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Maritime Challenges in Crisis Times

Abstract

The world today is extremely well connected and heavily dependent on maritime trade. The shipping market is the result of global production and as such is subject to cyclical changes, incidents and expansions. As part of such a market, maritime transport is vulnerable to external factors, such as international trade, political situations, financial trends, technological developments and legislation, which may directly or indirectly affect demand in the sector or similar. The negative effects of these changes are reflected in lower freight rates, lower daily rental prices and reduced prices of new or used boats. Maritime crisis have significantly affected income, wages, number of employees and similar. In this regard, the crisis management process plays a key role in reorienting strategies and structural reorganization. In order to ensure the development of the maritime sector, it is necessary to constantly invest in the growth of transport capacities, deepen ports, build new terminals and modernize existing ones. It also requires the advanced transport development and application, technological, technical, economic, organizational and commercial measures, in order to adapt to the environment. The efficiency of the maritime sector generally strengthens the country's international and political position, as its activities are linked to international economic cooperation, attracting foreign investment, membership in international organizations and other key factors.

Keywords: transport, shipping industry, crisis, crisis management

1. Introduction

The article is constructed in such a way that the crisis is analyzed, not only in tourist trips by sea, but also in maritime transport of goods and passengers in general. The biggest, as well as the most significant crises that affected this industry or affected the changes and crisis management in maritime transport were discussed. Consequently, in the following sections, piracy is mentioned as one of the biggest threats, together with the impact of COVID-19 on nautical tourism through the above examples in world maritime transport.

Tourism, unlike other industries, is more sensitive to external shocks. Changes in the perception of a tourist product on the market, for example a destination or way of transport, can have negative consequences on the image and attractiveness of a particular destination or product. The situation is particularly complex in developing countries, whose recovery takes a long time [4].

The shipping market is highly variable and volatile and as such is exposed to a process of volatility or a change in demand that fluctuates over a certain period of time. The changes are related to general external factors (e.g. changes in GDP), market, production, financial, organizational and legal factors [3]. Demand for maritime transport stems primarily from the needs of industrial processes, so the crisis situations in the shipping sector are mainly driven by industrial cycles and the global economic situation. These cycles are difficult to predict, and many shipping companies are forced to leave work in times of recession [13]. Cyclical development affects all factors of port activities: freight transport, ships, capital, staff and business efficiency. After many years of positive economic situation in the world and significant growth of trade, mainly due to the growth of developing countries, world economies have faced an economic crisis, which has resulted in stagnation of economic development and trade in many countries. Given that about 80% of world trade takes place by sea, many shipping companies have encountered problems. The main imbalance drivers are: low labor costs, public debt and impairment losses on capital assets and real estate, and direct financial investments in regions with low production costs, as well as the transfer of knowledge and technology [13].

Technological development of shipbuilding, port terminals and port equipment, world trade agreements, customs regulations, easier access to financial loans, as a direct result of improved communication and IT support, were fundamental factors in the smooth development of the international economy, trade and container transport [9].

Maritime transport, as a large globalized industry important for the successful functioning of the world economy, can have significant negative externalities (or social costs), with potential threats to the marine environment and human security, causing maritime accidents or encouraging illegal activities at sea, including piracy and armed robbery [1]. Cruising industry is vulnerable to many external threats, such as political instability in port destinations, natural disasters, and adverse weather conditions, which can greatly affect its operational efficiency [4]. Terrorist attacks, as one of the incidental situations, can cause detrimental effects on a destination or way of transport, especially if that country is dependent on tourist spending.

2. Shipping market in crisis conditions

Dry bulk rates are the leading indicators of economic activity. The eponymous market is a large and important segment of shipment that varies depending on the vessel size, type of cargo or the type of employment. The enormous drop in freight

rates posed a challenge to ship owners, ship operators and maritime market analysts [13]. The Baltic Dryness Index, managed by the Baltic Stock Exchange in London, is used as a measure for dry shipping ships on major routes around the world. Usually when trade is booming, transportation rates rise and charters tend to rent a vessel for longer periods, as further increases are expected, and vice versa, when demand is low and prices are expected to fall, then it is rented for shorter periods.

