

TREND OF GLOBAL AND LOCAL SHIPBUILDING

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Abstract

Shipbuilding is a state supported industry, which enjoyed government subsidies and always an attractive industry for developing countries. Bangladesh as a country with large population has golden opportunity to get success in labor intensive heavy industry like shipbuilding. Bangladesh has required potential to establish herself as a promising shipbuilding nation and revive the glorious history of maritime sector. But, Bangladesh cannot keep pace and regularity in this business due to lack of appropriate strategy and policy and fails to penetrate international shipbuilding market. Moreover, local shipbuilding also has few inherent challenges. From this study it has been revealed that, small and medium size container, tanker, cargo, multipurpose and special types of ships with 3000-10000 DWT (approx) is suitable for Bangladesh. However, very recently the opportunity of FDI has created in shipbuilding sector. Country like China, Turkey, and Netherlands has showed their keen interest in this sector.

Keywords: Shipbuilding, Shipping, Niche Market, Recycling

Introduction

Shipbuilding industry has suffered from the absence of global control and role and a tendency towards over-investment due to the fact that shipyards offer a wide range of technologies, employ a large number of workers and generate income as the shipbuilding market is worldwide. Shipbuilding is always a state supported industry and enjoy government subsidies.¹ As a result, shipbuilding is an attractive industry for developing countries. After World War II, Japan used shipbuilding in the 1950s and 1960s to rebuild its industrial structure; Again South Korea started to make shipbuilding a strategic industry in the 1970s and become global market leader in 2003. Then China follows the same process and repeated these same models by ensuring large state-supported investments in this sector and become the global leader in 2008.² Presently the global shipbuilding market

¹ Z Lixing, "Development oriented finance and economy in China: A historical review and prognostic assessment", Printed in Bloomington, Indiana, USA, 2009.

² D Michael, "China: A modern history", I B Tauris and Co Ltd, London, UK, 2010.

suffers from inflation, geopolitical situation, over-capacities, depressed prices low profit margins, trade distortions and widespread subsidization. Local shipbuilding have enough potential to revive her glory by optimizing capacity and capturing recommended niche market during on going global inflation.

It is an overview and analysis article on global and local shipbuilding, where both primary and secondary information has been taken from different sources. There are plenty of information and literature related to global shipping and shipbuilding available both in library and in nets. But, there are very few literature, studies, reports, and articles available on local shipbuilding. Again, there are few studies have been carried out on local ship breaking or recycling industry. Actually there are almost no systematic study has been found on trend analysis of global and local shipbuilding as well as critical analysis on local shipbuilding and its suitable market. So, an effort has been taken to study the global and local shipbuilding trend as well as depict suitable market and viable suggestion for local shipbuilding.

Overview of Global Shipbuilding

Shipbuilding is a primitive industry, deals with construction of ships and floating vessels. Shipbuilding activities usually takes place with heavy installation of machinery and which is known as a shipyard or dockyards. Shipbuilding industry is usually doing the design and construction of oceangoing ships and specialized vessel. Today, the global shipbuilding industry is leaded absolutely by Asia-Pacific followed by Europe and America with some specialized niche market. Asia-Pacific (mainly by China, South Korea, and Japan) is expected to maintain its supremacy in the global market, due to few well-defined and inherent advantages. Those advantages are: comparatively cheaper labor wages, strong government back up, favourable government policy, preferable mind set up, political stability, economic strength, as well as strong forward and backward linkage industries. It is a highly capital intensive industry, which produce costly unit production instead of mass production like Ready-Made Garment (RMG). As a result, shipbuilding needs strong government policy and support, favourable strategy and management as well as political stability and those are prerequisite to flourish and survive in the competitive world.

In 1860s, the epoch of modern shipbuilding has started with the development of manufacturing industry. From that time use of iron and advanced steamers has added the new dimension in shipbuilding. Ships owners like such strong and reliable ships because of longer voyages the ships could sail and they

can use ships for better commercial operations. As a result, in later 19th century successful symbol of such ships could be confirmed by the phasing out of sailing vessel. In late 19th century, UK was absolutely the biggest shipbuilding nation. However, from 1892 to 1894, UK produced over 80% of the ships sailing worldwide in terms of gross tonnage (gt). At that time, UK holds the leading position of world trade and they need huge merchant fleets to control all over the globe. Moreover, to maintain their colonial supremacy, UK needs such vast shipbuilding.

Trend Analysis of Global Shipbuilding History

Beginning of Global Shipbuilding Era. In Europe, UK was the front most states of world economy since the industrial revolution. They were the most successful productive nation of many industrial products including steel, materials, system, equipment and machinery. The industrialization of UK was well ahead in comparison with most of the nations in the world, as they provided the foundation to demand for the ships due to increasing trades generated by their booming economy. And that time, UK controlled most of the trade flows in the world. In 1902, Lloyd's Register of Shipping has showed that, the tonnages owned and operated by UK accounted for nearly 45% of the global merchant fleet. At the same time, UK shipbuilding industry occupied almost 58% of global market share. Again, in 1910 to 1920, UK produced nearly 70% of the global production. However, after reaching the peak of success, there was falling history. As the irony of fate, UK has lost its position both in shipping and in shipbuilding market. Finally, in 1982, the global shipbuilding market share of UK was below 1% as well as global shipping market of UK was below 3%.

State of Shipbuilding in Other European Countries. At the same time span, during the blooming period of British shipbuilding industry, the shipbuilders of other European nations were rather active at global market. In 1900 to 1950 European shipbuilders have entered to shipbuilding industry gradually together with UK Shipbuilders. The market share of Continental Europe (like Germany, France, and Netherlands) up to 1945 was 20% to 40% of the global. They were also controlling the global merchant fleet with a relative high share. In 1931, the Scandinavia shipbuilders were captured 21% of the global market share. However, UK along with European Countries (EC) were also losing their trade and market share of shipbuilding simultaneously. Again, from the analysis of the statistics of Lloyd's Register of Shipping and history, it is clear that, the increase of market share of shipbuilding always went along with the swelling of the size of national

fleets. Finally, after 1986, the entire maritime industry of Europe had declined significantly.

