fleet is principally comprised of dry bulk carriers with a focus on transporting bulk commodities. It is a private company.
5. The shipping companies included in this ranking principally generates revenue from international shipping routes to and from the PRC.

### Leading Dry Bulk Shipping Companies by Weight Carrying Capacity in the Globe, 2021

Market Participants	Fleet Size (Number of Vessels)	Weight Carrying Capacity (Million DWT)	Market Share by Weight Carrying Capacity
China COSCO Shipping Corporation Limited	500	43.4	4.8%
Euronav Limited <sup>(2)</sup>	74	18.8	2.1%
China Merchants Group	250	16.3	1.8%
Golden Ocean Group Ltd <sup>(3)</sup>	77	13.3	1.5%
Star Bulk Carriers Corporation <sup>(4)</sup>	128	12.8	1.4%
Subtotal	1,029	104.6	11.5%
Total	13,000	913.0	100.0%

Source: Frost & Sullivan

Notes:

1. The fleet size for the purposes of preparing the ranking includes chartered-in and self-owned vessels.
2. Euronav Limited is an international shipping enterprise which focuses on oil transport by sea. It provides shipping solutions on major shipping routes primarily comprising of Trans-Pacific routes, Euro-Asia routes, Intra-Asia routes and Trans-Atlantic routes. It primarily owns oil tankers and transports mainly oil products. It is listed on New York Stock Exchange.
3. Golden Ocean Group Ltd is a Bermuda registered, Norway based dry bulk shipping company. It operates across the globe and provides shipping services primarily through dry bulk carriers. It manages the transportation of a broad range of major and minor bulk commodities, including ores, coal, grains and fertilizers. It is listed on Nasdaq Stock Exchange.
4. Star Bulk Carriers Corporation is a Greece-based shipping company and operates a fleet of dry bulk carrier vessels. It operates across the globe and provides shipping services primarily through dry bulk carriers. It transports major bulks which include iron ore, minerals and grain, and minor bulks such as bauxite, fertilizers and steel products. It is listed on Nasdaq Stock Exchange.

We accounted for 0.1% of the total market share in the global dry bulk shipping companies in 2021 with 1.15 million dwt. We are also the fifth largest dry bulk shipping company headquartered in the PRC in 2021 in terms of weight carrying capacity for international shipping routes involving the shipping of dry bulks to and from the PRC.

## INDUSTRY OVERVIEW

### Leading Dry Bulk Shipping Companies of International Routes by Weight Carrying Capacity Headquartered in the PRC, 2021

Market Participants	Fleet Size (Number of Vessels)	Weight Carrying Capacity (Million DWT)	Market Share by Weight Carrying Capacity
China COSCO Shipping Corporation Limited	500	34.8	22.2%
China Merchants Group	250	14.5	9.2%
Shandong Shipping Corporation	53	8.1	5.2%
Shanghai Leading Energy Shipping Limited	22	1.65	1.1%
Our Group	23	1.15	0.7%
Subtotal	848	60.20	38.3%
Total	2,235	157.00	100.0%

*Source: Ministry of Transport of the PRC, Frost & Sullivan*

*Notes:*

1. The shipping companies of this ranking principally generates revenue from international shipping routes to and from the PRC.
2. The fleet size includes the vessels chartered-in and self-owned.

