

Working Paper 2024.1.6.1 - Vol 1, No 6

ẢNH HƯỞNG CỦA CUỘC XUNG ĐỘT TRÊN BIẾN ĐỎ TỚI VẬN TẢI QUỐC TẾ GIỮA VIỆT NAM VỚI CHÂU ÂU

Nguyễn Minh Trang¹, Nguyễn Ngọc Thủy Tiên, Trần Phương Thanh, Trần Phương Thảo, Thạch Hà Trang, Vũ Kiều Trân

Sinh viên K60 CLC Kinh tế đối ngoại – Viện Kinh tế & Kinh doanh quốc tế

Trường Đại học Ngoại thương, Hà Nội

Nguyễn Thị Yến

Giảng viên Viện Kinh tế & Kinh doanh quốc tế Trường Đại học Ngoại thương, Hà Nội

Tóm tắt

Kể từ giữa tháng 11, các cuộc tấn công của phiến quân Houthi ở Yemen nhằm vào các tàu vận tải thương mại đi qua phía nam Biển Đỏ đã gia tăng đáng kể, nhằm đáp trả việc Israel bắn phá Gaza. Cuộc xung đột này đã tác động không nhỏ đến vận tải quốc tế của Việt Nam với châu Âu; tuy nhiên, hậu quả đổi lại vẫn chưa được phát hiện đầy đủ. Nghiên cứu này cung cấp cái nhìn tổng quan về xung đột ở Biển Đỏ và những tác động tiêu cực cũng như tích cực của nó đối với Việt Nam và hoạt động vận tải quốc tế của nước này với EU. Nhóm tác giả đã quyết định so sánh xung đột này với những gián đoạn đã chứng kiến trong đại dịch Covid-19 và Cuộc phong tỏa kênh đào Suez năm 2021 để đánh giá toàn diện tác động của nó. Kết quả nghiên cứu chỉ ra rằng mặc dù có những mặt tích cực nhưng tình trạng này nhìn chung đã tạo ra một môi trường đầy thách thức cho các công ty Việt Nam phụ thuộc vào thương mại quốc tế với châu Âu. Ngoài ra, mặc dù cuộc khủng hoảng Biển Đỏ ảnh hưởng đáng kể đến vận tải hàng hải nhưng nó không dẫn đến chi phí tăng cao như đã thấy trong đại dịch Covid-19 và tắc nghẽn kênh đào Suez. Cuộc khủng hoảng Biển Đỏ anh hưởng táng lực vận chuyển tài container, chỉ đứng sau sự cản trở của kênh đào Suez, làm nổi bật sự căng thẳng của hệ thống vận tải biển toàn cầu.

¹ Tác giả liên hệ, Email: k60.2112150172@ftu.edu.vn

Từ khóa: Xung đột Biển Đỏ, vận tải quốc tế, Việt Nam, châu Âu, ảnh hưởng

IMPACT OF THE CONFLICT IN THE RED SEA ON VIETNAM'S INTERNATIONAL TRANSPORT WITH EUROPE

Abstract

Since mid-November, there has been a notable increase in attacks by Houthi rebels in Yemen on commercial shipping vessels passing through the southern Red Sea, in response to Israel's bombardment of Gaza. This conflict has had a significant impact on Vietnam's international transport with Europe; however, the consequences in return have not yet been fully discovered. This study offers an overview on the Red Sea's conflict and its negative and positive effects on Vietnam's international transport with the EU. The authors decided to put this conflict under comparison with the interruptions witnessed during the Covid-19 pandemic and the 2021 Suez Canal Blockade to comprehensively evaluate its impacts. The findings indicate that although there is a bright side, this situation in general has created a challenging environment for Vietnamese companies that rely on international trade with Europe. Besides, while the Red Sea crisis significantly impacted maritime transportation, it did not result in as high an increase in costs as observed during the Covid-19 pandemic and the Suez Canal obstruction. The Red Sea crisis led to a notable decrease in container ship capacity, second only to the Suez Canal obstruction, highlighting the strain on the global sea transportation system.

Key words: Red Sea conflict, international transport, Vietnam, Europe, impact

1. Introduction

The Red Sea holds a paramount position in global maritime commerce, serving as a vital conduit for trade between continents. For Vietnam, the Red Sea holds particular significance as a key component of its international transport network with Europe.

However, the recent attacks by Houthi forces in Yemen have sparked concerns about the stability and security in the Red Sea, which has had significant implications for maritime transportation and trade flows in the region. The impact of the conflict in the Red Sea on Vietnam's international transport with Europe is wide-ranging and complex. The most noticeable can be disrupting maritime routes, increasing transportation costs, and posing challenges for supply chain management. Nonetheless, this also created opportunities for Vietnam to explore exporting to alternative countries, strengthen competitiveness in other aspects, etc.

In order to fully assess the risks and opportunities in the evolving geopolitical landscape, we need to focus on understanding the implications of this conflict on Vietnam's trade relations with Europe. That is the reason behind the authors' decision to choose the topic "Impact of the conflict in the Red Sea on Vietnam's international transport with Europe" as our subject of study. By examining the significance of the Red Sea to Vietnam's trade relations with the EU and assessing the impact of recent attacks on maritime transportation in connection with supply chain disruptions caused by the Covid-19 pandemic and the Suez Canal obstruction, this study seeks to provide

valuable insights into the challenges and opportunities posed by the conflict. Through a qualitative analysis, our team wants to inform Vietnamese stakeholders and policymakers about the implications of the conflict and propose recommendations for navigating the complexities of international trade in the Red Sea region.

2. Literature Review

A qualitative study conducted by Notteboom, T., Haralambides, H., and Cullinane in 2024 discussed the emergence of the Red Sea Crisis in mid-November. The scope of this research is broad since it emphasizes short-term and long-term impacts of the crisis on vessel operations, shipping networks, freight rates, pricing practices, and global supply chains. Furthermore, the article discusses potential future implications such as a shift in global trade routes.

During this year, another publication by Lorenc and Maurizio emphasized the importance of the Red Sea and highlighted disruptions to supply chains, increasing shipping costs, and affecting trade flows and energy prices. The study suggests that these disruptions could destabilize the regional economy and eventually affect the global economy. To mitigate economic damage, affected businesses are advised to explore pre-booking manufacturing capacities.