Superiority of USA after WWI. The shipbuilding of UK started to decline during the First World War (WWI). After WWI, in the first half of 20th century, USA took the production center of world shipbuilding away from the UK and EC. The market share of the USA industry in late 1910s captured around 60% of global share. During the same period, those major traditional shipbuilding nations, like UK or EC, had produce less ships due to the war. It need to mention that, the industry in USA invented and introduced new concept of production in shipbuilding and they have set the new shipbuilding standard (like ABS) in design and production. That creativeness in shipbuilding made by USA has also significant influence in this heavy and primitive industry. The great shipbuilding history writer Martin Stopford stated that, ‘This was the first step towards standardized shipbuilding practice, though construction methods at these yards did not conform to the complete prefabricated unit principle introduce later’.³ During WWII (1940 to1945), the market share of USA shipbuilding had climbed the highest peak and they captured 90% of global share.

Decline of Global Market Share of USA after the WWII. In 1950, the market share of USA has declined to 10% to the global shipbuilding market. Actually the reason behind the huge productions of ship by USA during the wartime was due to the triggered and supported the industry by USA government. It is really interesting that, the governments during wartime, were heavily subsidized the local industry by USA government in order to meet the demand of both military and commercial. With the removing of subsidies in post WWII, the inherent disadvantage of USA shipbuilding industry (as 30% to 50% of higher in construction cost in comparing to other nations), they have lost their market position.⁴ So, the lesson learnt from USA case is that, the political interruption played an important and driving role in the shipbuilding for any nation. From the analysis of modern shipbuilding history, it can be depict that, in the first half of 19th century; Western Countries (both European and American) dominated modern shipbuilding industry due to their inherent local demand for ships.⁵ At the

³ M Stopford, “Maritime Economics”, Routledge, New York, USA, 2009.

⁴ K A Hossain and M N G Zakaria, “A Study of Global Shipbuilding Growth Trend and Future Forecast”, Procidia Engineering, 2017.

⁵ M N G Zakaria, M T Ali and K A Hossain, “Underlying problem of ship recycling industries of Bangladesh”, Journal of Naval Architecture and Marine Engineering, 2012.

same time, the size of fleets owned by the nations was also important. However, the competitive advantages also played another big role.

Emergence of Japan as Shipbuilding Center after WWII. After WWII, Japan started their industrial revolution, where they first concentrated to heavy industry. Shipbuilding as heavy industry is the multiplier of small and medium industries. The expansion and booming of Japanese shipbuilding industry was due to well planning and initiative taken by Japanese Government, just after WWII. Japan selected the shipbuilding industry as one of important industrial sector to rebuild the country's economy which was largely destroyed during WWII. Government departments, ministry of transport, were the central planner and they worked with experienced persons in maritime sectors to co-ordinate the distribution of the resources to the maritime sector. The Japanese strategy included collective allocation of the orders from domestic ship-owners and anticipated the production schedule for all shipbuilders. Again, Japan Development Bank (JDB) was also involved actively in the schedule by contributing favorable loans to local ship owners. The amount of funds flowing to marine sectors was vast, and that was over 30% of the total loans provided JDB. Moreover, the shipbuilding itself employed economies of scale by efficiently expanding to their production capacity. As a result, a huge investment was taken place to set up advanced and giant shipyards.

After that, Japanese ships became very competitive in the global market due to integrated production technology. Japanese shipbuilding technology improved productivity and that was accredited to the employment. At the same time, the domestic orders of new-buildings were also increased manifold. As a result, since 1950, the outcome of these measures and efforts made by Japan Government had boasted up Japanese shipbuilding and they capture the large global market share. Finally in 1960s, the Japan became the global market leader by supplying about 50% of the tonnage for global fleet. Again from analysis of the statistic of Lloyd's Register of Shipping and history, it has been proved that, in contrast to the success of Japanese shipbuilding, the Japanese national commercial fleets did not growing as the shipbuilding sector was grown up. In 1973, the Japanese share of the global shipping market was just around 10%. On the other hand, under the flags of convenience as per IMO and UNCTAD, Japan was the owner of 73% of global fleet (under the flag of convenience). So, the development of open registration in 1970's under the flags of convenience was also helps Japan to develop their local shipbuilding.

Actually, the open registration started in 1900's and had a rapid development after WWII. The ship owners who fly flags of convenience had less constraints on business decisions and operational activities than they fly national flags. However, the orders of new-buildings, was one of business planning and decision and that was free of controlling by flag states. Again, those new order mostly are subject to market mechanism and which guides ship-owners to place the orders of new-building ships according to their preferences by the nations.⁶ The great shipbuilding writer Martin Stopford concluded in his book *Maritime Economics* is that, 'The reasons of booming of Japanese shipbuilding industry were that, their shipbuilding became highly competitive and obtained a high penetration of the export market, particularly the market for larger tankers sold to independent owners'.

Surfacing of South East Asia as Global Center. The story of rising up of the South Korean shipbuilding was really near to fairy tale. At the same time, other Asian nations, who grew con-temporarily, Asia, the global shipbuilding center in 1980s. Japan was the shipbuilding leader with market share of around 46.5%, at the beginning of 1980s. In that time, the market share of South Korea was below 4%, with only 4% of global share. Then European share was about 33.5% of global market. Interestingly, 'There was remarkable change of global share at the end of 1980s. South Korea grew rapidly and gained substantial global share around 22%. Japan kept its position firmly with almost 43% of global share. Then China emerged at the first time in shipbuilding, with global market share of around 2.3%. In 1980, the most amazing and notable development during the years was that the global market shares of all South East Asian Countries were around 70%'.⁷ So, shipbuilding centers had been totally shifted from Western (Europe and USA) to Asia at the end of 1980s. Finally, the global market share of Europe declined significantly by around 10%. However, the trend of global market leadership of shipbuilding with probable causes has been shown in Table 1.

