A SHORT STUDY ON THE IMPACT OF COVID-19 PANDEMIC IN SHIPPING INDUSTRY

A dissertation submitted to the Indian Maritime University in partial fulfillment of the requirement for the award of the degree of ***Master of Business Administration in Port and Shipping Management***

By

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SCHOOL OF MARITIME MANAGEMENT

KOCHI CAMPUS

2020 - 2022

DECLARATION

I, hereby declare that the research report titled ***A SHORT STUDY ON THE IMPACT OF COVID-19 PANDEMIC IN SHIPPING INDUSTRY*** submitted in partial fulfilment of the requirement for the degree of Master of Business Administration in Port and Shipping Management is my original work carried under the guidance **of Dr. JAYAN P.A**, Assistant Professor, School of Maritime Management, Indian Maritime University, Kochi Campus For the partial fulfillment of the requirement of award of the Degree, Master of Business Administration in port and Shipping Management is a research of original work done by me and this work has not been submitted previously in part or full to this or any other university or institution for the award of any degree, diploma or any other courses

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CERTIFICATE

This is to certify that the MBA Project entitled **"A SHORT STUDY ON THE IMPACT OF COVID19 PANDEMIC IN SHIPPING INDUSTRY"** is a bonafide record of research work done by **Mr. ANANDHAKRISHNAN H** and is submitted in partial fulfillment of the requirement for the degree of Master of Business Administration in Port and Shipping Management is done by him during 2022 under my guidance and supervision and it is also certified that this project or any part thereof has not been submitted for the award of any other Degree, Diploma, Fellowship or any other similar title.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The international shipping industry is responsible for the carriage of around 90% of world trade. Shipping is the life blood of the global economy. Without shipping, intercontinental trade, the bulk transport of raw materials, and the import/export of affordable food and manufactured goods would simply not be possible. Ships are technically sophisticated, high value assets (larger hi-tech vessels can cost over US $200 million to build), and the operation of merchant ships generates an estimated annual income of over half a trillion US Dollars in freight rates. Shipping is the safest and most environmentally benign form of commercial transport. Perhaps uniquely amongst industries involving physical risk, commitment to safety has long pervaded virtually all deep-sea shipping operations. Shipping was amongst the very first industries to adopt widely implemented international safety standards. Because of its inherently international nature, the safety of shipping is regulated by various United Nations agencies. The International Maritime Organization (IMO) in particular has developed a comprehensive framework of global maritime safety regulations, which are enforced on a worldwide basis. Shipping is the least environmentally damaging form of commercial transport and, compared with land-based industry, is a comparatively minor contributor to marine pollution from human activities. There has been a substantial reduction in marine pollution over the last 15 years, especially with regard to the amount of oil spilled into the sea, despite a massive increase in world sea borne trade. Liner shipping is the most efficient mode of

transportation of goods. In one year, a single large containership could carry over 200,000 container loads of cargo. While individual ships vary in size and carrying capacity, many container ships can transport up to 8,000 containers of finished goods and products on a single voyage. Similarly, on a single voyage, some car carrier ships can handle 7,600 cars. It would require hundreds of freight aircraft, many miles of rail cars, and fleets of trucks to carry the goods that can fit on one large liner ship. Containerships have the capacity to carry several large warehouses worth of goods on a single journey.

The outbreak of the infectious disease named as the coronavirus disease (COVID-19) caused by the newly discovered coronavirus has caused chaos and panic all over the world causing the ceasing of all normal daily activities like going to work, a walk outside or in some countries even stepping a foot outside the house. One of the activities that has also been majorly impacted due to the spread of this disease is the shipping and maritime industry. This epidemic has caused the shipping and maritime industry to face the worst circumstances as the workforce in these sectors has been shut down for the safety and prevention of the escalation of COVID-19. This setback has also been caused due to the standstill of all kinds of cargos via water or air during this quarantine period (period of isolation) as the transportation of such cargos in ships or through the air can be possibly carrying with it the virus from one port to another. This widespread pandemic has launched a major brunt for the shipping and maritime industry not only from the ports of China (where the virus is said to originate) but also the ports globally. All the trade chains, including the major import and export trade, is in the face with a downfall. During this adverse time and the urgency of the situation, a ban has also been imposed by various countries on the entry of containers and vessels that are being operated from other ports, especially those that are transported from China. Such impeded operations have hampered with the logistics and operations of

these industries. During this adverse time, many workers and staff are being trapped onboard the vessels due to either being in quarantine or for other prescribed safety issues. The ports are also running at a low capacity, and the storage facilities have been highly overcrowded. The maritime transport and shipping industry is plastered with major challenges during these challenging times.

1.2 RESEARCH OBJECTIVES

The basic objectives of the study are as follows:

1. To assess the overall impact of Covid19 on Shipping Industry.
2. To identify the challenges faced by the shipping industry.

1.3 SCOPE OF THE STUDY

This study emphasis on the following scope:

1. To identify the challenges faced by the shipping industry.
2. To identify the impact, it had on the freight market.
3. To identify the impact on maritime workers.
4. This study helps in an understanding about the covid19 and the impact it had on the shipping industry as a whole.

1.4 RESEARCH METHODOLOGY

The study is mainly descriptive, exploratory, conceptual and broadly qualitative in nature, based on the review of relevant reports, studies and statistics related to various policies / programs released from the Ministry of Commerce and

Industry, Ports, Shipping & Waterways, Road Transport and Highways and Finance of Central Government, World Bank, WTO, IMF, UNCTAD and other UN agencies' studies, which are directly downloaded from their respective web sites.

1.5 METHODOLOGY LIMITATION

The limitations are those characteristics of design or methodology that impacted or influenced the interpretation of the findings from your research. The findings of this study have to be seen in light of some limitation which includes:

- Lack of previous research studies on the topic.
- Methods/instruments/techniques used to collect the data.
- Limited access to the data.
- Lack of available and/or reliable data.
- Time and financial constraints.

