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**WORLD MARITIME UNIVERSITY**

Malmö, Sweden

**ASSESSING THE PROSPECTS AND  
CHALLENGES OF THE BANGLADESH  
SHIPPING CORPORATION IN THE CONTEXT  
OF CHINA'S 21<sup>ST</sup> CENTURY MARITIME SILK  
ROAD INITIATIVE**

By

**TAREQUL ISLAM**  
Bangladesh

A dissertation submitted to the World Maritime University in partial  
Fulfilment of the requirement for the award of the degree of

**MASTER OF SCIENCE**  
**In**  
**MARITIME AFFAIRS**


**(SHIPPING MANAGEMENT AND LOGISTICS)**

2019

## DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

(Signature):  .....

(Date): *24 September 2019* .....

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## **ACKNOWLEDGMENTS**

Throughout the writing of this dissertation, I have received a great deal of support and assistance. I would first like to thank my supervisor, Dr. Liping Jiang, for her patient guidance, encouragement, and advice she has provided during my research work. I have been extremely lucky to have a supervisor who cared so much about my work.

I sincerely acknowledge the Norwegian Agency for Development Cooperation for giving me a great opportunity to study in the prestigious institution- World Maritime University. I would like to thank all the professors and staff at WMU for supporting me a lot during my studies in Sweden. I would also like particularly thank WMU Library staff for all their assistance with obtaining good literature sources. Thanks to all colleagues of WMU S19 for being with me, encouraging me and sharing with me your valuable knowledge and experience. Also, thanks to my colleagues from Bangladesh Shipping Corporation who helped me to get data from the organization.

And lastly, special thanks to my family members, whose love and guidance are with me in whatever I pursue. Most importantly, I wish to thank my loving and supportive wife, Farzana, who provides unending inspiration.

## ABSTRACT

Title of Dissertation: **Assessing the prospects and challenges of the Bangladesh Shipping Corporation in the context of China's 21st Century Maritime Silk Road initiative**

Degree: **Master of Science**

In the context of the Bangladesh shipping industry, the loss of market share of the Bangladesh Shipping Corporation (BSC) is an increasing concern to its stakeholders due to the opposite growth of the corporation with the rising market growth. The purpose of this study is to investigate the deterioration of BSC's market competitiveness and related causes. In addition, how BSC could explore the opportunities brought by the MSR initiative to restore its strong market position. This study is conducted by using the qualitative analysis method.

The research finds that BSC could not utilize its competitive advantages like government support including the national cargo protection facility, properly and renew its fleet in a timely manner. Therefore, overage vessels were not able to ply in most of the international water. Eventually, the organization had to stop its liner and container services. Moreover, it could not cope with the ever-changing and competitive shipping business because of the lack of skilled manpower and the proper market approach.

However, the study shows that the Maritime Silk Road (MSR) initiative has huge prospects for BSC with direct and indirect impacts, thus, it will generate more sea routes for BSC and promote the cargo availability. Furthermore, ten percent of key projects of OBOR, where the MSR initiative is one of its components, have been implemented in Bangladesh. It provides a great opportunity for Bangladesh to excel itself as a shipping hub in the region through the MSR initiative.

This study identifies the causes of BSC's market losing, impacts of the MSR initiative on it and proposes necessary measures for availing the opportunities of the initiative. Further studies are needed to determine the actual demand for maritime services in Bangladesh to meet the MSR's requirements.

**Keywords:** Bangladesh Shipping Corporation (BSC), Maritime Silk Road (MSR), Strengths, Weaknesses, Opportunities and Threats (SWOT) Porter's Five Forces, Market Share

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## **LIST OF ABBREVIATIONS**

BCIMEC	Bangladesh-China-India-Myanmar Economic Corridor
BDT	Bangladesh Taka
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BLPA	Bangladesh Land Port Authority
BMP4	Best Management Practices for Protection against Somalia Based Piracy
BPC	Bangladesh Petroleum Corporation
BSC	Bangladesh Shipping Corporation
CBM	Cubic Meter
CIF	Costs, Insurance and Freight
CMA CGM	Compagnie Maritime d'Affretement and Compagine Generale Maritime
CMC	China National Machinery Import and Export Corporation
COSCO	China Ocean Shipping Company
CPA	Chittagong Port Authority
DWT	Deadweight Tonnage
e.g.	Exempli Gratia (for example)
EEZ	Exclusive Economic zone
EMSA	European Maritime Safety Agency
EU	European Union
FOB	Free On Board
FY	Fiscal Year
G2G	Government to Government
GDP	Gross Domestic Product
GM	General Manager
HIS	Health Information System
i.e.	Id Est (in other words)
IMO	International Maritime Organization

ITF	International Transport Workers' Federation
KPI	Key Performance Indicator
LNG	Liquefied Natural Gas
LTM	Limited Tendering Method
MLC	Maritime Labour Convention
MSC	Mediterranean Shipping Company
MSR	Maritime Silk Road
NYK	Nippon Yusen Kabushiki Kaisha
OBOR	One Belt and One Road
OECD	Overseas Economic Co-operation Fund
OTM	Open Tendering Method
PIL	Pacific International Lines
PPA	Public Procurement Act
PPR	Public Procurement Regulations
RFQM	Request for Quotation Method
RMB	Renminbi
SG	Shale Gas
STCW	Standards of Training, Certification and Watchkeeping
SWOT	Strengths, Weaknesses, Opportunities and Threats
TEU	Twenty-Foot Equivalent Unit
Tk.	Taka
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
USA	United States of America
USD	United States Dollar

# **CHAPTER 1**

## **INTRODUCTION**

This chapter presents a background of the position of the Bangladesh Shipping Corporation (BSC) in the shipping industry of Bangladesh and how the MSR initiative will provide opportunities to BSC to lift its business. This chapter includes background, problem statements, objectives and research questions, theory, methodology and conceptual framework, significant and implications, research limitations and dissertation outline.

### **1.1: Background**

BSC is the sole state-owned shipping organization in Bangladesh, which was established in 1972. The objectives for establishing this entity are to provide safe and efficient shipping services on international routes and carry out all kinds of activities related to or ancillary to shipping. These include acquiring, charter, hold or dispose of ships, promote or associate with any organization related to its function inside or outside of Bangladesh. The objectives also include repair, overhaul or assembling ships, vessels, other vehicles and machines, parts, accessories, and instruments. Establishing institute or any arrangement for the training of persons engaged or to be engaged in any activities of shipping is also another objective of BSC; furthermore, acquiring, holding and disposing of any movable or immovable property and any functions notified by the government included in the objective of the corporation (BSC, 2001). The commercial operation of the organization is divided into- liner activities and chartering/ tramping/ lighterage activities.

BSC was established just after the independence of the country. To protect and support the commercial interests of the corporation the Bangladesh Government adopted the Bangladesh Flag Vessel Protection Ordinance, 1982. Therefore, BSC

enjoys 40% of national cargo-carrying protection through national flagships. BSC contributes to national development by doing its job (BSC, 2017). But now the corporation's performance is neither commendable nor attractive to shipping stakeholders (Chowdhury, 2017), though this has great potential for shipping. As shipping is a derived demand for international trade, it's crucial to consider world trade development to increase BSC's market share.

BSC has started losing its market share due to failing to cope with market changes and poor performance since the 1990s; this is almost unchanged until today. We get some indication of this issue from its annual reports. BSC carried 62,302 tons cargo in the Far-East-West-Asia Gulf route in 2011-2012 fiscal year (July-June), while in 2014-2015 fiscal year (FY) this was dropped to 25,350 tons and there was no voyage in 2015-2016 FY on this route (BSC, 2017). The container and feeder service has not been conducted by the corporation since 2007. Consistency was seen only in crude oil transportation and lighterage services from 2011 through 2016 FY's. Recently, BSC has taken a fleet extension plan as part of the government development plan (BSC, Annual Report 2015-2016, 2017).

Maritime Silk Road (MSR) initiative has opened a window of opportunity for BSC. China has built some deep seaports in the South Asian region as part of the MSR initiative. Infrastructure developments of the initiative require a huge amount of construction materials, i.e. steel products, heavy machinery, and equipment in the form of dry bulk cargo. Improved economic connectivity by transport infrastructure is linking the manufacturing industry and agricultural sector to the global markets. These developments by MSR initiative have implications for container shipping and bulk commodities (UNCTAD, 2018); BSC can capitalize on this opportunity.

Moreover, manufacturing cost has been increasing globally in recent years. China's manufacturers may invest in or establish plants in MSR countries to reduce their costs by using their technological expertise and capital advantages. China may gain a larger market by relocating manufacturing centers to MSR countries. Thus, most MSR countries, including Bangladesh; have the potential to develop manufacturing

sectors (Chen, 2018). The relocation of manufacturing centers will increase the maritime transport demand in Bangladesh too; therefore, have positive impacts on the BSC.

The MSR initiative is a part of the One Belt One Road (OBOR) initiative, which has direct implications in international shipping. Infrastructure developments, including ports in many MSR countries, are facilitating trade movements to a huge extent; because, dry bulk cargo like iron ore, grain and coal import to China will rise largely from various countries. Tanker shipping will also increase as oil and gas movements go up from the Middle East, West Africa, and the Caribbean to China as well as other countries. The initiative has some negative issues for the shipping industry as well. One of the disadvantages of the initiative is that it decreases in ton-mile and the oversupply of ships (Scott, 2017). Geopolitics is also another issue that needs to be addressed. Karim (2015) discussed some geopolitical and economic factors of the Maritime Silk Road initiative, especially focusing on the Bay of Bengal region. He suggests that China should work together with the USA and India in the Bay of Bengal and the South Asian region to ensure ‘freedom of navigation and uninterrupted commerce’ for all stakeholders (Karim, 2015).

## **1.2: Problem Statement**

One of the causes of the loss of market share of BSC is its smaller fleet size. On 30 June 2018, two ships were in the BSC’s fleet; BSC had competed with its small fleet in the challenging and bad market conditions (BSC, Annual Report 2017-2018, 2018). BSC failed to buy new vessels for 27 years due to resource limitations; because shipping is a capital intensive industry. It was able to purchase two vessels in 2018 and another four vessels in 2019, while its latest purchase was in 1991 (BSC, Annual Report 2017-2018, 2018). Currently, the organization has eight vessels in its fleet. Three ships were in its fleet in 2017 and it had reduced to two in early 2018; these two vessels are specialized for crude oil carrying. BSC had to stop its bulk shipping, feeder, and liner services on various routes at different stages; therefore, it lost its market share. Moreover, BSC had suffered the economic recession of 2008

and which generated a loss for the freight market volatility (BSC, Annual Report 2008-2009, 2010).

The overage of the fleet also was a problem; five vessels were in the fleet in 2015 and their average age was more than 30 years. BSC was not able to ply these overage vessels on most international routes, because of the age restriction regulations by IMO and other international organizations. Therefore, only two voyages were conducted in the West Asia-Gulf service route in FY 2014-15 (BSC, Annual Report 2014-2015, 2016). As the average age of the fleet had exceeded economic life, the insurance and repair & maintenance cost was comparatively higher (BSC, Annual Report 2008-2009, 2010). Thus, operational expenses were increased and economies of scale lost.

BSC had declared that the Self-Retirement Scheme in 2002 and 140 employees had received this offer (BSC, Annual Report 2016-2017, 2018). Many senior and skilled employees had gone into retirement for the scheme and the normal retirement process; thus BSC had been suffering from the shortage of skilled manpower. There were only three general managers in 2015, the top executive officer of the organization and in 2018 there were none. The highest executives were Deputy General Manager who was working at that time (BSC, Annual Report 2017-2018, 2018). The economy of Bangladesh was developing steadily. The GDP growth rate was 6.19 percent in FY 2007-08 (BBS, Statistical Pocket Book Bangladesh 2013, 2014) and reached to 8.13 in FY 2018-19 (BBS, Statistical Pocket Book Bangladesh 2019, 2019). Though the GDP and seaborne trade of Bangladesh was increasing gradually the BSC could not utilize this opportunity.

### **1.3: Objectives and Research Questions**

The objectives of the research are -

1. To identify the issues faced by BSC those that have impacts on its market share.
2. To examine the impacts of the MSR initiative on BSC's market share.
3. To identify the necessary steps that needs to be taken by BSC to get maximum benefits from the proposed MSR initiative.
4. To give recommendations to the relevant authority based on this research.

To achieve the above-mentioned objectives, the following questions have been concluded in the study;

1. What are the issues faced by BSC that contribute to losing its market share?
2. How the MSR initiative will impact on BSC's business?
3. What steps are needed by BSC to get maximum benefits from the proposed MSR initiative?

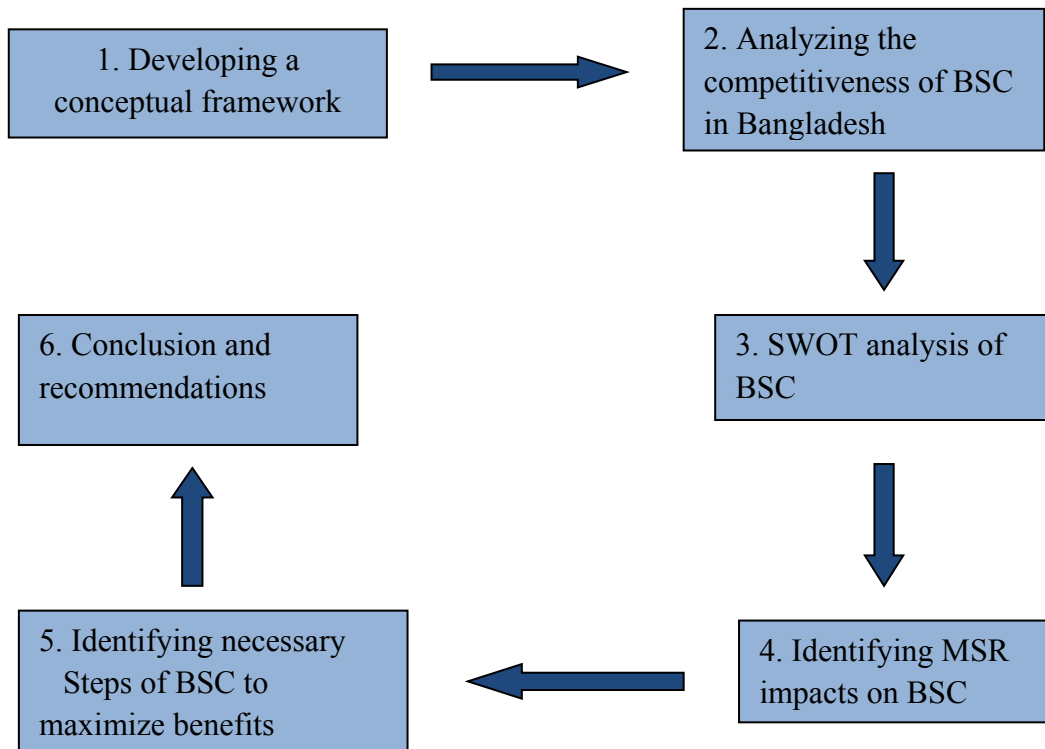
### **1.4: Theory**

Porter's five forces model and SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis are used as the theory in this research. Porter's five forces of management tool help to understand the competitiveness of the shipping market in Bangladesh and BSC's position in the same market. This model helped to identify the competitive advantages of BSC to capitalize on opportunities. On the other hand, SWOT analysis gives an acceptable perspective of a company's strengths and weaknesses; it also distinguishes the opportunities and the threats. Thus, the SWOT analysis model helped to identify necessary measures to minimize the weaknesses and threats of BSC by utilizing the available opportunities of the organization.



## 1.5: Methodology

### 1.5.1: Research Design



### 1.5.2: Method and Data

The research is conducted based on the qualitative method. BSC's official documents are used to get primary data regarding BSC's issues and plan; in this case, its publications and website were the sources. Journal articles, newspapers, internet sources are also used as sources of data. The study uses secondary data to assess the impacts of the MSR on BSC's business. By compiling the primary and secondary data, this paper answers the research questions.

### 1.5.3: Conceptual Framework

This research generates conceptual frameworks from the theories and relevant literatures related to Porter's five forces and SWOT analysis. These frameworks are used to answer the research questions in the discussion chapter.

## **1.6: Significance and Implication**

The BSC had purchased six new ships recently; its progress for the corporation, but at the same time it is important to remember that the commercial history of BSC is not so good during the last two decades. Therefore, it is very significant to do thorough research to expose the future commercial aspects for the organization. The MSR initiative is comparatively a new project and assuming that it has a significant impact on shipping. As a shipping entity, BSC needs to assess the impact of the project on it. This study shows that the MSR initiative has direct and indirect impacts on BSC's business. Direct impacts include more sea route connectivity, substitution effect on container shipping and reducing sea route distance for tanker shipping, which are more relevant for the business operation. The study reveals that ninety-nine seaports have been built along with the MSR countries, thus, BSC will benefit from the sea connectivity. Inversely, some pipelines for oil and gas transportation have been built during the initiative, which has had a negative impact on shipping as well as on the BSC. Moreover, the indirect impacts of the initiative include more cargo availability and geopolitical uncertainty. Huge infrastructural projects including ports have been constructed; this will result in trade facilitation. Therefore, seaborne trade in the region could be stimulated. At the same time, some big economies including the USA have raised questions regarding the Chinese intention under the initiative, whether it is their military or commercial interest. The study also includes specific recommendations for the BSC for getting the maximum benefits from the MSR initiative. Therefore, this research will help the corporation to formulate a necessary plan to cope with the changing market conditions. Moreover, this study has an implication in shipping studies. The study will be helpful for future research; particularly to determine the amount of demand for shipping services that will be generated from the initiative. Importantly, the industry will get the scenario of the future market from this study and be able to get ready accordingly.

### **1.7: Research Limitations**

Unavailability of some expected data creates a substantial limitation on this study; such as cargo handling data by the BSC before 2001 is not available. Because of this reason, the study is limited in its time frame between 2001 and June 2018. Furthermore, the number of buyers of shipping services is not available either; therefore, this study includes only ten selected sectors for this point. Data regarding the numbers of new entrants could not be mentioned in this study; only the expansion of one company is mentioned from the order book. Another important limitation of this study is quantifying the impacts of the MSR initiative in the context of Bangladesh. This study reveals that 54 projects have been implemented in the country under the initiative, but the impacts all of these projects could not be quantified, therefore, the forecast of Payra Port is used for answering the research questions.

### **1.8: Dissertation Outline**

For achieving the objectives of this study, the paper is divided and organized into the following chapters:

**Chapter 1** presents the background of the study together with the background of BSC and MSR initiative. These preliminary discussions are done for a better understanding of the issue from a practical standpoint. Moreover, research objectives and questions, theory, methodology with the implications and limitations are addressed in this chapter to bring attention to the significance of the study.

**Chapter 2** highlights Porter's five forces and SWOT analysis model and an in-depth literature review regarding Porter's five forces and SWOT analysis model to get conceptual frameworks. The research questions are concluded in light of these conceptual frameworks in chapter 4.

**Chapter 3** contains data analyses and findings that were obtained from various types of collected data. This chapter also presents the ship's acquisition plan of BSC to examine the future business preparation of the organization.

**Chapter 4** provides the discussion on data analysis and findings, and answers the research questions. The discussions are concluded in view of the conceptual frameworks that are discussed in chapter 2.

**Chapter 5** presents the conclusion of the study with the issues discussed in the dissertation. The final recommendations for the authority of BSC and suggestions for further research work are also included in this chapter.

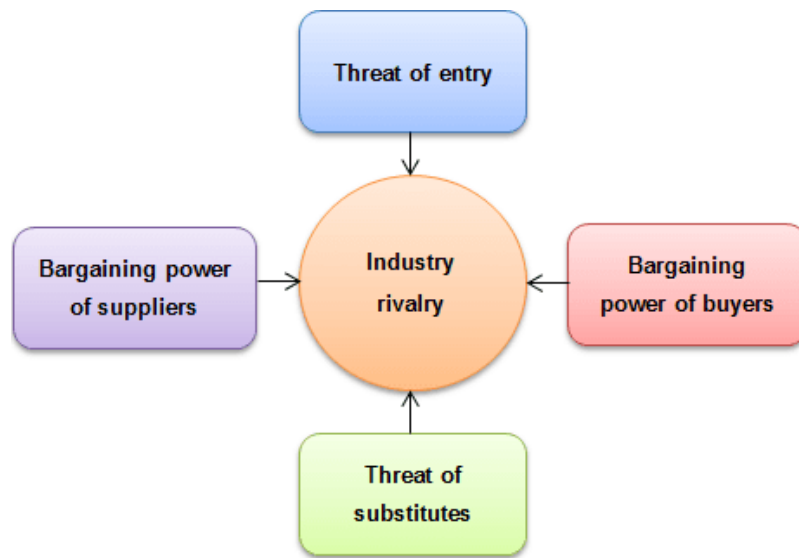
## **CHAPTER 2**

### **LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK**

This chapter presents a theoretical discussion regarding industry competitiveness in general and factors influencing a particular company. The first part of this chapter focuses on Porter's five forces model to understand the competitiveness of the industry. The next part discusses SWOT analysis at the company level to understand the company's internal and external forces that impact its business. The third part presents conceptual frameworks to answer the research questions in chapter 4.