⁶ K A Hossain, "SWOT Analysis of China Shipbuilding Industry in the Third Eyes", *Journal of Recent Advancement of Petrochemical Science*, vol 4, no. 2, 2018.

⁷ K A Hossain, "Analysis of important steering factors which give Success to Global Shipbuilding Leaders", *Journal of Recent Advancement of Petrochemical Science*, vol 4, no. 5, 2018.

Duration of Shipbuilding Leadership	Country	Causes of Lost Leadership
1860's-1950's	UK(Great Britain)	Failure to modernize local shipbuilding. Shipbuilding labor cost becomes high. Downsize own fleet. Lost global leadership by politically and economically
Mid1950's-mid1990's	Japan	High cost of shipbuilding with aging. High shipbuilding labor cost. Decrease shipyards R&D budget (less than 1%). Increase gap between demand and supply of steel. Increase steel price. Reduce government support.
Mid1990's to 2009	South Korea	High cost of shipbuilding labor. Increase gap between demand and supply of steel. Increase steel price. The appreciation of Korean local currency (won) has worsened the competitiveness of Korean shipbuilding. Reduce government support.
Since 2010' (it was earlier than Chinese planned)	China	Low human resources cost. Low shipbuilding labor cost. High shipbuilding labor cost. Ambitious government program for the shipbuilding development. Growing shipyards capacity. Friendly government policy and strategy. Increase governmental subsidies.

Table 1: Trend of Market Leadership of Global Shipbuilding Industry

Trend Analysis of Local Shipbuilding History of Bangladesh

Past Trend of Local Shipbuilding. Indigenous shipbuilding history of Bengal has a glory and stand on firm foundation. During the first half of the 19th Century, the Shipyards at Chattogram were capability of built ships around 1000 dwt. During Pakistan period Public Shipyards dominated the shipbuilding industry. At present, Private Sector has emerged as the major player of Bangladeshi shipbuilding. There are around hundred shipyards concentrated at different places of the country; where inland, costal and fishing ships are built. In 1979 FAO funded contract for supply of 08-food grain carrying vessels to Bangladesh Inland Water Transport Corporation (BIWTC) was secured by High-speed Shipbuilding and Engineering Company (HSEC) Ltd., Narayanganj, Dhaka through international tender. These were Class Vessels. Mitsui Engineering and Shipbuilding Industry (MESI) of Japan entered into a joint venture in shipbuilding with High Speed Shipbuilding and Engineering Co. Ltd. and a construction project of 04 deep-sea fishing craft was undertaken. 'Recently some shipbuilding Industries including Ananda Shipyard and Slipways Ltd (ASSL), Dhaka and Western Marine Shipyard (WMS) Ltd, Chittagong have come up with all moderately standards shipbuilding facilities that enabled them to receive export

orders. In 2008 for the first time Ananda Shipyards exported class ocean going cargo ship with 3500 dwt capacity, small ferries and boats include three aluminum catamaran passengers' vessels to Denmark and Mozambique and thereby secure the name of Bangladesh in the list of ship exporting nations'.⁸

Present Trend of Local Shipbuilding. Private local shipyards are mainly constructing steel ships that are suitable for inland and coastal water. They can design and fabricate ship around 4500 DWT to support the local demand. The most of the private shipyards are operating under individual management, with minor supervision of government. The numbers of vessels built per year by them are quite many. They employ huge number of skilled and unskilled labor in casual basis. The most of the private shipyards are highly depend on Bhatiary ship recycling industry. However, private shipyards need special attention by government to develop them as quality shipyards. However, 'Among these yards there are dozens of private shipyards are capable of manufacturing good quality small and medium ships to fulfill the requirement both local and foreign ship buyers/owners'.

There are three public shipyards are successfully running by management of BN. DEW Ltd as an oldest shipyards in the region building new ships and repair many vessels in this region since 1926. It has the experienced to built Ro-Ro Ferry, Tug-boat, LCT, OPV, aluminum high-speed boat, etc. KSY Ltd as another shipyard has built 400 new ships and repaired more than 3000 vessels since her inception in 1957. Very recently they built dozen of international standard naval ships joint venture with China shipbuilding giant CSIC. Country's only dry dock, CDDL has repaired more than 1000 merchant and naval ships since her from 1982. Presently CDDL is preparing to build Frigates and OPV for BN. All three public shipyards are running by BN profitably are quite capable to built both merchant and naval ships with small and medium size.

Trend Analysis of Global Merchant Ships

Ships are widely used for transportation of various commodities from large machines, vehicle, food grain, and ore to even oil, and passengers also. Transportation through water is always cheaper as compared to that of air, road, and rail. Ships are versatile as it has no state boundary and operated through sea and ocean. Again it exempting the changing exchange rates and the currency

⁸ K A Hossain, "Evaluation of potential prospect and challenge of Bangladeshi shipbuilding in light of global contest", MSc Thesis, Dept of NAME, BUET, 2010.

adjustment factor or fee imposed on the carrier companies and that gives additional advantages. Usually ‘merchant shipbuilding market has divided mainly into oil tankers, bulk carriers, container ships, general cargo ships, and passenger ships. Global merchant fleet statistics by main ships types in the year of 2020 to 2021 in thousand DWT and in percentage has been shown in Table 2. It is mention that that, during analysis and fleet size calculation, all propelled and seagoing merchant vessels of 100 gross tons and above has been considered.⁹ So, it has been cleared from the table that, as of January 2021, the global merchant or commercial fleet has grown by around 3% in average.

