

## Evaluation of the structure, capacity and technical condition of Vietnamese ship fleet

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**Abstract:** The trend of economic globalization together with the policy of comprehensive renovation and opening up of Vietnam's economy has had a profound impact on the entire production and social life in Vietnam. The Vietnamese economy has consistently gained a great deal of success, with annual GDP growth of the highest in the region and in the world. The people's living standards have improved markedly, the human development indicators and the social development programs recognized and appreciated by the UNDP. Vietnamese exports are available in most countries around the world. Vietnam's seaports have also received hundreds of millions of tons of cargo to serve the country's socio-economic development needs during the renovation.

**Keywords:** structure, capacity, technical condition, ship fleet

### 1. Introduction

The important role of the maritime sector in the development of the national economy and the world has been affirmed by many studies and realities of the nations. The shipping industry is directly affected by the development of the world economy. Over the last two decades, the following changes have affected the overall development of the maritime industry.

First is the change in the economic structure of the world, the change reflected by the following factors: the collapse of the Soviet Union and the socialist countries of Eastern Europe, which in turn made the appearance and Development of the market economy in the country. So. Market of the transportation industry of which seaport is expanded. The second factor is the trend of globalization and international economic integration of countries, first of all the consolidation and growth of the European common market, with the presence and circulation of the Euros. Then there is the rapid development of other economic blocs in different parts of the continent. The third trend is the miraculous development of Southeast Asia. With the advent of four new industrialized countries, this area became the world's highest economic growth region in the 1980s and early 1990s. One of the causes of economic growth In these countries, economic export strategy is the main driving force for economic development. In addition, the shift of assembled industries from industrialized countries to developing countries, where there are abundant and lower-cost workers, is Singapore, Hong Kong, Taiwan, South Korea, and now the move is being repeated but from developing countries to less developed countries (Vietnam, Laos ...). This trend together with the economic development Has made foreign trade rapidly.

The fourth trend is the rapid development, with the high intensity of science and technology revolution, especially information technology, which makes economic, technical and financial globalization evolve rapidly. More and more solidly, the opportunities for business markets for industries and sectors of nations are also growing and expanding. The growth rate of ship in the world is shown in Fig.1.

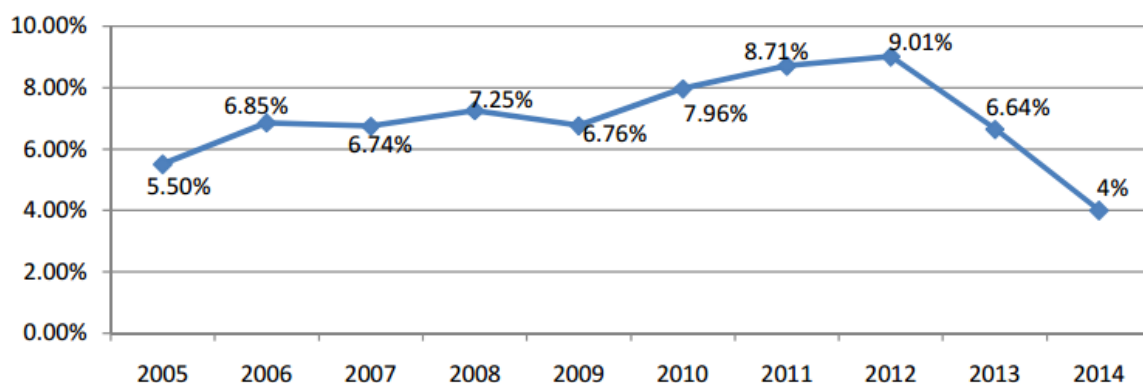
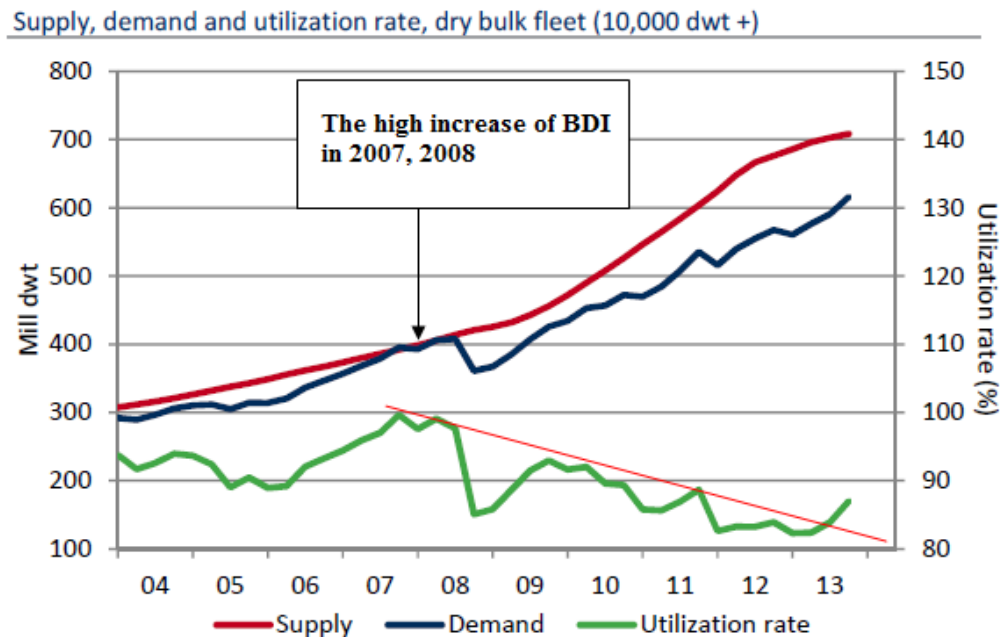