The research gap in the existing literature on the impact of the conflict in the Red Sea on Vietnam's international transport with Europe is evident in the disparity between the abundance of articles and the limited number of research papers dedicated to this specific topic. While a plethora of articles touch upon the broader aspects of the Red Sea Conflict, there is a notable scarcity of indepth research papers that specifically investigate how this conflict influences Vietnam's international transport connections with Europe. Despite the wealth of articles available on the Red Sea Conflict, there remains a dearth of comprehensive research papers that specifically analyze how this conflict influences Vietnam's international transport routes and relationships with European partners.

Our research aims to address these critical gaps by conducting a thorough examination of the impact of the conflict in the Red Sea on Vietnam's international transport with Europe. Our study seeks to provide a detailed analysis of how the Red Sea Conflict shapes Vietnam's international transport landscape in relation to its connections with Europe. Through this research, we aim to uncover the nuanced effects, challenges, and opportunities that arise from this conflict, offering valuable insights for policymakers, transportation experts, and stakeholders involved in Vietnam's international transport sector.

3. Theoretical Framework

3.1. International Sea Transportation

3.1.1. Definition Of International Sea Transportation

International sea transportation is the transfer of products to nations, regions, or territories throughout the world by ships, boats, and maritime infrastructure (seaports, transshipment ports) (Interlog, 2023).

Compared to domestic sea transportation in Vietnam, which benefits from significant seaports like Cat Lai, Cai Mep, Hai Phong, and Cai Lan and fulfills regional and international shipbuilding requirements, Vietnam continues to confront problems in the international market owing to the relatively small proportion of the shipping industry. Moreover, Vietnam encounters challenges because its main export goods are perishable, while the number of refrigerated vessels is limited.

3.1.2. Risks Related To International Sea Transport And Measures To Mitigate The Risks

International sea transport faces various risks. Ouedraogo et al. (2020) divides maritime transportation risk into 7 risk classes:

• Supply risk: Logistic risks disrupt product flow in the supply chain due to equipment shortages, maritime route bottlenecks, labor strikes, inadequate handling, resource shortages, maintenance issues, and workforce challenges.

• Demand risk: Shipping lines face uncertainties in long-term and spot market demand, leading to risk-averse pricing strategies due to unexpected customer demand fluctuations.

• Business risk: Financial or economic risks involve concerns about supplier financial stability, management, buying/selling of entities, and issues like production costs, fuel price variations, finance shortages, tax changes, and ROI estimation accuracy.

• Operational risk: Technical or physical plant risks occur during transport operations, including congestion, fire, terrorism, piracy, waiting times, handling challenges, and stowage issues.

• Environmental risk: Maritime transport faces environmental risks like weather conditions, natural disasters, political conflicts, and human-induced crises, causing delays and financial setbacks in cargo flow.

• Organizational risk: Managerial or planning risks stem from ineffective planning and estimation, leading to management issues, including document interpretation and planning estimation challenges.

• Infrastructural risk: Infrastructure failures or degradation in ports can disrupt the maritime supply chain, including risks like information delays, transportation capacity shortages, and cyberattacks.

Ouedraogo et al. (2020) also summarized the four types of risk impacts in maritime container transport:

• Delay impact: Associated with increased arrival and lead time due to risks, impacting supply chain timelines and overall operational efficiency.

• Financial impact: Linked to the loss of container or goods value, as well as additional costs incurred due to risks, influencing the financial stability and profitability of stakeholders along the supply chain.

• Damage impact: Related to the loss of reputation for carriers and the compromised quality of goods for shippers due to risks, affecting long-term business relationships and customer trust.

• Environmental impact: Corresponding to the elevation of carbon footprint due to risks, contributing to the overall environmental footprint of the maritime industry and global transportation emissions.

In terms of measures to mitigate risks in international sea transport, there have been researches of various methods to tackle each type of risk:

• Supply risk: Mani et al. (2017) proposed leveraging Big Data to minimize supply risks by sharing real-time information on logistics behavior, connecting it with supply chain managers' cell phones for predictive risk mitigation.

• Demand risk: Shibasaki et al. (2017) suggested a logit model for managing demand risks, while Alexandridis et al. (2018) introduced a portfolio approach combining physical diversification of freight rates and financial hedging in the shipping industry.

• Business risk: Wan et al. (2019) integrated a fuzzy belief rule approach with Bayesian networks to evaluate business risks under uncertain conditions. Cruz & Marques (2012) explored risk-sharing challenges in seaport terminal concession contracts.

• Operational risk: Li et al. (2015) proposed operational remedies for disrupted schedules, including acceleration and port substitution. They also optimized disruption recovery in berth allocation at container terminals.

• Environmental risk: Choi et al. (2010) studied the aid supply chain in extreme conditions, while Alyami et al. (2014) used BN and FMEA to evaluate hazardous event criticality for improving port safety.

• Organizational risk: Yang (2011) highlighted operational risk in the container security initiative (CSI), emphasizing a balanced approach to maritime security regulations to address security risks effectively.

• Infrastructural risk: Wan et al. (2019) developed a framework integrating fuzzy belief rules with Bayesian networks to evaluate infrastructural risks. Cruz & Marques (2012) discussed the impact of terminal concession contracts on infrastructural risk in the seaport sector.

3.1.3. The Role Of International Sea Transport

Maritime plays a pivotal role in the transport system and contributes significantly to world trade (Lane et al., 2020). It is considered crucial for attracting global capital and facilitating the expansion of business activity, innovations investments, labor market, competition, domestic and international trade, global mobility, regional economic development, population wellbeing,

environmental safety, and health, as by Skorobogatova et al.. Using an augmented Solow model, Park and Seo (2016) found that container port activities can positively influence regional economic growth.