Main Ships Types	2020 (thousand dwt)	Percentage (%)	2021 (thousand dwt)	Percentage (%)	% Charge 2021 Over 2020
Bulk carriers	879725	42.47%	913032	42.77%	3.79%
Oil tankers	601342	29.03%	619148	29.00%	2.96%
Container ships	274973	13.27%	281784	13.20%	2.48%
Other types of ship	238705	11.52%	243922	11.43%	2.19%
Offshore supply	84049	4.06%	84094	3.94%	0.05%
Gas carriers	73685	3.56%	77455	3.63%	5.12%
Chemical tankers	47480	2.29%	48858	2.29%	2.90%
Other/not available	25500	1.23%	25407	1.19%	-0.36%
Ferries and passenger ships	7992	0.39%	8109	0.38%	1.46%
General cargo ships	76893	3.71%	76754	3.60%	-0.18%
World total	2071638		2134 640		3.04% average inc

Table 2: Global Merchant Fleet Statistics by Main Ships Types from 2020 to 2021 in Thousand dwt and in Percentage

On the other hand, ‘the total number of all main types of merchant ships in the world was 99800 or in short 0.1 million in 2020.¹⁰ And the equivalent total capacity in dwt of merchant ships in the global fleet was 2,134,639,907 or in short 2.13 billion dwt. Again annual growth rate of global merchant fleet in percentage on the basis of ships dwt in the year from 2000 to 2020 has been shown in Figure 1. The graph has been drawn as per the calculation on the basis of data collected from Clarksons Research’.¹¹ From analysis of the graph it has been found that, the ships growth rate gone to the peak in the year of 2011 with 11%. Again ‘the ageing of the merchant fleet is always a important concern, as older ships are generally less efficient, generate higher emissions (of CO₂, CO, NO, etc) and which is

⁹ Clarksons Research, “Shipping Review Outlook”, 2021.

¹⁰ UNCTAD, “Global Trade Update, World trade rebounds to record high in Q1 2021”, May 2021.

¹¹ Clarksons Research, “Seaborne Trade Monitor”, vol 8, no. 6, 2021.

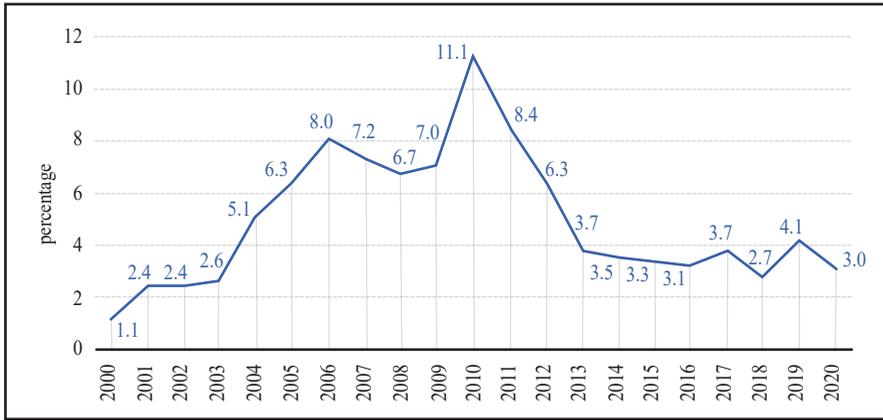


Figure 1: Annual Growth Rate of Global Merchant Fleet, in % on the Basis of Ships DWT from 2000 to 2020

danger for environment. On the other hand, the age distribution of the global merchant fleet with share of the global carrying capacity in 2021 in percentage has been shown in Figure 2'.¹² From the analysis of the graph it has been cleared that, the younger group has been falling, while that for ships of 10 to 14 years old has been rising steadily.

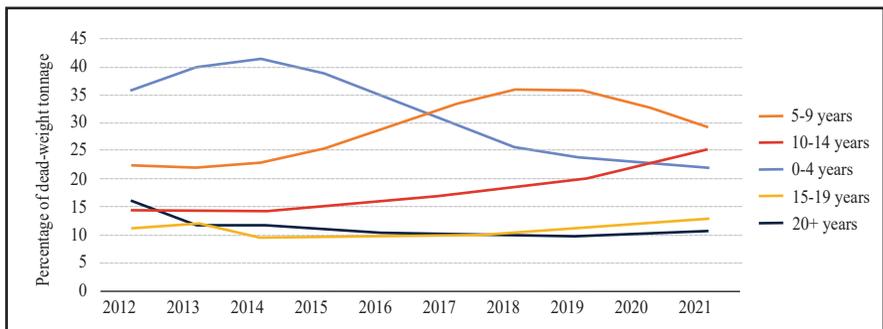


Figure 2: The Age Distribution of the Global Merchant Fleet with Share of the Global Carrying Capacity in 2012 to 2021 in Percentage

The age distribution of the global merchant fleet as per development status groups in 2021 in percentage has been shown in Figure 3.¹³ From the analysis of the graph it has been cleared that, the age distribution varies between different

¹² Clarksons Research, “Shipping Intelligence”, no. 1478, 2021.

¹³ Clarksons Research, “World Shipyard Monitor”, vol 28, no. 1, 2021.