1.6 CHAPTERISATION SCHEME

Chapter 1 - Introduction

Chapter 2 - Literature Review

Chapter 3 - Assessing the impact of Covid19 on shipping industry

Chapter 4 – Conclusions

CHAPTER 2

LITERATURE REVIEW

Beginning in early 2020, the COVID-19 pandemic broke out suddenly and quickly spread to various countries around the world. As of 24:00 on October 31, a total of about 56,4962,000 confirmed cases and 7,479,000 deaths have been reported globally. Many countries implementing unparalleled mobility restrictions to control the spread of the virus (March et al., 2020). For example, many governments have adopted restrictive measures to reduce citizens' social activities and suspended the operations of some companies to reduce contact between people (Lau et al., 2020). Besides, facts have proved that curbing population movement is one of the effective ways to respond to public health emergencies and stop the spread of the epidemic (Chen et al., 2020). As the most efficient, reliable and effective means of transportation, shipping is especially important in keeping the world supply chain open during this challenging period (Cleopatra 2020). In particular, the behavior of human activities in the ocean have been radically altered by the COVID-19 pandemic, with port restrictions and changes in consumption patterns impacting multiple maritime sectors most notably fisheries, passenger ferries and cruise ships sectors which rely heavily on the movement of people and goods (Bennett et al., 2020; Depellegrin et al., 2020; Wan et al., 2019).

The rapid spread of coronavirus has had a major impact on global shipping markets, with the slump in demand for goods from China having a ripple effect on everything from container ships to oil tankers. The freight rate for global container lines generally drops at a sharp rate of 10% -15%. A radical drop in demand for Chinese crude tankers from an average of 3.4 billion tonne miles

per day in 2019 to almost zero. This was just the start of what was about to become a global crisis for all sectors including shipping. Therefore, this study aims to analyze the impacts of the Coronavirus COVID-19 on the maritime industry especially in Indonesia, and how to overcome the coronavirus outbreak based on World Health Organization (WHO) and International Maritime Organization (IMO) recommendations.

For global supply chains that go by ocean, there is a built-in time lag attributable to ship transit times. Container ships carrying exports that left China before the outbreak are only recently discharging cargo at destinations. We saw the Ebba Maersk loading at Yantian in Shenzhen on January 5. It didn't make it to Rotterdam until February 2, and at last check it was at the Thames Port in the United Kingdom. That meant 27 days to reach the first port of call in Europe. Yantian (Shenzhen) to Long Beach, California might take 14 or 15 days, and a rail connection to the Midwest might take five more days. Thus, the impact of the disruptions in China will take a while to be felt. There might be a few months of pipeline inventory winding its way through logistics and distribution facilities before it finally hits retail in the U.S. or Northern Europe."

Similarly, research in the shipping industry initially focused on the cruise segment, which was heavily affected at the beginning of the crisis because of high on-board infection rates and eventually had to halt operations completely (e.g., Gilmour et al., 2020, Ito et al., 2020). The cargo shipping segments did not sustain a complete network breakdown, but were nonetheless heavily disrupted.

Seminal studies (e.g., Verschuur et al., 2021, March et al., 2021, Zheng et al., 2021, Guerrero et al., 2022), which were primarily based on ship position and ship status information, confirmed how shipping networks were affected during the pandemic's initial phases. However, these studies were unable to identify patterns in the disruptions. Disruptions occurred for various reasons, ranging

from the difficulty in performing crew changes to port restrictions, but also to the sudden reduction in consumer demand and the collapse of industrial production in many parts of the world (United Nations, 2021). These disruptions resulted in shipping network changes.

CHAPTER 3

ASSESSING THE IMPACT OF COVID-19 ON SHIPPING INDUSTRY

3.1 COVID-19 IMPACT OF GLOBAL MARITIME MOBILITY

Many countries throughout the world went into lockdown and enforced extraordinary containment measures to prevent the Coronavirus sickness (COVID-19) from spreading. These constraints gradually altered social behavior and worldwide movement patterns, causing obvious disruptions in social and economic activity. We examine the consequences of the COVID-19 epidemic and containment efforts on the shipping sector, which accounts for more than 80% of worldwide trade, using marine traffic data acquired via a global network of Automatic Identification System (AIS) receivers. To quantify ship movement in a given unit of time, we use numerous data-driven marine mobility indices. The global mobility study given here is based on the following computations: Cumulative Navigated Miles (CNM) of all ships These restrictions gradually altered social behaviour and worldwide movement patterns, causing obvious disruptions in social and economic activity. We examine the consequences of the COVID-19 epidemic and containment efforts on the shipping sector, which accounts for more than 80% of worldwide trade, using marine traffic data acquired via a global network of Automatic Identification System (AIS) receivers. To quantify ship movement in a given unit of time, we use numerous data-driven marine mobility indices. The global mobility study shown here is based on the following calculations: Cumulative Navigated Miles (CNM) of all ships reporting their position and navigational status through AIS, number of active and idle ships, and fleet average speed. To draw attention to noteworthy developments We examine the consequences of