## OVERVIEW OF GLOBAL AND THE PRC THIRD-PARTY SHIP MANAGEMENT SERVICES MARKET

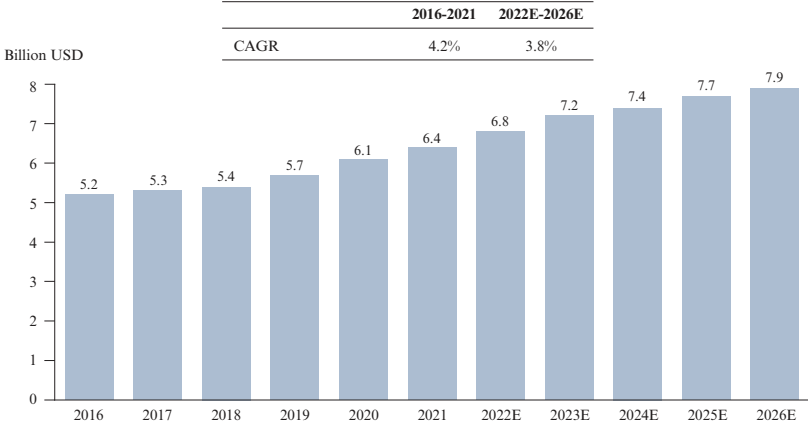
Third-party ship management services refer to the daily operation of vessels, technical management, crew management, repair and maintenance services, and the management of certificates and system documents required under maritime regulations as well as conventions for third-party owned vessels. Vessel owners with small and medium scale fleets often deploy shipping services through third-party ship management services providers in order to manage cost effectively. The stable growth in maritime shipping industry over the past years has brought along with demands for cost-effective, regulated and standardized ship management services. Ship owners that do not necessarily have the experience to manage ships will engage third-party ship management services providers.

### Market size of global third-party ship management services industry by revenue

The global market size of third-party ship management increased from USD5.2 billion in 2016 to USD6.4 billion in 2021, representing a CAGR of 4.2%, driven by increasing compliance requirements and the demand for high value-added services. Riding on the growth of the maritime shipping services, the global market size of third-party ship management is expected to grow at a CAGR of 3.8% from 2022 to 2026.

**INDUSTRY OVERVIEW**

**Market Size of Global Third-party Ship Management Services Industry by Revenue, 2016-2026E**

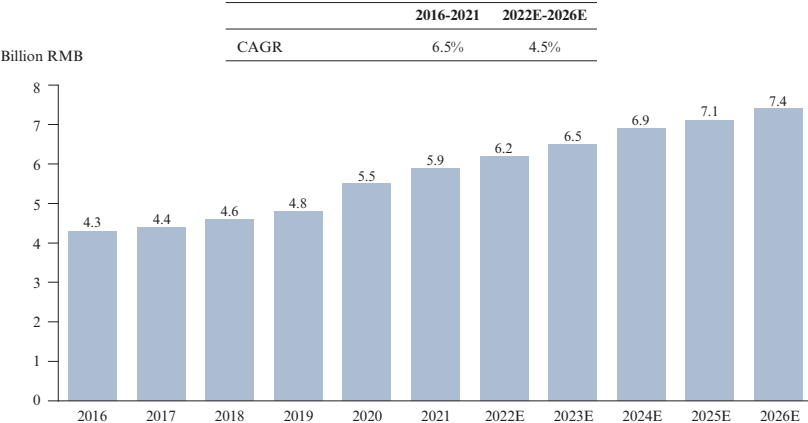


Source: Frost & Sullivan

**Market size of third-party ship management services industry in the PRC**

The market size of third-party ship management in the PRC increased from RMB4.3 billion in 2016 to RMB5.9 billion in 2021, representing a CAGR of 6.5%. In particular, the market increased sharply in 2020 as a result of rising demand in midst of disrupted supply chain due to the COVID-19 pandemic. With the recovery of port operations in other countries, the growth in third-party ship management services in the PRC is expected to be not as strong in the near future when compared to the dramatic increase in demand following containment of the COVID-19 outbreak in the second half of 2020. It is expected that the demand for third-party ship management services to continue to grow post-pandemic at a CAGR of 4.5% from 2022 to 2026.

**Market Size of Third-party Ship Management Services Industry in the PRC by Revenue, 2016–2026E**



Source: Frost & Sullivan

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## INDUSTRY OVERVIEW

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### Market drivers and trends in the global market

#### 1. *Increasing compliance requirements*

In the face of increasing compliance requirements, many shipping companies are opting to adopt an integrated fleet management system to remain competitive within the market. In order to comply with increasingly stringent regulations such as the new limit on the sulphur content for marine fuel introduced by the IMO which came into force as at 1 January 2020, shipowners are more inclined to seek and take advice from professional third-party ship managers. This advice could relate to matters such as the correct marine fuels and ship engines or the transition timetable for related investment to achieve the maximum cost savings.