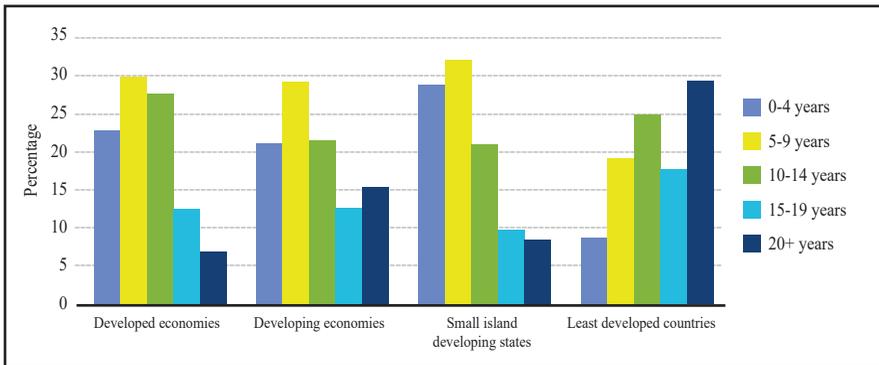


Figure 3: The Age Distribution of the Global Merchant Fleet as per Development Status Groups in 2021 in Percentage

economies (Developed, developing, LDCs, SIDS, countries). The oldest ships (more are than 20 years old) are generally found in the least developed countries (LDCs) and that is around 30%. Again compared to the developed and developing countries, the LDCs also have a higher proportion of ships in age group from 15 to 19 years old. However, its need to mention that, the LDC and SIDS country grouping has been based on the definition by the United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS). It is interesting to know that, ships are getting bigger as well as introducing very few in the global merchant fleet. But, most of the bigger ships of the existing merchant fleet are ageing day by day.

Trend Analysis of Ships Size and Constrain

The share of mega-container ships in global merchant fleet carrying capacity by TEU in the year of 2011 to 2021 in % has been shown in Figure 4.¹⁴ From the analysis of the graph it has been cleared that, since the early 2010s, most of the world's cargo has been carried in as usual container ships with ships capacity below 10000 twenty-foot equivalent units (TEU). However, 'from 2011, mega-container ship with capacity of greater than 10000 TEU has been introduced in the global merchant fleet. So, from 2011 to 2021, proportion of container ships carrying capacity rose from 6 to 40% and less than 10000 TEU container ships have been reduced gradually. Again the number of mega-container ships in global fleet has been shown in the Figure 5'. From the analysis of the graph it has been

¹⁴ Clarksons Research, "Container Intelligence Monthly", vol 23, no. 6, 2021.

cleared that, in the last 10 years, there have been 97 new ships of between 15000 and 19990 TEU as well as since 2018, 74 new ships of 20000 TEU and above have been commissioned to the global container fleet. It is interesting to know that, ‘these mega-container ships have been facilitated by technological advances, and also have been part of broader corporate strategies to pursue economies of scale’.¹⁵ On the contrary, this has been resulted in excess supply or ‘over tonnage’ in the global major liner routes, with greater pressure on infrastructure as well as on the port logistics.

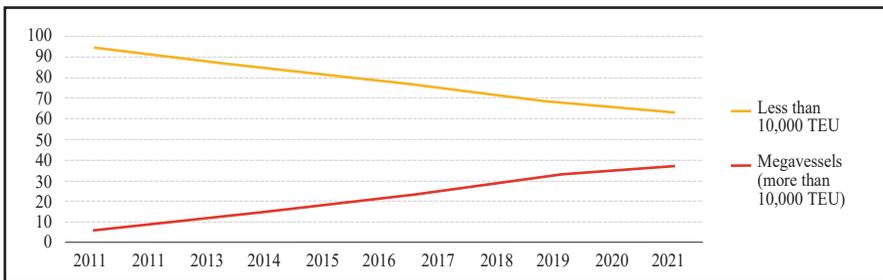


Figure 4: Share of Mega-Container Ships in Global Merchant Fleet Carrying Capacity by TEU in the Year of 2011 to 2021 in %

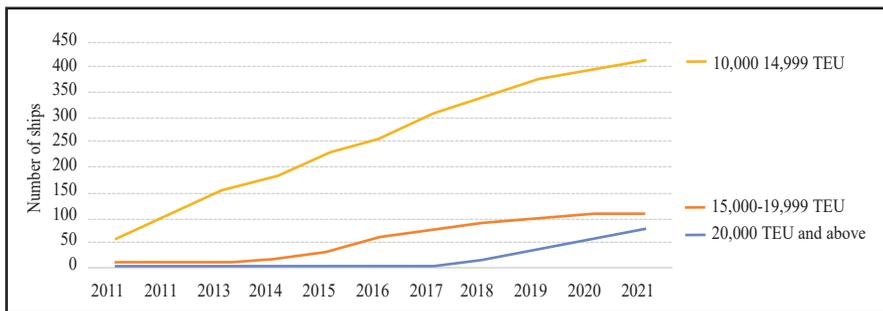


Figure 5: Number of Mega-Container Ships in Global Fleet

This pressure on infrastructure has been dramatically illustrated from 23 to 29 March 2021, as the Suez Canal was blocked by the mega-container ship Ever Given, which carrying capacity was 20000 TEU. In that incident it was again prove that, ‘larger ships are more difficult to steer and harder to handle as well as more costly to rescue in cases of collisions, groundings and severe accidents. However, in addition to safety and salvage issues, it is also learn that, the higher

¹⁵ Clarksons Research, “Suez Canal Blockage: Summary and Context”, 2021.

risks entail higher insurance costs and which was encumbrance for the whole industry'.¹⁶ This is a critical issue for the global maritime transport network in particular to the Suez and Panama canals, which have constrained capacities. So such 'sensitive disruption sends shock waves to the entire global supply chains. The Ever Given incident has been delayed the passage of hundreds of vessels through the Suez Canal. As a result that incident has disrupted global trade and has aggravated the shortage of shipping containers as well as leading to congestion in many ports. Finally the container freight rates have increased'.