Due to the high value of boats, shipping is a capital very intensive industry. The global economic crisis began in the financial sector in 2007, then culminated in the fall of 2008 and ended with the collapse of production, investment and international trade [9]. The recession caused a drop in transport demand, spreading the crisis to the shipping. The consequences for container transport, directly arising from the beginning of the crisis, included: cargo overcapacity, falling freight rates, customs rates reduction and cancellation of charters, warships of cargo ships, job losses and debts, financial losses and bankruptcies and complete cessation of shipping. In times of recession, high-ranking operators, with capital reserves, were able to offer their customers lower rates, even below liquidity, to stay in the market and squeeze out other, weaker operators. This often led to so-called “cargo wars”, which could create additional debts, bankruptcies and in some cases result in the complete cessation of shipping activities. The crisis in container shipping begins with the stagnation of production and trade, followed by the industrial recession and finally the state of depression. Such a crisis start-up order can provide indications and warnings to shipping companies for taking certain mitigation actions and procedures [14].

With overcapacity, due to reduced demand for container space, circumstances have further worsened, such as the increased marine fuel prices, self-imposed financial discipline, and a depreciation of US dollar values. Likewise, the crisis has not bypassed another segment of the container shipping industry - chartering. Large operators, in order to maintain the liquidity of the fleet owned, had to drastically reduce the existing rental rates of third-party vessels employed on their main routes, either on Time or on Voyage charters. In many cases, they were forced to cancel contracts altogether.

In the maritime context, piracy refers to violence committed on the high seas or in the exclusive economic zone (EEZ). Maritime piracy can have a narrow legal meaning for establishing jurisdiction over certain illegal activities or it can be widely used to cover all forms of robbery and violence at sea. Piracy in these waters is the sole responsibility of the respective port or coastal state [1]. In order for the above to take place at all, the presence of two ships is required. Maritime piracy is no longer limited to petty crime, but includes hijacking, arms smuggling and “bunkering” or illegal wiretapping, theft and sale of crude oil in large quantities [12]. Pirates that do not have a Global Positioning System (GPS) do not have night vision or a ladder to climb an oil rig or a supply ship, so both weapons and vessels needed to be modernized. From street demonstrations and international lobbying, to sabotage and armed struggle, the politicization of rebel and criminal groups has certainly played an important role in this regard. The vulnerability of ships at sea to piracy and robbery depends on factors

such as the type of ship, its size, speed, ship surface and navigation [1]. These factors, together with the circumstances of individual attacks, require analysis in order to obtain a complete picture of the piracy nature and, accordingly, the formulation of adequate policies and strategies. Also, terrorism, which can affect the tourism industry along with wars and political instability, health problems, natural disasters and crime. The Security Co-operation Council defines maritime terrorism as “acts and activities in the maritime environment that use either against ships or fixed platforms at sea or in port and may affect passengers or staff, coastal facilities or settlements” [4]. Terrorist attacks include hostage-taking, bombings, assassinations, threats and hoaxes, suicide attacks, sabotage, and chemical or biological attacks. Then, they include hijacking, sinking a ship using an explosive device, attacking a station, and biologically attacking ships with food or water supplies, which requires the acquisition of complex maritime skills, including navigation, piloting, and ship handling. Shipbuilders, ship owners, ship operators and maritime administrations are increasingly preoccupied with ship safety issues in the coastal water area [10]. Lack of security is punished in a certain way, in terms of lost lives, environmental damage and burdens. This has resulted in constant controls regarding the operation of ships and the education and training of ship operators. Assessing the crisis impacts, it is concluded that they are necessary and inevitable and that their effects usually appear unexpectedly [2]. Crises vary in time, motives, and forms. They can be interactive, artificial, interconnected and include several phases (latent period, decline, depression or poor balance, resuscitation).