The international maritime transportation industry plays a pivotal role in transporting approximately 90% of commodities involved in global trade, with 80% earmarked for import and export activities, as reported by the International Chamber of Shipping (ICS). Cargo ships move 11 billion tons of goods annually, including essential items like crude oil, iron ore, and wheat, amounting to 1.5 tons per individual worldwide. This underscores the critical dependence on global trade, particularly through maritime transportation, for human survival. The ICS highlights that the sector comprises over 50,000 vessels capable of conveying diverse commodities, with 150 countries having registered cargo ship fleets for economic distribution. Furthermore, these fleets collectively employ over one million personnel from various nations, underscoring the substantial contribution of the maritime transportation industry to sustaining global trade activities (CWTS, 2022).

Maritime shipping is a key driver of economic growth, fostering broader economic advantages through the growth of maritime businesses and associated clusters. Frațila et al. (2021) found that in Europe, maritime transport and related sectors, such as shipbuilding, repair, and port activities, contribute around 40% to the total value added in blue economy activities. These sectors also employ 24% of the workforce within the blue economy. This analysis highlights the crucial and extensive role of international maritime transportation in global trade and economic endeavors, emphasizing its significant influence on related sectors and employment opportunities within the blue economy.

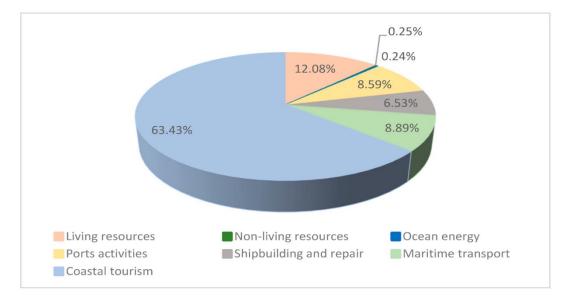


Figure 1. Persons employed by sector (% of total employment in the blue economy)Source: Fratila et al., 2021



3.2. Red Sea And Its Role In International Transportation Between Vietnam And Europe

Figure 2. Location of the Red Sea

Source: BBC, 2023

The Red Sea, located between Africa and Asia, can be considered a small gulf of the Indian Ocean. This sea opens into the ocean to the south, through the Bab-el-Mandeb strait and the Gulf of Aden. To the north are the Sinai Peninsula, the Gulf of Aqaba, and the Gulf of Suez, connecting to the Mediterranean Sea through the Suez Canal. The Red Sea has a length of up to 2,250 km, with its widest point being 355 km. Six countries bordering the Red Sea are: Egypt, Saudi Arabia, Yemen, Sudan, Eritrea, and Djibouti.

The Red Sea is a vital route for world marine trade, connecting Asia, Africa, and Europe. It is one of the busiest shipping lanes in the world and an important part of the regional commerce network. According to estimates, 12% of global trade activities are related to the Red Sea. This is also the route for 30% of the world's container traffic. Similar to the Suez Canal, any obstruction along the Red Sea route will have a global impact, causing prices of various commodities such as energy, electronics, etc., in other regions to become more expensive (Hoang Dai, 2024).

For Vietnam, the Red Sea is a crucial shipping channel connecting Vietnam and Europe, one of the longest sea routes in Vietnam, providing a direct and efficient channel, significantly reducing transit times and freight costs. Vietnam's maritime commerce with Europe is primarily reliant on it due to its strategic benefits. If sailing from the Indian Ocean through the Gulf of Aden, crossing the Red Sea and navigating the Suez Canal, Vietnam's ships will reach the Mediterranean Sea and easily proceed towards European countries. From there, the ships can move on to France,

Italy, Bulgaria, etc. Alternatively, the ships can pass through the Istanbul Strait to reach ports such as Costanza, Varna, Odessa; the Gibraltar Strait to reach northern countries; the Kiel Canal in the Baltic Sea to reach ports in Germany, Finland, Poland, and Sweden (Lan Trinh, 2024). Vietnamese exporters may secure rapid and dependable commercial relations with Europe by taking use of the Red Sea route.

4. Analysis Of The Impact Of The Conflict In The Red Sea On Vietnam's International Transport With Europe

4.1. The Conflict In The Red Sea Between Israel And Hamas

The Red Sea crisis, involving Hamas in the Gaza Strip and Israel, has deep roots in the complex historical and political dynamics of the region. Hamas, an acronym for Harakat al-Muqawama al-Islamiyya (Islamic Resistance Movement), emerged in the late 1980s as a Palestinian Islamist organization with the goal of liberating Palestine from Israeli occupation. Currently, Hamas governs the Gaza Strip, which is part of the Israeli-occupied Palestinian territories. In 2005, Israel withdrew its settlements and military presence from the Gaza Strip, leaving Hamas in control of the area. Since then, Israel, together with Egypt, have implemented a blockade that caused substantial economic harm to Gaza, citing security concerns as the justification. International rights groups have characterized the blockade as a form of collective punishment, while Israel defended it as necessary to prevent weapons and dual-use goods from entering the territory. After the blockade, there have been subsequent periods of conflict and attacks between Israel and Palestinian militants in the region.

The conflict escalated on 7 Oct 2023 when the Palestinian militant groups launched a surprise attack on southern Israel from the Gaza Strip. Hamas officials stated following that the attack was a direct response to the Israeli occupation, the blockade imposed on the Gaza Strip, Israeli settler violence against Palestinians, restrictions on Palestinian movement and the imprisonment of thousands of Palestinians. As of 30 Jan 2024, over 28,000 people have been killed under the cover of thousands of rockets fired from Gaza (UN OCHA, 2024). On 19 Oct 2023, the Red Sea region was thrust into a crisis when the Houthi movement in Yemen launched a series of attacks targeting Southern Israel and ships in the Red Sea, using cruise missiles, drones, and anti-ship ballistic missiles. The Houthi rebels claimed that the attacks were in response to what they believed to be Israeli involvement in the Yemeni conflict, despite the fact that some of the targeted ships did not have any association with Israel. In Dec 2023, Houthi spokesperson Yahya Saree declared that any ship headed for Israel was a "legitimate target" and that they would stop until the <u>Gaza Strip</u> was supplied with "food and medicine".