Trend Analysis of Global Shipbuilding New-Orders

Let's see the trend analysis of shipbuilding industry in the recent past. It is interesting to know that, the two-thirds of world ship building were of dry bulk carriers and tankers. In 2020, ship deliveries declined by 12%, mainly due to lockdown-induced labor shortages during the first half of the year that disrupted marine-industrial activity. In 2020, the new-ships delivered were mostly bulk carriers, followed by oil tankers and container ships and that has been shown in Table 3. Since 2015, an increasing proportion of shipbuilding has taken place in just four countries and they are; China, South Korea, Japan, and Philippines. In 2020, their combined market share has risen to 96%.

Ships type	China	South Korea	Japan	Philippines	Rest of the world (ROW)	Total	%
Bulk carriers	15051	1442	9383	551	311	26738	46
Oil tankers	2702	7071	1901	1	478	12152	21
Container ships	2665	5357	394	56	200	8671	15
Gas carriers	869	4046	353		7	5275	9
Ferries and passenger Ships	251	64	76		1208	1600	3
Chemical Tankers	488	88	465		55	1095	2
General cargo	390	1	142		360	893	2
Offshore	340	101	7		118	566	1
Other	501	4	107		162	775	1
Total	23257	18174	12827	608	2898	57765	100
%	40	31	22	1	5	100	

Table 3: Deliveries of New-Building Merchant Ships (in Thousand Gross Tons) by the Countries in 2020

¹⁶ N Roussanoglou, "Ship Owners Order more Container Ships and LNG Carriers", 2021.

Trend Analysis of Global Ship Recycling

In 2020, almost half of the recycling was of bulk carriers, reflecting declining charter rates and following the trend of recycling ageing tonnage in LDT.¹⁷ It's more interesting for us that, 'around two-thirds of reported tonnage (LDT) sold for recycling in 2020 was in Bangladesh and India. With the addition of Pakistan and Turkey, the share of the top four countries reached 93% and that has been shown in the Table 4. The highest increases in shares have observed for Pakistan, by 14.7%, and for India by 3.2%'.¹⁸ In contrast, there were noticeable reductions in Bangladesh, by 15% and in China by 2%. The market share of China has reduced due to ban on recycling international ships, which entered into force in 2018. As a result, between 2017 and 2020, China's share of global recycling tonnage (LDT) fell from 16% to 1%. On the other hand, deduction of recycling market share of Bangladesh has observed due to local restriction and implementation of government recycling instruction.

Ships type	Bangladesh	India	Pakistan	Turkey	China	Rest of the world	World total	%
Bulk carriers	5254	1317	1718	34	125	61	8509	48.9
Container ship	160	1428	282	206		68	2143	12.3
Oil Tankers	616	410	617	159	10	226	2038	11.7
Offshore supply	125	257	4	308	3	273	969	5.6
Ferries/ passenger ships	26	179		545	3	26	879	5.1
General cargo	176	219	175	203	47	29	848	4.9
LPG/ LNG	169	141		8		176	594	3.4
Chemical Tankers	12	125	94	1		10	241	1.4
Other	157	786		135	9	93	1180	6.8
Total	6694	5061	2890	1598	195	962	17401	100.00
%	38	29.1	16.6	9.2	1.1	5.5	100.0	

Table 4: Global Ship Recycles in Tonnage or LDT in Thousand Gross Tons Sold in 2020 (for Main Ship Types)

Trend Analysis of Global Shipbuilding New-Orders

The COVID-19 pandemic severely affects the global economy, trade, social life, maritime transport and shipbuilding business. However, 'the outcome was less damaging than initial anxiety. The pandemic shock in the first half of 2020 has caused maritime trade reduced by 3.8 % and in the second half there was

¹⁷ UNCTAD, "Impact of the COVID-19 Pandemic on Trade and Development", 2021.

¹⁸ UNCTAD, "Ship Recycling by Countries Annual", 2021.

a recovery. But in the third quarter of 2020 both containerized trade and dry bulk commodities trade increased. But tanker shipping fails to recover. At the same time present Russian war on Ukraine as well as rise in oil price change the entire situation. However, with the recovery of global trade, GDP and maritime trade in 2021 have also increased by 4.3% and that has been shown in Figure 6'.¹⁹ And international maritime trade by region in 2020 by % share in tonnage has been shown in Figure 7. It is interesting to know that, the medium-term outlook remains positive; however with some risks and uncertainties, because of moderated growth in the global economy. From the GDP and maritime trade ratio graph it is clear that, over the past two decades, the compound annual growth in maritime trade has been found 2.9%. On the other hand, over the period 2022–2026, UNCTAD predicts that the rate will be slow and low and that will be around 2.4%.

In 2021, dramatically shipping companies reacted to the capacity constraints with a rush of new orders. The trend of global containerized trade, for 1996-2021 (Million TEU and % annual change) has been shown in Figure 8. The calculation and graph has been drawn by the assessment of UNCTAD on the basis of MDS Trans-modal, World Cargo Database, June 2021 and data of Clarksons Research 2021. Interestingly, ‘container ships orders in 2021 have found the highest for the last two decades. There were also more orders for LNG and other