the COVID-19 epidemic and containment efforts on the shipping sector, which accounts for more than 80% of worldwide trade, using marine traffic data acquired via a global network of Automatic Identification System (AIS) receivers. To quantify ship movement in a given unit of time, we use numerous data-driven marine mobility indices. The global mobility study shown here is based on the following calculations: Cumulative Navigated Miles (CNM) of all ships reporting their position and navigational status through AIS, number of active and idle ships, and fleet average speed. We also compute and compare global and local vessel density maps to highlight noteworthy changes in shipping routes and operating trends. We compare mobility levels in 2020 to preceding years, assuming that growth rates would have remained constant if COVID-19 had not occurred. Following the outbreak, there has been an extraordinary decline in marine mobility across all commercial shipping categories. From March to June 2020, when the most severe limitations were in effect, there was a general reduction in activity. We find that container ships' mobility varies between 5.62 and 13.77 percent, dry bulk varies between +2.28 and 3.32 percent, wet bulk varies between 0.22 and 9.27 percent, and passenger traffic varies between 19.57 and 42.77 percent. The used AIS dataset, which contains a trillion AIS signals sent worldwide by 50,000 ships, is exceptional in terms of its originality and completeness, a number that roughly resembles the size of the world commercial fleet as reported. Towards this direction and aimed at “flattening the curve” of infections so as to avoid overwhelming healthcare systems, many countries implemented unprecedented confinement measures, ranging from bans to travel and social gatherings, to the closure of many commercial activities. Evidence that the lockdown measures achieved a reduction of the rate of new infections is gradually appearing in the scientific literature.

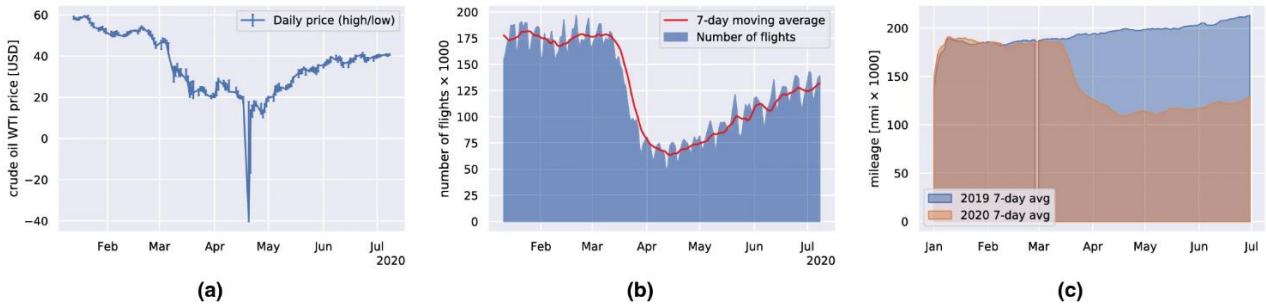
Many of the aforementioned restrictions are in contradistinction to “normal” routines. At a time when we are asked to come together and support one another in society, we must learn to do so from a distance. But the behavior changes have been deemed necessary, and some may provide useful insights regarding how we can facilitate transformation toward more sustainable supply and production. The hope is that the macroeconomic system, global supply chains, and international trade relations will not revert back to “normal” and “business-as-usual,” and will allow the emergence and successful adoption of new types of economic development and governance models.

On the other hand, both the outbreak and the restrictions are revealing the fragility of the global economy, sparking fears of impending economic crisis and recession. Social distancing, self-isolation and travel restrictions have led to workforce reductions across all economic sectors. Schools have closed down, and the demand for commodities and manufactured products has generally decreased. In contrast, the need for medical supplies has significantly risen. The food industry is also facing increased demand due to panic-buying and stockpiling.

Overall, world trade is expected to fall by between 13 and 32% in 2020 as the COVID-19 pandemic disrupts normal economic activity and life globally. Business activity across the eurozone collapsed to a record low in March 2020, and US industrial production showed the biggest monthly decline since the end of World War II. An example of the unprecedented financial changes is the price of oil dropping below zero due to expiry of delivery contracts and limited storage capacity to receive them, for the first time in history in April 2020, as reported in Fig. 1a. The connection between the recent spread of COVID-19, oil price volatility, the stock market, geopolitical risk and economic policy

uncertainty in the US is studied by Sharif et al. Guan et al. analyzed the supply-chain effects of a set of idealized lockdown scenarios, using the latest global trade modeling framework. Given that lockdowns be necessary, the authors demonstrate that they best occur early, and be strict and short in order to minimize overall losses.

Fig 1



(a) Crude oil WTI price from January to July 20208. Note the sudden and unprecedented negative price in April 2020. (b) Total number of flights tracked by FlightRadar24 from January to July 20209. At the end of March there was an abrupt decrease of the number of flights (∼ 100,000 units) because of the lockdown restrictions. (c) Daily navigated miles by passenger ships in 2020 compared with 2019.

With over 80% of global trade by volume and up to 70% of its value being carried on board ships and handled through seaports worldwide, maritime transport for trade and development is of paramount importance. Therefore, shipping can be viewed as a barometer for the global economic climate. According to the United Nations Conference on Trade and Development (UNCTAD), in 2018 total volumes are estimated to have reached 11 billion tons, an all-time high. UNCTAD originally projected an annual average growth rate of 3.4% for the period 2019–2024. However, this estimated growth will possibly need to be revised, as the coronavirus pandemic led to a 3% drop in global trade values in the first quarter of 2020. The downturn is expected to accelerate in the second quarter, according to UNCTAD forecasts, which

project a quarter-on-quarter decline of 27%. For the full year, UNCTAD expects a drop of 20%. The World Bank further noted that merchandise trade appeared to have bottomed out in April, falling nearly 20% year over year, after a 10% decline in March. The trade contraction caused by COVID-19 is deeper than the one observed during the financial crisis of 2008–2009.