4.2. The Effect Of The Conflict On Vietnam's International Transport With Europe

4.2.1. Negative Effects

a) New route of international transport between Vietnam and Europe

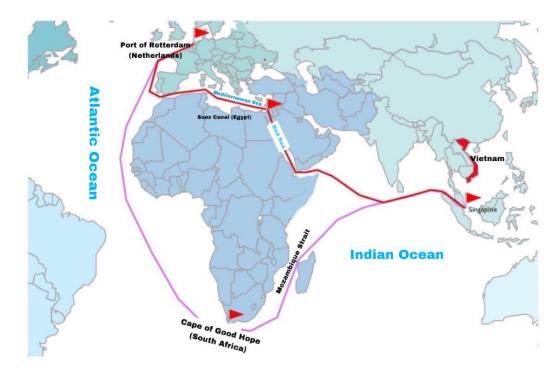


Figure 3. The vessels route before (red line) and after (pink line) the Red Sea Crisis

Source: Traffic News, 2024

Prior to the crisis, the Suez Canal route, which is about 10,000 nautical miles, had been the most efficient sea route between Vietnam and Europe. However, during the Red Sea Crisis, the Cape of Good Hope route has become the most practical alternative solution since various alternative options for the old route are not suitable such as air mode with expensive freights especially for bulky goods, rail mode which has no direct cargo rail track connecting Vietnam and Europe, etc. During the week of 25 - 31 Dec 2023, the number of ships transiting through the Cape of Good Hope has increased by 27% compared to the previous week (Lloyd's List Intelligence, 2023).

In the Cape Route, starting from Vietnam, the route crosses the East Sea. Then, it can entail traversing the Sunda or Malacca Strait. The path continues over the Indian Ocean, passing via the Arabian Sea and the Bay of Bengal. After arriving at South Africa's Cape of Good Hope, the route continues north over the Atlantic Ocean and ends at one of the ports in Europe. The total distance is around 13,000 nautical miles, about 3,000 miles longer than the Suez route. When opting for this route, the travel time between the Far East and West Europe is extended by approximately 25-35 percent (Gokcay Balci, 2024). Ships passing by the Cape of Good Hope could also face challenges in terms of refueling and replenishing supplies due to the shortcomings of ports in Africa. These ports struggle with issues such as corruption, cumbersome procedures, congestion and inadequate infrastructure. Major ports in South Africa, including Durban, Cape Town and Ngqura are classified as among the poorest-performing ports in the world, despite being the largest ports in Africa (World Bank, 2023). It is also notable that harsh weather conditions often occur in

the Cape of Good Hope region, which is prone to frequent storms. This means that ships may consume fuel at a faster rate, making fueling services even more crucial in these areas.

b) The influence of the new route

The fact that the route has been changed when exporting or importing between Vietnam and Europe has caused many unwanted consequences.

Sea freight rates increase abnormally

The freight rate of transporting goods through the Red Sea continues to grow. Mr. Rico Luman, an expert at market research firm ING Research, said that container freight rates on the Asia-Europe trade route were most affected with the figure increasing by 60% in Jan, 2024 compared to the end of 2023 and dramatically by 88% compared to before the Covid-19 pandemic (Vietnam Maritime Administration, 2024). Tensions in the Red Sea cost an additional \$1,000 - \$2,000 on average per container passing through the European region and the most affected industries include agriculture, textiles, footwear, wooden furniture, electronics, etc. (Van Giap, 2024). Specifically, Phuc Sinh Group, one of Vietnam's leading agricultural product exporters with many lines such as coffee, pepper and spices, reported that on average every day, the company exported 5 - 10 containers of goods. However, since the crisis, the company's export activities have stagnated and decreased sharply with current shipping rates from Vietnam to Europe rising sharply from \$600 to \$4,000/container (Nguyen Nga & Chi Nhan, 2024). Meanwhile, Saigon Trade and Production Development Corporation (Sadaco) had nearly 20% of exports under FOB price contracts refused by European partners because of rising freight rates (Nhat Linh, 2024).

Additional fees are added

Many large shipping companies such as Yang Ming Line, One, Evergreen Line, HMM, Maersk, etc. have sent notices about collecting additional fees due to having to change itineraries on Asia - Europe routes (Van Giap, 2024). Particularly, Mediterranean Shipping Company (MSC), whose headquarter is located in Geneva, is asking Vietnamese shippers to pay an additional \$1,000 per 40-foot equivalent unit (feu) with the introduction of a Contingency Adjustment Charge (CAC), designed to cover transit times taking the Cape of Good Hope route, on January 1, 2024, which is significantly higher than the spot price of \$200 - \$300 per container. However, this additional fee pales in comparison with shipments through the Red Sea, where MSC is asking shippers to pay a surcharge of \$2,000 per feu (Nhat Linh, 2024). Meanwhile, according to Ms. Tran Thi Thu Huyen, representative of APS Logistics Company, the company is facing difficulties when many shipping lines are automatically applying "war surcharges" to loaded goods especially with cargo containers from 20 to 40 feet (Ngoc Quynh, 2024). More disadvantageously, many shipments from Vietnam to Europe during the pre-Lunar New Year period have faced additional peak season surcharges (Nhat Linh, 2024).

Delivery time has been extended incurring extra expenses

Diverting ships around the Cape of Good Hope could take 25% longer than using the Suez Canal between Asia and Europe which means more expensive transportation. Specifically, cost for each round trip between Asia and Northern Europe is expected to include \$1 million more in fuel, leading to consumers paying more for everything from food to oil (Tran Phuong, 2023). Additionally, according to Stephen Gordon, head of research at Clarksons, the delivery time for exporting goods from Asia to Europe will take 9 more days, from 31 days to 40 days, especially. oil and liquefied natural gas (LNG) taking twice as long to transport (Logistics Vietnam, 2024). Influenced by the general trend, transporting goods from Vietnam to Europe currently takes an additional 7-10 days, incurring more expenses such as fuel and crew costs; additional insurance premiums for conflict risks from 0.1 - 0.15% to 0.2% of ship value, compared to 0.07% previously; late delivery penalty; etc. (Willis Towers Watson Insurance Broker, 2024). Some shipping routes have had to cut some weekly shipments, leading to a lack of space or putting more ships into operation, which increase costs. Moreover, prolonged delivery time will reduce the capacity of the global fleet by 10-15% compared to normal periods (Fitch Ratings, 2024). Especially for businesses that import and export agricultural and frozen products, longer journeys affect the quality of these products, thereby influencing the competitiveness of businesses (Duc Dung, 2024).