Figure 1. The growth rate of ship in the world

Vietnam is a country with a stable economy with high growth rates in recent years, so the volume of goods circulating domestically and import-export goods is increasing rapidly. Meanwhile, the market share of Vietnam's fleet for all new sea-going vessels accounts for less than 20%. Statistics show that up to the end of December 2009, the fleet of Vietnam has 1,598 ships with a total tonnage of over 6.2 million DWT, the average age of ships is 11.8 years. The Vietnamese shipping fleet has contributed to a significant increase in ocean shipping as well as revenue and profits for shipping and maritime services and increased the competitiveness of Vietnam's shipping fleet in the maritime market in the international and regional area.



**Figure 2. The increase of BDI in 2007, 2008**

## 2. Structure, capacity and technical condition of the Vietnamese fleet

### 2.1. Evaluation by ship type

#### *Specialized bulk carrier*

Vietnam annually exports millions of tons of coal, hundreds of thousands of tons of ore and imports of loose fertilizer and clinker with a few hundreds of tons. However, the fleet of specialized ships waiting for the bulk of Vietnam so far has only about 30 ships with a total capacity of about 580,000 DWT and an average age of over 14 managed by Vinalines and Vinashin. Special-purpose vessels of 18,000 DWT or more have been bought by the Vietnam Shipping Company since 1996. Prior to 1996, almost all shipments were made by one-deck ship. technical ability is not appropriate. With the increasing demand for transportation, the demand for ships will be about 960,943 DWT in 2010, since 2008 we lack nearly 400,000 DWT. If the capacity of this fleet of Vietnam is not sufficient, in the future, foreign vessels will have the opportunity to overwhelm the market share which will greatly affect the competitiveness and development of the Vietnamese cargo fleet.

#### *Oil tankers, specialized liquid cargo vessels*

Transporting oil and oil products, liquefied petroleum gas and so on will require very high levels of safety, otherwise it will result in huge losses to people, property and the ecological environment, especially to the marine environment. Vietnam's tanker fleet currently has 96 vessels with a total deadweight of 1,083,473 DWT and an average age of 15 years. Some big ships such as Dai Hung, Dai Long ... are capable of transporting import and export goods, while other small vessels are mainly used for inland transportation from petroleum depots to consumption areas. . Currently, Vietnam's oil tanker fleet, if it wins the transport rights, meets only over 20% of the total volume of imported fuel and crude oil exported from Vietnam.

An oil tanker requires that the technical condition is always in good condition, with a high safety factor. Except for the new oil tankers that have been invested in the last few years, most of the smaller ships operating in the country are too old, over 25 years old (1975), poor features Technical conditions do not ensure the safety of the exploitation. On the offshore route with very strict requirements on the technical status, level of

exploitation and operation of the ship, so now a number of companies of Vietnam to hire foreign management. If the specialized oil tanker fleet of Vietnam is not properly developed, it will not be able to improve its market share, especially when it comes to the integration roadmap, In Vietnam, the more modern vessels, the greater economic potential, so it can engage in business in all geographic areas. The inland shipping of Vietnamese vessels is also at risk of being scrapped by the team foreign ships.

### ***Ships dedicated container***

The container fleet currently has 26 vessels owned by seven domestic ship owners with a combined tonnage of 248,374 DWT (17,000 TEUs), representing about 4.45% of the total DWT of the Vietnamese fleet. At present, the main activity of this fleet is to provide feeder services to Singapore, Hong Kong and Kaohsiung to collect and withdraw goods for mother ships on main routes, but inland transportation between Vietnam's seaports still owns weak.