#### **2.1: Analysis of Industry Competitiveness**

Porter's five forces analysis model points to an insight of industry into the competitive scenery of the market by showing the five forces. The five forces determine the intensity of competition, profitability, and attractiveness of the industry (see Figure 1). The strength of forces are dependent on the industry structure or industry's underlying economic and technical characteristics (Porter, 1990). The Structural change of industry is important because it creates opportunities for competitors. Besides the opportunities for structural change, firms need to take their position within the industry. The vital point for positioning of a firm is its competitive advantage. A firm with a sustainable competitive advantage will succeed in relation to its competitors.



**Figure 1: Porter's Five Competitive Forces that determine industry competition**

*From: Porter (1990), image collected from internet*

Porter's five forces are described below; in line with these forces industry competitiveness will be analyzed in the data analysis and findings chapter to get the competitive advantages of BSC in the shipping industry of Bangladesh.

**Supplier's Power:** The first force is about the supplier's influence over a company. If a company purchase from an industry that has very few players in the market, suppliers have a huge influence on the company's competitiveness. Indeed, BSC has purchased its goods, work, and services from various suppliers from the national and international arena. As BSC is a government entity, it has to follow the Public Procurement Act-2006 and Public Procurement Regulations-2008 (MoLJPA, 2019). These public procurement policies are to regulate the procurement of goods, work and services to achieve the objectives of optimizing efficiency and ensuring fairness in procurement. By complying with these regulations, BSC has been purchasing from different sources; thus, suppliers are not consolidated and suppliers have less power to influence BSC's procurement.

**Buyer's Power:** Where a company is doing business with countless numbers of buyers, the company can protect the cost of their product and retain business. If it has a few buyers, buyers could influence the company easily. The number of buyers of

shipping services in Bangladesh is large because Bangladesh's economy has maintained an attractive economic growth for quite a long time. The GDP growth rate was 7.86 in FY2017-2018, while the rate was 7.28 in FY2016-2017. In addition, the growth of the public sector of the country, the private sector is also growing rapidly. It is estimated that the private sector will grow at 26% in FY 2020-21, whereas it was 23% in FY2017-18 (MoF, 2018). Certainly, this growth resulted in more maritime transportation demand. Therefore, the country's main port, Chittagong Port Authority had handled 2.8 million containers in FY 2017-2018; 12.19% more than the previous year. Exporters believed that container handling amount increased mainly for more import and export in recent years (Tribune, Business, 2018). These indicate the growing number of buyers of shipping services.

**Competitive Rivalry:** This aspect is a common thought when considering business prospects. The main area of concern is how many companies are working in the same market and how capable are they of doing the same business. In a situation where a company is doing business alone; it can control the market and where many others are doing business with equal capabilities, then the power is in the hands of the market. BSC has big competitors both from private or local shipping companies and in the international arena. BSC had stopped its liner services and its former liner services which were taken over by at least 100 shipping companies; and foreign companies which are doing good business like a monopoly in Bangladesh (Tribune, 2018).

**Threat of Substitution:** If a company is the only way to accomplish a task and the task cannot be outsourced, the company is in an excellent position to grow its business. In a situation where other products or services can substitute a company's product or service, it is in a vulnerable situation. Almost, ninety-two percent of the export-import cargo of Bangladesh is transported by sea route and another transporting mode is less significant here. Further, BSC is the only organization that carries crude oil for the country at present. So, there is no threat of alternative routes and organizations for transporting crude oil yet (Chowdhury, 2017).

**Threat of New Entrants:** If a company is in an easy business to get into; others may decide to enter the market and become a competitor. If the industry requires a lot of upfront investment and proprietary knowledge, a company will be well insulated from new entries. Shipping is such a sector which requires high expertise and huge capital. Therefore, BSC has a low threat of new entrants from local shipping companies.

Some literature that is conducted by Porter's concept is discussed here for understanding the competitiveness of the shipping industry of Bangladesh and BSC's competitive advantages within the industry. Thereafter, a conceptual framework will be depicted in section 2.3, to show the relationship between competitive advantage and market share; and to answer the research question in chapter 4.

Chowdhury (2017) examined the shipping industry of Bangladesh and identified the BSC's position within the industry by using Porter's five forces model. The researchers' highlight that new entry is not a threat for BSC; but existing mainline shipping operators and various domestic shipping companies a threat to it (Chowdhury, 2017). They also tell that BSC can increase its market share by adding new ships to its fleet, and the supplier's power is less likely over the corporation to interrupt its buying process. However, they don't mention how the corporation purchases its required goods, services or works and why the suppliers are not able to influence the organization on its purchasing process.

Furthermore, researchers tell that BSC is enjoying an absolute advantage for crude oil cargo carrying in Bangladesh, as the government put this duty to BSC. However, alternative shipping operators are abundant in the country and they can gain benefits as a transport service by BSC which is not frequent. Chowdhury (2017) suggests that the BSC has a tiny risk concerning the buyer's power; because it is not cost-effective for buyers to change suppliers in shipping. Comparatively, BSC has few buyers and its maximum carried cargo is crude oil and this comes from a single buyer, which is not discussed by the researchers.



Chowdhury (2017) illustrate that ninety-two percent of the cargo of Bangladesh is transported by sea route and alternative roads are less significant here to carry cargo, which means that BSC has limited threats of substitution. Also, BSC is getting support from the government; and the flag vessel protection ordinance gives privileges to it. These mean that it is enjoying a competitive advantage over other shipping companies. Finally, Chowdhury (2017) mentioned that BSC has its suitable locus on five forces analysis and by default of its structure, regulation and operation it enjoys the benefits of having a good industry position. Though the researchers described several competitive advantages of the organization they don't illustrate the reasons why the organization is losing its market share.

Yunna (2014) studied the competitive situation of the shale gas (SG) industry in China and show how a company can maintain its competitive advantage in a changing industry.

Yunna analyzed the key factors that change the competition of industry. SG suppliers are affected by the government policy as land and underground resources in China are considered state property (Yunna, 2014). They imply that the supplier's power changed with the development of national policy, however, the suppliers are still in a dominant position and the buyers are relatively powerless because the buyers of natural gas are not integrated.

Yunna (2014) identified several reasons as the barriers to the industry, and tell that the economic risk of firms is also very high since the enterprises need a longer time to get back the invested capital. Moreover, the researchers show three energy sources as the substitution of SG. While wind power and solar power are developing and have the potential capacity to replace the SG to a certain extent, nuclear power is not in a position to be a threat. Also, they tell that the degree of rivalry is relatively low because of several barriers and due to the other four forces. Yunna (2014) concludes that the degree of the rivalry of the industry is changing based on different market scenarios. Thus, Yunna (2014) are pointing to the need for reducing the production cost of an enterprise to enjoy a competitive advantage in the market. This point

illustrates that reducing the unit cost of production of a firm is significant, besides having other competitive advantages, therefore, important for BSC to increase its market share.

King (2008) examined the higher education industry to introduce strategic concepts and utilize them in competitive strategy formulation. Therefore, industry incumbents must scan the competitive scenarios regularly either for positive or negative structural changes in the industry (King, 2008).

King (2008) reveals that buyers of higher education are widely fragmented and potential students have a limited influence on the industry. Conversely, the information is available and symmetric now compare to a generation ago. This offsets market fragmentation effect and gives the power to the buyer; therefore, the market becomes neutral. On the other hand, the motivation of suppliers for integration in higher education is low. Thus, the supplier's ability to influence the industry is also low.

King concludes that the market is neutral because of the tradeoff between the disadvantages of industry fragmentation and the benefits of the growing industry. However, the researcher does not present how an institution can increase its market share in a neutral industry. Importantly, BSC needs to develop its sustainable competitive advantage to improve market position if ever it operates in a neutral market situation.

Alam (2010) studied the tea industry of Bangladesh for analyzing industry attractiveness. The attractiveness of an industry depends on the presence or absence of threats (Alam, 2010). When the threat is posed as being greater, attractiveness is low and vice versa. It can be noted that firms develop their strategies to deal with industry forces which is important find unique ways to persuade their customers to develop a competitive advantage over their industry rivals (Porter, 1990)

Alam identified some areas that act as a barrier for new entry and illustrated that the tea industry is fragmented with a large number of small and medium-sized firms.

Also, these firms are not in a position to dominate the industry. However, because of the low switching cost of customers, the industry rivalry is high. Nevertheless, big companies get a competitive advantage as they can make a difference in their product in terms of quality, appearance, and liquor.

On the other hand, the industry structure has limited the supplier's power. Because suppliers give price quotations as per the requirement of gardens, and the tea gardens buy the quotation that is most competitive. Additionally, suppliers are not in a position to be integrated and compete with the firms.

Alam (2010) highlight, the threat of substitution of tea is very low in Bangladesh. Therefore, the industry is attractive to invest in and finance for a long time. BSC needs to note that whatever the market condition, the organization needs to formulate such a strategy that makes its services different from its rival companies to increase its market position in a sustainable way.

Rachapila (2013) investigated the competition of the sweet corn industry of Thailand and the researchers found the competition is relatively high (Rachapila. T., 2013). Rachapila illustrated that the degree of competition depends on the numbers of manufacturers, over-production, fixed costs and withdrawing of manufacturers from the industry. They conclude that market forces are changing; only some components can be fixed. Therefore, integrating strategic purchasing of sweet corn will help to promote good relationships and collaboration between manufacturers, growers, and brokers. This strategy will provide a sustainable competitive advantage for sweet corn firms. Similarly, BSC needs to increase relationships and collaboration with its stakeholders, especially with shippers and trade associations to increase its buyers and ensure larger market share.

## **2.2: Analysis of Internal and External Factors (SWOT) of Firm/ Industry**

SWOT is an acronym for business tools devised at Stanford University by a team led by Dr. Albert Humphrey during the 1970s. A SWOT analysis allows analyzing issues and helping an organization to identify their present business's situation. This

also looks at a company's internal and external factors that can affect its business. Internal factors include the company's strengths and weaknesses and external factors include threats and opportunities. Consequently, BSC's external and internal factors will be analyzed by the SWOT model in the data analysis and findings chapter.

**Strengths:** A SWOT analysis helps a company to discover the business areas that are doing well. These areas success factors as well as give the company a competitive advantage. Sorting out these strengths can help a company maintain its competitive advantage. As a state-owned entity, BSC enjoys government support in various forms and have the sole opportunity for crude oil transportation in Bangladesh.

**Weaknesses:** Weaknesses are the characteristics that put a company's business at a disadvantage to others. SWOT-analysis helps it to identify these characteristics and minimize or improve them before becoming a problem. The Bangladesh Flag Vessel Protection Ordinance was adopted to support BSC to prepare it for competing with global competitors, but the corporation failed to succeed at the expected level rather its number of vessels has declined in the last 35 years (Alam M. , 2016).

**Opportunities:** SWOT analysis helps a company to identify opportunities that its business could take advantage of making a greater profit. Opportunities generated from external factors; the MSR initiative is such an opportunity for shipping which deserves proper attention because this initiative will change the global trade by building up economic cooperation among the related countries (Muniruzzaman, 2016). Therefore, this initiative will provide a new opportunity to accelerate seaborne trade for coastal countries like Bangladesh; thus BSC will get the opportunity to employ more of its vessels.

**Threats:** Threats are external factors that could cause problems for a business, such as decreasing demand, competitor's new services or new entry of a competitor. SWOT-analysis helps a company to identify threats and ways to counteract them depending on its strengths and weaknesses. Some analysts raised questions regarding China's interest in MSR, whether it is an economic or strategic interest investing in

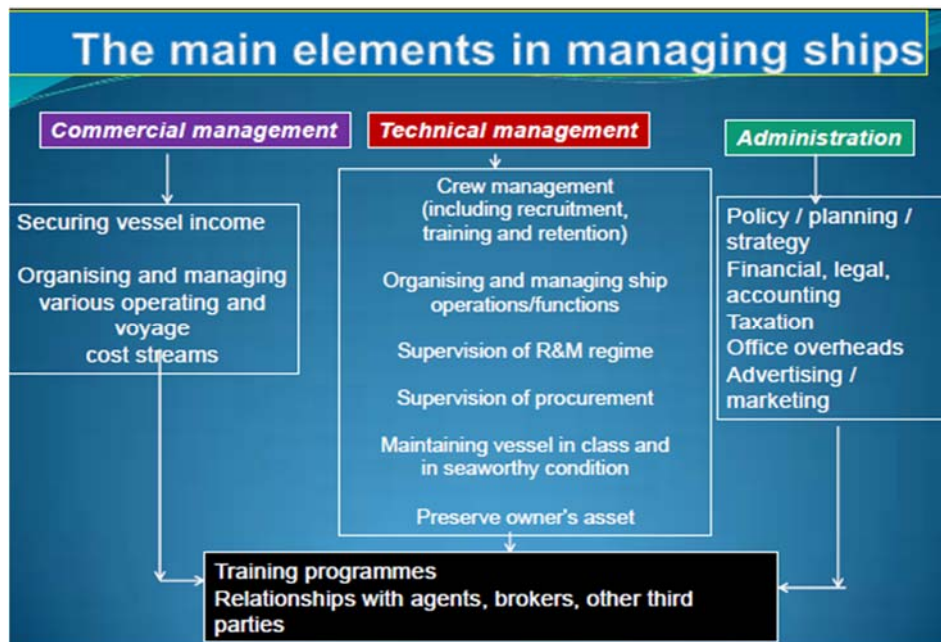
major ports like the Gwadar port of Pakistan; this point indicates to geopolitical issues of the region (Funaiole, 2018). Therefore, geopolitical uncertainty is a big threat to the region as well as to BSC.

To draw a conceptual framework for analyzing the relationship between BSC's internal & external factors and its market share, and to answer the research questions, some literature is reviewed below.

Ergun (2015) conducted a SWOT analysis of Turkish Shipping Company's organizational structure and management systems. The shipping industry introduces a volatile nature and it is not transparent (Ergun., 2015). Ergun illustrates that for surviving in the present competitive industry the shipping companies have to meet the demand for qualified manpower and reorganizing themselves because these are vital elements that determine directly the business accomplishment. Ergun (2015) suggests that shipping companies may assume as a logistic company too. However, most of the Turkish companies don't have this department, but this may be a factor to improving their business. The core areas for a shipping company are ship management; this mainly based on commercial and technical management and administration as seen in Figure 2. Most Turkish shipping companies only have technical management and they don't have commercial management.

Ergun (2015) tells that skilled manpower is needed to interpret the available market information, because the shipping market is changing rapidly and requires adopting a new approach. Practically the companies of Turkey have no plan to adopt new strategies, which will create a negative impact on the business.

Ergun (2015) reveals that Turkey's companies are well aware of the changing of maritime order, but they need to be more proactive. However, the companies have the initiative to handle supply chain management activities and have good cooperation with the Maritime Administration.



**Figure 2: Main elements of ship management**  
 From: Ergun (2015)

In contrast, the capability of commercial management is very low in Turkey and the organization is not able to form a strategic plan and mitigate risk; which is crucial to surviving in the ever-changing industry (Ergun., 2015). Ergun illustrates that many companies are starting in the shipping business and many of them may copy others in the future; thus a threat to incumbent companies. Anyway, several companies are using management information systems to facilitate their management functions.

Ergun (2015) concludes that the shipping companies need to establish a link with global counterparties; as the maritime business has an international feature. Furthermore, the fundamental equation of shipping success is the quality operational management; hence, ship owners need to rearrange their organization and management system along the lines of the contemporary shipping market.

Ergun suggests that shipping companies need to adopt a new approach to utilize available opportunities and to mitigate threats for sustaining in the competitive market condition. Similarly, BSC could adopt this approach to get a greater market share.

Ma (2018) investigated the Philippine manning industry and reveal that shipping tasks change with economic growth, which will influence the demand for seafarers.

Ma tells that the Philippines remain the largest market for crewing due to numerous causes including the country's geographical position, high unemployment rate, and high population growth. The country is the leading seafarer supplier since 1987 and supplies more than 25 percent of the world's demand (Ma, 2018). However, they suggest that combined initiative is needed among government, employers and seafarers' organizations to maintain the leading position.

Nevertheless, Ma (2018) identified some weaknesses of the industry including new environmental regulations, STCW requirements, an inadequate number of quality trainers, lacking training berths. Moreover, in some academies, the quality of cadet recruitment is not up to the desired level. Also, a basic concern is the unavailability of senior management level officers, especially engineers.

Ma (2018) highlighted that the shipping industry needs an additional 42,500 officers by the end of 2019, and tell that the country needs to produce more officers to take the opportunities.

Ma illustrates that the biggest threat of the industry is the possible ramifications of the European Maritime Safety Agency (EMSA) audit result, which would be a consequence in the ban of Filipino seafaring workers to be employed in EU ships. Another challenge of the industry is the growing competition from seafarer-supplying countries like China, India, Ukraine, Croatia, Latvia, Greece, Japan, Russia, and the United Kingdom.

Ma (2018) tells that the results of SWOT analysis will serve as the basis to maintain the status of the industry as the Manning Capital of the world in the changing shipping environment. Understandably, the researchers suggest mitigating industry weaknesses and minimizing threats to get benefits of the opportunities to remain its position as a market leader or increase market share. Therefore, this study is helpful to analyze the relationship between the market share of BSC and its SWOT factors.

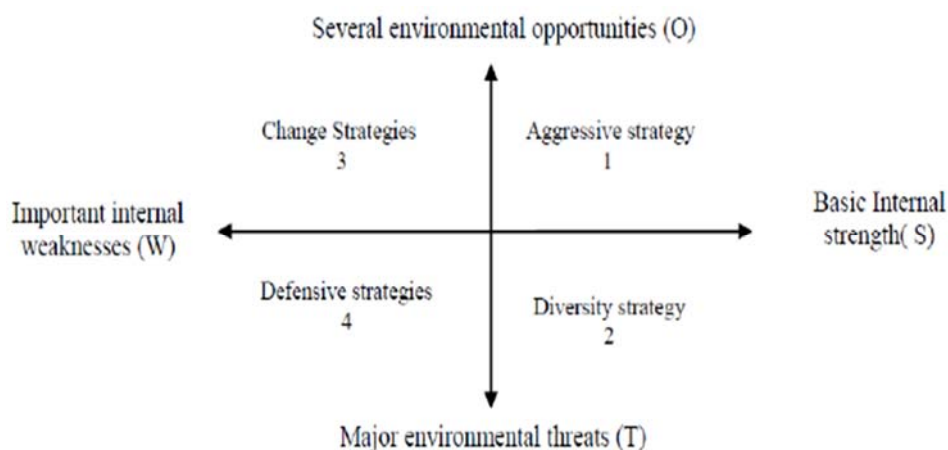
Saghaei (2012) studied a lubricant manufacturing company to methodize an appropriate strategy, and to utilize its internal resources for taking the opportunities and overcoming threats. Saghaei tells that improving organizational situations would be impossible without considering and adapting to the environmental variable (Saghaei. Maryam, 2012). Saghaei (2012) analyzed the internal and external environments (SWOT) of the company and proposed different strategies as seen in Figure 3.

**SO (Strengths-Opportunities) Strategies:** Considering the demand for the foreign market, high quality of production and new products with particular additives.

**WO (Weaknesses-Opportunities) Strategies:** Establishment of a separate unit for supplying used oil and adopting strategies for marketing to increase local and foreign market share.

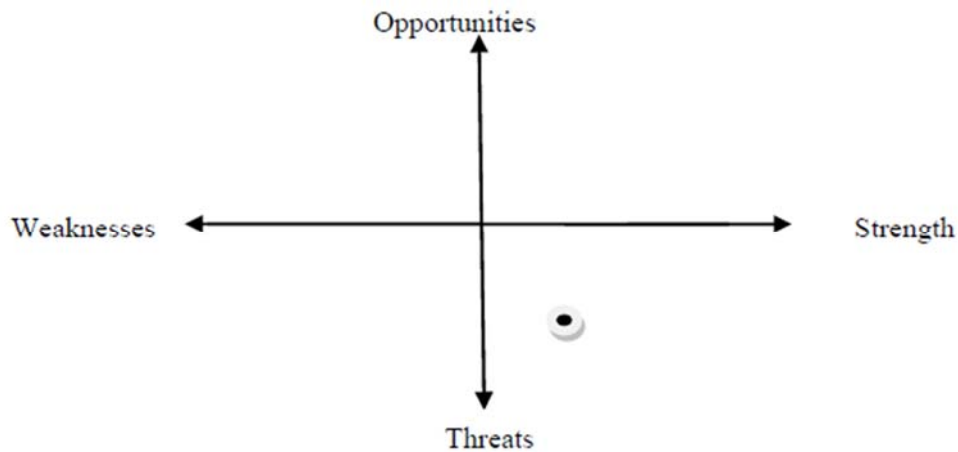
**ST (Strengths-Threats) Strategies:** Expansion of the market along with research by using information innovation, participation in fairs for better introducing to customers and cooperation with the Department of Environment.