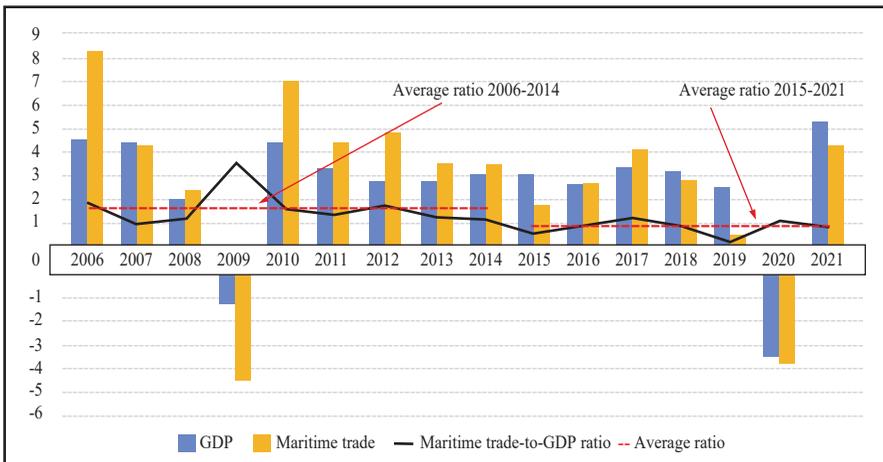


Figure 6: International Maritime Trade, World GDP and Maritime trade to GDP ratio, 2006-2021(in %, Ratio)

¹⁹ UNCTAD, “Ship Recycling by Countries Annual”, 2021.

gas carriers'.²⁰ The Clarksons research, UNCTAD, Lloyd, Epicflow and most of the ICS predicts that, future demand of major types and size of new ships will increase in general and small and medium type of container and bulk cargo ships in particular. Researcher has met and taken interviews personally of few merchant mariners, ICS personnel, international shipbuilders and ships owner. Most of them predict that, there will be a niche-market for small and medium size of container, bulker and cargo ships for small shipbuilders like Bangladesh.

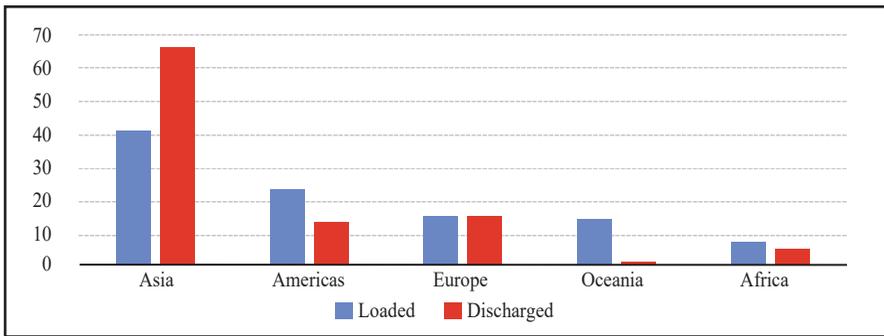


Figure 7: International Maritime Trade by Region, 2020 (% Share in Tonnage)

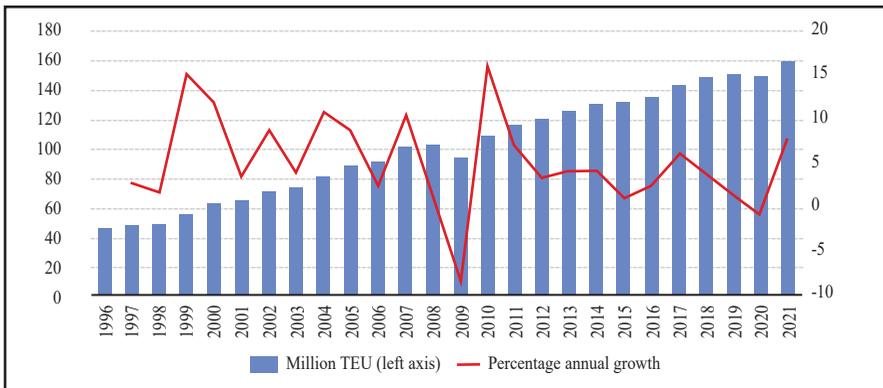


Figure 8: Trend of Global Containerized Trade, from 1996 to 2021 (Million TEU and % Annual Change)

²⁰ N Roussanolou, “Ship Owners Order more Container Ships and LNG Carriers”, Hellenic Shipping News Worldwide, 2021.

Capability and Challenges of Local Shipbuilding

A number of various types of ships and vessels are built in local shipyards around the country. The vessels built in local shipyards are: Multipurpose vessel, Coaster, Dry Cargo Vessel, Cargo Coaster, Passenger Vessel or Ferry or Lunch, Double Decker Passenger Vessel, Tanker, Container vessel, Landing Craft, Tug, Dump Barge, Supply Barge, Deck Loading Barge, Self Propelled Barge, Dredging Barge, Research Vessel, Survey Ships, Hospital Ship, Tourist ship, Inspection Vessel, Pleasure Craft, Yachts, Ro-Ro Ferry, Crane Boat, Speed Boat, Hydrographic Survey Boat, Work Boat, Pilot Boat, Water Taxi, Pontoon, Catamaran Vessel, Sand Carrier, Troops Carrying Vessel, Fast Patrol Boat, OPV, PC, LPC, LCV, LCT, Deep Sea Trawler, etc. There are more than ten thousand inland vessels have been registered in Department of Shipping (DOS). Apart from fifty thousands of mechanized and manually operated country boats have not yet come under the preview of registration and organized statistics. There are more than five hundred coastal ships have been registered with Mercantile Marine Department (MMD). To get the real number of vessel actually build in local shipyard is quiet more than the registered either in DOS or in MMD.