Global maritime mobility reductions affect not only global trade and the economy, but also the environment: ship activities heavily influence sea pollution and invasive species incursions; according to a recent International Maritime Organization (IMO) report submitted to the Marine Environment Protection Committee (MEPC), greenhouse gas (GHG) emissions from shipping—expressed in carbon dioxide equivalent (CO2e)—increased 9.6% i.e. The link between COVID-19 and the environment has already piqued the scientific community's interest, and various studies have already been published that examine the pandemic's consequences in four key areas: (1) Degradation of the environment (2) pollution, (3) weather/climate influences, and (4) temperature Pollution levels reduced dramatically as a result of lockdowns; for example, greenhouse gas emissions, nitrogen dioxide, black carbon, and water pollution all declined dramatically. We compare the average nitrogen dioxide concentrations in Europe from 13 March to 13 April 2020 to the same period in 2019, using data from the Copernicus Sentinel-5P satellite. Pollution levels have decreased by roughly 50% in major European cities (Rome, Paris, Madrid and Milan). In the same picture, we've highlighted with boxes marine zones where nitrogen dioxide concentrations have fallen, which might be related (at least in part) to decreased shipping activity. It's worth noting that pollution in 2020 was lower than in 2019 along the first half of one of the Mediterranean Maritime's key sea lanes (Gibraltar-Suez). Faber et al. recently proposed that ship emissions may be lowered if they reduced their speed; our study of AIS data reveals that, on average, ships reduced their speed in March–April 2020

compared to the same months in 2019. We report average fleet speed variations of 5.1 percent, 15.3 percent, 6.0 percent, and 9.5 percent in the highlighted zones of the Gibraltar-Suez route, Ligurian Sea, Northern Adriatic Sea, and Aegean Sea, respectively.

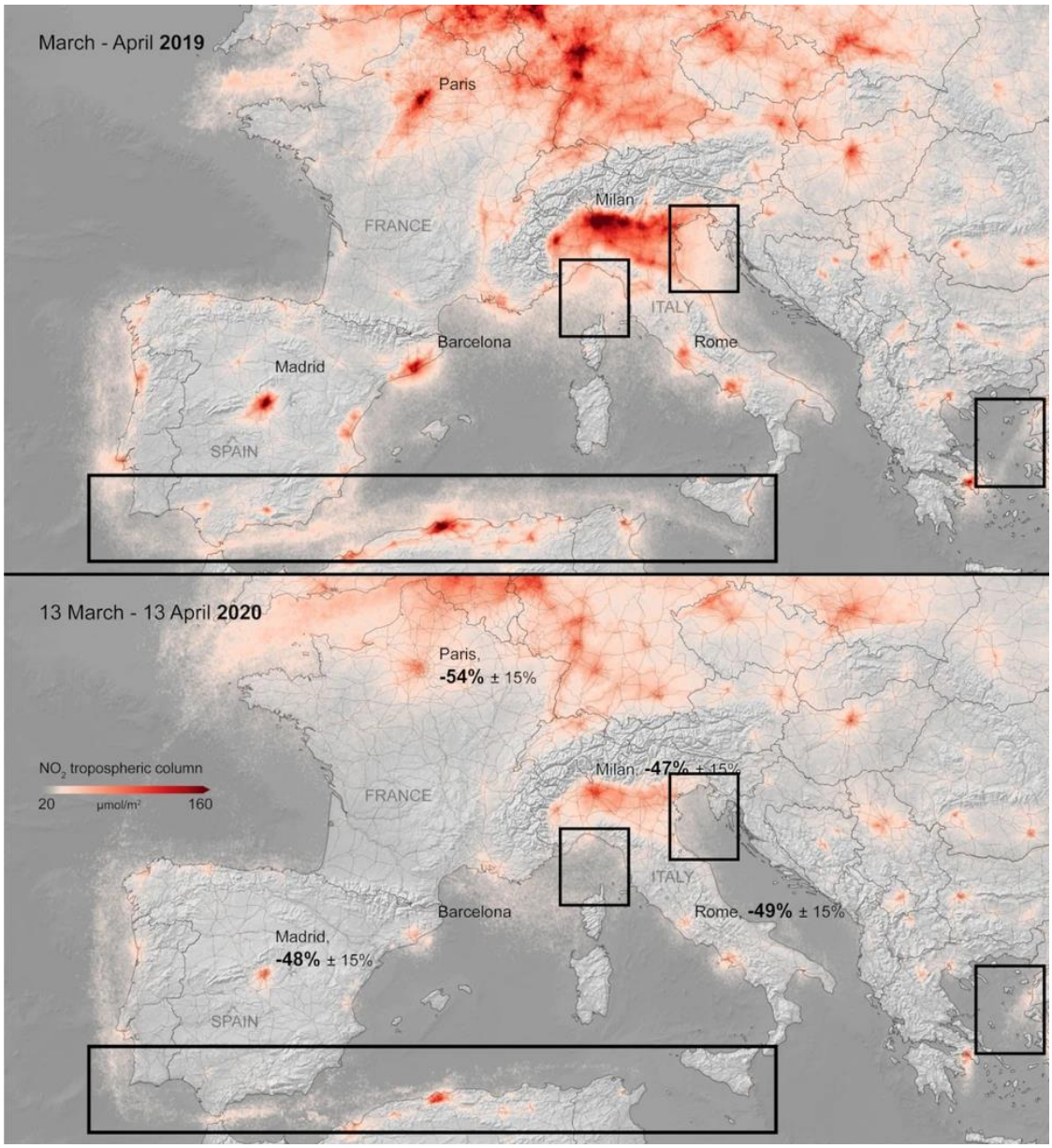


Fig 2

Average nitrogen dioxide (NO2) concentrations from 13 March to 13 April 2020, compared to the same period in 2019. The decrease of emission is evident, around −50% in large European cities (Rome, Paris, Madrid and

Milan). Highlighted with boxes there are regions of sea where it is evident a decrease of nitrogen dioxide concentrations, probably due to the reduced shipping activity. WHO air quality guideline values quantify in 40μg m−3 (annual mean) the NO2 limit level for human health12. Reproduced with permission. © Contains modified Copernicus Sentinel data (2019–2020), processed by KNMI/ESA.