**WT (Weaknesses-Threats) Strategies:** Increase of experienced human resources, management, and expansion of the brand, escalating motivation of suppliers for better efficiency by using different methods.



**Figure 3: Analysis of Strategies Matrix SWOT**  
*From: Saghaei, Maryam (2012)*





**Figure 4: Analysis of SWOT**

*From: Saghaei, Maryam (2012)*

Saghaei (2012) illustrates a variety of strategic zones as seen in Figure 4 and recommends three strategies for lubricant company in the ST strategies zone, which is mentioned above (ST strategies).

Saghaei tells that the three strategies can solve the problems of customers' views about recycling oil engines of the lubricant company and introducing its products to the domestic market. Saghaei (2012) calls attention to the management to decide based on the changing and demanding situations. Therefore, the study is supportive to explain BSC's SWOT factors and adopting an appropriate strategy for ensuring a better market position in Bangladesh.

Yu (2014) studied counseling of Korean schools to identify its internal and external factors that are favorable and unfavorable to reach the goals. The job security of its members is one of the strengths of school counseling in Korea (Yu. Kumlan, 2014). Also, recruiting quality of school counselors and supports of the Korean Ministry of Education are strengths of school counseling.

Yu (2014) reveal that most school counselors were frustrated and felt isolated when they faced uncooperative administrators and school colleagues. The role ambiguity of the counselors reveals that the identity crisis is still a major problem in the system.

Moreover, counselors have limited career advancement options compared to general teachers. However, due to the revised No Violence in School Act and excessive use of the internet by students has created more job opportunities for the school counselors.

Yu (2014) illustrate the major threat of school counselors, and that is the competition with other professionals such as school career counselors as well as school social workers. Indeed, the roles of school counselors and school career counselors are overlapping each other. Moreover, low school-community networking is another threat to this profession.

Yu (2014) emphasize establishing a robust identity for the school counselors for the enhancement of the profession. Yu shows that due to the lacking job description and identity, the project is struggling to reach its goal. Similarly, BSC should formulate its strategy to improve its market position by utilizing opportunities and mitigating threats and weaknesses.

Nawaz (2015) investigated the health information system (HIS) and illustrates that fragmented and uncoordinated efforts are existent in this sector (Nawaz. Rab, 2015). Therefore, it's crucial to develop a greater perspective to consider organizational factors for a better-integrated information system.

Nawaz (2015) reveals that the HIS has been implemented homogeneously throughout the country; furthermore, the system is flexible and can integrate with other public health programs. Nawaz also highlights the weaknesses of the program such as limited resources, manpower shortages and uninterested senior officers in the program. Thus, the data record is not appropriately completed.

However, integration of the HIS program with other public health programs brings the opportunity of using quality data. Nawaz (2015) suggests redesigning the health information system in the context of the present situation to improve record management and reporting quality. Similarly, proper data management systems are also needed for BSC to analyze its market regularly, and to formulate its strategy for

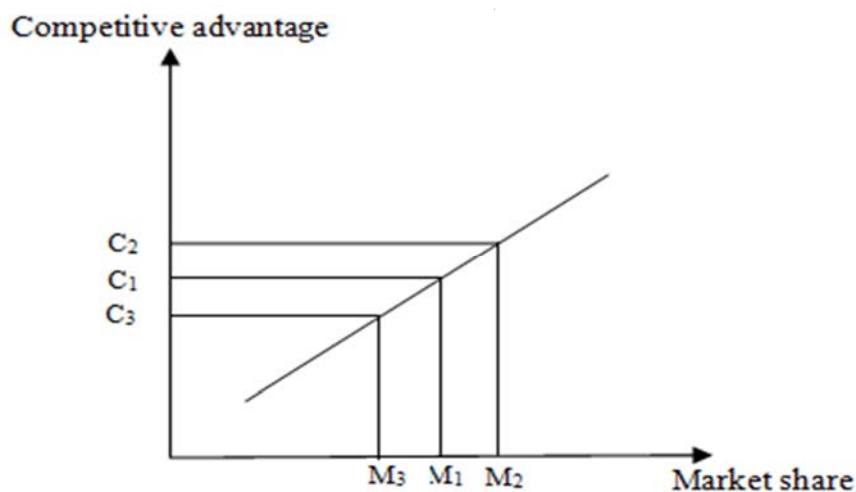
the ever-changing market situation. By doing so, BSC could utilize opportunities properly and improve its market share.

### 2.3: Conceptual Framework

Market share is an important indicator of economic performance. This study examined market share of BSC to get its position in the industry, and the conceptual frameworks developed to illustrate the relationship between the market share and competitive advantage and SWOT factors.

The following conceptual frameworks are developed by the researcher, in line with the theories and above-mentioned literatures relating to Porter's five forces model and SWOT analysis.

A company's position within a competitive industry depends on the competitive advantage of the firm. Market share is positively related to the competitive advantage of a firm that it owns in its structure. The idea generated from Porter's five forces and the mentioned literatures is depicted in Figure 5.



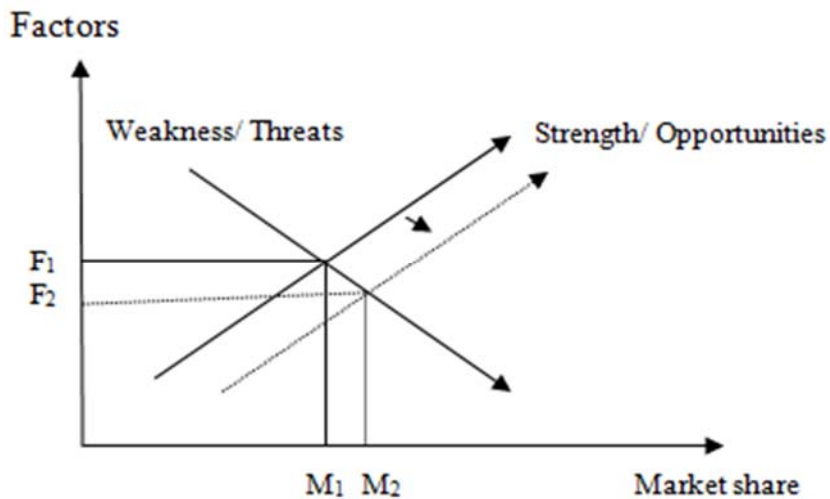
**Figure 5 : Relationship between competitive advantage and market share**

*From: Own concept*

As seen in Figure 5, when a firm's competitive advantage increases from C<sub>1</sub> to C<sub>2</sub>, its market share also grows from M<sub>1</sub> to M<sub>2</sub>. The opposite thing happens when its

competitive advantage decreases to  $C_3$ , then it loses the market share and comes down to  $M_3$ .

The following concept is generated from the SWOT analysis model and literatures. A firm's market share is the interaction of its internal and external factors.



**Figure 6: SWOT analysis and market share**

*From: Own concept*

As seen in figure 6, the weaknesses and threat factors are inversely related to market share; whereas the strengths and opportunities are directly related to the share. When a firm's weaknesses or threats increase, it loses its share. On the other hand, when opportunities or strengths increase, the line (Strength/ Opportunities) shifts to rightward and increases the market share from  $M_1$  to  $M_2$ . At the same time, it offset the weaknesses or threats, thus, comes down from  $F_1$  to  $F_2$ . Increased opportunities induce a firm to increase its strengths, and increased strength helps the firm to utilize available opportunities. So, both of the factors work positively and move together.

## **Chapter 03**

### **DATA ANALYSIS AND FINDINGS**

This chapter presents the empirical data to show the BSC's current status and its prospects. The chapter exclusively focuses on presenting the data in such a way to facilitate the discussion, which will be presented in Chapter 4. The first part analyzes data to find out the competitiveness of the corporation in the shipping industry of Bangladesh. The following part of this chapter discusses the internal and external factors of BSC in light of the SWOT analysis model. The third part presents the impacts of the Maritime Silk Road initiative on the business of BSC.

#### **3.1 Market competitiveness of BSC**

The position and structure of an organization in an industry is determined by Michael Porter's five forces. To get the competitiveness of BSC in the shipping industry of Bangladesh these five forces are discussed here sequentially.

##### **3.1.1: Power of Suppliers**

BSC has used to follow the government procurement rules as a state-owned shipping entity (MoLJPA, 2019). On 31 July 2019, 131 published tender notices were available on the website of BSC; all of these were done by following the PPA-2006 and PPR- 2008. Therefore, BSC has been purchasing goods, works, and services from the national and international markets. Among the 131 tenders, 72 were international, whereas 59 were national.

<b>Name of Method</b>	<b>National Tender</b>	<b>International Tender</b>	<b>Total Number</b>
OTM	50	14	64
Framework Contract	-	1	1
LTM	-	57	57
RFQM	9	-	9
Total Number	59	72	131

**Table 1: BSC's procurement methods at the national and international market**

*From: BSC website (2019)*

The corporation has been following different purchasing methods like Open Tendering Method (OTM), Limited Tendering Method (LTM), Request for Quotation Method (RFQM) and Framework contract. Table 1 shows that maximum 64 tenders conducted by following OTM; where all eligible suppliers can participate in the tendering process, and lowest 1 tender followed by Framework contract; where the authority can purchase goods or services directly from the enlisted suppliers with the contracted terms and conditions within a specified period. LTM is the second-highest (57); where some eligible suppliers can compete who are previously enlisted through OTM tender for a fixed period, and the third one is RFQM (9); where emergency and available goods are purchased by this method.

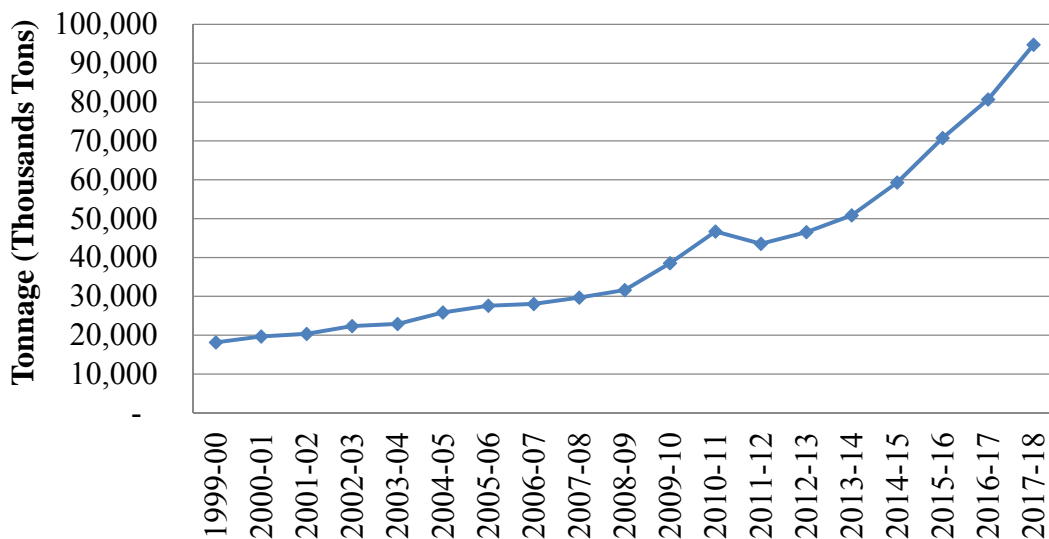
From the above-mentioned Table 1, it is observed that the maximum 49 percent purchased is done by the OTM method and the minimum method is the Framework Contract which accounted for 1 percent. Besides, LTM and RFQM accounted for 43 percent and 7 percent respectively.

Moreover, BSC has recently purchased six new vessels from China with a G2G contract under the concessional loan of China. This purchasing process was started in September 2011, when the exporter company proposed to BSC. Thereafter a Memorandum of Understanding was signed between BSC and the exporter company CMC (China National Machinery Import and Export Corporation) on 15 June 2012. Finally, the financial agreement was signed in 2016, when the Chinese President visited Bangladesh.

Based on the aforesaid analysis it can be termed that BSC has not had a flexible source of purchasing rather it has to follow the different methods, and sometimes it takes a long time to complete the process.

### 3.1.2: Power of Buyers

The demand for shipping services is increasing gradually in Bangladesh. Data show that 18,148,000 tons of seaborne cargos or export-import cargos were handled in Bangladesh in FY 1999-2000, and the amount rises to 94,764,000 tons in FY 2017-18, more than five times higher. The only deviation is observed in FY 2011-12; where handled cargo amount was dropped to 43,541,000 tons from 46,691,000 tons of the previous year. Except for FY 2011-12, the graph is growing up regularly as seen in Figure 7.



**Figure 7: Seaborne trade pattern of Bangladesh**

*From: BBS (2013, 2018), CPA (2019) and Mongla Port Authority (2019)*

Table 2 presents the number of companies and cargo amounts for selected 10 items who are engaged in export and import trade; thus, they are buying maritime transportation services in Bangladesh. For exporting goods in FY 2017-2018, numbers of buyers for maritime transportation service came from Ready-Made Garments (RMG) 4560 (BGMEA, 2019), Manufactured Jute 205 (BJMC, 2019), Leather 682 (BTA, 2019), Frozen Fish 108 (BFFEA, 2019) and Tea 9 (BTB, 2019).

On the other hand, the buyers for importing goods came from Raw Cotton 96 (BCA, 2019), Pig Iron 26 (Exporters.sg, 2019), Chemical Products 153 (BCIMA, 2019), Fertilizer 7000 (BFA, 2019) and Cement 45 (Star, 2018) companies. Although, some sectors are concentrated with few amounts of companies; the market is large in Bangladesh with a total amount of 12,884 entities of 10 sectors.

<b>Buyers of maritime services in Bangladesh for selected items (Export &amp; Import in FY 2017-18)</b>					
<b>No</b>	<b>Item</b>	<b>Export amount</b>	<b>Import amount</b>	<b>Unit</b>	<b>No. of Company</b>
1	Ready Made Garments	30,614	-	\$/million	4,560
2	Manufactured Jute	831,000	-	Ton	205
3	Leather	12,000	-	Ton	682
4	Frozen Fish	64,000	-	Ton	108
5	Tea	1,000	-	Ton	9
6	Raw Cotton	-	1,662,000	Ton	96
7	Pig Iron	-	92,000	Ton	26
8	Chemical Products	-	1,499,000	Ton	153
9	Fertilizer	-	3,508,000	Ton	7,000
10	Cement	-	17,391,000	Ton	45
				Total=	12,884

**Table 2: Number of buyers of shipping services in Bangladesh for selected items**

*From: BBS (2018) and other sources*

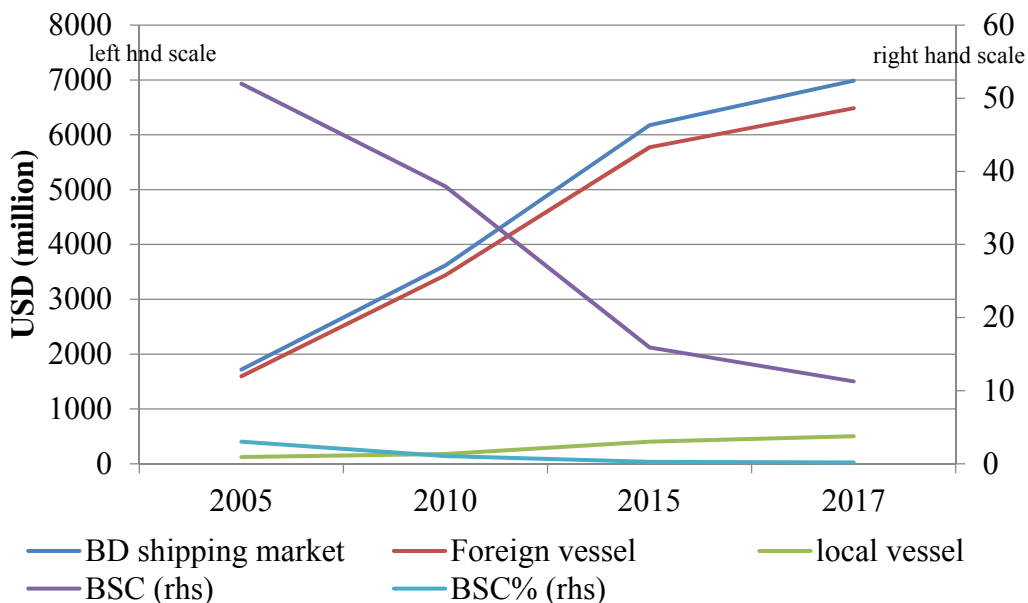
BSC earned 70 percent of its commercial income only from the crude oil lightering operations in FY 2017-18 (BSC, Annual Report 2017-2018, 2019). Therefore, the organization is mostly dependent on a single buyer and it could not take advantage of the large market.



### 3.1.3: Competitive Rivalry

UNCTAD maritime country profile data shows that the shipping market size of Bangladesh was USD 1719 million in 2005 and the amount increases to USD 6986 million in 2017 (UNCTAD, Maritime Profile:Bangladesh, 2019). The earnings of foreign vessels were USD1597 million in 2005. This amount increased to 3442, 5774 and 6486 million USD in 2010, 2015 and 2017 respectively. At the same time, the earnings of the local vessel also increased gradually from USD 122 million in 2005 to USD 500 million in 2017 (see Appendix- 1).

The scenario of BSC is the opposite; the earnings of the organization are going down gradually. The earnings were USD 52 million in 2005, and came down to USD11.26 million in 2017. Figure 8 indicates the decreasing rate was very sharp from 2005 to 2015. Here, Figure 8’s primary vertical axis (left hand scale) represents the Bangladesh shipping market size, foreign vessel earnings, and local vessels earnings, and the secondary vertical axis (right hand scale) represents BSC’s earnings and percentage. The percentage of earnings of the organization was 3.02, 1.05, 0.26 and 0.16 in 2005, 2010, 2015 and 2017 respectively.



**Figure 8: Competitive Scenario of Bangladesh (BD) shipping Market**  
 From: UNCTAD (2019) and Bangladesh Economic Review (2011 and 2018)

BSC has the right to carry 40% of national seaborne cargo because of the Bangladesh Flag Vessel Protection Ordinance, 1982 (Alam, 2016). This law gives a competitive advantage to BSC over other companies. However, Figure 8 shows that the corporation could not properly utilize the above-mentioned opportunity of the law. The causes of this fact are discussed in the weaknesses analysis section of this chapter.

Bangladesh Oceangoing Ship-owners' Association (BOGSOA) represents the ship-owners of Bangladesh; the association has 17 members (BOGSOA, 2019); as seen in Appendix-2. All members are not active now in shipping. Table 3 shows only 8 private shipping companies are doing business, besides the government shipping entity BSC. Table 3 also presents the company's fleet strength; Brave Royal is the strongest competitor of BSC with a fleet of 18 ships of 889,262 DWT. Other major local competitors are Meghna Group, Alunited Maritime and MJL Bangladesh. In comparison, BSC has 8 ships in its fleet with the capacity of 262,482 DWT (BSC, Business Excellence, 2019). According to Table 3 among the 52 local ships, 45 are bulkers, 5 are tankers and only 2 are container carriers; these containers are not in service now (Clarksons, 2019).

Private Shipping Companies of Bangladesh and their fleet details								
No.	Name of Company	No. of Ships	Fleet size	Unit	Bulk	Container	Tanker	Status
1	Alunited Maritime	9	504,458	DWT	9	-	-	In service
2	HRC Shipping	2	1,181	TEUs	-	2	-	Laid up
3	Brave Royal	18	889,262	DWT	18	-	-	In service
4	Meghna Group	12	577,475	DWT	10	-	2	In service
5	MI Cement	4	192,657	DWT	4	-	-	In service
6	MJL Bangladesh	2	213,638	DWT	-	-	2	In service
7	Orion Oil and Shipping	1	35,407	DWT	-	-	1	In service
8	Vanguard	4	181,577	DWT	4	-	-	In service
<b>Total Ships =</b>		<b>52</b>			<b>45</b>	<b>2</b>	<b>5</b>	

**Table 3: Private shipping companies of Bangladesh**

*From: www.clarksons.net (2019)*

BD Trade Info is listed 107 company's name working in Bangladesh which is seen in Appendix-3 (Info, 2019). The list includes the name of local and foreign companies or their agent's names. Besides these companies, some foreign companies are also working in the market, e.g. CMA CGM, COSCO, Maersk, MSC, NYK, K-line, Hapag-Lloyd Shipping Line and PIL.

