

# THE EFFECT OF COVID-19 ON COASTAL SHIPPING IN MEDITERRANEAN AND BLACK SEA

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## Abstract

The aim of this study is to analyze the effect of the COVID-19 pandemic on coastal shipping in the Mediterranean and Black Sea with emphasis on short sea bulk and general cargoes. Semi-structured interviews were with shipowners, and shipbrokers to enhance the qualitative methodology and to gather more detailed responses. The result of the study shows that in the first quarter of 2020 shipowners and charterers significantly reduced sailing with some ceasing operations altogether, due to the effect of COVID – 19. Trade stopped, factories shut down, ports slowed down and yet port congestion still occurred. Shipyards and scrapyards also faced similar reduction in operations. Freight rates declined to new record lows (for a brief period of time) causing some shipowners to lay-up vessels. Crew change problems were faced and still continuing creatign more disruption in managing the human element of the maritime industry. By the third-quarter of 2020, as demand for raw materials and finished good inventories increased, so did the demand for charters. Fortunately for charterers, the increase in demand also caused an increase in freight rates.

**Key words:** COVID-19, Coastal shipping, Mediterranean, Black Sea

## 1. Introduction

The COVID-19 pandemic has wounded the world economy with serious consequences impacting all communities and individuals [1]. In many ways, the pandemic will continue to change our lives in the future. In the first quarter of 2020, the world entered one of the deepest economic crises ever recorded due to Covid -19. UNCTAD reported that since the outbreak of the coronavirus disease, globally, more than 1 million people lost their lives due to the pandemic, and the global economy has contracted by a staggering 4.3 percent in 2020 for the

first time since 2008. Millions of jobs were lost, millions of livelihoods are at risk, and an estimated additional 130 million people will be living in extreme poverty if the crisis persists [2]. The contraction of production and consumption due to the spread of COVID-19 [3] affected the entire shipping industry [4]. Passenger sea transport in particular has suffered heavy setbacks in volumes. Ferry services and cruise ships were strongly affected by border closures, cancellations of voyages, and complete ban. Cargo sea transport also faced reduced demand. Container shipping in particular managed to compensate by withdrawing ship capacity to manage the supply while strong consumer demand help the lines to increase prices [5]. While the literature has focused on the effect of COVID-19 on crew, scrapyards and different type of ships, The focus of this study was to investigate the effects of COVID-19 on coastal shipping with emphasis on short sea bulk and general cargoes. Coastal ships are composed of bulk carrier and general cargo ships whose dwt capacity between 2,000 to 10,000 tons. While the size of such vessels operate throughout the world, the focus of this study will be on sailing between the Black Sea and the Mediterranean. The results of this research are important both for practitioners of the industry as well as academics, as it will provide a perspective how coastal shipping markets may react during periods of crisis such as a pandemic. Effects of the results may direct decision makers how the industry and markets may react during a crisis thereby providing data to assist operations.

The remainder of this paper is organized as follows: Section 2 provides a critical review of the literature on the issue; Section 3 described the methodology and data used; Section 4 concludes on the findings.

## **2.Literature Review**

The literature on the issue of the effects of COVID-19 on different industries is extensive. However, studies related to the effect of COVID-19 on shipping is rather limited. Studies focused particularly on coastal shipping does not exist. In the literature, Nektarios and Melas (2020) examined the the impact of exogenous effects in the shipping industry by employing data from the recent COVID-19 pandemic outbreak and explored the reactions of freight rates for dry bulk, clean, and dirty tankers [6]. Akcaci and Cinarlioglu (2020) analyzed the effect of the COVID – 19 outbreak on logistics and trade [7]. The Ministry of Transportation and Understructure of Turkey (2020) analyzed the effect of COVID-19 on the effect of the transportation [8]. Notteboom et al. (2021) investigated the temporal and spatial sequences of the supply and demand shocks of COVID-19 on container ports and the container shipping industry by comparing these events to the 2008–2009 financial crisis [9]. Verschuur et al. (2021) analyzed the implementation of large-scale containment measures taken by governments to contain the spread of the COVID-19 virus which has resulted in large impacts to the global economy by using shipping data [10]. Battineni et al. (2021) assessed the awareness and knowledge of seafarers towards the mandatory infection control measures adopted by shipping companies [11]. Yong – Feng et al. (2020) discussed the the transmission mechanism and visual impact of shipping and industry under epidemic condition [12]. Chowdhry et al. (2020) examined the effects of the COVID19 pandemic on international trade and shipping [13]. Arifin (2020) analyzed the impacts of COVID -19 on the maritime industry in Indonesia [14]. March et al. (2021) examined that human activity in the ocean have been radically altered by the COVID-19 pandemic, with reports of port restrictions and changes in consumption patterns impacting multiple maritime sectors, most notably fisheries, passenger ferries and cruise ships [15]. Curovic et al (2021) have studied the Impact of COVID-19 on environmental noise emitted from the port [16]. Rahman et al (2021) analyzed the impact of COVID-19 on ship recycling [17]. Wang et al. (2020) identify the risks of COVID-19 imported by ocean going vessels based on AIS and Infection data [18]. Ventouri (2021) determined that the rapid spread of COVID-19 renders information uncertainty a daunting challenge for shipping companies engaged in global trade [19]. Praharsi et al (2020) addresses that by applying the concepts of Lean-Six Sigma and supply chain resilience, the most suitable continuous improvement method for the maritime industry is developed to maintain a resilient supply chain during COVID-19 [20]. As described earlier in the literature review, several studies have been conducted on the effects of COVID-19 in various aspects in maritime transportation. However, studies focused on the effects of a global crisis on coastal shipping do not exist. As such, the purpose of this study is to close this gap in the maritime transportation literature.