The global CNM that we have computed from AIS data indicates the scale of ship mobility. From January to June ships cumulatively travelled something around 530,000,000 nautical miles (nmi) in 2016, 580,000,000 nmi in 2019, and 575,000,000 nmi in 2020. To aid understanding, the distance commercial shipping travelled in the first half of 2016 is comparable to travelling 6.5 times the mean distance between the Earth and sun, and in 2019 almost 7.2 times that.

Instead of increasing, as it has happened in all past years since 2016, in 2020 the global ship mobility in terms of CNM has slightly decreased for the first time. The decrease in the first half of 2020, compared to the first half of 2019, amounted to a modest 0.9% and to over 5% in the period April–June 2020, compared to April–June 2019. The decline in the first half of 2020 is almost 4%, compared to the forecast values in 2020, and is over 8% in the period April–June. Moreover, there is great variation of this figure among traffic categories and different months; for instance, in June container ships decreased 12% compared to 2019, wet bulk ships of 5%, and passenger ships of 42%, while dry bulk ships slightly increased (1.7%).

The maritime transport and shipping industry is plastered with major challenges during these challenging times. Some of these issues faced by the maritime and shipping industry have been outlined below: -

I. Port closures

Ports have been closed due to quarantine periods in effect and in order to ensure the well-being of workers and various conditions have been imposed, for instance, the ban of marine vessels into certain countries which has demanded such vessels to be on the water and not have a destination port to go to. The entry of vessels by certain countries has been restricted or prohibited, thus, causing chaos amongst the marine transportation facilities globally.

II. Less demand for cargos

The competent health authorities of every country are avoiding the risk of spreading of COVID-19, which has led to the decline in import and export of products and goods between countries. All such goods that were previously carried conveniently on a ship or any other marine vehicle have to follow a set standard of rules and procedure which has limited the demand for such cargos. The delay in such transportation due to added complications of quarantine periods have led to the further decline of demand for such cargos. Perishable goods are not being able to be transported due to the waiting period of 14 days or the waiting period prescribed by the competent authorities in every country.

III. Disputes between owners and charters

Charters hire the vessels from the owners of the vessels and various kinds of disputes are arising between the owners and charters of such vessels due to loss of time and money. The disputes are arising pertaining to the hire period of such vessels where the charter had been granted such a vessel for a limited period of time; however, such time period being negated due to force majeure.

IV. Disputes in lay time settlement

The owners grant the vessels to charters for a definite time period for fixed costs. The overriding of such time period leads to additional costs that have to be paid for surpassing the set time period. COVID-19 has imposed major difficulties on the settlement of such time period as the vessels are prohibited

from entering certain ports forcing them to be on territorial waters for an extended period of time forcing them to be a party to pay additional costs that are under the light of dispute. Due to force majeure, such costs are not being paid, therefore, causing losses to parties.

V. Discussion on clauses

Every owner of a ship or a vessel is to add an infectious disease clause within its directives and guidelines which is causing a dispute between the owners of the vessels and charters hiring such vessels. Both parties would want to add such clauses advantageous to their own situation or clauses that ensure maximum safety which is leading to disagreements on which clauses to be inserted.

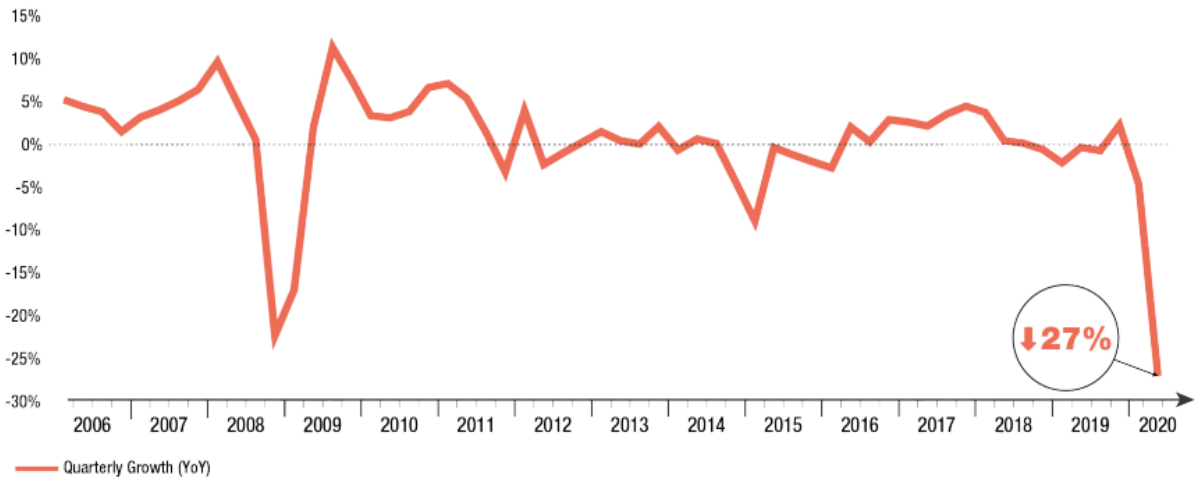
VI. Bankruptcy

Many small companies engaged in the maritime and shipping industry have gone bankrupt due to less demand and the inability to handle the finances of the company during this period of less demand of cargos and shipping. This has majorly impacted the small running businesses and even resulted in the shutting down of various companies engaged in this industry.