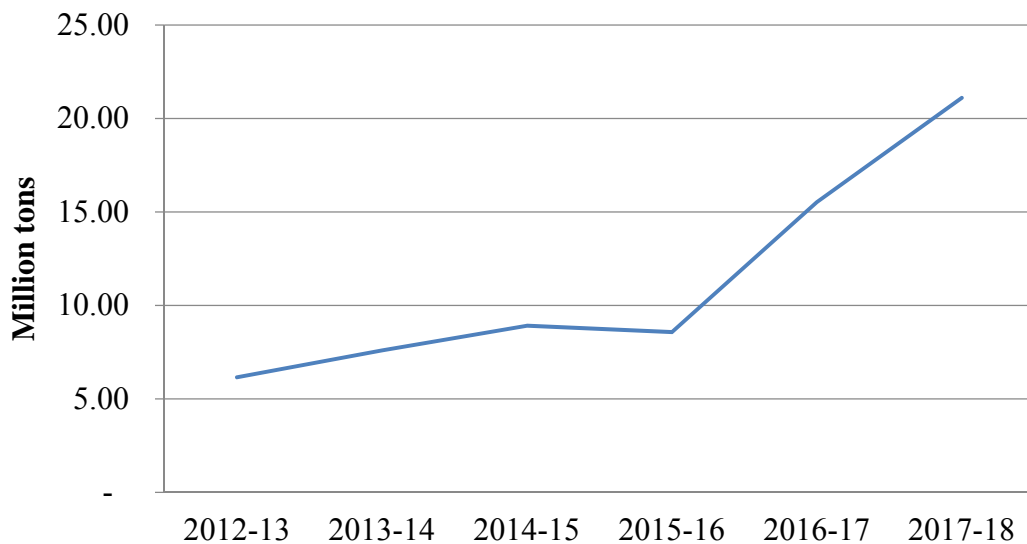
#### **3.1.4: Threat of New Entrants**

The Government Shipping Office (GSO) of Bangladesh has published the list of Bangladesh flag vessels, and it includes 52 ships in 2019. Three of these are waiting to scrap (GSO, 2019). A newspaper of the country reported that there were 35 oceangoing vessels in Bangladesh in 2018; the number was 85 at five years back. The same daily reported that only 7-8 local companies are working in the shipping industry of the country (DailyStar, 2018). Order book for new building ships shows only one ship was ordered to build by Bangladeshi ship owner Meghna Group (Clarksons, Orderbook, 2019). The ordered Bulk carrier's capacity is 64,000 DWT and is scheduled to deliver in 2020.

#### **3.1.5: Threats of Substitution**

Road and air are the alternative modes of cargo transportation from Bangladesh to other countries. Bangladesh Land Port authority has been operating 23 land ports in Bangladesh (BLPA, 2019). Total cargo handled by the land ports was 6.15 million tons in FY 2012-13 and the amount reached 20.16 million tons in FY 2017-18.

Figure 9 shows that handled cargo amount was increasing slowly until FY 2014-15 and dropped slightly in FY 2015-16. Thereafter the amount increased sharply until FY 2017-18.



**Figure 9: Cargo handled in land ports**

*From: BLPA website (2019)*

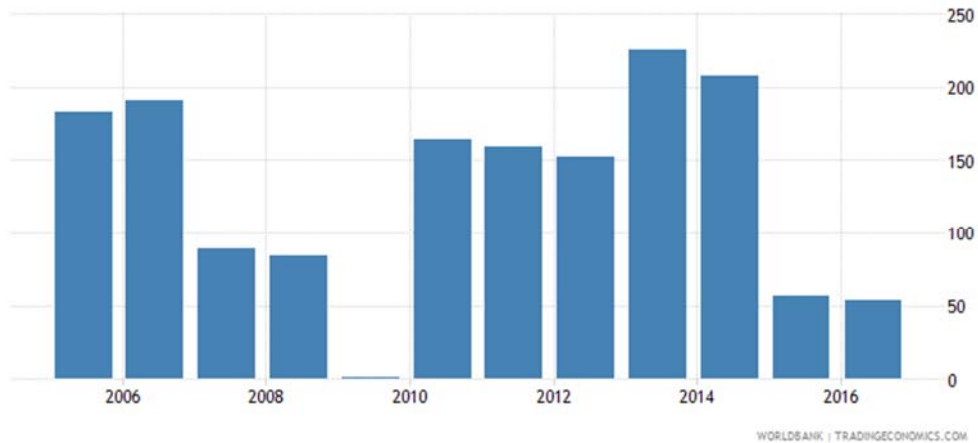
The air cargo amount is very unstable in Bangladesh. World Bank has revealed the air cargo amount of the country. The organization reported that the cargo amount was 193.87 million ton-km in 2000 (Bank, 2019). Table 4 shows that the highest amount of cargo was carried in 2014; the amount was 207.74 million ton-km.

<b>Year</b>	<b>Cargo amount</b>	<b>Year</b>	<b>Cargo amount</b>
<b>2000</b>	193.87	<b>2009</b>	0.01
<b>2001</b>	169.60	<b>2010</b>	164.42
<b>2002</b>	171.58	<b>2011</b>	159.69
<b>2003</b>	175.50	<b>2012</b>	152.32
<b>2004</b>	180.43	<b>2013</b>	225.19
<b>2005</b>	183.49	<b>2014</b>	207.74
<b>2006</b>	190.83	<b>2015</b>	57.01
<b>2007</b>	89.03	<b>2016</b>	53.98
<b>2008</b>	84.22	<b>2017</b>	61.75

**Table 4: Air cargo of Bangladesh (million ton-km)**

*From: World Bank (2019)*

The amount dropped suddenly to 0.01 million ton-km in 2009 from 84.22 million ton-km of 2008, as seen in Figure 10. In 2016 it was 53.98 million ton-km; it reached 61.75 million ton-km in 2017 (Tradingeconomics, 2019).



**Figure 10: Air cargo amount of bangladesh (million ton-km)**

*From: Tradingeconomics (2019)*

In comparison with seaborne trade, land, and air cargo transportation is not a threat to BSC. Though the land ports cargo is a large amount, it's not a threat. Because land ports only deal with the cargo of neighboring countries Myanmar and India that are connected with land. On the other hand, air cargo is not enough as well as this mode of transportation is expensive. Therefore, export-import traders are dependent on sea transportation.

### **3.2: Current Status of BSC**

This part discusses the Strengths, weaknesses, Threats, and Opportunities of BSC to get the causes of why it is losing its market share and how the MSR initiative could impact on the business of the organization.

#### **3.2.1: Strengths Analysis**

##### **1. Government Support**

BSC has received great support from the Government in many ways. Some government-supported project information is found in its annual report (BSC, Annual Report 2017-2018, 2019) and presented in Table 5.

No.	Loan Amount	Source of fund	Objective
1	1.2 billion RMB	G2G <sup>1</sup> concessional loan from China Govt. , 2016	To buy six new vessels
2	9 billion Yen	Govt. signed a loan agreement with the OECF <sup>2</sup> , Japan, 1979	To buy four new vessels
3	103.2 million Tk.	Bangladesh Government, 2002	To provide Self-retirement Scheme benefit of 140 employee
4	79.6 million Tk.	Bangladesh Government, 2012	To modernize BSC Marine Workshop

**Table 5 : Government support to BSC**

*From: Annual reports of BSC*

BSC was able to procure ships after 27 years because of the government's support. For the procurement of six new vessels (3 product oil tankers and 3 bulk carriers each of 39000 DWT) a financial contract was signed between the government of Bangladesh and the government of China on 14 October 2016. The project cost was 1.2 billion RMB. All ships of the project are already added to the BSC fleet. Similarly, the Bangladesh government signed a loan agreement in 1979 with OECF, Japan for 09 (nine) billion yen to buy four ships for the fleet of BSC. The loan was granted with a payback period of 30 (thirty) years including 10 (ten) years grace period and the interest rate was 2.75 percent. The government converted of BDT 64,655,302 of the loan into 'shares' in 1997; meantime, BSC paid the amount for BDT. 155,229,688.36 to the government. The government of Japan exempted the total loan amount as well as the interest to the government of Bangladesh in 1990; in line with that BSC applied to government for exemption the full amount. In response to the application, the government rescheduled of BDT 600,700,000 of the loan in 1995. Finally, BSC applied to the government to convert the loan amount into government equity.

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<sup>1</sup> Government to Government

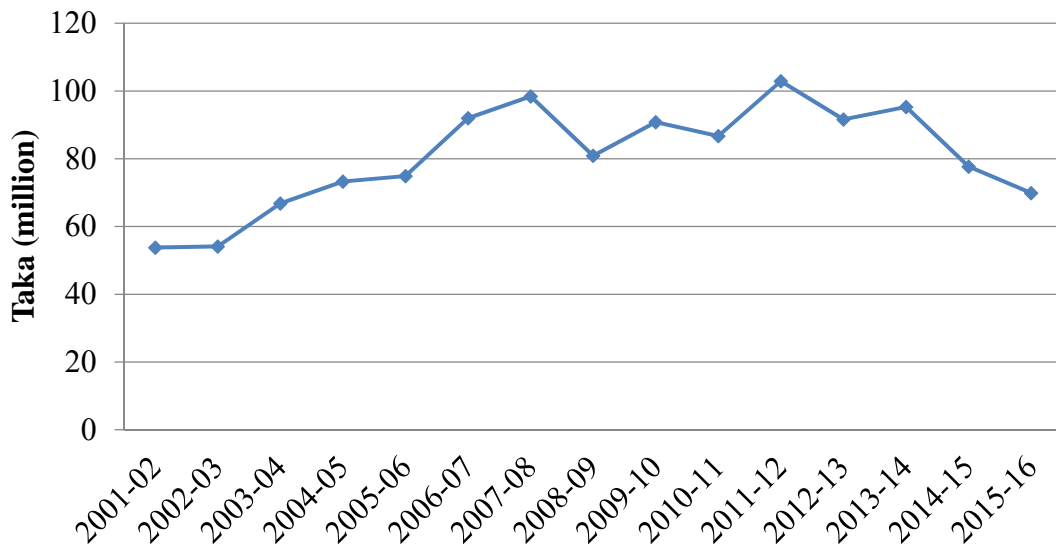
<sup>2</sup> Overseas Economic Cooperation Fund

Furthermore, BSC received a loan amount of BDT 103,200,000 from the Bangladesh government in 2002 for the retirement benefits of 140 employees, who retired under the Scheme of Self-retirement. The loan has remained unpaid since 2002. BSC had completed the modernization work of BSC Marine Workshop with a loan of the government that received in 2012. The loan amount was BDT. 79,594,785 with a 15 years payback period and 5 percent interest rate.

## 2. Marine Workshop

BSC has its workshop situated in a very suitable place in the Chittagong Port area. The Workshop carries out all kinds of repair works of BSC’s vessels, furniture, and fixture, air conditions, vehicles, and manufactures various spare parts. Moreover, the workshop also undertakes various repair works of other organizations- both public and private (BSC, Annual Report 1999-2000, 2001).

Figure 11 presents the income trend of the workshop from FY 2001-2002 to 2015-2016. The lowest income of the workshop was of Tk<sup>3</sup> 53.76 million in FY 2001-02 and the highest income of the amount of Tk. 102.9 million in 2011-12. After that, the income keeps dropping gradually and reached Tk. 69.9 million in 2015-16.



**Figure 11: Income of BSC Marine Workshop**

*From: Annual reports of BSC*

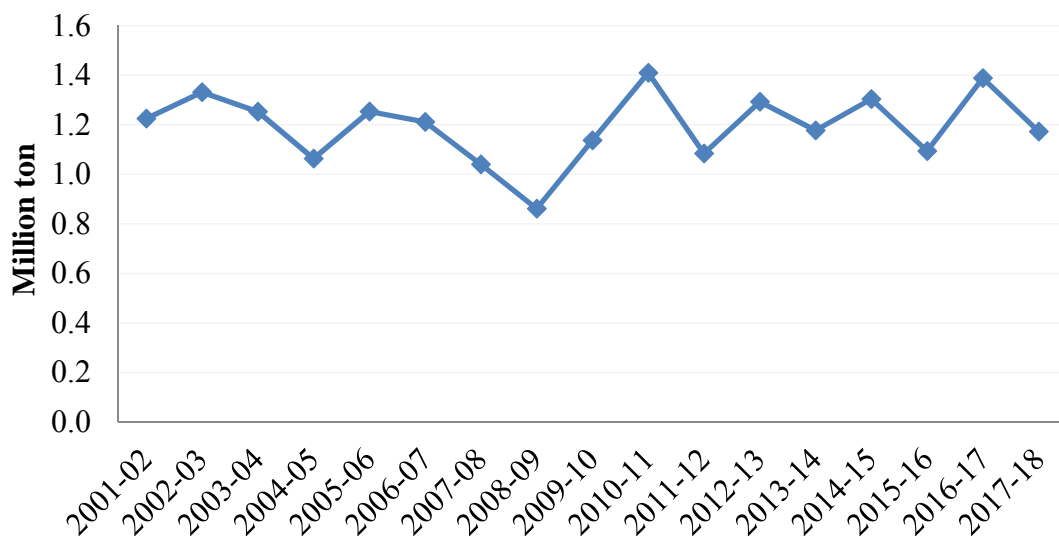
<sup>3</sup> Tk.= Taka. The currency of Bangladesh

### 3. Port Facility

BSC is enjoying a mooring facility for repairing its vessels. Chittagong Port Authority (CPA) has fixed one mooring (RM-9) point for BSC's vessels which are under repair (CPA, 2019).

### 4. Crude Oil Transportation

Crude oil carrying in Bangladesh is a captive market for BSC. The Bangladesh government has nominated BSC to carry all crude oil cargo for the government entity, Bangladesh Petroleum Corporation (BPC). The amount of Crude oil that is handled by BSC is presented in Figure 12. Data show that the handled amount staying almost always around 1.2 million tons. The biggest fluctuation is seen in FY 2008-09 with the amount of 0.86 million tons. On the other hand, the highest amount is 1.41 million tons in FY 2010-11; the second-highest carried amount is 1.39 million tons in FY 2016-17 (BPC, 2019).



**Figure 12: Annual Crude Oil Carried by BSC**

*From: BPC (2019)*

### 5. Agent of Government for Chartering Vessels

BSC is nominated as the sole agent for chartering vessels for transporting goods of all government entities. The government of Bangladesh is preparing 'rules on



chartering vessels for transporting goods of state-sector entities- 2017' for giving the sole agency to BSC (Express, 2018).

## **6. Public Listed Entity**

BSC is listed on the Dhaka Stock Exchange in August 1977 and Chittagong Stock Exchange in November 1975. Its authorized capital is Tk. 10,000 million and paid-up capital is Tk. 1525.3 million (approved is Tk. 3500 million). Consequently, BSC has collected BDT 3137,071,489 (BSC, Annual Report 2016-2017, 2018) from the stock market to buy two ships for its fleet (Limited, 2019).

## **7. Ship Acquisition Plan of BSC**

BSC has undertaken several ship acquisition projects to expand its fleet with different types and sizes of vessels, in line with the government 7th Five-year Plan, Vision-2021 and Vision-2041. Table 6 presents the ships acquisition plan of the organization.

No.	Name of projects	No. of vessels	Purpose of projects
<b>Recent project</b>			
1	Procurement of 6 (six) new vessels (3 product oil tankers and 3 bulk carriers of 39000 DWT each)	6	To modernize the BSC's fleet. Status of the project: <b>Completed</b>
<b>Projects to be completed by 2021</b>			
2	Procurement of mother bulk carriers (for carrying coal) of capacity minimum 80,000 DWT each	2	3 coal-fired power plants have been implemented at Rampal, Payra, and Matarbari of Bangladesh. Required coal will be imported from abroad. The objective of the projects is to ensure the uninterrupted supply chain of coal of these projects.
3	Procurement of 10 bulk carriers (for carrying coal) of capacity 10,000-15,000 DWT each	10	
4	Procurement of mother tanker of capacity 100,000-125,000 DWT	2	To carry all crude oil for BPC by BSC's vessels
5	Procurement of mother product oil tanker (for carrying diesel) of capacity minimum 80,000 DWT each	2	To carry diesel oil for BPC
<b>Projects to be completed by 2041</b>			
6	Procurement of LNG carrier of capacity about 140,000 CBM	2	To carry LNG to meet up the gas demand of Bangladesh.
7	Procurement of LNG carrier of capacity about 174,000 CBM	2	
8	Procurement of LNG carrier of capacity about 180,000 CBM	2	
9	Procurement of Chemical/ Crude oil tanker of capacity 30,000-35,000 DWT each	2	To replace two lighterage tanker
10	Procurement of cellular container vessel of capacity 1,200-1,5000 TEUs each	4	To start feeder service among the BIMSTEC countries
Total vessels =		34	

**Table 6: Ship acquisition plan of BSC**

*From: BSC's annual reports and website*

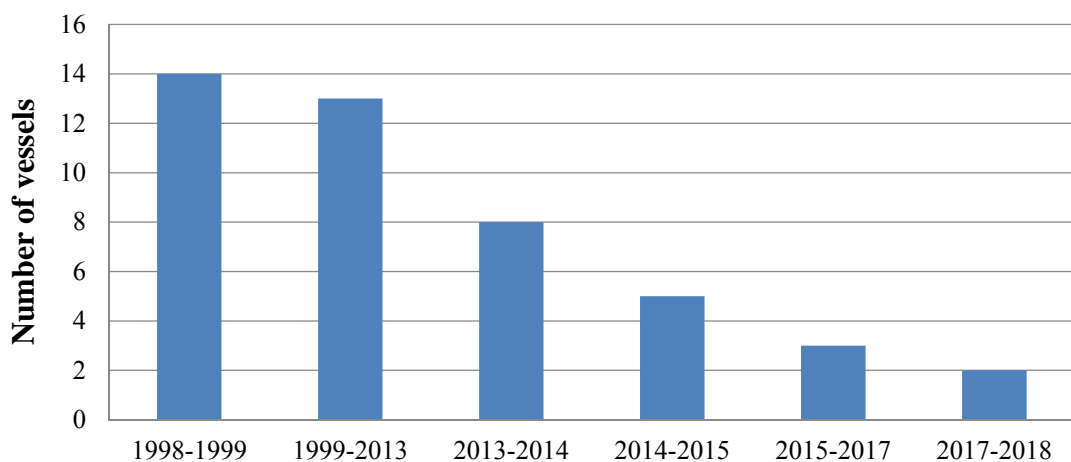
Among the above seven strengths of BSC, some strengths give the corporation competitive advantages over all other shipping companies. These include the government support in several forms including loan facilities for ship acquisition, working as the sole agent for the government for crude oil carrying and chartering vessels, having a marine workshop and port facility. By having these strengths and competitive advantages, BSC will be able to increase its market share.

### 3.2.2: Weaknesses Analysis

The strengths of BSC are valuable for the corporation; at the same time, it is also important to realize the weaknesses that may cause hindrance to the organization's business.

#### 1. Fleet Size

One of the weaknesses of the organization is its fleet size for which BSC has been suffering. BSC keeps continuing its commercial activities though it faces various problems including small fleet size (BSC, Annual Report 2015-2016, 2017). Therefore, small fleet size along with the fleet age reduces the fleet supply capacity of the organization.



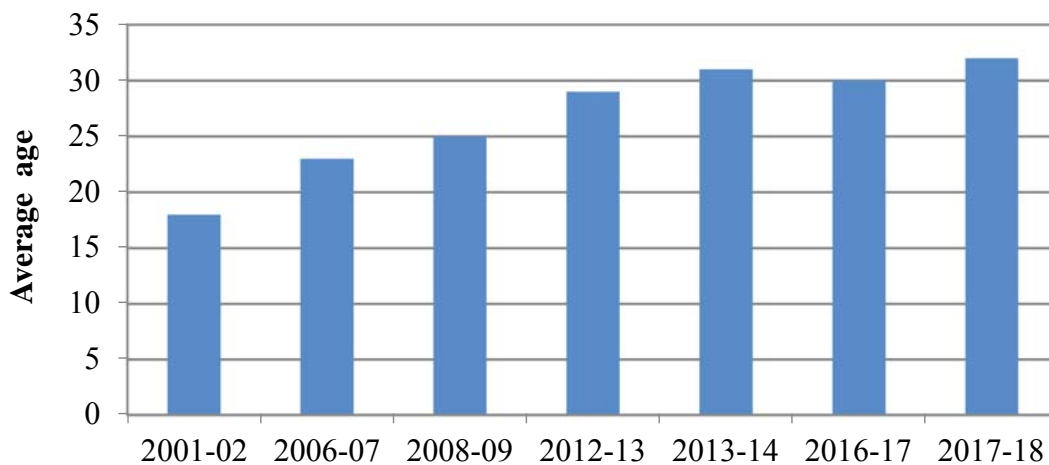
**Figure 13: Fleet size of BSC**

*From: Data compiled from MoF (2018) and annual reports of BSC*

Figure 13 presents that BSC had 14 vessels in its fleet during the FY 1998-99 and disposes of one vessel in the next year; thus, 13 vessels were in the fleet from FY 1999-2000 to until the FY 2012-2013. The fleet size dropped to 8 in FY 2013-14; next year BSC sold out its three vessels and fleet size came down to 5. Again, it disposes of another two vessels in the following year; therefore, three vessels remained in the fleet during the FY 2015-2-17. Finally, it sold out one vessel and fleet size came down to two in FY 2017-2018.