According to the maritime risk system, risk reduction includes avoidance, surveillance, early warning, response, and recovery [10]. The international shipping industry has begun to move from a reactive to a proactive approach to safety, using a formal safety assessment (FSA). In accordance with all the above, before the crisis, the emphasis should be on prevention and control and on early warning activities, while the phase during the crisis implies emergency response. In the post-crisis period, recovery as soon as possible is crucial, with continuous improvement.

2.1. Nautical tourism and COVID-19

Regarding the title of this paper, it is certainly important to look at the coronavirus pandemic that triggered the global crisis and thus affected the economy of the European Union. Given the current COVID-19 pandemic, nautical tourism is estimated to be the most resilient, as family and friends can socialize on ships, without mutual communication, they are in the air and in an isolated environment. With the massive spread of the virus in mid-March 2020, which occurred on passenger cruisers, the global cruise ship industry, with accompanying greenhouse gas emissions and water pollution problems, was forced to shut down.

Most cruise ships remained stranded in ports, and for security reasons, travel restrictions and port closures were imposed, banning the Seychelles from all cruisers

until the end of 2021. As this situation has disrupted international roads and transport systems, in order to keep the virus under control, many countries have adopted radical measures, creating a ten-point action plan on maritime transport, customs operations, transit, transparency and legal issues, as well as technology to improve paperless trade processes [15]:

1. ensure uninterrupted delivery,
2. keep ports open,
3. protect the international trade in critical goods and speed up customs clearance and facilitate trade,
4. facilitate cross-border transport,
5. ensure the right of transit,
6. protect transparency and provide up-to-date information,
7. promote paperless systems,
8. address the legal implications for commercial parties,
9. protect ship owners and transport service providers,
10. give priority to technical assistance.

In order for trade to return to normal, developing countries need the support of the development community, as well as cooperation. Even before the pandemic, they faced limited funding to invest in transport infrastructure and services and undertaking trade facilitation reforms. The prescribed measures require further investment in human, institutional and technological capacities and development partners as a priority.

The affected maritime sectors are connected to the concept of the blue economy as a new ecological landmark of the maritime economy. Coastal tourism, fishing, aquaculture, port activities and maritime transport are affected, which is why it is necessary to ensure the implementation of a long-term strategy of “blue growth” [11]. Experts predict a slow recovery from the crisis, largely due to the impact the crisis has had on the global tourism and tourism industry. Without a proven vaccine, the virus will affect almost every sector of travel, from transportation, destinations and resorts to accommodation, attractions, events and restaurants. For those involved in coastal and sea tourism, a faster recovery is envisaged, as they generally have outdoor activities, but certainly with the observance of measures that will provide passengers with a certain dose of safety (e.g. high cleanliness). For many destinations, especially those dependent on maritime tourism, the crisis is a wake-up call, with the aim of recognizing the need to launch additional investments in the tourism industry to make it more resilient and sustainable. On the other hand, a pandemic could create positive changes in passenger behavior and they should become more aware of the impact of travel on the environment. This could result in a renewed focus on sustainable and ethical travel - which could benefit the health of coastal and marine ecosystems in the long-term. The marine and coastal environment is cleaner and ‘fresher’, with a positive effect on marine life and coastal fauna and flora.

Reduced transport and use of ships in the Mediterranean and its surroundings

have contributed to the improved environmental sustainability of coastal regions. However, France, Greece, Italy, and some southern Mediterranean countries have reported increased amounts of plastic in the form of protective masks and other means (e.g., plastic gloves) in sea basins, fishing trails, and coastal areas [5]. With all of the above in mind, the need for training, education, forecasting, employment, financial resources, new maritime policies and structures, safety protocols, health and spatial planning is imperative.