Ships being anchored raises concerns about disruption of the Vietnamese supply chain

The current situation of maritime disorder can be compared to the Ever Given event in March 2021 blocking the Suez Canal for 6 days, disrupting the supply chain on the Asia - Europe route and affecting nearly 20% of world trade volume including Vietnam's (Mai Chi, 2023). However, there are several differences in the current congestion in which insurance and container storage costs both increased sharply. Specifically, insurance costs for ships passing through the Red Sea have grown by an average of 20% compared to the Ever Given event (Van Giap, 2024). Dony Vietnam Garment Company's clothing shipment exported to Jordan has been anchored at Singapore port for nearly 5 weeks because the customer's port has not yet received the goods (Nguyen Nga & Chi Nhan, 2024). Exported goods getting stuck during shipment causes businesses to have capital stagnant affecting operations. Currently, Vietnamese businesses are urgently looking for new sources of goods and new suppliers to make backup and replacement plans making supplier dependence become a weakness for Vietnamese enterprises (Ho, N.D.K, 2024). Accordingly, final prices for many Vietnamese products have witnessed a rise causing consumers in the EU region to limit spending, especially in the fishery industry where Europe has been a large source of consumption for Vietnam (Nguyen Nga & Chi Nhan, 2024).

4.2.2. Positive Effects

The conflict in the Red Sea also provides many opportunities for Vietnam in various aspects.

Several industries in Vietnam have benefited from the growth in price

The rise in freight rates, insurance costs, fuel costs, etc. has been a shock for Vietnamese exporting or importing enterprises, whereas many other industries in Vietnam take this as an opportunity to boost revenue and gain profit, naming logistics, oil and gas and aviation.

Firstly, for logistics businesses, increases in transportation costs create short-term benefits for these companies. Shinhan Securities Vietnam Company (SSV) gives a positive rating to the transportation business group including Hai An Transport and Unloading Joint Stock Company (HAH) specializing in container transportation, Vietnam Ocean Shipping Joint Stock Company (VOS) and Sea Shipping Joint Stock Company Vinaship (VNA) specializing in international dry cargo transport, etc. (Van Giap, 2024). In addition, the Red Sea incident also led to a shortage of empty containers. The Drewry World Container Index (DWCI) rose by 15% to \$3,072 per 40 feet container this week and by 44% compared to January, 2023. Thus, some companies such as HAH, Vietnam Container Shipping Joint Stock Corporation (VSC) and the container segment of Hoa Phat Group Joint Stock Company (HPG) are expected to benefit (Thu Minh, 2024).

Secondly, for the oil and gas industry, freight rates for crude oil tankers and liquefied natural gas (LPG) tankers tend to grow due to increased travel demand, as well as strong imports of crude oil and LPG from Europe (Mai Chi, 2023). The figures are likely to increase by up to \$1/barrel for crude oil and \$4/barrel for refined products (The Goldman Sachs Group, 2024). Besides, oil prices also experience a rise which might bring many short-term investment opportunities for various Vietnamese oil and gas companies such as PetroVietnam Drilling & Well Services Corporation (PVD), PetroVietnam Technical Services Corporation (PTSC), PetroVietnam Gas Joint Stock Corporation (PV Gas), etc. (Huu Bat, 2024). PetroVietnam Transportation Corporation (PV Trans) is an example of the positive effect from the situation. The company's activities were smooth thanks to high tanker rental rates and a shortage in the supply of oil and chemical tankers. Specifically, the average Aframax time charter price and the average medium-range tanker charter price were respectively 13% and 55% higher in the first 9 months of 2023 (Duy Quang, 2023).

Thirdly, for the aviation industry, increased freight rates, additional fees incurred and delivery time extended have triggered many Vietnamese export/import companies to switch from sea transport to air transport even though the cost for air is higher to ensure that the goods arrive to customers timely. According to Xeneta data, the global average air cargo spot rate peaked at \$2.6/kg in December 2023 and rose to \$4/kg in January 2024 (Huu Bat, 2024). Particularly, Vietnam Airlines is benefiting from maintaining flight routes from Vietnam to Europe. Meanwhile, Bamboo Airways has temporarily suspended European flights during the restructuring process, while Vietjet has not yet flown to Europe (Cong Trung, 2024). Xeneta's supply chain monitoring and advisory platform (2024) reported that the volume of goods on a primary air route from Vietnam to Europe, which is frequently used for shipping fashion items, experienced a substantial 62% increase in the week ending on January 14, 2024 from the previous week. Furthermore, international cargo service logistics companies such as Saigon Cargo Service Joint Stock Company (SCSC) and Tan Son Nhat Cargo Service Joint Stock Company (TCS) all reported the volume of

goods circulating through TCS and SCSC warehouses for international travel is flourishing, but is mainly handled by foreign airlines (Cong Trung, 2024).

Disruption in trading with Europe opens an opportunity for Vietnam to diversify its international markets.

Due to the conflict in the Red Sea, the total main exports and imports between Vietnam and the European countries both witnessed a decrease in 2023 with the figures reducing by 5.9% and 2.5% respectively (General Statistics Office of Vietnam, 2024). However, the international transaction between Vietnam and the Asian countries such as China, Japan, etc. becomes promising. For instance, Vietnamese shrimp - one of Vietnam's primary exports - exported to China was however in the general reduction in 2023 but the decline was recorded as the lowest among main shrimp importing markets of Vietnam including the EU (Chu Khoi, 2024). The figure is expected to be promoted in 2024 as Ecuador, the main competitor of Vietnamese shrimp, has been troubled with increased shipping costs due to the conflict in the Red Sea (Vu Quang, 2024). For Japan, shrimp exports increased by 6% in December 2023 as opposed to December 2022, recorded to bounce back more strongly than shrimps to Europe (The Hoang, 2024).