### 3. Methodology

This study employs a qualitative research in an attempt to explore the Effect of COVID-19 on Coastal Shipping in Mediterranean and Black Sea. Using a qualitative approach provided a deeper insight regarding the issue through responses gathered from those interviewed. In this study, a semistructured interview method was used to provide reliable qualitative data.

#### 3.1. Data Collection

A literature review to explore the Effect of COVID-19 on Shipping has been conducted to compile prompt questions for semi-structured interviews. In addition to the questions regarding the profile of the participants and companies, an interview instrument was created by the authors.

In this study, the same questions were asked to the participants and interviews were conducted either by telephone or a questionnaire was sent to the participants by e-mail. Three telephone and 7 e-mail interviews were conducted and responses were received during April and May 2020 from 7 shipowning, 2 shipbroking, and 1 maritime research company in Turkey (See Table 1 and Table 2 for participant and interview details). Participants were recruited by purposive sampling methods. All participants were asked if they were willing to participate in a research study and notified of the purpose of the study was publication. Respondents also had the option to not be interviewed and were provided the opportunity to submit anonymous responses. The study was explained and an oral informed consent was obtained.

During phone interviews, the interviewer transcribed the respondent's responses. In interviews, when the number of interviews reached 10 (7 e-mails and 3 phones), it was reached theoretical saturation which is the point where no new insights are gained and the interviews were stopped.

**Table 1. Profile of Companies and Participants**

Type of Firm	Title / Position of participant	Interviewee Code	Age of Participant	Sector Experience of Participant (Years)	Education of Participant
Ship owning	Chartering Manager	A1	47	25	University
Ship owning	Chartering Manager	A2	40	20	University
Ship owning	Operation Manager	A3	40	20	University
Ship owning	Chartering Manager	A4	50	27	University
Ship owning	Chartering Manager	A5	50	27	University
Ship owning	Ship owner	A6	45	23	University
Ship owning	Chartering Manager	A7	44	22	University

Maritime Research	Head researcher	A8	40	21	University
Ship broking	Owner/founder	A9	41	20	University
Ship broking	Owner/founder	A10	41	20	University

**Table 2. Details of Interviews**

Interviewee Code	Place of Interview	Voice Recording or taking note
A1	On Phone	Taking note
A2	By e-mail	
A 3	By e-mail	
A4	By e-mail	
A5	By e-mail	
A6	By e-mail	
A7	By e-mail	
A8	By e-mail	
A9	On Phone	Taking note
A10	On Phone	Taking note

In this study, the data collected from the interviews was categorized according to the questions asked to the interviewees. The data collected from respondents was categorized under 13 questions. Findings of the study are presented in the form of relevant quotations from the interviews.

#### **4. Findings**

Based on the questions discussed with the participants, the following points have been revealed. The results of the study have been classified according to key findings.

##### ***The effect of COVID-19 on the Mediterranean and Black Sea Trade***

Before COVID-19 was declared as a pandemic, there was no decrease in the amount of trade. However, after the declaration of pandemic by the World Health Organization, especially between March and September 2020, with the loss of life and the start of closures, production and global trade slowed. Trade came to a standstill, great decreases occurred in the freightmarket and almost all of the ships had to wait for cargo and even shipowners, who had the opportunity, went to a short – term lay up solution. However, in September 2020, with the intense demand for raw materials and food, a high trade volume continued and the demand for transportation to meet this high trade volume emerged.

### ***The effect of COVID-19 on shipping markets***

In freight market, freight rates declined to new record lows between March and September 2020. However, by the third-quarter of 2020, as demand for raw materials and finished good inventories increased, so did the demand for charters. Fortunately for charterers, the increase in demand also caused an increase in freight rates. In the fourth quarter, ISTFIX coaster freight Index based in Istanbul reached a historic 748 points with the high seasonal cargo demand. The demand for vessels continued in early first-quarter 2021, with the index point of 662 exceeding 2019 vessel rates.

In the first two quarters of the pandemic, shipyards and scrapyards faced reduction in their operations. Scrap ship purchases ceased altogether in India. After the second quarter, the Aliaga scrapyards in Turkey increased operations. In ship sale and purchase market, most shipowners decided not to sell vessels in order to take advantage of strong increase in freight price and volume. In order to maintain a positive cash-flow, some ship-owners were forced to sell vessels. However, the price of the sold vessels remained relatively stable.