#### 2. *High value-added services*

In view of the rising demand for sophisticated ship management services, the need to hire a third-party ship management services providers becomes prevalent. The third-party ship management services essentially include crewing, dry-docking, supplies organization, regulation compliance, and maintenance. Third-party ship management services providers also offer services in daily operations of vessels, crew management, and repair and maintenance services for third-party owned vessels as well as shipbuilding supervision services. Traditionally the ships are managed by the ship owner himself. Now almost all the organizations involved in the industry are humongous and owns many ships, which in turn drive the needs for professional management of their business and fleet.

#### 3. *A new breed of shipowners*

A new and increasingly important source of new business for third-party ship management service providers has arisen from a new group of investors in the shipping market, including finance leasing companies, private equity funds, and export credit agencies. As the expertise of those investors is not in shipping industry, they are more likely to join force with third-party ship management services providers, relying on the latter’s professional knowledge and economies of scale in order to meet fleet management requirements. Indeed, the rise of such non-traditional shipowners, particularly in Asia, serves as the driver to the third-party ship management services.

### Market drivers and trends in the PRC

#### 1. *Economies of scale*

Ship management has become an increasingly specialised and technical business segment in the PRC. An increasing number of shipping companies who previously ran their own in-house management team have chosen to outsource their regular operational functions to third-party shipping services providers. They usually offer a range of different management packages, from crewing only, to full commercial and technical management. Use of a third-party shipping services provider generates cost savings through economies of scale.

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## INDUSTRY OVERVIEW

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### ***2. Increasing mergers and acquisitions activities***

With increasing complexity of ship management, third-party ship management services providers are extending their services scope to fulfill client’s rising expectations. As the market develops into a mature stage, large market participants are seeking expansion opportunities through horizontal or vertical integration and business portfolio diversification which leads to an increase in mergers and acquisitions activities in the PRC third-party ship management services market. Some leading third-party ship management services providers in the PRC have been consistently seeking opportunities that can further expand its business scale and diversify its revenue stream through mergers and acquisitions.

#### **Entry barriers**

##### ***1. Brand reputation and awareness***

Existing third-party ship management services providers often have a proven track record of ship successful management projects, and have established a market reputation and brand awareness in the industry. Leading ship management services providers are often included on lists of qualified service providers by major stakeholders in the shipping industry. As such, new entrants to the ship management services market may face difficulties in this regard. Moreover, leading existing market participants with good brand reputation and established client portfolio are more attractive for new clients, in addition to being able to retain their existing clients. Hence new entrants may need extra efforts and time to acquire business from prospective clients. Therefore, existing market players are more competitive in terms of expansion of business network and exploration of new clients.

##### ***2. Experienced management team***

The competency of strategic planning and technical expertise is the cornerstone for developing third-party ship management business. Larger scale third-party ship management is very technical and often requires a wide scope of services, including daily operations of vessels, technical management, crew management, and repair and maintenance services for third-party owned vessels as well as shipbuilding supervision services. Owing to the technical nature of provision of ship management services, recruiting and retaining skilled talents with industry expertise in managing various types of ships become critical for market participants. With excellent strategic ability, existing market participants possess professional knowledge and industry experience in providing efficient and comprehensive third-party ship management services, as well as the ability to continuously lower costs. Additionally, leading existing market participants usually have the ability to provide better remuneration package and career opportunities, thereby standing a better chance of recruiting experienced talents. Comparatively, new entrants without experienced management team may face difficulties when making strategic decisions and recruiting skilled employees.