The tension creates a chance for Vietnam to consolidate the national competitiveness

The goods' final price inflation due to rising sea freight has diminished not only Vietnam's but other Asian countries' competitiveness in international trade with the EU. Therefore, competing with other nations by focusing on the product quality, Vietnam automatically enhances its exports' condition and standard, making Vietnam to grow more strongly and steadily in the virtue of exporting activities. Moreover, to combat the challenge going on in the Red Sea route, Vietnam enterprises have to re-evaluate risk management strategies, proactively plan to diversify supply sources to limit the impact on the supply chain and consider moving production activities domestically or exploiting alternative transportation methods. All these efforts might help Vietnam's businesses improve the ability to adapt flexibly and proactively, the process of brainstorming back-up plans, the ability to exploit available resources or options, etc. Also, the government has been upgraded in quality in terms of management efficiency while, for instance, trying to support the affected businesses or in terms of international trade promotion while, for example, speeding up the time to carry out customs procedures to boost the delivery time, etc. Efforts of both Vietnamese enterprises and government to solve the negative impact of the conflict will potentially intensify the country's competitiveness in international trade with Europe in particular and the world as a whole.

4.3. Evaluation Of The Impact Of The Conflict On Vietnam's International Transport With Europe

4.3.1. The Red Sea Crisis Brings Both Positive And Negative Impacts To Various Industries And Sectors

The impact of The Red Sea crisis is predominantly negative rather than positive, and if the situation prolongs, it will lead to supply chain congestion.

a) Many negative impacts need to be addressed.

The Red Sea situation impacts companies involved in export and import, particularly those relying on cold supply chains like agriculture and food. Export activities support economic restructuring, job creation, and industries' development. Key export items from Vietnam to Europe, including textiles, footwear, electronics, components, textiles, and wood exports, are also affected.

The main impact is the increase in a range of fees, including shipping costs to the EU, which affects selling prices. Mr. Dinh Hong Ky, Chairman of the Board of Directors of Secoin Joint Stock Company, claimed that increasing transportation expenses is just one more hit that makes it harder for businesses.

If the current tension persists, global maritime transportation costs may rise to levels equivalent to those seen during the Covid-19 pandemic. Supply chains could face congestion, and major economies that are Vietnam's export partners, such as the United States and the EU, may reduce spending on ordinary and luxury products, leading to a decrease in order volume. Meanwhile, domestic industrial production sectors primarily focus on exports, heavily relying on the global market as domestic production exceeds domestic market demand, especially for industries like textiles, leather and footwear, electronics, etc. These industries only supply 10% of their production for domestic demand, while the remaining 90% is for export. This raises concerns about Vietnam's export situation to Europe (Nguyen & Nguyen, 2023).

b) Some positive aspects that can be leveraged but need careful consideration.

Although the Red Sea crisis has proved to have positive effects on certain industry groups in Vietnam such as logistics, oil and gas, and aviation, the country still needs to keep in mind that these advantages are not completely potential or without any downside. In the aviation industry, a shift from sea to air transport, leading to a higher air freight rate, can be beneficial for certain products, but there are limitations, especially for bulky or perishable items such as agriculture or fishery goods. Also, the aviation industry in Vietnam currently lags behind the international market in terms of market share, with nearly 90% of the market share belonging to foreign countries (Do Xuan Quang, 2023). For the oil and gas industry, while a rise in the price of fuel benefits many oil & gas companies, it accordingly causes a general growth in domestic petroleum prices, which poses difficulties for the domestic citizens. Logistics sector is also not an exception in this trend. There is competition with international counterparts due to the low competitiveness and high costs. The logistics service industry accounts for only 20% of Vietnam's GDP (Tran, 2019), and high freight charges can result in increased end-product prices, leading to reduced customer demand. In the long run, this can negatively impact logistics companies. Additionally, the Red Sea conflict presents promising opportunities for Vietnam to diversify its supply chains with other Asian countries. This also comes along with attached requirements and standards in terms of quality, origin, environmental sustainability, etc. Moreover, it strengthens the nation's competitive capabilities, but if not done well, it can lead to confusion and mis-action.

4.3.2. Comparison Of The Red Sea Crisis With Covid-19 And The Suez Canal Blockage In 2021

a) Overview of the related impacts on the Vietnam's international transportation during Covid-19 and the Suez Canal Blockage

In Vietnam, the Covid-19 outbreak started in mid-2020. As a developing country heavily reliant on international trade and located on major shipping routes, the manufacturing, trade, and service sectors were severely affected. In the first six months of 2020, Vietnam's import-export value dropped by 2.1% compared to the previous year (247 Express, 2020). In late 2019, Covid-19 emerged in China and spread globally. In Vietnam, the first half of 2020 saw a strong outbreak. According to a report from the Vietnam Logistics Business Association (2021), transportation costs increased by 50% during this time, while cargo circulation decreased by 54.2% compared to 2019. Many businesses reduced their domestic and international logistics services by 10% to 30%, and fewer transportation and warehousing companies were established (Nguyen Huu Nguyen Xuan, 2021). However, with government measures and support, Vietnam still achieved positive import-export results in 2021.

Regarding the Suez Canal Blockage event, on March 23, 2021, the Ever Given, one of the world's largest container ships, got stuck in the Suez Canal. It took a week to rescue the ship, causing major traffic congestion and significantly impacting global trade. Shipping costs and global oil prices increased as a result, affecting Vietnam's import-export activities and trade in Europe.

b) Comparison between the Red Sea conflict and Covid-19 & the Suez Canal Blockage

Transportation cost

Sea-Intelligence, a Danish maritime data analysis company, has stated that the Red Sea crisis has had a more significant impact on the maritime transportation sector than the initial phase of the Covid-19 pandemic. Additionally, the prolonged travel time around the Cape of Good Hope has had a more pronounced effect on the availability of container-receiving vessels at ports compared to the early stages of the pandemic. Freight rates have increased more compared to the early stages of Covid-19. Despite the tightening measures leading to reduced imports and exports for other countries, Vietnam has achieved positive results. In 2020, Vietnam's total import-export turnover reached 545.36 billion USD, with export turnover reaching 282.66 billion USD, accounting for 51.8% of Vietnam's import-export structure (Nguyen, 2021).