3. Consequences of crisis situations in the world

The Greek economic crisis of 2009 affected all aspects of the country's social and economic life, including transport. The frequency of travel of Crete residents has decreased, due to increased direct or indirect associated costs. The unemployment rate rose from 9.6% in 2009 to 27.5% in 2013 and 21.5% in 2017. Gross domestic product at market prices per capita in current prices decreased from 21,800 euros in 2008 to 16,200 euros in 2015 and remained at € 16,800 in 2017. In addition, job insecurity increased dramatically, while working conditions deteriorated. For example, the official part-time employment rate rose from 6.1% in 2009 to 9.5% in 2015. The economic crisis has also affected the transport sector. In 2012, almost four out of ten Greek citizens (37%) did not travel at all, and most of them (72% out of 37%) stated financial reasons. The number of passengers using Greek ports decreased by -20.4% between 2008 and 2012, while sea transport decreased by -7.5% in the same period. As a result, both air and maritime operators have been forced to reduce their costs by reducing staff, increasing prices, using a smaller fleet, using fewer routes per destination, etc. The crisis has significantly affected the maritime market, causing drastic declines in freight rates and time rates. Despite the fact that the price of fuel has dropped, many shipping companies have found themselves in large debts, struggling to cover their costs [6].

According to the number of pirate attacks recorded by the International Maritime Bureau (IMB), Nigeria is the second most dangerous country in the world, after Somalia, but before Indonesia and Malacca since 2008. The patterns of piracy in Nigeria are quite specific in this regard. Pirates used to ambush on passing vessels in places like the Cawthorne Canal near the Bonny Sea and River. In addition, armed fishermen would stay close to shore, steal all available valuables (radio, money, telephones) and share the spoils with their relatives in nearby villages. Compared to the Biafra War of 1967–1970 or the 1995 Ogoni crisis, the homicide rate has not risen, but terrorist acts and “bunkering” have become more common. As a result, attacks at sea have become widespread, targeting oil rigs or large ships and reaching the Bakassi Peninsula in Cameroon or even Bata in Equatorial Guinea. The financial crisis quickly spread to the industrial sector, and as a result, international trade fell by 14.4%, for the first time since 1982. World GDP shrank by 2.2%, pulling transport demand and collapsing freight rates. In such a business environment, companies have been forced to adapt and develop

effective strategies and measures to cope with new, changed circumstances [12].

The port and maritime industry is a strategic area of economic activity in the Republic of Lithuania, significant in attracting foreign investment, promoting the development and growth of the country's transport sector and the economy as a whole. When the global financial market collapsed, maritime firms faced significant difficulties in financing in international capital markets. The decline in international shipping caused excess ship capacity and lower profits, and ship owners wanted to reduce costs by hiring cheaper crews, reducing crew numbers, salaries, and maintenance standards [2]. This cost reduction may increase the risk of accidents at sea, including landings, collisions and ship losses, with higher risks of marine pollution and vulnerability to piracy. Also, underpaid and overworked seafarers are not suitable for maritime safety.

4. Examples of crisis management

In order to combat existing as well as potential crises, measures with immediate effect turned out to be the most traditional: laying, sales and waste, reducing the speed of navigation and sailing in idle. Placing a vessel in times of crisis is a well-known and proven measure of consolidation, while sailing in the void is a new measure that works by stopping one of the ships on a particular line for a week or more. This artificially generates a demand for container capacity and the result is a higher load. Along with capacity consolidation, OPEX optimization and reduction of day-to-day operating costs is another traditional immediate measure with immediate impact. The main operating costs are: fuel and lubricants, crew costs, maintenance, spare parts, consumables, etc. [9].

Risk assessments are applied in improving business and reducing risk exposure. The key to any successful analysis is choosing the right method (or combination of several) for the current situation, which is achieved by collecting and processing available data on marine crises. It can include financial, health, safety, environmental risks and other types of business risks. Appropriate analysis of these risks will provide information that is crucial in making decisions and will often clarify the decision to be made. In addition, communication, counseling, monitoring, and review should be included throughout the process [8].

The safety of marine installations against marine hazards relies on IMO legislation and the rules of the classification society, adopted based on previous crisis experience and prescribing project solutions. HAZID is a general term used to describe an exercise that aims to identify hazards and related events that can result in significant consequences. It can be carried out to identify potential hazards that could result in consequences for personnel (eg injuries and deaths), the environment (oil spills and pollution) and financial assets (eg loss / delay in production). Hazard identification is most effectively applied in the early life cycle of a project. By early identification, hazards can often be "designed" or completely eliminated during the initial stages

of project design. If they are not identified until the system is operational, resolution will be more expensive, and the only possible solution may be to provide mitigation measures that can cause dangerous events [8].