## INDUSTRY OVERVIEW

### COMPETITIVE LANDSCAPE OF THE PRC THIRD-PARTY SHIP MANAGEMENT SERVICES MARKET

#### Leading Third-party Ship Management Services Provider by Fleet Size Managed in the Globe, 2021

Market Participants	Fleet Size (No. of Vessels)	Market Share
V Group <sup>(1)</sup>	940	6.7%
Anglo-Eastern Group <sup>(2)</sup>	831	5.9%
Bernhard Schulte GmbH & Co. KG <sup>(3)</sup>	650	4.6%
Fleet Management Limited <sup>(4)</sup>	463	3.3%
OSM Group <sup>(5)</sup>	430	3.1%
Subtotal	3,314	23.7%
Total	14,000	100.0%

*Source: Frost & Sullivan*

*Notes:*

1. V Group provides a full range of ship management and marine support services to ship owners and operators around the globe. It operates globally and provides ship management and marine support services to various types of ships, including tankers, bulk carriers, container vessels and leisure ships. It is a private company.
2. Anglo-Eastern Group is an international ship management group. It provides technical ship management for a wide range of different ship types, including dry bulk carriers, container ships, tankers (oil, gas and chemical), roll-on/roll-off carriers, offshore vessels and semi-submersibles, around the globe. It is a private company.
3. Bernhard Schulte GmbH & Co. KG is a family-owned ship owner and ship manager that is well-established in the maritime industry. It provides shipping management services to container vessels, liquified natural gas carriers, liquified petroleum gas carriers, tankers, bulk carriers, offshore vessels and cruise vessels across the globe. It is a private company.
4. Fleet Management Limited provides a comprehensive range of ship management services to cargo ship owners worldwide. It manages a range of vessels including bulk carriers, container vessels, car carriers, oil tankers, gas carriers, and chemical tankers across the globe. It is a private company.
5. OSM Group is an international ship management and maritime services provider company. It engages in shipping management services for various types of vessels, including tankers, bulk carriers, offshore ships, cruise vessels, ferries, and yachts across the globe. It is a private company.

#### Market share of third-party ship management services providers headquartered in the PRC

PRC-based ship management services providers are able to leverage their extensive market know-how and access to the vast network of shipping companies in the PRC to build up a wide base of suppliers and clients. We are the largest third-party ship management services provider headquartered in the PRC in 2021 in terms of the number of third-party owned vessels under management, with 176 third-party owned vessels managed, accounting for approximately 1.3% of the total global market share, respectively.

## INDUSTRY OVERVIEW

### Leading Third-party Ship Management Services Provider by Fleet Size Managed Headquartered in the PRC, 2021

Market Participants	Fleet Size (No. of Vessels)	Market Share
Our Group	176	8.8%
Shanghai Fujian Guohang Ocean Ship Management Co., Ltd.	50	2.5%
Zhongqishi Huayang (Tianjin) Ship Management Co., Ltd.	45	2.3%
V-Ship (Shanghai) Ship Management Co., Ltd.	40	2.0%
Shanghai Dongdu Shipping Management Limited Company	35	1.8%
Subtotal	346	17.3%
Total	2,000	100.0%

*Source: Frost & Sullivan*

*Notes:*

1. Shanghai Fujian Guohang Ocean Ship Management Co., Ltd. (上海福建國航遠洋船舶管理有限公司) is a ship management company based in Shanghai. It manages tankers and bulk carriers mainly in the PRC. It is a private company.
2. Zhongqishi Huayang (Tianjin) Ship Management Co., Ltd. (中企世華洋(天津)船舶管理有限公司) is a ship management company based in Tianjin. It manages tankers and bulk carriers mainly in the PRC. It is a private company.
3. V-Ship (Shanghai) Ship Management Co., Ltd. is based in Shanghai and a subsidiary of an international ship management company. It manages tankers and bulk carriers mainly in the PRC. It is a private company.
4. Shanghai Dongdu Shipping Management Limited Company (上海東渡船舶管理有限公司) is a ship management company based in Shanghai. It manages tankers and bulk carriers mainly in the PRC. It is a private company.

### DIRECTORS' CONFIRMATION

Our Directors, after due and reasonable consideration, are of the view that there has been no adverse change in the market information since the date of the F&S Report which may qualify, contradict or have an impact on the information therein.