However, overall, the increase in costs is not as high as during the Covid-19 pandemic and Ever Given case. According to Mr. Pham Quoc Long (Chairman of the Association of Marine Agents and Brokers), with the signed contracts businesses are not heavily affected at the present time because Vietnamese import-export enterprises have commonly opted for the "CIF buying, FOB selling" method in commercial contracts (Pham, 2024). Under CIF terms, the goods are delivered at the port, meaning the seller's responsibility ends when the goods are on board the vessel at the shipment port. On the other hand, under FOB terms, the seller's responsibility ends when the goods are delivered onto the ship at the agreed time and location in the contract.

Additionally, although freight costs have increased, they have not reached the levels seen during the Covid-19 period. However, it is inevitable that the final products will incur additional costs, and manufacturers will be directly affected regardless of whether the business signs CIF or FOB contracts meaning whoever pays the freight charges, the transportation costs increase, as stated by Secoin's Chairman Mr. Dinh Hong Ky.

Since November 2023, the Houthi rebels have intensified attacks on ships passing through the narrow waters towards the Suez Canal. The World Container Index (WCI), compiled by maritime consulting company Drewry, reached \$3,777 per forty-foot equivalent unit (FEU) at the end of last week. From the beginning of the year until now, the WCI has increased by 173%. If we exclude the period of the Covid-19 outbreak from December 2020 to October 2022, global spot container rates have reached their highest level in the history of WCI data since June 2011. During the Ever Given case, specifically, the price of a 40-foot container from Shanghai (China) to Rotterdam (Netherlands) has increased by 418%, according to data from Freightos. Meanwhile, the shipping cost of a 40-foot container from Lianyungang Port (China) to the United States has surged from around \$2,000-3,000 to over \$10,000. The rates have also doubled on routes from Europe to the United States.

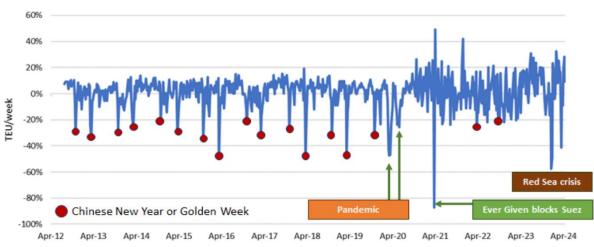




Figure 4. Weekly capacity deviation from the 52-week average baseline

Source: Sea-Intelligence, 2023

As stated by Alan Murphy, CEO of Sea-Intelligence, the current reduction in container ship capacity is the second highest in recent years, following the six-day blockage of the Suez Canal caused by the Ever Given container ship in March 2021. While the Suez Canal obstruction already strained the global sea transportation system due to a large number of vessels awaiting passage, the attack by Houthi forces in the Red Sea conflict has led to a substantial decrease in ship numbers as they change their routes away from the Red Sea.

During the Lunar New Year, there is a decrease in production capacity to compensate for the anticipated decrease in demand due to the holiday period, which is considered a normal market behavior. In the initial phase of the pandemic, it only affected ports in China, and in the second phase, it spread globally. With the Ever Given incident, it became the largest single event - even surpassing the initial impact of the pandemic.

5. Recommendations For Vietnam

5.1. Recommendations For Vietnamese Export-Import Enterprises

Normal route through the Red Sea

Fear of Houthi attacks, many shipping companies have rerouted to avoid crossing the Red Sea. However, there are some that still operate normal routes through the Red Sea, such as Cosco, a China-based leading shipping company. When choosing to keep the old route, enterprises should have several actions to protect themselves from the risks of the crisis:

- Include clauses regarding indemnity and liability exclusion in case of emergency when signing and negotiating commercial and transportation contracts to reduce the possibility of losses and degradation in the event that goods are transported for longer than expected or have incidents along the way. Also, insurance should be purchased for all of the contracts.
- Enhance demand forecasting, updating the situation to plan transport proactively. For agricultural products such as fruits, fishery, which are easily damaged due to longer transportation time, improve the packaging process to keep the products in initial condition.

Alternative ways

• Diversify delivery methods proactively: switching to air transport if the volume of goods being exported is small, such as luxury goods or perishable agriculture and food products, such as fruits or fishery requiring short delivery time, which may incur higher costs but offers very fast delivery times, which is still acceptable. They should also learn about rail transportation methods for textiles, footwear, wooden furniture, electronics, which cannot be easily damaged due to long delivery times.

• Actively seek and diversify supply sources to limit the impact on supply chains. For the technology industry, data shows that 75% technology and equipment used by Vietnamese businesses are sourced from foreign countries, especially developed nations such as the United States, South Korea, and the European Union (Nhi Anh, 2022). Firms should actively find domestic suppliers in this context, facilitate development in this field, and increase competitiveness of Vietnam technology.

• Diversify export markets to reduce dependence on a single region: exploring and accessing new markets through trade promotion activities, market research, and facilitating business partnerships to create a bigger opportunity for Vietnamese exporters. In fact, the shrimp export

industry in Vietnam has also benefited from the Red Sea crisis due to Ecuador's decreasing shrimp export volume to East Asia because of the increasing transportation cost. In the area, Vietnam has the advantage of location, lying near big markets such as China, Japan, Korea etc,. So Vietnamese shrimp exporters can seize this opportunity to attract more loyal customers from Asia instead of focusing too much on the European market.

• Enhance the products' quality, particularly in terms of quality standards and consumer preferences to compete and retain customers in the demanding European market by investing in advanced production technologies and equipment, establishing rigorous quality control mechanisms, etc.

5.2. Recommendations For The Vietnamese Government

To support Vietnamese export and import enterprises, the Ministry of Transport has issued a document requiring the Vietnam Maritime Administration to work with logistic companies operating routes to Europe, assess changes in transportation costs, monitor the transportation situation, and enforce the listing of transportation service prices and surcharges in accordance with regulations (Chi Nhan, 2023). But to improve the situation, more recommendations are put forward.

Enhance port infrastructure and customer procedures

Enhance port infrastructure and streamline customs procedures to reduce the time required for import-export processes. The Vietnamese government should invest in the expansion and modernization of port facilities, including container terminals, berths, and storage areas to increase the capacity to handle larger volumes of goods and accommodate larger vessels. Moreover, implementing advanced technological solutions such as automated cargo handling systems, electronic data interchange (EDI), and online platforms for customs clearance processes will streamline documentation procedures and enable real-time tracking of shipments, which facilitates seamless communication and coordination between different stakeholders including customs authorities, port operators, and logistics providers.