Crisis management may also include short-term methods, such as reducing administrative costs, reducing the number of employees and salaries, while long-term methods relate to reduced customs duties and charges, reorganized cargo structure, and changed marketing strategies [2].

Possibilities for further development, as well as taking urgent reaction measures, require the following:

- introduction of a team of experts to overcome the crisis and capable of developing a post-crisis action program,
- review of management methods (centralization of power according to separate aspects, encouragement of creative ideas, integration of efforts, encouragement of information exchange, etc.),
- initiation of economic measures (budget planning, economic programs);
- initiating financial measures (cash flow control, attracting additional financial steps, etc.).

In addition, it is necessary to take certain shore-based management measures, such as a greater involvement of local security forces, international support to help strengthen capacity, enhanced cooperation between foreign navies engaged in anti-piracy operations in the area and greater vigilance of merchant ship crews [1]. All ships and ports should have [4]:

- Company / port security officers responsible for assessing vulnerabilities and threats to ships and ports,
- Enterprise / port security plans,
- Annual audits of ship and port security measures,
- Staff training, together with on-board / port drills, to be conducted each month,
- Continuous synopsis record, including a permanent record of the movement and ownership of ships,
- Ship security alert systems to notify the land authorities of any potential terrorist attacks, kidnappings or piracy.

Risk minimization measures can be grouped into two categories: initiatives and strategies on board. If cruise companies want to reduce the terrorist threat and reassure their passengers, credible crisis management plans need to be put in place and mandatory ship and port security requirements complied with. The need for crisis management plans in the tourism industry has become necessary, following a series of terrorist attacks and cruise-related health problems, such as pandemic flu.

Human resource management consists of various interrelated management and organization activities aimed at ensuring the appropriate number and structure of employees, their knowledge, skills, interests, motivation and pattern of behavior, which is necessary to achieve the development and strategic goals of the organization. The

optimal number of employees, with the necessary knowledge and skills, is one of the key factors in the execution of planned processes [3]. Since maritime work takes place in a relatively limited environment, cooperation is a key factor in carrying out business tasks. The aim is to ensure the smooth running of business processes that include the prevention and maintenance of work resources and the continuity of business tasks on board. The specifics of human resource management in maritime affairs are reflected in the fact that part of the company's staff is displaced on ships that represent an isolated environment. This includes making decisions in crisis situations, deploying staff and workload, and giving orders to perform certain tasks. In this context, human resource management needs to be reviewed which should include management, motivation, reward, communication, education, advancement, decision making and employee satisfaction.

Coastal risk management in the coastal water area is a process that achieves maritime harmony, i.e. navigation safety, by applying efficient use of resources, in order to develop staff capacity and reduce or eliminate the risk of production safety [10]. As a kind of process, it consists of hazard identification, risk assessment, early warning, emergency response and continuous improvement.

5. Conclusions

The definition of shipping includes the ship transport of goods and passengers. Today, ships account for approximately 90% of global trade, whose industry consists of ships worth up to \$ 150 million [7]. With the rapid development of the maritime industry, maritime safety management has become crucial. Energy efficiency, renewable energy sources, increased ship education and coastal personnel, improvement of ships and engine structures, reduction of exhaust air pollution, use of biodegradable and biologically acceptable materials in construction tanks, as well as strict compliance with international, national and classification regulations, modernized shipping industry, basing it on sustainable development policy. In order to achieve competitiveness and success, both on the domestic and international markets, it is extremely important to properly and timely analyze all the above factors, as well as further consolidate cargo capacity, reduce operating costs, deploy ships, responsible and transparent cargo prices, with implementation of strategies. Companies that have overcome crises have become proactive, they have recognized the potential of the crisis, conducted risk assessments, identified mechanisms for retaining damage and recovering, established a crisis management team and collaborated with a range of stakeholders who can be directly or indirectly involved in implementing the plan.

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