At present there are few private shipyards already have developed international standard and have received new building order to manufactured world-class ships for foreign countries. Among them, Ananda Shipyard and Slipway Ltd (ASSL), Dhaka, Western Marine Shipyard (WMS), Chattogram, Karnophuli Shipyard and Slipway Ltd (KSSL), Chattogram, and KSY Ltd, Khulna have attained the capability to construct ships around 10000 DWT. ASSL and WMS has already constructed and exported few dozen of small and medium merchant ships to foreign (Europe, Africa and Asia) destination. ‘World ship owners are slowly but surely entering Bangladesh with hope and trust to local shipyards. So, it is expected that our local shipyards will improve their capability and shipbuilding quality to attained global standard’.²¹

Only few local shipyards have found to be careful and attitude to improve quality, health, safety, and environmental (QHSE) aspects, which are again at average level. Pressure from the government and the foreign buyers together with the awareness program and training on QHSE aspects will lead the local Shipyards to international ones. Most of the local shipyards are very reluctant to follow

²¹ K A Hossain and M N G Zakaria, “A Study of Global Shipbuilding Growth Trend and Future Forecast”, Procidia Engineering, Elsevier, 2017.

corporate management culture. Family members occupy the important managerial appointment. Such family management culture is one of the hindrances for development of the shipbuilding. For example ASSL, has failed to continue their success in ship export business due to family management culture. We need to change our attitude like “get rich quickest way possible”. We need to improve our mentality to a more sustainable way. For example WMSL has failed to continue their success in ship export business due to their attitude to get rich in quickest way. Unfortunately they invest to other business in the ambition to become rich easily and quickly. Business consistency and sustainable way of doing business is the main tools of success in shipbuilding business.

There is no corporate management culture practiced in local Shipyards. Poor job satisfaction observed among the middle level management and skilled workforce. Workforce merely enjoys industrial benefit, like production bonus, and fringe benefit; not enjoys labor welfare activities like medical, pension, travel or daily allowance, accident and other compensation. Main workforce is employed in casual basis. Local shipyards owners do not bother about working environment and welfare of the employees due to abundance of cheap labor in local job market. As a result, substantial number of graduates and other skilled manpower trained in maritime industry leave frequently from local private shipyards for overseas employment.

Additional financial cost of local Shipbuilding is about 10 to 20% higher than the other competing nations like China, Korea, Japan, India, Vietnam, etc. High price and shortage of electricity and gas supply as well as other poor infrastructure are major obstruction, which hinders the setting up shipbuilding industries in Bangladesh. Relatively poor state diplomacy, country image and lack of activities to promote local shipbuilding are creating obstacle to growth of this promising industry. The government allocation of Annual Development Program (ADP) for waterways and water transport is below 4%, whereas for road is above 70%. Local shipbuilding industry is still at a vulnerable stage; need so many things to do, to develop into international and competitive standard. If this sector get same facilities as given to the RMG sector, the net benefit will be better in comparison to that of RMG.

Suitable Market for Local Shipbuilding

To find out the suitable market, help has been taken from empirical research and the outcome has based on quantitative and qualitative data collection

methods. The data and information have also been collected from Focused Group Discussion (FGD) those are working on board different types of merchant ships around the world and at various shipping companies of Bangladesh. Size of global shipbuilding market is around USD 200 billion, where small ship building market is around USD 20 billion. There is a serious demand of container ships in all size. UNCTAD, WB, WTO, and OECD have detected the high demand of container ships in coming days ahead.

Small niche shipbuilding market is suitable for local shipbuilders. In coming future, the world will need few thousand of vessels, mostly small to medium sized. Old single hull tanker fleet will be replaced totally and immediately as per IMO requirement. And it has been discovered that, small and medium size container, tanker, cargo, multipurpose and special types of ships with 3000-10000 dwt (approx) is suitable for Bangladesh. Bangladesh has all potential and capacity to capture this niche market with competitive price. Bangladesh has all potential and capacity to get 1% of global market share within next couple of years and that worth will be USD 2 billion per year. Moreover, very recently the opportunity of FDI has created in shipbuilding sector. Country like China, Turkey, and Netherlands has showed their keen interest in this sector.

The sea area of Bangladesh is of enormous importance, because it is the only way of direct connectivity to the rest of the world. Constant presence of BN and BCG are imperative for keeping the sea lanes of communication secured, establishing and maintaining the sovereign rights over our 118813 sq km sea areas and economic benefit of the country. In order to avert any threat to national security by 'traditional' and 'non-traditional' means both the organizations remain vigilant by deploying ships at sea. So, a good number of military ships are required for operational tasks both in peace and wartime. And that is also a local niche market for BN operated private shipyards along with huge local inland and coastal fleet. In future we need to develop our own merchant fleet to maintain our export and import business of cargo, energy and other goods. There will be another local niche market for us.

Conclusion

By trend analysis of global shipbuilding industry, we found that, Japan had been the dominant ship building country from 1960s through to the end of 1990s but gradually lost its competitive advantage to the emerging industry in South Korea which had the advantages of much cheaper labor wages, strong government backing and a cheaper currency. The market share of European ship builders began

to decline in the 1960s as they lost work to the Japanese in the same way as Japanese ship-builders have lost work to South Koreans in 2003. China becomes the global shipbuilding leader since 2010 leaving behind Korea and Japan by utilizing their abundance of cheap labor and favourable government policy. However, four local shipyards of Bangladesh have capable to build around 10000 DWT export quality ships. It has been predicted that, at future, China will leave a portion of their small and medium shipbuilding market share.

Cheap labor alone cannot be the only factor for sustainable development of shipbuilding. Nowadays advance technology can save cost and there is a chance to lose our competitiveness, if we rely only on labor cost. Actually, Bangladesh can make a huge economic progress by properly nourishing and utilizing our export oriented shipbuilding industry. Entrepreneurs have also confident on good prospect of local shipbuilding industry. Bangladesh is taking the advantages of its long history of maritime activity, favorable geographical location and availability of cheap workforces. Export oriented shipbuilding is truly a global industry. Bangladeshi-made ships of international standard are roughly 10%-30% less costly than ships made in Japan, Korea, China even Vietnam or India. Considering present opportunities and future challenges, local shipbuilding industry may formulate and adopt a viable policy and consequent strategies. At the same time optimizing the local shipbuilding capacity and explore the suitable shipbuilding market is also essential. It may be the sustainable way to revitalize the lost splendor history of local shipbuilding.

About Author

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