## 2. Age of Fleet

BSC was not able to ply its vessels in most international water due to the age restriction by IMO and other international law enforcement organizations (BSC, Annual Report 2015-2016, 2017). Data show that the average age of the fleet was 18 in FY 2001-02 and it crosses 25 years in FY 2008-09. Figure 14 shows that the average age always remains more than 25 years from FY 2008-09 to 2017-18. The highest average age is 32 years is seen in FY 2017-18 and the second highest is 31 years in FY 2013-14.



**Figure 14: Average age of BSC's fleet**

*From: data compiled from BSC's annual reports*

### 3. Withdraw of Liner Services

BSC suspended its liner services of various routes gradually because of cargo unavailability, changes in the shipping business, and economic recession. Table 7 reveals that BSC suspended its Bangladesh/ Far East/ Japan Service in 1998 because of the scarcity of export cargo to Far East countries. Moreover, the growing containerization process affects BSC for suspending its Bangladesh/ UK Continent/ Africa Service in 2000. The Container and Feeder Service had suspended for time being in 2007, and the Bangladesh/ Pakistan/ West Asia Gulf Service had suspended in FY 2015-16 due to the reducing of cargo quantity and freight earning for the economic recession of 2008. Moreover, BSC stopped its charter/ tramp service in FY 2015-2016 (BSC, Annual Report 2016-2017, 2018).

No.	Service route	Year of suspension	Reason of suspension
1	Bangladesh/ Far-East/ Japan Service	1998	Due to export cargo paucity from Bangladesh to Far East countries, BSC had suspended the service in this route
2	Bangladesh/ UK-continent/ Africa Service	2000	Due to growing containerization, traditional break-bulk liner service had become economically non-viable
3	Container and Feeder Service	2007	Suspended for time being
4	Bangladesh/ Pakistan/ West Asia Gulf Service	2015-16	Due to the economic recession of 2008, freight earning and cargo quantity had reduced

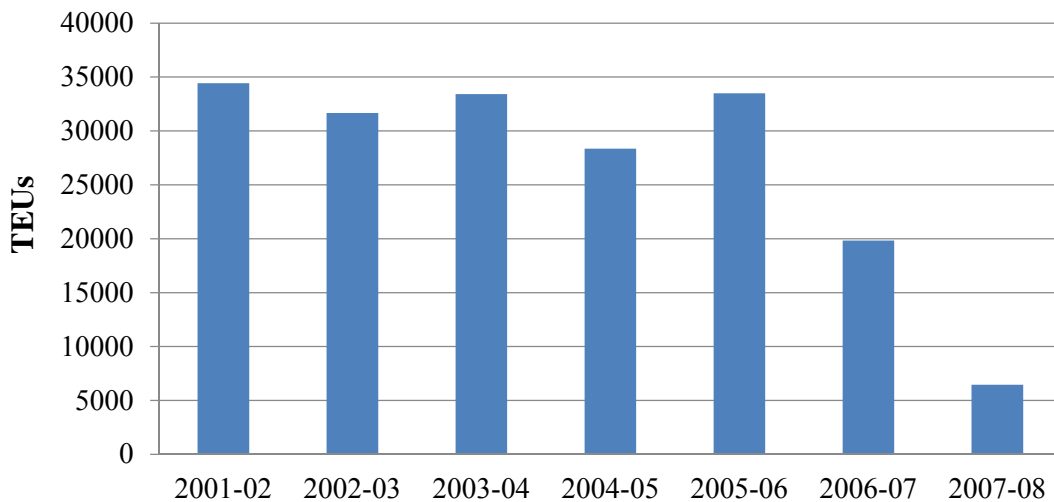
**Table 7: Suspension of BSC's services in various routes**

*From: BSC's annual reports*

### 4. Cargo Handling Performance

BSC had suffered for the reduction of cargo handling too. The cargo handled amount in container service and Bangladesh/ Pakistan/ West Asia Gulf Service are presented below.

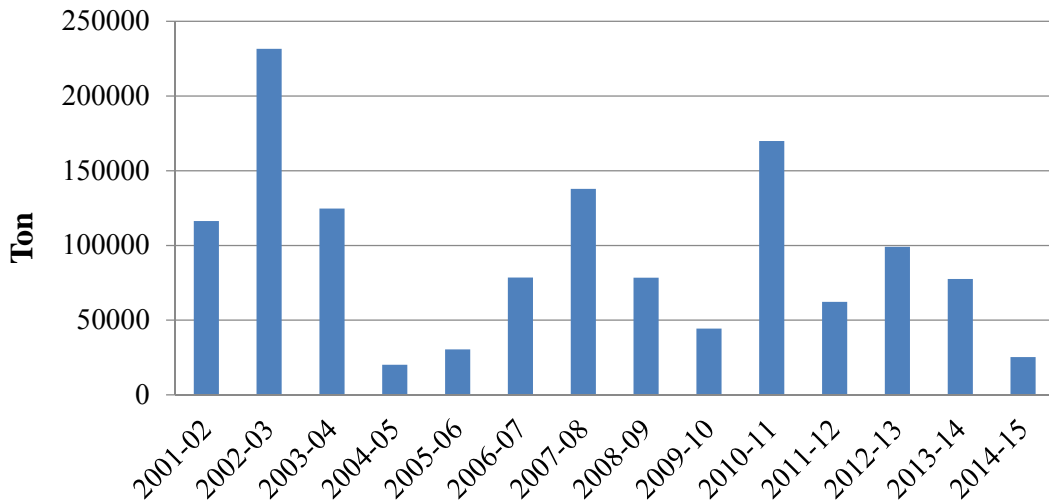
The handled container amount by BSC was 34,423 TEUs in FY 2001-02, and the amount remains almost the same until FY 2005-06. Thereafter, the amount dropped sharply to 19,837 TEUs in FY 2006-07, and in FY 2007-08, the container handled amount came down to 6,458 TEUs. BSC's container handling trend is revealed in Figure 15. The organization stopped its feeder service on 16 November 2007 for the time being and does not start the service again.



**Figure 15: Container handled by BSC**

*From: BSC's annual reports*

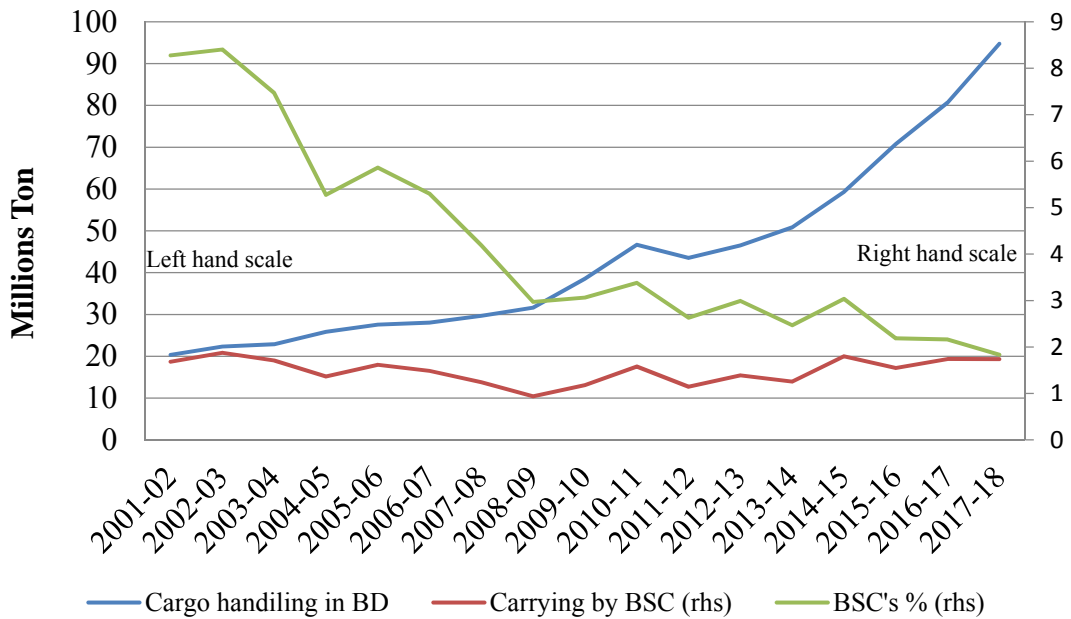
Data show that the fluctuating magnitude of handled cargo is very high in Bangladesh/ Pakistan/ West Asia Gulf Service route. The highest handled cargo amount was 231,563 tons in FY 2002-03 and the following amount was 169,896 tons in FY 2010-11. The lowest and second-lowest amount was 20160 tons and 25350 tons in FY 2004-05 and 2014-15 respectively. Most of the time (9 times) the handled amount remains below 100,000 tons and only 5 time crosses this limit, as seen in Figure 16.



**Figure 16: Cargo handled in Bangladesh/ Pakistan/ West Asia Service route**  
*From: BSC's annual reports*

### 5. BSC's Cargo Handling and Bangladesh Shipping Market

BSC lost its market share in Bangladesh in terms of volume as well. Figure 17 presents the shipping market size of Bangladesh in volume and the market share of BSC. Figure 17's primary vertical axis (left hand scale) represents the total cargo handling amount in Bangladesh, and the secondary vertical axis (right hand scale) represents cargo handling amount by BSC as well as its percentage, compared to the total cargo amount of Bangladesh. According to the data, BSC handled 1.68 million ton cargos in FY 2001-02, which was 8.27 percent of the total market of 20.33 million tons. In the following year, both the market size of Bangladesh and the BSC's portion are increased to 22.34 million tons and 1.88 million tons respectively.



**Figure 17: BSC's market share in Bangladesh (Bd) in volume and percentage**

*From: BBS (2013 and 2018), CPA (2019) and Mongla Port Authority (2019)*

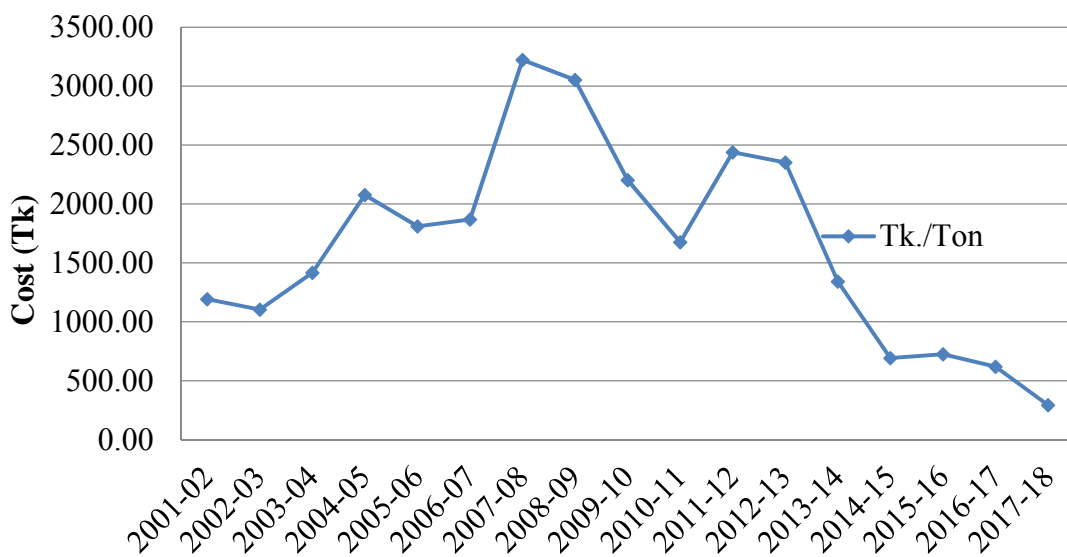
Data show that the shipping market size of Bangladesh is increasing gradually and it reached 94.76 million tons in FY 2017-18; almost 4.5 times bigger than FY 2001-02. BSC's handled cargo remains always below 2 million tons (see Appendix-4). BSC handled the highest 1.88 million tons of cargo in FY 2002-03 and the lowest amount is 0.94 million tons in FY 2008-09. On the other hand, BSC's share in percentage is reducing gradually, this share reduced to 1.84 percent in FY 2017-18 from 8.27 percent of FY2001-02.

## 6. Economies of Scale of BSC

BSC had suffered for the high average unit cost of its service as well. Data present that the average unit cost (Tk. / Ton) of its service was Tk. 1192 in FY 2001-02 and it dropped slightly in the following FY. With some fluctuations, the average unit cost kept rising until FY 2007-08 and reached to 3223 Tk. / Ton. The second highest cost was 3053 Tk. / Ton in FY 2008-09 (see Appendix-5). Figure 18 shows that the average unit cost started to reduce gradually from FY 2011-12 and reached its lowest cost of 293 Tk. / Ton in FY 2017-18; thus, BSC has started to gain the economies of scale advantage. Anyway, the transport volume did not change that much, it is



primarily the reduction of the total cost of the corporation. The reduction of the total cost is mainly because of the fleet management by selling the overage vessels of its fleet. Also, reduced repair and maintenance cost keeps the total cost lower (BSC, Annual Report 2017-2018, 2019). Thus, BSC needs to keep reducing the unit cost of production by reducing operational expenses and maintenance costs for having the most important competitive advantage, economies of scale.



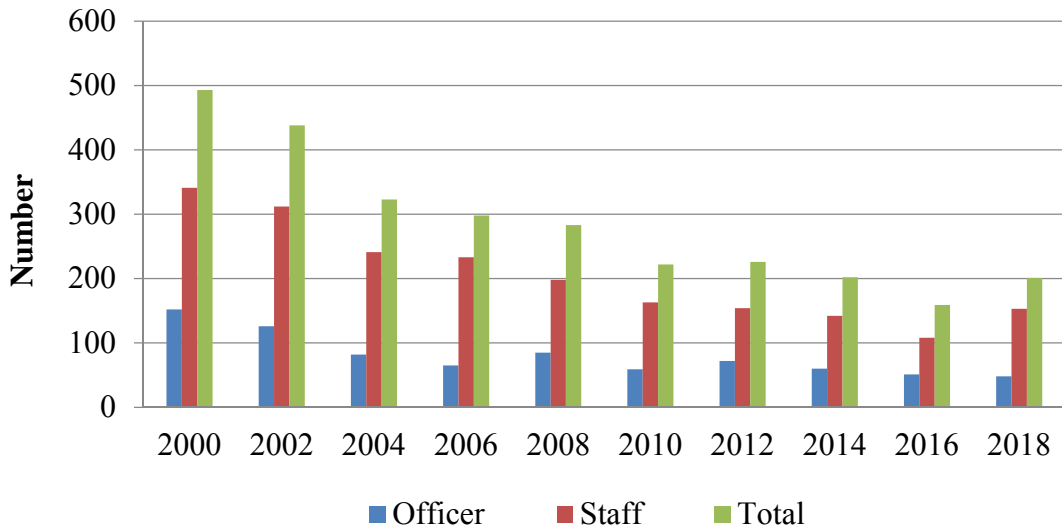
**Figure 18: Economies of scale of BSC**

*From: Data compiled from MoF (2018) and annual reports of BSC*

## 7. Skilled Manpower

Skilled manpower is also an issue for BSC. Figure 19 presents the scenario of shore-side manpower of the organization. There were 152 officers and 341 staff in 2000. Data show that total manpower reduced consistently except 2012. In 2012, 4 employees increased compared to the previous year. The total manpower dropped to 201 in 2018, whereas the number was 493 in 2000. The number of officers dropped to 48 in 2018 from 152 of 2000. The rate of officer reduction is higher than the staff. Similarly, the number of officers reduced to 82 in 2004 from 126 of 2002; the reason for this drastic reduction was the Self-retirement Scheme of 2002 when 140 employees received the scheme. Among the 48 officers, there was no General

Manager (GM) in 2018 (BSC, Annual Report 2017-2018, 2019), the top executive officers' post of the corporation. Only 2 GM was working in FY 2016-17 and 3 were working both in FY 2015-16 and 2014-15.



**Figure 19: Diagram represents manpower (shore) of BSC**

*From: Annual reports of BSC*

Because of the above-mentioned weaknesses, BSC could not fully explore its opportunities, though it has several competitive advantages. Therefore, the organization loses its market share gradually.

### 3.2.3: Opportunities Analysis

#### 1. Development Activities

Economic development and various development activities of Bangladesh including consistent GDP growth rate, increased export-import, infrastructure development, establishing Special Economic Zones, and new power plants all are providing opportunities for the development of BSC. Table 8 presents the GDP growth rate of Bangladesh's economy. In FY 2007-08, the growth rate was 6.19 percent and reaches to 8.13 percent in FY 2018-19 (MoF, Bangladesh Economic Review 2019, 2019). According to the data, the GDP growth rate was below 6 percent only in FY 2008-09. Except for this year, the rate remains above 6 percent every year.

<b>Fiscal year</b>	<b>GDP growth rate (%)</b>	<b>Fiscal year</b>	<b>GDP growth rate (%)</b>
2007-08	6.19	2013-14	6.06
2008-09	5.74	2014-15	6.55
2009-10	6.07	2015-16	7.11
2010-11	6.71	2016-17	7.28
2011-12	6.23	2017-18	7.86
2012-13	6.01	2018-19	8.13

**Table 8: GDP growth rate of Bangladesh**

*Source: Statistical Pocket Book Bangladesh 2013, 2018 & MoF (2019)*

The GDP growth rate increased consistently in the last six fiscal years. Moreover, the rate remains above 7 percent in the last four consecutive years. The lowest growth rate is 5.74 percent, whereas 8.13 percent is the highest as seen in Table 8.

## **2. Policy Support**

The government of Bangladesh is going to amend the Bangladesh Flag Protection Ordinance. The cabinet of Bangladesh has approved the Bangladesh Flag Vessels (Protection) Bill 2019 to increase the percentage of national cargo-carrying obligation to 50 from the existing 40 percent; and the law stated that at least 50 percent of the national seaborne cargos must be carried by BSC's vessels (Tribune, 2019). The new law will protect BSC's interest to a large extent.

## **3. New Initiatives**

A decision has been taken to start feeder service among the BIMSTEC countries (BSC, Annual Report 2017-2018, 2019), which is an opportunity to develop the business of BSC. Maritime Silk Road is an important project for the shipping industry; thus also significant to BSC. The detail of MSR impacts on BSC is discussed separately in section 3.3 of this chapter.

Therefore, the development activities of the country and other international initiatives including the MSR project create huge opportunities for BSC. Moreover, the government supports BSC by changing the law that gives a more competitive advantage to the organization. Therefore, BSC could improve its market position by utilizing these opportunities.

### 3.2.4: Threats Analysis

#### 1. Market Volatility

BSC has exposed to various threats and challenges like any shipping company, such as fluctuation of the exchange rate, interest rate, bunker price- all these regular threats. The freight rate fluctuation is another big threat to BSC. Table 9 presents the fluctuation of the freight market of all bulkers from 2006 to 2019. Earnings of a bulker were USD 20,028/ day in 2006, which rose more than twice in 2007 with the amount of USD 44,267. The earnings dropped rapidly in 2009; the rate was USD 16,721 and again rose in 2010 with an amount of USD 20,498 per day.

Year	Earnings of bulkers (\$/day)	Year	Earnings of bulkers (\$/day)
2006	20,028	2013	10,348
2007	44,267	2014	9,881
2008	39,881	2015	7,092
2009	16,721	2016	6,218
2010	20,498	2017	10,986
2011	12,930	2018	12,249
2012	8,662	2019	9,794

**Table 9: Weighted average earnings of all bulkers**

*From: www.clarksons.net (2019)*

According to the data, the highest earnings per day were in 2007 and the lowest earnings were in 2016. Data also reveals that from 2011 to 2019, per day earnings of bulker moves around USD 10,000.

#### 2. Change in Regulations

BSC affected by the policy changes both from the government level and the international level. The organization has to follow the governmental procurement act and regulations for purchasing its required goods, works or services. The procurement rules slowed down the smooth purchasing and supply activities of the organization (BSC, Annual Report 2010-2011, 2012). Furthermore, BSC has

invested huge money every year to cope up with the changing regulations of IMO (BSC, Annual Report 2017-2018, 2019). The corporation already implemented the Safety Management System, Ship Security Plan, Ship Efficiency Management Plan, and New Garbage Management System as per the IMO requirement; it also implemented the MLC-2006 in its ships. The organization is waiting to build CITADEL in ships to ensure safe accommodation for crew, BMP4 to protect piracy and Bridge Navigation Watch Alarm System (BSC, Annual Report 2017-2018, 2019).