### ***Laying up vessels***

Only one ship-owner laid up ships during the March-September 2020 period when freight rates were low. However, almost all of the ship-owners had to operate their ships under running cost in the first two quarters.

### ***The effect of COVID-19 on ports***

At first, a 14 day quarantine period was applied in many ports. The ships have not been berthed to the port of arrival within 14 days from the last port of departure.

Therefore, there were delays in some ports. Some slowdown occurred as a result of contractual labor hours in some ports. Yet after some negotiations with labor, in some ports, the density has decreased between 1 and 7 days. Currently, there are no congestion and slowdown at the ports under the study.

### ***The effect of COVID-19 on cash flow***

During the period when freight rates were low, some participants faced cash flow problems, but most of the ship-owners did not have a serious cash flow problem. Those who had cash flow problems met the problem through an equity sale.

### ***Crew Changes***

It was the seafarers who were most affected by COVID related restrictions. The exchange of seafarers could not be made in many countries. The seafarers had to remain on and continue to work even though their contracts had expired until the ships arrived in the ships home port.

### ***Transformation of corporate operations***

Almost all of the ship-owners have started to work remotely from home and they state that they have no difficulty in this situation. As a requirement of the job, employees in ship owning companies state that they adapt very quickly to the new order because they have used telephones and computers outside the company frequently. They stated that they will return to the office once conditions and health authorities allow. Some businesses still apply traditional methods and continue operations from the office. Those respondents were quick to emphasize that all safety precautions were followed in the office such as social distancing, requiring facemasks, emphasizing sanitary protocols, and encouraging employees to remain at home if feeling ill.

### ***Remote working***

Almost all businesses have started to work from home. Working in the office has been reduced to a minimum. Communications are mostly done on-line, telephone, What's Up, Skype, and e-mails. Documentation and filing work has decreased and has been digitized. Cloud technologies have started to be used, and increased.

### ***Precautions taken to protect office employees***

Necessary precautions were taken in all businesses and office workers were informed about the relevant regulations. Distances were set between the desks in the offices, and information was given on masks and hygiene. Guests and cargo employees were not allowed to enter the office. The temperatures of those who had to enter were taken. In some businesses, office

workers were divided into two groups and rotated, and offices were disinfected weekly. However, with the appearance of COVID-19 in employees in some businesses, the works were completely taken home. In some businesses, one person in each department worked at office, while other employees continued to work from home. Some of the businesses receive weekly notifications from occupational safety experts.

### ***COVID -19 and Ship Personnel***

Maximum emphasis was given to the training of the ship's personnel throughout all organizations to learn new means of communicating with family. Virtual meeting platforms were provided to help mariners and their families in terms of motivation. While difficult to create the same level of personal connection to families, the objective was to maintain motivation. Even the frequency of communication with families was allowed. In some organizations, the ship's personnel were not permitted to leave ports and, their temperatures were measured very often. The agency and administrative personnel arriving on the ship were greeted with masks and hygiene suits. In some companies, ship personnel are motivated by various on-board social activities and salary increases.

### ***Organizational and office structure***

Businesses stated that their organizational structure has not changed, but their business conduct and tracking systems have changed. They stated that some businesses have moved their systems to cloud technology and working with a laptop and internet.

It was stated that generally no change was made in the office structure, only one business was moved to a larger office to be compliant with local health and safety protocols.

### ***Laying - off office employees***

Most organizations were able to avoid a reduction in workforce. However, some layoffs did occur in one organization. Still another firm reported that they increased office personnel during the crisis.

### **Conclusion**

The purpose of this study is to analyze the impact of the COVID-19 pandemic on coastal shipping in Mediterranean and Black Sea. The study reveals that in the first two quarter in 2020, freight volume decreased to the lowest level. Many ship owners operated ships with lower margins and net loss. Some ship-owners even forced to lay up vessels. Although there were delays in the ports at the beginning, the congestion later disappeared, while returning due to an



increase in global trade. There were significant disruption with crew changes. After the six-month period, trade increased with a strong demand for raw materials and food, and freight volume increased. At the outset of the pandemic, many ship-owners minimized the number of employees in the office and the staff learned to work remotely. Personnel adapted very easily to this new situation as they carry out their activities mostly over the internet and with their phones. Virtual meetings replaced face-to-face. The pandemic did necessitate the need for organizations to digitize their operations. In order to create any sort of semblance to normalcy, crews were taught how to use more technology on-board vessels in order to help more on-line talks were made with their families, and salary increases were made in some enterprises.

Overall, the study found that many changes occurred for maritime organizations to properly function during a pandemic. A significant portion of office work was conducted remotely and a virtual environment replaced the personal interactions from face-to-face meetings.

The effect of the pandemic on operations mentioned above was also found to be a limitation of this study. Accessing the appropriate participants to take part in the study continued to be challenge as many ship owners, were unavailable and unable to provide information. As such, managers of ships, ship brokers, and ship agents were relied on for much of the collected data.

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