Although the volume of container transported by the Vietnamese fleet has increased, with the current capacity of 17,000 TEUs of the current fleet compared to the actual demand, the market share of the container ship fleet in Vietnam is still increasing. small, occupy about 18% market share in Vietnam. According to a report from a foreign maritime consulting company, by the end of 2007, there were 134 vessels in the container transport market in Vietnam with the average size of 950 TEUs, total transport capacity of 124,800 TEUs. To exploit 59 routes to and from some main ports of Vietnam as follows:

- Feeder Services: There are 27 different routes, one or more Vietnamese ports connecting to international transshipment ports such as Singapore, Hong Kong and Kaohsiung;
- Asian regional direct route: 32 different routes, one or more Vietnamese ports connecting many different ports in the midland.

Meanwhile, the Vietnamese fleet has 26, capable of 17,000 Teu, operating mainly on domestic routes and several feeder routes in the area. According to forecasts from many sources, the demand for containerized cargo on Vietnam's main routes will reach nearly 4 million TEUs by 2010 and over 8 million TEUs by 2020. Therefore, in the future, it is necessary to develop container fleet to meet the demand of container shipping in Vietnam. Demand for containership fleet to 2010 under 2 transport scenarios as follows:

Scenario 1: with 25% market share for exports, 24% for imports and 100% for domestic products;

Scenario 2: with 30% market share for import and 100% for domestic.

As of early 2007, our dedicated container fleet has a combined capacity of 15,000 20-foot equivalent units, while domestic demand for 7,969 TEUs is required. Demand for ships on routes according to the transport market share scenarios is shown in the table below.

**Table 1: Demand for container ships in 2010**

<b>Line</b>	<b>Transportation cargo quantity (TEU)</b>	<b>Demand (TEU)</b>	<b>Added shipfleet (TEU)</b>
Inland	255.000	7.969	0
Export	650.000	25.558	39.657
Import	480.000	21.130	
<b>Total</b>	<b>1.385.000</b>	<b>54.657</b>	<b>39.657</b>

The above demand balance sheet shows that between 2007 and 2010 a minimum of 31,172 TEUs (equivalent to over 3,000 TEU vessels) needs to be added. Thus, the need to develop container fleet is urgently needed to be able to handle 100% of domestic shipments and at least 25% of volume on overseas routes. This issue should be taken seriously in view of the sustainable development of Vietnam shipping in the future.

In recent years, Vietnam has developed a comprehensive dry cargo fleet to transport imported and domestic goods are growing rapidly. As of the end of 2008, the total dry cargo fleet of Vietnam had about 918 vessels of 200 DWT or more, with a total tonnage of 2,969,989 DWT, accounting for 53.21% of the total tonnage of Vietnamese vessels under DWT. The average age of the combined dry bulk carrier fleet is 22 years. With the actual situation so in the coming years this fleet almost no longer meet the transport requirements if the owner of the ship age requirements are not over 20 years, this is also one of the difficulties of the fleet. Vietnam sea in the process of integration. As a result, the competitiveness of this fleet will deteriorate further when charterers and charterers perceive and assess possible damages to old charterers.

**Table 2: Structure of Vietnam ocean ship fleet**

Ship type	Quantity	Weight (DWT)	Weight rate DWT (%)
Total	1.445	5.579.524	100
Contaner	26	248.374	4.45
Dry cargo ship	943	3.549.989	63.62
Bulk cargo ship	25	580.000	10.40
Merchant ship	918	2.969.989	53.21
Oil & Oil Products	96	1.083.473	19.43
Others	380	697.668	12.50

## 2.2. Evaluation by ship age

The reality is that the average age of the Vietnamese fleet is being rapidly rejuvenated, reaching 13 years old, chasing nearly the average age of the world fleet of 11.8 years. However, over 20 years of Vietnam ships are too many (over 35%), so naturally the fleet will not fit into today's modern forms of transportation. According to the plan and development strategy, the Vietnam National Shipping Lines and the Vietnam Shipbuilding Industry Group have rejuvenated the fleet with an average age of 15 years in the 2005-2010 period. The world's shipbuilding market has experienced major fluctuations in recent years. Between 2004 and 2007 new shipbuilding prices increased rapidly, in part due to high world steel prices, partly due to the rapidly growing demand for ships. Therefore, Vietnamese ship owners cannot afford the capital to invest in new building vessels, so Vietnamese shipping companies still have to supplement their capacity by purchasing old vessels, even though they know that they are not sure. To ensure high efficiency for the business of operating the ship, this greatly affects the ability to exploit, compete, and grow.