Moreover, IMO is going to implement the Sulfur Cap 2020 regulation from 1 January 2020 under Annex VI of the MARPOL Convention. According to this regulation, the emission limit of sulfur from fuel oil, used on ships that are operating outside of the designated emission control areas, will be reduced to 0.50 percent (IMO, 2019) instead of an existing limit of 3.5 percent, to protect the environment and human health. This regulation will require substantial investment to remain competitive for shipping companies; thus it is a big threat to BSC as well.

### **3. MSR Impacts**

MSR initiative generates some issues which have to be taken into account by BSC. Its direct effect is the reduction of sea route distance for tanker shipping and substitution effect to container by road transport; and indirect effect is the geopolitical issues among some big economies. This issue has the potential to hinder the international seaborne trade. Details discussion on these issues is included in section 3.3.4 of this chapter.

### 3.3: MSR impacts on BSC

#### 3.3.1: Overview of MSR

Silk routes which have existed thousands of years back that connecting Asia, Africa, Europe and many different regions for goods, knowledge, ideas, and culture. China has taken a plan to revive the silk routes again. On 7 September 2013, Chinese President Xi Jinping proposed the ‘Silk Road Economic Belt’ during his visit to Kazakhstan. While he was addressing the Indonesian parliament on 3 October 2013, he proposed the ‘New Maritime Silk Road’. Both of the roads are jointly known as One Belt One Road (OBOR) initiative. China authorities refer One Belt to the land-based Silk Road and One Road to the 21<sup>st</sup> Century Maritime Silk Road (Figure 20). China announced a plan to develop the following six economic corridors to implement the OBOR initiative.

1. China- Mongolia- Russian Economic Corridor
2. New Eurasia Land Bridge Economic Corridor
3. China- Central Asia- West Asia Economic Corridor
4. China- Pakistan Economic Corridor
5. Bangladesh- China- India- Myanmar Economic Corridor
6. China- Indochina Peninsula Economic Corridor



Figure 20: China's Silk Road Economic Belt and 21st Century Maritime Silk Road

From: [www.clarksonsn.net](http://www.clarksonsn.net) (2019)

The MSR initiative is planned to create connections among the regional waterways; therefore, the initiative has outlined three ‘blue economic passages’.

1. The first one is the China-Indian Ocean-Africa-Mediterranean Sea Blue Economic Passage, this includes the South China Sea, the China-Pakistan Economic Corridor, the China-Indochina Peninsula Economic Corridor and the Bangladesh-China-India-Myanmar Economic Corridor.
2. The China-Oceania-South Pacific passage and
3. The Europe-Arctic Ocean passage, also known as the Polar or Ice Silk road.

### 3.3.2: Countries and Ports involved with the initiative

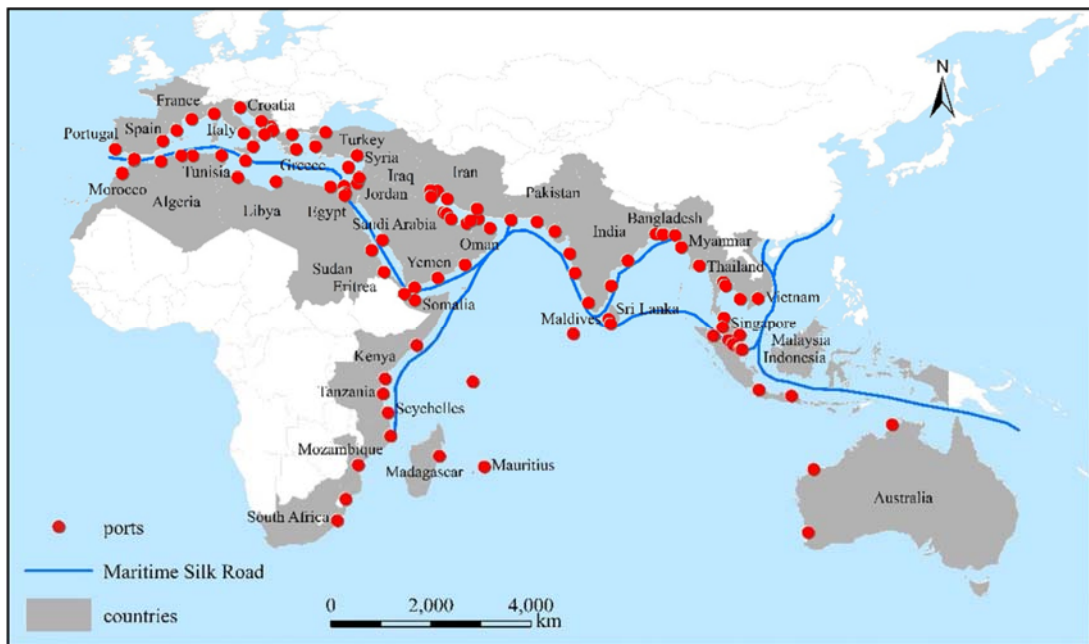
Table 10 shows the number of countries according to the regions and the key country/ countries to the respective regions of the One Belt One Road initiative (see Appendix- 6 for details). The highest 21 countries come from the East European region and the second-highest 14 from the Middle East region. Eight countries are involved with the initiative from South Asia; and Pakistan, as well as Bangladesh, is the key stakeholder in the region.

<b>Region</b>	<b>No. of Countries</b>	<b>Key Countries</b>
South East Asia	11	Indonesia, Malaysia, Laos
East/ Central Asia	6	Kazakhstan, Uzbekistan
South Asia	8	Pakistan, Bangladesh
West Asia	3	Armenia
Russia	1	Russia
East Europe	21	Belarus, Latvia
Middle East	14	Saudi Arabia, Iraq, UAE
North Africa	2	Egypt

**Table 10: Key countries and regions of belt and Road projects**

*From: www.clarksons.net (2019)*

The main focus of the MSR initiative is on marine routes from the coast of China to the Indian Ocean, the Mediterranean Sea, and the South Pacific. Peng (2018) has identified the position of 99 major ports of 51 countries within the MSR region (Peng, 2018), as seen in figure 21. Nouwens (2019) has mentioned the name of 94 ports where China has investment under the MSR initiative (Nouwens, 2019) (See Appendix- 7 & 8).

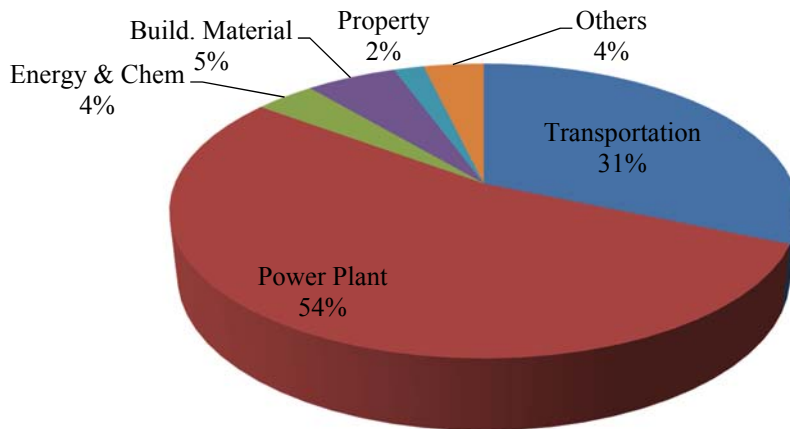


**Figure 21: Position of selected 99 ports along the Maritime Silk Road**  
*From: Peng (2018)*

### 3.3.3: MSR Projects in Bangladesh and impacts on BSC

The Bangladesh-China-India-Myanmar Economic Corridor (BCIM-EC) is a part of the MSR initiative; China has taken some projects to implement in Bangladesh for facilitating the initiative. Among the 511 key individual projects of OBOR (Clarksons, China's 'Belt & Road Initiative'- Key Project List, 2019), 54 projects (See Appendix- 9) have been implemented in Bangladesh. Figure 22 reveals that most of the projects (54%) are related to power plants and transportation projects are in the second top (31%). Energy & Chemical, Building Material, Property, and other projects also included among the 54 projects.

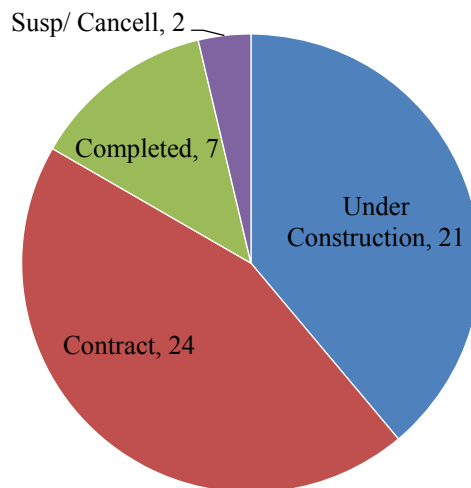




**Figure 22: MSR projects in Bangladesh by sector**

*From: compiled from Clarksons (2019) and other sources*

Figure 23 shows the status of MSR projects in Bangladesh. Among the projects, 7 projects have been completed and 2 projects have been suspended/ canceled. 21 projects are in progress; whereas 24 projects are in the contract stage. This indicates that the country will experience more development activities in the future.



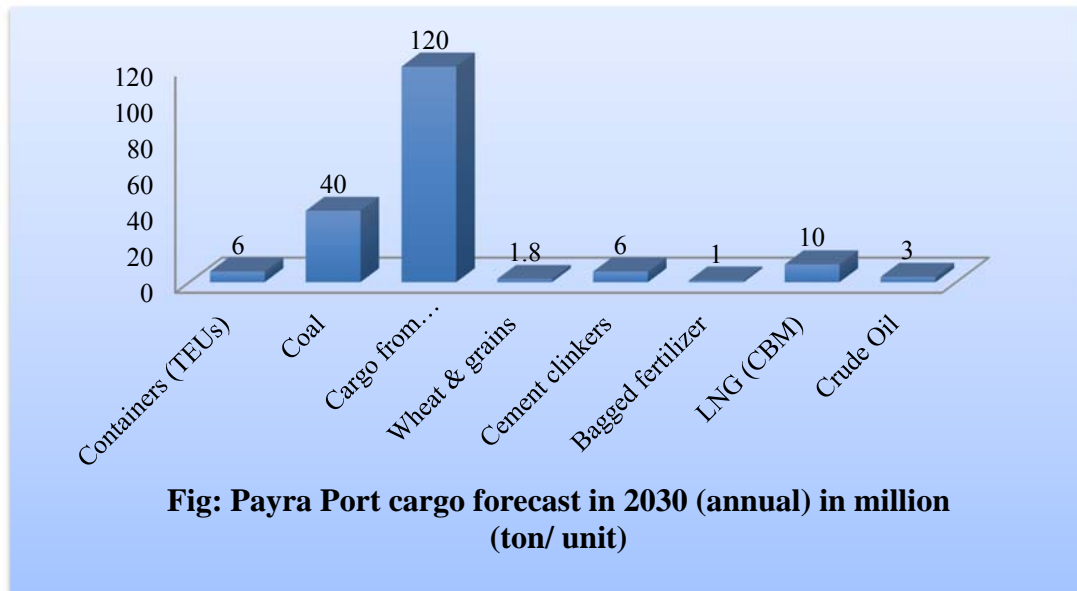
**Figure 23: Status of 54 MSR projects in Bangladesh**

*From: compiled from Clarksons (2019) and other sources*

‘Payra Deep Sea Port’ is one of the significant port projects of the MSR initiative (Diplomat, China Power, 2019), which is located in Bangladesh. The estimated amount and types of cargo that would be handled in 2030 by the port are seen in

Figure 24; which is also significant for the seaborne trade. Data show that 120 million tons of cargo will come from the neighboring countries (PPA, 2019). As the BCIM Economic Corridor is going to be implemented, therefore, the port will be an important transit point of the Silk Road. 40 million tons of coal will be imported through the port as several coal-fired power plants are constructing in Bangladesh under the MSR initiative.

The Payra Port is constructing to handle a vessel with a 300 meter length and 16 meter draft, therefore, the port could be handled the Panamax container ship. Thus, it is estimated that the port will handle 6 million TEUs container in 2030.



**Figure 24: Payra Port cargo forecast in 2030 (annual) in million (ton/ Unit)**

*From: PPA (2019) and Daily Star (2019)*

Moreover, Figure 24 shows 6 million tons of cement clinkers that will be imported in 2030 through the port. It is estimated that 1.8 million tons of wheat & grains will be imported through the same port to meet up the internal market demand. To facilitate fertilizer plants and power plants, the estimated amount of LNG import is 10 million CBM (Dailystar, 2019). At the same time, 1 million tons of bagged fertilizers estimated to import. Furthermore, there is a plan to develop a refinery in Payra port, which will need 3 million tons of crude oil each year. In addition, the port has

planned to develop an EEZ, airport, port city, dockyard/ shipyard and eco-tourism facilities (Asia, 2019). The port is being developed by three stages and completed by 2023.

Besides the Payra Port, China has upgraded the Chittagong Port and is building an industrial park in the same city. China is also constructing road and railway lines to link the region to Kunming in China's Yunnan province (Diplomat, 2019). Moreover, Chen (2018) mentioned that Bangladesh, along with 12 other MSR countries, is a potential place to develop China's relocated manufacturing sectors. These are indicating the seaborne trade of Bangladesh and demand for maritime transportation will keep increasing in the future too.

### 3.3.4: MSR and challenges for BSC

Some states are raising questions about the intention of China regarding the OBOR; thus the MSR initiative. Therefore, BSC has some concerns that need to be addressed about what is generated from the Maritime Silk Road project. China has started to seek ownership of foreign seaports along strategic transit channels through land-use agreements between Chinese state-owned enterprises and local authorities (Ghiasy, 2018). Table 11 shows that China has owned 8 foreign seaports for different periods through a lease agreement. Among the listed 8 seaports, 5 ports are in the Indian Ocean and 3 ports are in the South China Sea.

<b>Year</b>	<b>Region</b>	<b>Host State</b>	<b>Port</b>	<b>Lease period</b>
2015	Indian Ocean	Pakistan	Gwadar	40 years
2015	Indian Ocean	Myanmar	Kyaukpyu	50 years
2015	South China Sea	Malaysia	Kuantan	60 years
2016	Indian Ocean	Djibouti	Obock	10 years
2016	South China Sea	Malaysia	Melaka Gateway	99 years
2017	Indian Ocean	Sri Lanka	Hambantota	99 years
2017	South China Sea	Brunei	Muara	60 years
2017	Indian Ocean	Maldives	Feydhoo Finolhu	50 years

**Table 11: Chinese sea port ownership in the South China Sea and the Indian Ocean Region since October 2013**

From: Ghiasy (2018)

China is facing some challenges in the Indian Ocean from its rival states because of the security implications. This issue is illustrated in figure 25. India and some other states believe that China is deliberately creating dependencies among the states which are along with the road project to make strategically dependents and to turn these economic enclaves. The Quadrilateral Security Dialogue or ‘Quad’ between India, Japan, the USA, and Australia was revived in 2017. The security of key international sea lanes and freedom of navigation is the concern of the USA. Japan is concerned about China’s increasing ability to control its energy supply chain and Australia is worried that China’s projects aid could make weak states more vulnerable to coercion.

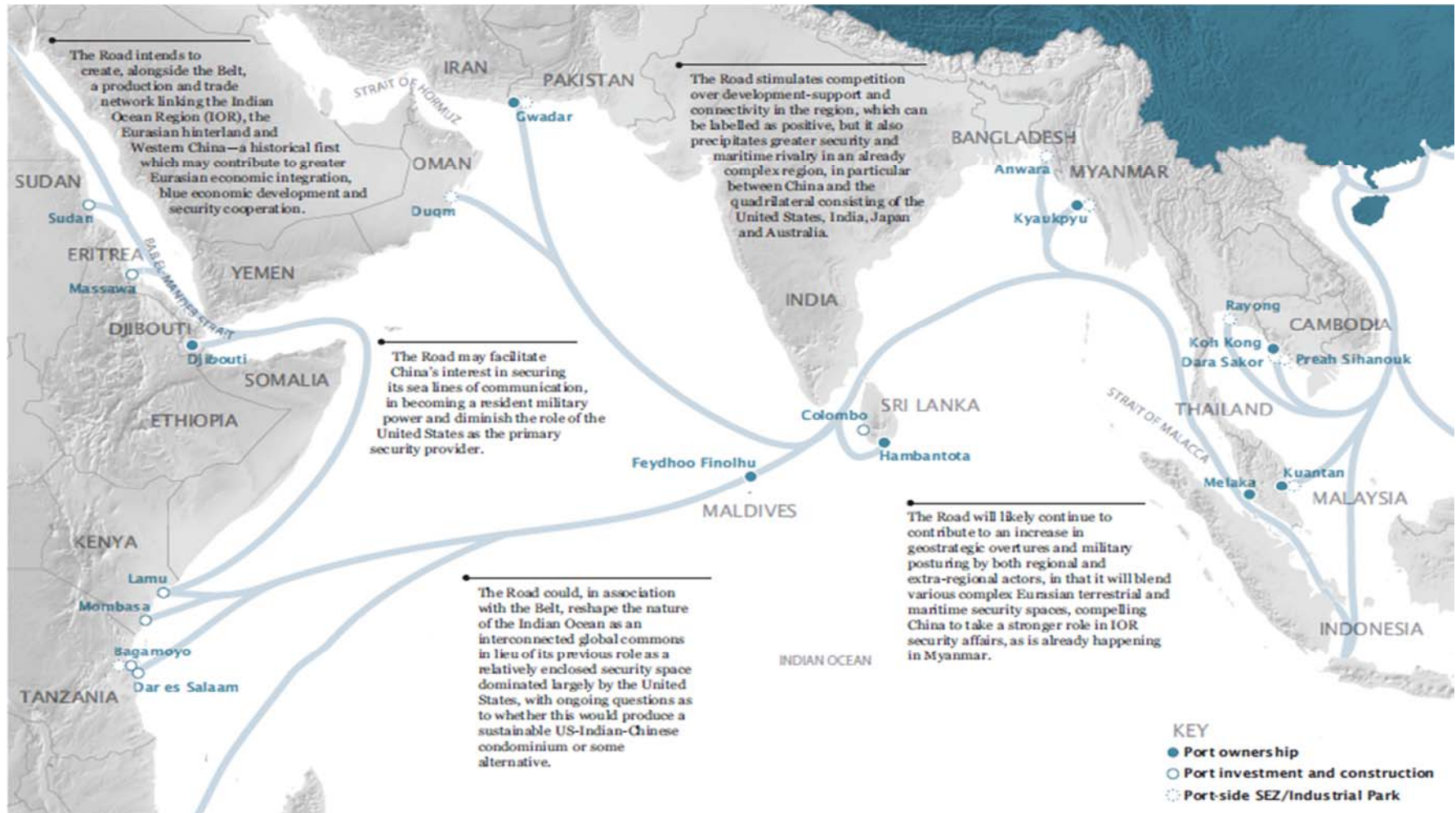
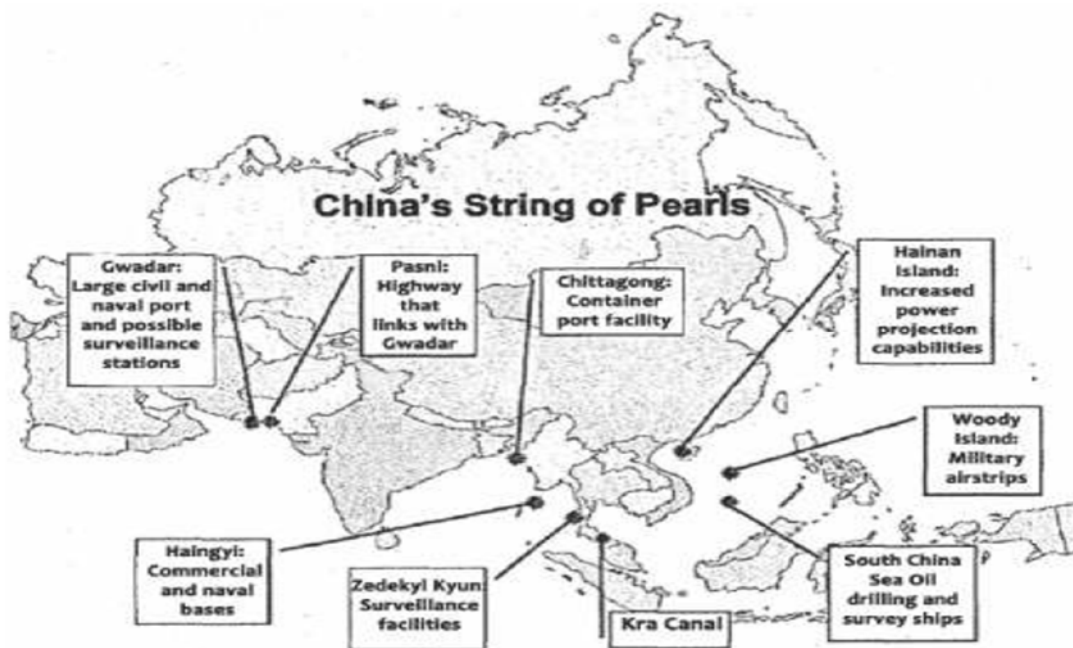


Figure 25: MSR security implications and investments in the Indian Ocean

From: Ghiasy (2018)



**Figure 269: String of Pearls**

From: Suri (2016)

The concept of ‘String of Pearls’ thought by an American think tank in a report ‘Energy Futures in Asia’ for the US Secretary of Defence in 2004. The report states that “China is building strategic relationships along the sea lanes from the Middle East to the South China Sea in ways that suggest defensive and offensive positioning to protect China’s energy interests, but also to serve broad security objectives” (Suri, 2016). Figure 26 shows that the container shipping facility in Chittagong, Bangladesh is a ‘Pearl’ in the string. These concepts are creating geopolitical tensions among the countries, which are an issue for BSC. Moreover, the OBOR has some negative points too for the shipping industry. Scott (2017) identified some disadvantageous points for container and tanker shipping because China and Europe have already started trade overland for high value and time-sensitive cargo which was used maritime transportation previously. Similarly, OBOR is a reason to shorten the sea route because China is building pipelines for carrying gas and crude oil in China, which is detrimental to the shipping industry.