3.2 COVID19 IMPACTS ON GLOBAL TRADE FLOW

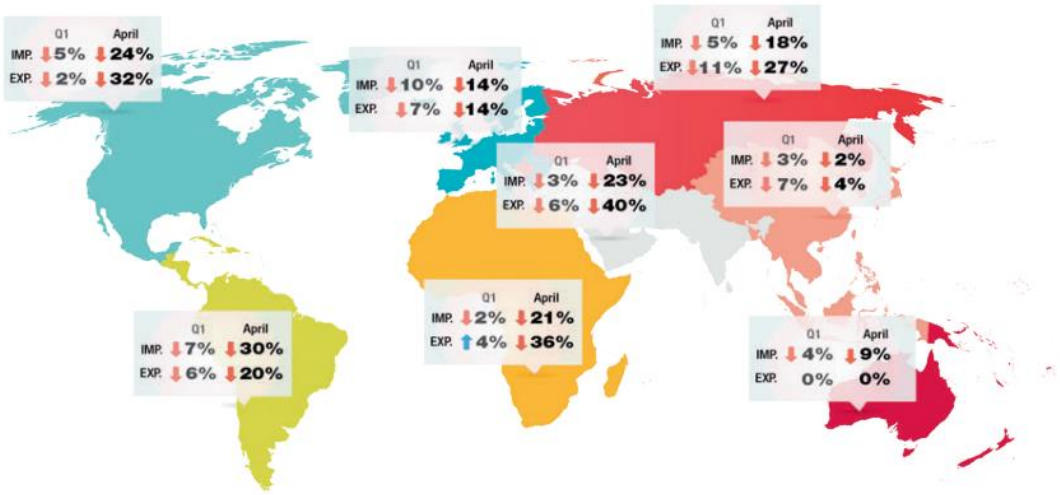
The COVID-19 pandemic affected global trade flows at an unprecedented speed and scale. During the pandemic, access to essential goods and medical items has been secured largely by the ability of the maritime supply chain to quickly adapt. UNCTAD estimates global merchandise trade to have fallen by 5 per cent in the first quarter of 2020 and expects a deeper contraction of 27 per cent in the second quarter. For the full year, UNCTAD expects a drop of 20 per cent. The World Bank further noted that that merchandise trade appeared to have bottomed out in April, falling nearly 20 per cent year on year, after a 10 per cent decline in March. 4 The trade contraction caused by COVID-19 is deeper than the one observed during the financial crisis of 2008-2009 (Figure 3). Global trade performance has been uneven (Figure 4) suggests that the sharpest year-on-year downturn in April took place in the Middle East, which registered trade declines of up to 40 per cent. Trade also collapsed in sub-Saharan Africa, Latin America, the Caribbean, North Africa, North America, and the European Union (EU 27), following the declaration of the pandemic by the World Health Organization (WHO) in mid-March 2020. Declines in East Asia and the Pacific trade were less severe, with exports registering a 7 per cent decrease in Q1 2020 and 4 per cent in April. In April, China appears to have performed better than other major economies, registering modest growth in exports. However, data for May 2020, indicate that China's imports and exports fell by about 8 per cent. While the decline in the exports of developing countries may reflect reduced demand in destination markets, falling imports are also driven by the suppressed demand as well as other factors such as exchange rate movement, concerns regarding debt and shortage of foreign currency. Meanwhile, with the continued lockdowns in Latin America, forecasts are increasingly pointing to a further and rapid deterioration in the trade of developing countries.

FIG 3 - Trends in global trade (Percentage change)



*Source: UNCTAD (2020). Global Trade Update. June (*https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2392).

FIG 4 - Global trade by region in 2020 (Percentage change over 2019)



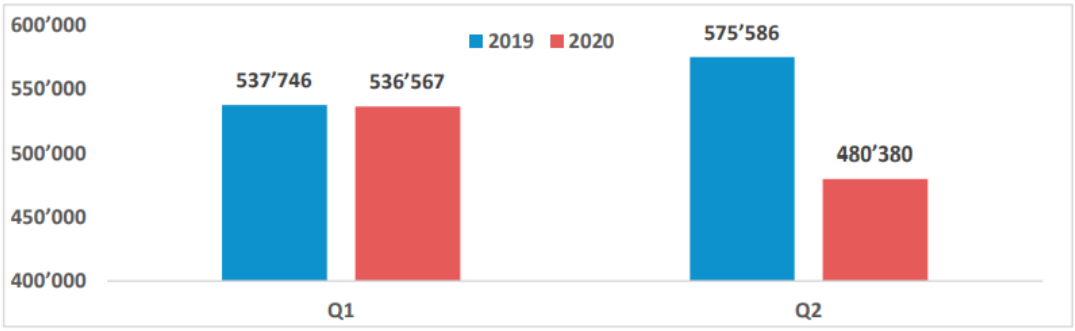
*Source: UNCTAD (2020). Global Trade Update. June (*https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2392).
Notes: UNCTAD calculations based on national statistics; Statistics for April are preliminary and based on a limited number of countries. Data excludes intra-EU trade.

3.3 CHANGES IN MARITIME TRADE: REDUCED PORT CALLS

Automated Identification System (AIS) data that track and trace ship movements, provide near real-time information on maritime transport and trade in motion. This helps fill existing data gaps as traditional data sources and methods that rely on national official statistics are often produced with some delay. By tracking ship calls, AIS data can help identify underlying trends at an early stage and in a timely manner. Insights gained enables quick analyses of key variables and helps improve understanding of the short-term changes as well as anticipate potential longer-term structural shifts. MarineTraffic's AIS data on weekly port calls for the first 24 weeks in 2020, provide a good indication of both the magnitude of the disruption as well as the resilience level of the maritime supply chain. Some key trends per ship type, as well as per geographical region and per type of economy are set out below.

While AIS data can be used as a proxy to inform about trends in economic activity, it is also recognized that such data have inherent limitations, including in terms of coverage. Therefore, and while indicative of underlying trends, insights derived from these data should be interpreted with care and calibrated against official statistics and more mainstream data sources. In the first 24 weeks of 2020, global ship calls diminished by 8.7 per cent, down from 1.1 million calls recorded during the first 24 weeks of 2019. Much of the decline occurred in Week 12 of 2020, when COVID19 was characterized as a pandemic (Figure 5). During the first quarter, variations in ship calls were marginal. The picture changed dramatically when countries started to impose economic and social restrictions and lockdowns. In the second quarter, the number of calls fell by 17 per cent, or 95,206 calls less than the same period in 2019.