**Table 3: Average age of the Vietnamese fleet**

Parameters	Unit	2005	2006	2007	2008
Total	ship	1.084	1.107	1.199	1.445
Weight total	DWT	3.115.489	3.447.474	4.384.880	5.579.524
Avegare age	year	16	15	14	13

Generally, the Vietnamese fleet is small and medium-sized vessels, deriving from the depth of the inlet into Vietnamese ports. Most of the dry bulk ships of the Vietnamese shipping fleet carry import and export cargo of 6,000-12,500 DWT. The largest container ship was only 1300 TEU, with 1,700 TEU ships in 2009, while container ships in the world reached over 11,500 TEUs. In the general trend of tonnage development, the Vietnamese marine fleet has started to shift its investment to vessels of more than 10,000 DWT, mainly in VINALINES. Particularly for bulk carriers up to 40,000 DWT, crude oil tankers can be up to 90,000 DWT in the 2007-2010 period.

The average productivity of the Vietnamese fleet in 2008 was 14.20 tons / DWT-year and 23.642 tons / ton-year. If yield per ton / DWT, it can be confirmed that the Vietnamese fleet is more productive than the world (average fleet capacity is 7.7 tons / DWT-year). But according to the volume of rotation, the productivity of the Vietnamese fleet is much lower than that of the world (31,600 T-HL / DWT-year), which is only two thirds of the world fleet. This proves that the Vietnamese fleet only operates on near routes. Although the container fleet has the highest capacity of 25.98 tonne / DWT-year and 2.35teu / DWT-year, it mainly operates domestic routes with no long sea routes. With this result, we can see the transportation market of Vietnamese fleet is limited in space. The goal of Vinalines and Vinashin companies after 2006 is to reach out to distant continents with large ships to improve the efficiency of exploration and expand the shipping market for the long-term development of Vietnam's maritime industry. Without additional breakthroughs by large vessels, this goal is difficult to implement in the coming period.

## 2.3. Evaluation by technical condition

The technical condition of the Vietnamese fleet is generally inferior, as most of the ships are old and outdated, especially small-scale shipowners, which do not meet the requirements of the shipper. Although the State has prescribed the age of the ship when purchased from abroad is not over 15 years to minimize technical obsolete for the fleet of Vietnam, reduce the loss of goods caused by the ship fails. However, the fact that Vietnamese shipping companies still have to continue to exploit the old fleet. The lack of capital to modernize

the fleet has narrowed the market share of Vietnamese shipping. Ships do not meet the technical standards required under international conventions are obliged to concentrate on domestic routes together with the small fleet still operating in the past. The result is surplus domestic capacity but lack on overseas routes. To overcome this situation, it is necessary to step up investment in specialization for national fleets, especially container ships, crude oil tankers and oil products, in order to exploit them more and more effectively.

Although the Maritime Bureau's close guidance on maritime safety inspections of the Vietnamese fleet is underway, the situation of Vietnamese ships detained overseas is still largely due to defects. in terms of quantity and quality of life-saving equipment, fire fighting and prevention of environmental pollution. Particularly for ships on domestic routes, maritime safety violations cause serious danger of causing environmental pollution.

### 3. Conclusion

Accordingly, in 2016, members of the Tokyo-MOU conducted 31,678 PSC inspections of 17,503 flag-nautical vessels of 101 countries to regional ports. In 31,678 PSC inspections, 18,943 defect detection ships affected safety, security, maritime labor conditions, environmental pollution prevention and 1,090 flagged vessels from 69 countries. kept due to serious defects; The average retention of the entire region was 3.44%, down from 3.67% in 2015 and 3.96% in 2014. The year of 2016 is a very difficult year for the business of the Vietnamese shipping fleet. The freight rates are sharply reduced, fuel prices fluctuate, piracy raging in the sea zone of Philippines, Indonesia and Malaysia occurs, However, Vietnamese shipping companies have made great strides in maintaining the technical state of the vessel in compliance with the provisions of the international treaties, in order to minimize the PSC detentions in the water. out. Over the past year, Tokyo-MOU members conducted PSC inspections of 742 Vietnamese ships and held 30 ships (a retention rate of 4.04%, higher than the regional average of 3,44%, and higher than the proportion of Vietnamese ships seized in 2014, 2015). Thus, this is an important issue paid special attention to in 2016 and in the next years by the Vietnamese maritime community.

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