## **CHAPTER 4**

### **DISCUSSION**

The data analysis and findings presented in Chapter 3, which are obtained from primary and secondary data sources by using qualitative data analysis. It identified and highlighted some significant competitive factors as well as external and internal factors of BSC, which contribute to its market share, and how the MSR initiative can impacts on its business. This chapter is devoted to presenting a critical discussion of the findings and initial analysis from Chapter 3 in light of the conceptual framework presented in Chapter 2.

#### **4.1: Critical Discussion**

This study aims to identify the reasons why BSC loses its market share as well as how the MSR initiative will impact on the business of the organization and what kind of measures should BSC take to get the maximum benefit from the initiative. To achieve these aims, the findings are discussed critically in line with the corresponding research objectives and questions.

##### **4.1.1: Research Question 1**

*What are the issues faced by BSC that contribute to losing its market share?*

##### **1. Power of Suppliers**

The data analysis chapter shows that BSC has been purchasing its required goods, services and works from the national and international market by following different government purchasing methods. The analysis also reveals that the suppliers come from different segments of the market, they are not integrated. It can explicitly be seen that suppliers give price quotations according to the requirement of BSC, and

the corporation buys which quotation is competitive to it. Therefore, the process itself limits the power of the suppliers.

## **2. Power of Buyers**

It is observed in the data analysis chapter that the power of buyers is less over the shipping companies because of the steadily increasing demand for shipping services in Bangladesh. Though the number of buyers of shipping services is large enough in the market, BSC is mainly carrying the cargo of BPC. Therefore, the shipping market of Bangladesh is dominated by foreign shipping companies and slightly by the local companies. Specifically, the container shipping is entirely run by the foreign liner shipping companies.

## **3. Threat of New Entrants**

It is examined that the number of Bangladesh national flagships has decreased recently; probably, because of the specialized nature of the shipping and the requirement of huge capital to start and run the business. Only one private shipping company has ordered a new ship. Therefore, the threat of new entrants to BSC is low in Bangladesh.

## **4. Threats of Substitutions**

BSC does not have any substitution threat; because ninety-two percent of the country's export-import transportation is done by sea route. Moreover, air transportation is costly and the amount is not much of a threat to BSC. Comparatively, land ports are handling a considerable amount of cargo, but this also not a threat to the corporation. Because land ports are only dealing the cargo for neighboring countries, Myanmar and India's some parts of which are connected by land with Bangladesh.

## **5. Competitive Rivalry**

The data analysis and findings chapter discloses that BSC is holding some competitive advantage in the shipping market of Bangladesh. As a government



entity, it has the right of getting forty percent national seaborne cargo because of the Bangladesh Flag Vessel Protection Ordinance, 1982. Moreover, the government has taken the initiative to amend this ordinance to increase its support to BSC. Importantly, the market size is increasing consistently and earnings of foreign and local companies increasing gradually too; conversely, the corporation is losing its market share regularly.

Thus, BSC is doing its business in a very competitive industry with some competitive advantage over other companies. The conceptual framework shows that if the competitive advantage of a company increases within an industry, the market share of the company increases too. In case of BSC, the market share decreased regularly though the competitive advantage remains almost unchanged. This happened perhaps for the underutilization of its competitive advantage. Indeed, the under-utilization issue is linked to the internal and external factors of the organization.

## **6. Strengths of BSC**

Data analysis chapter presents some strengthening factors of BSC including government support for ship acquisition, crude oil transportation as a captive market, secretary for chartering vessels for all government entities, stock-listed corporation, berthing facility and ownership of a marine workshop. Recently, the government had arranged a G2G loan and acts as a guarantor on behalf of the corporation to buy ships; and planned to procure more ships for BSC. Moreover, the government has decided to carry all its crude oil through this government entity; which made this market a captive for BSC. Furthermore, the government allows BSC for chartering vessels for all government entities. Being a public listed company, the organization has collected capital from the share market and planning to buy two ships for its fleet. BSC also owned a marine workshop; which does various repair works including its fleet and offices as well as for other public and private organizations. Also, the CPA has allocated one berth to BSC for the repair works of its vessels.

## **7. Weaknesses of BSC**

Data analysis and findings chapter reveals some weak factors of BSC, which influenced to decrease its market share. BSC could not renew its fleet for 27 years. Therefore, the fleet size of the corporation decreased its minimum to two; and the average age remains higher than the international standard required by IMO. It is also seen that BSC had stopped its liner services as well as tramp shipping due to cargo scarcity, economic recession, changes in shipping business and the age restriction problem. Similarly, cargo handled data for liner services also show the decreasing trend, these happened perhaps for lacking proper market analysis and correct response to market nature, lacking relationships with shippers, trade bodies and other stakeholders. Conversely, the cargo volume of the market is growing steadily. Because of these opposite trends, BSC's percentage of market share is going down regularly. Another significant point is that the unit cost of BSC's service was higher when the fleet size and the market share were comparatively large. The unit cost reduced significantly when the fleet size and market share came down. This shows that the vessels were less productive for a long time. Moreover, reducing manpower at the shore is another important issue to consider, especially the reduction of officers' number; most importantly, the top executive officers is alarmingly low. Because of these above-mentioned weaknesses, BSC could not utilize its competitive advantages.

## **8. Opportunities of BSC**

Chapter 3 presents some opportunities too to BSC. These include the steady increase in GDP of Bangladesh, various development activities inside the country, government support to BSC including policy changes, regional initiative to shipping and most significantly the MSR initiative.

## **9. Threats of BSC**

The ever-changing regulation of shipping activity in the national and international sphere is the threat element for BSC, e.g. the Sulfur Cap 2020. Both the cost and

competitiveness are directly influenced by the required technical standard of regulations. Lifting the general standard to the required standard is a time-consuming procedure (Beth, 1984) and regulation always requires a degree of management or operational adjustment (Mitroussi, 2013). Moreover, market volatility nature is another threat to BSC, and geopolitical issues, as well as reduction of sea route distance for tanker shipping and substitute of container shipping by road transports that generated from the MSR initiative, needs to take into account by the organization.

The data analysis and findings chapter exposes that besides the underutilization of the competitive advantage of BSC, probably the weaknesses and threat factors have brought about greater impacts on BSC compare to the impacts of strengths and opportunities during the conducted research period; therefore, BSC loses its market share.

#### **4.1.2: Research Question 2**

*How the MSR initiative will impact on BSC's business?*

The data analysis chapter presents that the MSR initiative has significant implications for shipping. These can be divided into direct and indirect implications. Direct implications include the maritime connectivity between regions or countries along with the MSR initiative and inverse effects on the tanker and container shipping. On the other hand facilitating the seaborne trade, i.e. cargo availability, through infrastructure development and geopolitical issues generated from the initiative are the indirect implication. Bangladesh is in the position of key countries in South Asia of the OBOR project; therefore, important in the MSR initiative. Furthermore, the MSR initiative has planned to invest in around one hundred ports to connect the waterways of the countries. Thus, this is evident that the initiative will provide connectivity from the coast of China to the Indian Ocean, the Mediterranean Sea, and the South Pacific; thus it will help to open new routes of BSC.

Further, Bangladesh is a part of BCIM-EC and fifty-four projects have been implemented in the country; that accounted for ten percent of total OBOR projects. More than half of the MSR projects of Bangladesh are power plants and one-third are transportation projects. These projects imply that the BCIM countries are going to be connected through some of these projects, and some others are executing for generating enough power for various MSR plants including manufacturing factories and industrial plants. Moreover, the MSR projects' data are showing the reason why the seaborne trade in Bangladesh has increased recently. A good amount of MSR projects are under construction which requires a huge amount of raw materials; and resulted to increase seaborne trade for importing construction materials (Star, 2019). Importantly, more MSR projects are going to be implemented in the future, which will require more maritime transport services; significant for BSC to take into the calculation.

'Payra Deep Sea Port' is a part of the MSR initiative. Chapter 3 presents the forecasted cargo amounts that would be handled in the port from the BCIM countries and inside the country; generated from MSR projects or by using MSR developed infrastructures. Moreover, the production of the Chinese Economic and Industrial Zone and other Special Economic Zones need to be considered too because Bangladesh is a potential place among the MSR countries to relocate China's manufacturing industries. To calculate the maritime transport demand for the MSR projects, BSC has to take into consideration the ton-mile concept. Because the ton is meaningful to port activity; on the other hand, ton-mile makes more sense in shipping (Shuo, 2018).

Though the MSR initiative has a huge influence on shipping, the industry also needs to consider its geopolitical issues and impacts on tanker and container shipping. Some big economies including the superpower USA are strongly opposing the OBOR initiative, thus the MSR project. They are blaming that China has military ambition behind the OBOR initiative. These countries are opposing the initiative because of China's movement in the Indian Ocean and the South China Sea by taking over port ownership through a lease agreement for different tenure in between ten years to ninety-nine years. Moreover, Chittagong Port is considered as a 'pearl' of Chinese string by the USA, which also indicates some geopolitical issues among the big economies as mentioned in the previous chapter. The OBOR initiative also has its effects on the reduction of sea route distances for tanker shipping and to substitute by land road for container shipping. These may be converted into the intense of vessels over-supply problem and reduction of freight rate.

As observed from the data analysis and findings chapter, the positive impacts of MSR on BSC seems more significant than the geopolitical and other issues. Therefore, in light of the conceptual framework, it can be concluded that the MSR initiative can shift the strength and opportunity line positively, and offset the weaknesses and threat factors of BSC; these can result in increasing the market share of the corporation.

### 4.1.3: Research Question 3

*What steps are needed by BSC to get maximum benefits from the proposed MSR initiative?*

The MSR project will provide cargo in the form of bulk, container, LNG, and crude oil. BSC has a plan to procure different kinds and sizes of vessels within 2041; it includes bulk carriers, oil tankers, LNG carriers, and container vessels. As observed from the cargo estimation of Payra Port and ship procurement plan of BSC, it is explicable that the ship acquisition plan of the corporation is not designed to address the MSR's opportunities. Therefore, the first step should be updating its ship acquisition plan to properly address the maritime transport demand generated from the initiative. In calculation the demand of maritime transportation, BSC needs to estimate by applying the ton-mile concept according to cargo wise and direction wise.

**Second**, it is evident from the data analysis that the Bangladesh government has taken initiative to adopt the Bangladesh Flag Vessels (Protection) Bill 2019 to replace the Bangladesh Flag Protection Ordinance 1983 to give more privileges to BSC for carrying national cargos. It can be assumed that the main purpose of the government, in this case, is earning foreign exchange and improving the balance of payment position. Shipping has its value as a vehicle of trade and separate value as a foreign currency earner or foreign exchange saver (Sanklecha, 1982). With the view of maximizing this purpose, BSC should pursue the government to follow specific commercial contract for exporting and importing of national cargo. In case of import of goods, importers need to follow the FOB contract and exporters need to follow CIF contract for exporting goods to the maximum possible extent.

**Third**, in the present competitive market, BSC has had to meet the demand of skilled manpower to achieve success in business. Data show that BSC has been suffering from a lack of skilled manpower; especially as it has few top executive officers. To utilize the opportunities properly, which is offered by the MSR initiative, BSC needs more skilled and committed manpower. With the view of this point, the organization

should recruit skilled manpower directly as well as to invest in maritime education and training programs for its office staff; particularly, need to train its officers in globally recognized maritime education institutes. At the same time, the corporation has to ensure the recruitment of the right crew for the ships and an effective shore-ship relationship.

**Fourth**, it is observed that while the shipping market was booming in Bangladesh, BSC's market share was going down there; the cargo handling amount should not be decreased in a booming market. Moreover, the maximum carried cargo of BSC comes from only one buyer, BPC. Therefore, it needs to improve its relationships with its stakeholders, especially cargo shippers and trade associations to increase customer numbers. To increase the number it can set standards for providing service and try to improve the standard continuously. It should follow some KPI like as, customer retention rate, to achieve its target. Furthermore, the corporation needs to analyze its market properly through quality data management, and accordingly, it needs to change its response to the market for utilizing its competitive advantages and having a better market position. In addition, BSC should start logistics activities as well e.g. warehousing, clearing & forwarding for facilitating its business.

**Fifth**, it is explained that construction works of the MSR projects will keep demanding more maritime transport services in the future. The shipping industry size in Bangladesh was \$7b in 2017 and reached \$8b in 2018 because of the MSR project's effect (Star, 2019); thus, the market is still growing. Therefore, BSC needs to address this point and approach to avail of this opportunity.

**Sixth**, it is seen that BSC's unit production cost of service has reduced recently from higher unit cost; thus the productivity of the fleet was very low for a long time. It can be mentioned that shipping productivity is determined by some factors such as the speed of a ship, ballast voyages, load factors, turn-round of a ship in port, number of days of unemployment, time for repairs etcetera. BSC management needs to take the necessary measures to increase the productivity of its fleet. At the same time, shipping space productivity also needs to increase. Generally, this productivity

measures by the number of ton-miles of cargo carried per DWT of shipping at a specific time. Furthermore, managing the daily operating cost is also important for the organization. To reduce unit cost, BSC can also operate larger ships to gain economies of scale. Because comparatively less engine power is required for a larger ship than smaller ships; thus saving in fuel consumption and cost per ton becoming less. The MSR project, Payra Port, will provide the opportunity to operate a larger vessel like Panamax, which is not possible in Chittagong Port.

**Seventh**, the MSR initiative has some challenges too due to the opposition stand of few big countries; therefore, it has a probability to increase geopolitical tension between the MSR countries and the opposition block of it. Probably, this issue can limit the freedom of navigation of merchant ships in international water. Thus, BSC needs to observe this issue regularly and to pursue the government for taking proper steps to ensure its vessel's smooth movement, if arise any unwanted situation. Moreover, management has to ensure the most profitable employment of the vessels and to ensure the successful execution of the employment contract in a professional way to make the organization successful in the ever-challenging and competitive industry.



## **CHAPTER 5**

### **CONCLUSION AND RECOMMENDATIONS**

The previous Chapter presented the interpretation of data analysis and findings in line with the research objectives and questions. It was also discussed according to the conceptual framework described in Chapter 2. This chapter presents the conclusion and recommendations resulting from this study. This also includes suggestions for further research work. Thus, this chapter is organized into three sections including the conclusion and recommendations.

#### **5.1: Conclusion**

This study aims to answer the following three questions-

1. What are the issues faced by BSC that contribute to losing its market share?
2. How the MSR initiative will impact on BSC's business?
3. What steps are needed by BSC to get maximum benefits from the proposed MSR initiative?

Data is collected from primary and secondary sources for this study. Primary data was obtained from the official publications of BSC and relevant information from its website. The secondary data was compiled from various publications of the Bangladesh Government, government offices' website, relevant literature, research sites, and various internet sources as well. These sources of data have supported the analysis of this research in the qualitative research method principally.

The research findings revealed that BSC is holding a competitive position in the shipping industry of Bangladesh. As a government entity, it is having government supports in various forms. Though the government has supported the organization continuously, its market position has been going down over time. Besides the

underutilization of its competitive advantages, BSC has been facing some internal and external challenges; that are responsible for losing its market share. Internal factors included small fleet size, fleet overage, decrease of handled cargo, the higher unit cost of service, less productivity of vessels, scarcity of skilled senior executive; and external factors are economic recession, change in market nature, freight market volatility, ever-changing shipping regulations by IMO and other authorities. Data analysis and discussion chapter presents that BSC could not utilize its competitive advantages and opportunities properly because its weaknesses were outweighed its strengths. Similarly, external threats contributed to losing its market share as well. Thus, this research has achieved its first objective by addressing the first research question adequately.

The study satisfactorily answered the second research question as well. The MSR initiative has direct and indirect impacts on BSC's business. Presented data suggest that BSC will get large maritime connectivity at around one hundred ports along with fifty-one countries of MSR regions. Therefore, this initiative will help BSC to expand its routes along the Indian Ocean, the Mediterranean Sea, the South Pacific and the Coast of China. Similarly, the initiative will provide a large amount of cargo. As part of the MSR initiative, the BCIM Economic Corridor has been planned to be executed. Therefore, Bangladesh's port 'Payra' will be a hub of seaborne trade for the region. At the same time, the initiative has been implementing more than fifty projects in Bangladesh. Thus, it can be said that the initiative will provide such an opportunity that can lift the business of BSC to a large extent.

Moreover, the initiative's projects, which work is underway, have created additional demand for maritime services. It can be safely assumed that in future the demand will keep increasing as more projects of the initiative are going to be implemented.

However, BSC has some challenges for the MSR initiative too. These challenges are the geopolitical issues, reduction of sea route for tanker shipping and substitute effect for container shipping. As observed in findings, the positive impacts of MSR will

weigh more than its challenges, therefore, the initiative will help to increase BSC's market share.

The study suggested some measures for BSC in the discussion part as well, that need to be done by the organization to get the maximum benefits from the MSR initiative. Therefore, the study answered the third research question too. The suggested steps include the updating BSC's ship acquisition plan to address the MSR impacts properly, pursue to government to follow FOB contract in import and CIF contract in export, recruit skilled top executive and trained more officers in maritime education, market analysis and proper approach to market, reduce unit production cost, increase ship productivity and pursue to government to take measures for ensuring smooth navigation of its ships.

## **5.2: Recommendations**

As different issues analyzed in this research, this study strongly proposes the following recommendations.

1. Since the existing ship acquisition plan of BSC is not addressing the MSR opportunities, it must update and upgrade its ship procurement plan to address the maritime transport demand generated from the initiative.
2. In the line of the Bangladesh Flag Protection Ordinance 1983, BSC should pursue the government to follow the CIF commercial contract for exporting and FOB for importing goods to the maximum possible extent.
3. Since the corporation has a shortage of senior and skilled executive officers, it needs to recruit skilled manpower directly for top positions and needs to invest in maritime education for the proper training of its office staff; especially officers need to train in world-class maritime education institutes e.g. World Maritime University and the IMO International Maritime Law Institute (IMLI). At the same time, it has to ensure the right crew recruitment for ships and an effective shore-ship relationship.

4. Due to the lack of proper market analysis and appropriate approach to it, BSC had failed to cope with the ever-changing shipping business. Therefore, the corporation should maintain proper data to analyze the market as well as its performance regularly. Furthermore, it has to increase its number of buyers to reduce its dependency on a single buyer.
5. As a result of ongoing construction works of MSR projects, demand for maritime transport is increased and expected to grow the demand in the future too. Therefore, BSC should be ready to avail itself to take advantage of this opportunity.
6. Due to the high unit production cost of its service, the fleet productivity of BSC has remained less for a long time. Thus, BSC should think about increasing its fleet productivity and shipping space productivity. At the same time, the corporation needs to manage the daily operating cost.
7. Concerning the economies of scale, BSC should operate larger ships, i.e. Panamax, which is possible to navigate at Payra Port.
8. Since the MSR initiative has some geopolitical issues, BSC should pursue to Bangladesh government to take necessary measures for ensuring the freedom of navigation of its fleet in international water. Moreover, BSC has to ensure the most profitable employment of its vessels as well as the proper execution of the employment to be a successful shipping organization in the challenging and competitive industry.