FIG 5 - Total number of ship calls worldwide (2019-2020)



Source: UNCTAD calculations, based on AIS data collected and provided by MarineTraffic.
Note: Data for Q2 of 2020 are preliminary. They are based on Weeks 13 – Weeks 24 and are compared with the same weeks of 2019.

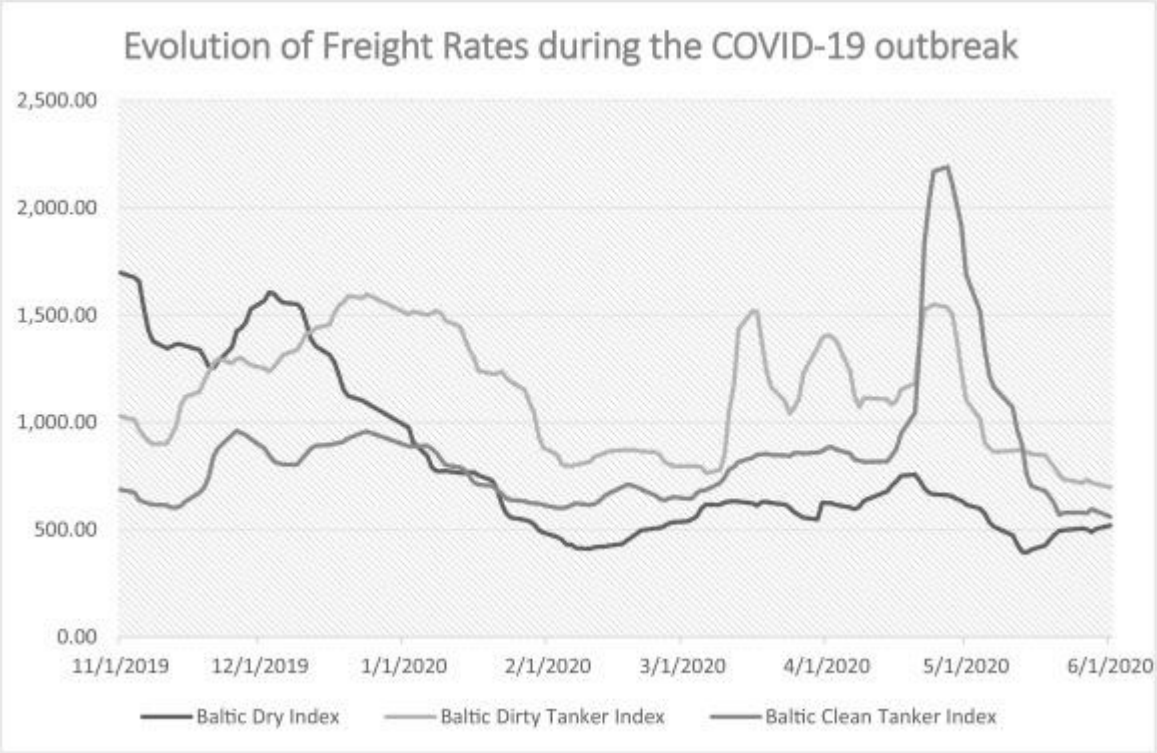
3.4 SHIPPING OPERATIONS

Despite the difficult operating conditions triggered by COVID-19, shipping lines have ensured the continuity of maritime trade flows, especially the essential goods such as food, critical agricultural products, raw materials, medical equipment and other vital supplies. For carriers, this success reflects to a certain extent, their capacity to act quickly. At the height of the pandemic, shipping proved particularly useful beyond its traditional role of a trade facilitator. During the first half of 2020 when truck and rail movements were restricted, shipping lines had to work with shippers to use short-sea shipping networks as a reliable alternative to road transport. This helped to avoid new land-border blockages created by government actions to limit the movement of people. In addition to blank sailing and the suspension of service, shipping lines had to innovate with new service and storage solutions to minimize booking cancelations by shippers. An example is MSC which introduced a Suspension of Transit (SoT) container shipping program using some of the world's leading transshipment hubs such as Bremerhaven, Busan, King Abdullah Port, Lomé, Port of Rodman PSA Panama International Terminal, and Tekirdag Asya port as advance yard storage to help shippers quickly move goods in anticipation of a demand recovery. This provided flexibility and cost savings by enabling shippers to better control storage costs at the point of booking, while adapting

the delivery date to their own needs. It has also helped to decrease congestion in ports of discharge and improve efficiency, as products were placed closer to distribution networks. At the same time, they also had to use solutions from the past. For example, re-introducing a service that had been discontinued but was perfectly suited in the new environment for a partial recovery in cargo volumes on a route.

Effective capacity management by liner shipping companies helped to prevent the collapse of freight rates. Contrary to the 2008-2009 financial crisis, freight rates remained strong as carriers observed a strict capacity management approach. In the short-term, the key question relates to the levels of freight rates during and after the recovery. It might be the case that alliances choose to maintain sailings at a time of increasing demand thereby increasing rates or add capacity to the market, thereby reducing rates. If the economic fallout accelerates and cargo demand sinks further, one or more of the alliances could break down and opt for market share over price. This implies more blank sailings and more problems for the shippers of containerized cargo.