### **5.3: Suggestions for further work**

One of the objectives of this study is to find out the impact of MSR initiative on BSC's business. This study investigates how the initiative can influence the business of the organization. Another potential area of investigation is determining exactly how much maritime transport the initiative will require to carry all the cargo. It also needs to be determined the number of required vessels according to the nature of cargos e.g. dry or wet cargo, container or general cargo, as well as the possible direction of cargo, needs to be indicated.

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## APPENDICES

### Appendix-1

Competitive scenario of Bangladesh shipping industry (million USD)

<b>Year</b>	<b>Market earnings in Bangladesh</b>	<b>Foreign Vessels earnings</b>	<b>Local vessels' earnings</b>	<b>BSC's earnings</b>	<b>BSC in %</b>
<b>2005</b>	1719	1597	122	51.98	3.02
<b>2010</b>	3618	3442	176	37.93	1.05
<b>2015</b>	6175	5774	401	15.9	0.26
<b>2017</b>	6986	6486	500	11.26	0.16

## List of BOGSOA members

<b>Members of Bangladesh Oceangoing Shipowners' Association (BOGSOA)</b>			
<b>No.</b>	<b>Name of Company</b>	<b>No.</b>	<b>Company Name</b>
1	Bangladesh Shipping Corporation	10	EC Bulk Carriers Ltd.
2	East Coast	11	Trans Ocean Lines
3	Meghna Group	12	J.K. Maritime Ltd
4	SR Shipping Ltd	13	Alunited Maririme Business (Pvt.) Ltd.
5	Brave Royal Shipping Ltd	14	Ratanpur Shipping Lines Ltd
6	Abul Khair Shipping	15	Rubya Shipping Lines
7	HRC Shipping	16	Continental Shipping Agencies
8	Deshbandhu Shipping Ltd	17	Trade Breeze Shipping Ltd
9	Vanguard Maritime Ltd.		

## Name of shipping companies

Name of Private and Foreign Company/ Agent who is working in Bangladesh					
No.	Name of Company/Agent	No.	Name of Company/ Agent	No.	Name of Company/ Agent
1	Angel Shipping Ltd.	37	Starpath Sea Trade Ltd.	74	Northern Shopping Line
2	Air and Sea Freight Ltd.	38	Sunship Agency (Pte) Ltd	75	Rahman Shipping Lines
3	H.S Shipping Lines	39	The Asha Shipping Lines	76	Islam & Sons Marine
4	Sea Vanchar Shipping Lines Ltd	40	Transmodel Company Limited	77	M.S. Rahman Shipping Lines
5	H.S Shipping Lines & Trading Agency	41	Trust Com Bangladesh Ltd.	78	Unicorn Shipping Services Ltd.
6	Multimove Shipping and Trading Ltd.	42	Yang Ming Line	79	BAY Shipping Services
7	Sea Venture Shipping Lines Ltd.	43	Gold View Spipping Ltd.	80	Reliance Shipping Services
8	Prantik Marine Services Limited.	44	Oceanaid Services Ltd.	81	AZ Shipping Services
9	Allseas Shipping Limited	45	S.S.Shipping And Trading	82	M/S. Birds bangladesh Agenies Limited
10	Aquamarine Limited	46	Shohag Lighterage Services Ltd.	83	M/s. Transmarine Logistics Limited
11	Baridhi Shipping Lines Ltd	47	The Angelic Lines	84	M/s. HRC Shipping Limited
12	China Shipping Container Lines Co.	48	3.M. Bazlool Huq & Co. Ltd.	85	M/s. Sea World Corporation
13	Concord Shipping Agency	49	Mercantile Shipping Lines Ltd.	86	M/s. Zuner Shipping Lines
14	East Coast Group	50	United Shipping Lines	87	D.S Shipping Lines
15	Cryscal Insurance Company Ltd.	51	Litmond Shippin Limited	88	M/s. A. Jubair Shipping Lines
16	Logistic Shipping Service Ltd	52	M S Shipping Agency Ltd.	89	Progressive Shipping Lines Ltd
17	Logistics Shipping Consortium Pte Ltd	53	South Asia Shipping Ltd.	90	Raihan Shipping Lines Ltd.
18	Maersk Sealand	54	Pubali Shipping Ltd.	91	M/s. Milon Sikder Shipping Lines
19	Mariners (Bangladesh) Ltd.	55	D B T Shipping Ltd.	92	Good Luck Enterprise
20	Maritrade Pvt. Ltd.	56	Seatime Shipping Services	93	Asia Marine Agency
21	Masters Ocean Voyage Ltd.	57	Shoyeb Shipping Line	94	Northern Shipping Line
22	Mearsk Logistics	58	Green Line Shipping	95	Green Shipping Line
23	Midland Shipping Lines Ltd	59	Hanjin Shipping	96	Athoi Shipping Ltd.
24	N. Pacific Shipping Lines	60	Atlas Shipping Lines Ltd	97	M/s. Sifat Shipping Lines
25	N.Haidar Co. Pvt. Ltd.	61	Shanto Shipping Lines	98	M./S. Iqbal Shipping Lines
26	Nishat Shipping Services (Pvt) Ltd.	63	Aeka Shipping Lines (Pvt) Ltd.	99	M/s. Mohammad Ali Shipping Lines
27	Ocanic Group Inc.	64	Bay Shipping Lines Ltd.	100	Bulk Shipping Lines (PVT.) Ltd.
28	Royal Steam Ship Company	65	Logistic Shipping Services Ltd.	101	Unicorn Shipping Services Limited
29	Ruhul Amin & Brothers	66	Aero Marine	102	Roxy Trading & Shipping (PTE) Ltd
30	S.M. Bazlool Huq & Co. Ltd.	67	Alauddin Shipping Lines Ltd..	103	SW Shipping Ltd
31	Sea Nebula Corp (BD) Ltd.	68	Aquamarine Bangladesh Ltd	104	Jahan Shipping Lines
32	Seastar Shipping Lines Ltd	69	Bashundhara Group	105	Pioneer Shipping Agencies Ltd.
33	Seasun Shipping & Trading Agency	70	Summit Group	106	Brothers Shipping
34	Sentrans Maritime (BD) Ltd.	71	M/s Kalmilata	107	Unison Shipping Limited
35	South West Shipping	72	Shital Enterprise		
36	SSA Bangladesh Ltd	73	Jilan Associates (Pvt). Ltd.		

## Appendix- 4

Cargo handling amount (million tons) in Bangladesh (Bd) and BSC's market share

<b>Year</b>	<b>Cargo handling in BD</b>	<b>Carrying by BSC</b>	<b>BSC's %</b>
2001-02	20.333	1.68	8.27
2002-03	22.335	1.88	8.40
2003-04	22.88	1.71	7.47
2004-05	25.862	1.36	5.28
2005-06	27.578	1.62	5.86
2006-07	28.042	1.49	5.30
2007-08	29.67	1.24	4.19
2008-09	31.624	0.94	2.97
2009-10	38.554	1.18	3.06
2010-11	46.691	1.58	3.38
2011-12	43.541	1.15	2.63
2012-13	46.522	1.39	2.99
2013-14	50.845	1.25	2.47
2014-15	59.31	1.80	3.04
2015-16	70.764	1.55	2.19
2016-17	80.688	1.74	2.16
2017-18	94.764	1.74	1.84

## Average unit cost of BSC's service

<b>Year</b>	<b>Expenditure (Million Tk.)</b>	<b>Handled cargo (Million Ton)</b>	<b>Tk./Ton</b>
2001-02	2002.1	1.68	1191.73
2002-03	2076.4	1.88	1104.47
2003-04	2422.4	1.71	1416.61
2004-05	2824.4	1.36	2076.76
2005-06	2932	1.62	1809.88
2006-07	2784.5	1.49	1868.79
2007-08	3996.1	1.24	3222.66
2008-09	2870	0.94	3053.19
2009-10	2599.1	1.18	2202.63
2010-11	2647.9	1.58	1675.89
2011-12	2805.5	1.15	2439.57
2012-13	3269.6	1.39	2352.23
2013-14	1677.7	1.25	1342.16
2014-15	1246.8	1.80	692.39
2015-16	1120.8	1.55	724.26
2016-17	1078.9	1.74	619.14
2017-18	509.6	1.74	293.00

## OBOR Economies (Source: World Bank)

<b>OBOR Economies</b>					
<b>No.</b>	<b>Country/ Economy</b>	<b>No.</b>	<b>Country/Economy</b>	<b>No.</b>	<b>Country/Economy</b>
1	Brunei Darussalam	24	Bahrain	47	Estonia
2	China	25	Egypt, Arab Rep.	48	Greece
3	Cambodia	26	Iran, Islamic Rep	49	Georgia
4	Hong Kong SAR, China	27	. Iraq	50	Hungary
5	Indonesia	28	Israel	51	Kazakhstan
6	Lao PDR	29	Jordan	52	Kyrgyz Republic
7	Malaysia	30	Kuwait	53	Latvia
8	Mongolia	31	Lebanon	54	Lithuania
9	Myanmar	32	Oman	55	Macedonia, FYR
10	Philippines	33	West Bank and Gaza	56	Moldova
11	Singapore	34	Qatar	57	Montenegro
12	Taiwan, China	35	Saudi Arabia	58	Poland
13	Thailand	36	Syrian Arab Republic	59	Romania
14	Timor-Leste	37	United Arab Emirates	60	Russian Federation
15	Vietnam	38	Yemen, Rep.	61	Serbia
16	Afghanistan	39	Albania	62	Slovak Republic
17	17 Bangladesh	40	Armenia	63	Slovenia
18	Bhutan	41	Azerbaijan	64	Tajikistan
19	India	42	Belarus	65	Turkey
20	Maldives	43	Bosnia and Herzegovina	66	Turkmenistan
21	Nepal	44	Bulgaria	67	Ukraine
22	Pakistan	45	Croatia	68	Uzbekistan
23	Sri Lanka	46	Czech Republic		



## Maritime Silk Road Port Projects of China ((Nouwens, 2019))

1. Gwadar Port Free Zone, Pakistan	43. Benin River Port, Nigeria
2. Colombo International Container Terminals and Colombo Port City, Sri Lanka	44. Lekki Deep-Sea Port, Nigeria
3. Hambantota Port, Sri Lanka	45. Narinda Bay Deep-Water Port, Madagascar
4. Payra Deep-Sea Port, Bangladesh	46. Techobanine Deep-Water Port, Mozambique
5. Kyauk Pyu Port, Myanmar	47. Paranagua Port, Brazil
6. Melaka Gateway Project, Malaysia	48. Port of Sao Luis, Brazil
7. Kuantan Port, Malaysia	49. Porto Sul Deep-Water Port, Brazil
8. Muara Port, Darussalam	50. Port de Montevideo, Uruguay
9. Unnamed Deep-Water Port, Cambodia	51. Panama Colon Container Port, Panama
10. Lae Port, Papa New Guinea	52. Manzanillo Port, Mexico
11. Port of Darwin, Australia	53. Chancay Port, Peru
12. Port of Newcastle, Australia	54. Port of Santiago de Cuba, Cuba
13. Port of Melbourne, Australia	55. Houston Terminal Link, US
14. Khalifa Ports, UAE	56. Miami Terminal Link, US
15. Suez Canal Economic Zone and Development Project, Egypt	57. Long Beach Port, US
16. Port of Alexandria, Egypt	58. Los Angeles Port, US
17. Ain Sokhna Port, Egypt	59. Seattle Port, US
18. Haifa Port, Israel	60. North Abaco Port, The Bahamas
19. Port of Ashdod, Israel	61. Port of Sydney, Canada
20. Aden Container Port, Yemen	62. Terminal Du Grand Ouest, France
21. Mokha Container Port, Yemen	63. Malta Freeport Terminal, Malta
22. Cherchell Port, Algeria	64. Port of Zeebrugge, Belgium
23. Oran Port, Algeria	65. Port of Antwerp, Belgium
24. Somaport, Morocco	66. Port of Rotterdam, Netherlands
25. Eurogate Tangier, Morocco	67. Terminal des Flandres, France
26. Dolareh Port, Djibouti	68. Terminal de France and Terminal Nord at Port de Havre
27. Abidjan Port, Ivory Coast	69. Eurofos, France
28. Port of Conakry, Guinea	70. Vado Port, Reefer Terminal and Container Port Terminal
29. Nouakchott Port, Mauritania	71. Venice Port System, Italy
30. Mombassa Port, Kenya	72. Port of Genoa, Italy
31. Lamu Port, Kenya	73. Port of Trieste, Italy
32. Dar-es-Salaam Port, Tanzania	74. Piraeus Port, Greece
33. Bagamoyo Port, Tanzania	75. Noatum Port Holdings, Spain
34. Atuabo Free Port, Ghana	76. Port of Bilbao, Spain
35. Tema Port, Ghana	77. Port of Valencia, Spain
36. Lobito Port, Angola	78. Kumport Terminal – Port of Ambarli, Spain
37. Caio Port, Angola	79. Lysekil Port, Sweden
38. Walvis Bay Port, Namibia	80. Farosund Port, Sweden
39. Kribi Port, Cameroon	81. Northern Dvina River Deep-Water Port, Russia
40. Beira Fishing Port, Mozambique	
41. Lomé Port, Togo	82. Busan New Container Terminal, South Korea
42. Tin Can Island Container Terminal, Nigeria	83. Haicang Xinhaida Container Terminal, China

## Chinese MSR Interest Port Projects and PLA Support Bases (Nouwens, 2019)

1. <b>Chittagong Port, Bangladesh</b>	7. La Union Port, El Salvador
2. Gaadhoo Port, Maldives	8. Great Goat Island Port, Jamaica
3. Kra Isthmus Canal, Southern Thailand	9. Elefsina Port, Greece
4. Sihanoukville Port, Cambodia	PLA Support Bases
5. Unamed Deep-Water Port, São Tomé and Príncipe	1. Djibouti
6. Ilo Port, Peru	PLA= People's Liberation Army

## China's MSR projects in Bangladesh

Chinese investment in Bangladesh under MSR initiative						
No	Date	Project Name	Sector	Sub-sector	Status	Cont. Value
1	Dec, 11	Shahjalal Fertilizer Plant	Cap. Invest	Energy & Chem	Completed	3.74 bn RMB
2	Jan, 12	7th-Bangladesh-China friendship Bridge Construction	Infrastructure	Transportation	Completed	.03 bn US\$
3	Jan, 13	Ghorasal Power Plant	Infrastructure	Power Plant	Completed	0
4	Jun, 14	Padma Bridge Construction	Infrastructure	Transportation	Under Const.	1.55 bn US\$
5	Nov, 14	Dasherbandi Sewage Treatment Plant Project	Infrastructure	Others	Under Const.	0.03 bn US\$
6	Jul, 15	Barapukuria Coal-fired Power Plant	Infrastructure	Power Plant	Completed	0.33 bn US\$
7	Jan, 16	Boalkhali Power Plant (2x300 MW)	Infrastructure	Power Plant	Contract	-
8	Mar, 16	Chittagong W4 Water-Supply Line Construction	Infrastructure	Others	Under Const.	-
9	Mar, 16	Paira Bridge Approach Road Construction	Infrastructure	Transportation	Under Const.	0.81 bn RMB
10	Apr, 16	Ghorasal Power Plant No 4 Unit Upgrade	Infrastructure	Power Plant	Completed	-
11	Jun, 16	Bangladesh Power Distribution System Upgrade Project	Infrastructure	Power Plant	Under Const.	0.17 bn US\$
12	Aug, 16	Padma Bridge Rail Link Project	Infrastructure	Transportation	Contract	4.47 bn US\$
13	Aug, 16	Bangladesh N8 Highway Expansion Project	Infrastructure	Transportation	Under Const.	0.51 bn US\$
14	Aug, 16	Sirajganj Combined Power Plant	Infrastructure	Power Plant	Under Const.	0
15	Aug, 16	Khulna Combined Power Plant	Infrastructure	Power Plant	Susp/Cancell	0.30 bn US\$
16	Aug, 16	Gaibandha Solar Power Plant	Infrastructure	Power Plant	Under Const.	0.40 bn US\$
17	Sep, 16	Payra Coal-fired Power Plant	Infrastructure	Power Plant	Under Const.	2.20 bn US\$
18	Oct, 16	Dhaka-Sylhet Highway Expansion	Infrastructure	Transportation	Susp/Cancell	2.10 bn US\$
19	Oct, 16	Dhaka Smart Grid Construction and Upgrade Project	Infrastructure	Power Plant	Contract	11.1 bn RMB
20	Oct, 16	Banshkhal Coal-fired Power Plant	Infrastructure	Power Plant	Under Const.	2.40 bn US\$
21	Oct, 16	Daudkandi Coal-fired Power Plant	Infrastructure	Power Plant	Contract	1.70 bn US\$
22	Oct, 16	Gazaria Coal-fired Power Plant	Infrastructure	Power Plant	Contract	.43 bn US\$
23	Dec, 16	Dhaka-Payra Port Railway Construction	Infrastructure	Transportation	Contract	7.50 bn US\$
24	Feb, 17	Hidaraya River No. 3 Bridge Construction	Infrastructure	Transportation	Under Const.	0.06 bn US\$
25	Feb, 17	Supporting Facilities Upgrade of Ghorasal Unit 4 Power	Infrastructure	Power Plant	Completed	-
26	May, 17	Boalkhali Coal-fired Power Plant (2x300 MW)	Infrastructure	Power Plant	Contract	0.88 bn US\$
27	Jun, 17	Dhaka Metro 6 Construction	Infrastructure	Transportation	Under Const.	0.20 bn US\$
28	Jun, 17	Chandpur Solar Power Plant	Infrastructure	Power Plant	Contract	1.03 bn US\$
29	Jul, 17	Mirersarai Coal-fired Power Plant	Infrastructure	Power Plant	MOU	2.50 bn US\$
30	Aug, 17	Dhaka Airport Elevated Expressway Project	Infrastructure	Transportation	Under Const.	1.06 bn US\$
31	Sep, 17	Kodda Gazipur coal-fired Power Plant	Infrastructure	Power Plant	Under Const.	-
32	Oct, 17	South East Bangladesh Crude Oil Pipeline construction	Infrastructure	Transportation	Contract	0.70 bn US\$
33	Nov, 17	Bangladesh-China Iron and Steel Capacity Zone	Cap. Invest	Build. Materials	MoU	2.13 bn US\$
34	Nov, 17	Khulna Combined Power Plant Upgrade	Infrastructure	Power Plant	Under Const.	-
35	Nov, 17	Sylhet Combined Power Plant Expansion	Infrastructure	Power Plant	Contract	-
36	Dec, 17	Joydevpur-Ishwardi Railway Reconstruction	Infrastructure	Transportation	Contract	1.50 bn US\$
37	Dec, 17	Akhaura-Sylhet Railway Project	Infrastructure	Transportation	Contract	1.55 bn US\$
38	Jan, 18	Mirersarai Coal-fired Power Plant (Ph. 2)	Infrastructure	Power Plant	Contract	2.50 bn US\$
39	Feb, 18	Bhola IPP Combined Power Plant	Infrastructure	Power Plant	Contract	0.27 bn US\$
40	Feb, 18	Mirsarai Dual Fuel Power Plant	Infrastructure	Power Plant	Under Const.	0.71 bn RMB
41	Feb, 18	Munshiganj Coal-fired Power Plant	Infrastructure	Power Plant	Under Const.	1 bn RMB
42	Mar, 18	Chittagong LNG Power Plant	Infrastructure	Power Plant	Contract	5.7 bn RMB
43	Mar, 18	Ashuganj Power Plant	Infrastructure	Power Plant	Contract	0.23 bn US\$
44	Jul, 18	Deshbandhu Cement Plant	Cap. Invest	Build. Materials	Contract	0.6 bn RMB
45	Oct, 18	GPUFP Urea & Ammonia Producing Project	Cap. Invest	Energy & Chem	Contract	0.40 bn US\$
46	Nov, 18	Cox's Bazar Wind Farm	Infrastructure	Power Plant	Contract	0.71 bn RMB
47	Nov, 18	Bangladesh Floating Glass Production Line	Cap. Invest	Build. Materials	Contract	-
48	Dec, 18	Dhaka Bypass	Infrastructure	Transportation	Contract	0.38 bn US\$
49	Jan, 19	Phulbari Coal-fired Power Plant	Infrastructure	Power Plant	Contract	-
50	Feb, 19	Payra Gas-fired Power Plant, Ph. 1	Infrastructure	Power Plant	Contract	3.00 bn US\$
51	Sep, 17	Chattoagram-Cox's Bazar Railway Project	Infrastructure	Transportation	Under Const.	-
52	June, 15	Karnaphuli River Tunnel Project	Infrastructure	Transportation	Under Const.	1.1bn US\$
53	2013	Payra Deep Sea Port	Infrastructure	Transportation	Under Const.	15 bn US\$
54	-	Chinese Economic and Industrial Zone	Infrastructure	Property	Under Const.	-