FIG 6 – Evolution of Freight rates during the covid19 outbreak



3.5 SUPPLY CHAINS

A survey measuring the effect of the pandemic on global supply chains36 revealed that the implications were widespread. Some 59.2 per cent of shipping and freight professionals across the world have been significantly affected by the COVID-19 pandemic while 25 per cent were ‘moderately affected’. Most of the shipping and freight experienced volume declines while more than half were hit with transit delays. Some 50 per cent were hit by delays from port to customers and 40 per cent had to address issues related to the lack of capacity. Operations were challenged by the inconsistent volume demand, but also financial factors that go well beyond increased costs such as late or non-payment from clients and cancelled credit lines from physical carriers. The results of the survey have established the need for adaptation. A total of 37 per cent of the respondents stated that they experienced a partial supply chain shut

down with significant freight delays. Another 36 per cent had problems that delayed freight by a few days. Meanwhile, 9 per cent experienced a complete supply chain shut down and only 14 per cent stated that the supply chain was able to adapt with no problem. Half of these admitted, however, that they were not prepared at all.

As for the future, and irrespective of variations in expectations as regards the speed and levels of recovery, seven out of 10 professionals indicated that there was a need or a potential to change their shipping and supply chain strategy based on their experience with the COVID-19 experience. Supply chains seem to have been already adapting to the crisis with 92 per cent of the specific survey takers arguing that they experienced disruptions but that they managed to adjust in varying degrees. This has been a learning curve as no single country was effectively prepared to handle the impact of a pandemic on the entire supply chain. It has also been acknowledged that, while there has already been some evidence of flexibility built into global supply chains and shipping operations, further change is needed as part of the post-pandemic recovery efforts post the pandemic. Respondents to the survey indicated that these changes referred to investments in technology (67 per cent), employees (33 per cent), assets (26 per cent), acquisitions (13 per cent) and other aspects (12 per cent).

TABLE 1 - Impact of COVID-19 on supply chain activities across the different sectors

Manufacturing	Export and import	Retail trade	Food services	Logistics and transport
• **Manufacturershave found it difficult to distribute their products.** • **There has been inventory buildup, increasing thecost of storage.** • **Producers of perishable finished goods have experienced wastages andoutput losses.** • **Due to restrictions, the cost of distribution has been high, affecting the profitability of manufacturers**	• With border restrictions and limitations due to COVID-19, the volume of exports and imports have reduced. • Ports have been overwhelmed by imports and exports yet to be cleared due tostaff restrictions • Warehousesclose to the ports have remained mostly at full capacity dueto delay in shipping activities	• Due to internal and external border restrictions, retailers have found it challenging to selltheir products, especially, online retailers • Retailers have built up inventories and incurred additional costs of storage • There is also therisk that retailers may be forced to sell their inventories at, orbelow the cost price, thus reducing profits, due to difficulties in sales and distribution.	• Distribution cost has become a critical line item on the financial statements of food service providers like restaurants • In situations where most companies have deployed work from home strategies, restaurants have had to reduce the volume of products andshift to online delivery strategies	• Distribution companies have increased their delivery charges to cover for the drop inthe volume of activities • There has been some partnerships between traders, manufacturers and logistics/transport companies to facilitate distribution • Airlines and shipping companies have hadto lay off workforce due to high operating costs and low turnover • Increased lobbying by international airlines for government to reopen the airspaceand allow them to operate amidst the lockdown.

CHAPTER 4

CONCLUSIONS

A double-digit decline in merchandise trade is projected for 2020. While existing forecasts are pointing to a recovery in 2021, expectations remain uncertain and subject to the pandemic's pathway as well as the extent and effectiveness of policy intervention measures aimed at stimulating growth. Yet, trade in developing countries has fallen relatively faster. Declines in the exports of developing countries reflect, among other factors, the reduced demand in destination markets. A drop in their imports reflects, among other factors, reduced demand as well as exchange rate movements, concerns regarding debt and shortage of foreign currency. As lockdowns in Latin America continued in the second quarter of 2020, forecasts are pointing to a further and rapid deterioration in developing countries. Economic disruptions affected some sectors more than others. Textiles and Apparel declined together with Office Machinery and Automotive sectors. In contrast, the agri-food sector, has been the least volatile and grew marginally despite the pandemic and related restrictions. The pandemic's impact on maritime trade varied across regions. Europe and the Mediterranean experienced a major drop in ship calls. In both Australia and Oceania, the decline was also significant. Latin and North Americas recorded double-digit declines. Meanwhile, the drop in Sub-Saharan African port calls stood at -9.7 per cent. Both the Far East and the Gulf & ISC experienced moderate declines. During the first half of 2020, global ship calls contracted by 8.7 per cent, down from 1.1 million ship calls recorded in the first half of 2019. In the first quarter of 2020 changes in ship calls were marginal.

The picture changed dramatically when countries started to impose restrictions and lockdowns on their economies and societies. In Q2 of 2020, the number of ship calls was lower by 17 per cent. This translated into a cut of 95,206 ship calls compared with the second quarter of 2019. Compared with Q2 of 2019, ship calls in Q2 of 2020 declined by 23.1 per cent in develop countries, 9.1 per cent in developing countries, and 10.9 per cent in countries with economies in transition.

As the impact of COVID-19 spirals across the world the shipping industry is impacted by the associated challenges. COVID-19 also resulted in a local lockdown that impacted the entire shipping industry where the goods one from region to another cannot be transported due to the lockdown and also the quarantine procedures were so strict that even the employees in the ships cannot leave the ships. The COVID-19 has wreaked a total havoc across the supply chain industry as well. Being the backbone of global trade and economy, the shipping industry has a great role to play. Shipping is a primary industry for almost all countries globally and serves as an integral part of the supply chain for most industries. The COVID-19 pandemic will have a long-term impact on the global shipping industry, due to temporary trade barriers and restrictions for medical supplies, cargo inspections and border controls will increase, and logistics costs may increase. Although this is a brief study on how the covid19 impact the shipping industry worldwide, though have some restrictions on collecting the necessary data.

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