Support affected enterprises

Implement targeted programs to support affected enterprises, especially small and mediumsized enterprises (SMEs), which are the backbone of the economy and play a significant role in export-import industries. Vietnam's key industries such as agriculture, fishery, etc. which are easily affected by the increase in transportation time and price should also be supported by providing access to financing, business development services, export promotion assistance, and tailored capacity-building programs.

Encourage other benefited industries

As noted above, three main industries benefiting from the crisis are aviation, logistics and oil & gas. The government should encourage airlines that operate international routes to actively improve their services, stabilize the price and find potential customers. This may increase the competitiveness of the Vietnam aviation industry in the international market. For logistics

enterprises, they need to enhance their qualifications to become a more reliable logistics partner for international trade. Government should also encourage oil and gas enterprises to balance the price, avoiding affecting other industries.

Support domestic R&D efforts

Provide funding, grants, and incentives to support R&D efforts to improve product quality and innovation to compete price increases by establishing partnerships between industry and research institutions to develop new technologies, enhance production processes, and improve product design.

5.3. Recommendations For The Vietnamese Logistics Companies

Enhance security measures

Strengthen security measures for cargo and vessels. Collaborate with security agencies, port authorities, and shipping companies to ensure the safety of goods and personnel. This may include employing armed guards, implementing strict access control measures, and utilizing technology such as tracking systems to monitor shipments.

Explore intermodal transportation

Consider utilizing intermodal transportation options to mitigate risks associated with the Red Sea crisis. This may involve combining multiple modes of transportation, such as rail and air, to bypass affected areas and maintain the flow of goods.

Strengthen risk management

Develop comprehensive risk management strategies to identify, assess, and mitigate potential risks arising from the Red Sea crisis. This includes conducting regular risk assessments, establishing contingency plans, and implementing robust communication channels to respond promptly to any emerging challenges.

Foster customer relationships

Maintain open and transparent communication with customers regarding any potential disruptions or changes in shipping routes. Proactively address their concerns and provide alternative solutions to minimize the impact on their supply chains. Building strong customer relationships will help maintain trust and loyalty during this challenging period.

6. Conclusion

The crisis in the Red Sea between Israel and Hamas has had a wide-ranging influence on Vietnam's international transportation to Europe. As previously described, interruptions in this critical maritime corridor have both positive and negative consequences for a variety of businesses and sectors. One of the most noticeable impacts is the abnormally increased sea freight rates, a series of additional fees, extended delivery times and disruptions in the supply chain. However,

some industries in Vietnam have benefited from the increased prices, and the disruption in trading with Europe has prompted Vietnam to diversify its international transaction sources. In general, this tension resembles the interruptions witnessed during the Covid-19 pandemic and the 2021 Suez Canal Blockage, highlighting the vulnerability of global trade lines to geopolitical conflict. In response to the negative effects of the Red Sea crisis, the authors suggested developing backup plans and implementing thorough risk management for enterprises, regardless of their choice to continue using the normal route via the Red Sea or seek alternative directions, in order to proactively manage transactions and alleviate the situation. Besides, collaboration between the Vietnamese government and foreign partners is emphasized for strengthening insurance measures and providing support to small and medium-sized companies (SMEs). Improving quality standards and operational efficiency across industries is also highlighted as a strategic priority to build overall competitiveness for the country.

As the global geopolitical landscape evolves, this report is expected to offer valuable insights to enhance Vietnam's resilience in international trade, particularly amidst the crisis in the Red Sea, contributing to further research and practical applications in Vietnam. However, it's essential to acknowledge the limitations of this report. While it emphasizes key strategies to address current challenges, it may not provide a comprehensive solution for all the issues faced by Vietnamese export-import enterprises at present and in the future. Therefore, caution is advised for Vietnamese export-import enterprises and authorities when implementing any recommendations under specific situations affected by unmentioned external factors.

Lastly, our group would like to express sincere gratitude to our instructor, Dr. Nguyen Thi Yen, for her invaluable guidance and support throughout the completion of this report. Her instructions and feedback have significantly enhanced the quality of this work, aiding us in shaping the analysis to extract meaningful insights for future purposes and applications.

Reference

247Express (2020). "Tác Động Của Đại Dịch Đến Ngành Logistics Việt Nam", 247express.vn, Available at: https://247express.vn/tin-tuc/logistics-44/tac-dong-cua-covid-19-den-nganhlogistics-viet-nam/417.

Al Yami, H., Tae-Woo, P., Lee, Yang, Z., Riahi, R., Bonsall, S. & Wang, J. (no date). "AN ADVANCED RISK ANALYSIS APPROACH FOR CONTAINER PORT SAFETY EVALUATION", Available at: https://core.ac.uk/download/pdf/42477168.pdf.

Alexandridis, G., Sahoo, S., Song, D.-W. & Visvikis, I. (2018). "Shipping risk management practice revisited: A new portfolio approach", *Transportation Research Part A: Policy and Practice*, Vol. 110, pp. 274–290.

Anh, N. (2022). "75% công nghệ và thiết bị của doanh nghiệp Việt Nam có nguồn gốc từ nước ngoài", *VnEconomy*, Available at: https://vneconomy.vn/75-cong-nghe-va-thiet-bi-cua-doanh-nghiep-viet-nam-co-nguon-goc-tu-nuoc-ngoai.htm.

Ashine, S. G. (2024). "The new global superpower geo-strategic rivalry in the red sea and its implications for peace and security in the horn of Africa", *Social Sciences & Humanities Open*, Available at: https://doi.org/10.1016/j.ssaho.2024.100834.

Balci, D.G. (2024). :How Red Sea attacks could trigger new Suez Crisis - an expert explains", *inews.co.uk*, Available at: https://inews.co.uk/news/world/red-sea-attacks-new-suez-crisis-2832486.

Bat, H. (2024). "Căng thẳng ở Biển Đỏ tác động thế nào đến doanh nghiệp Việt?", *stockbiz.vn*, Available at: https://stockbiz.vn/tin-tuc/cang-thang-o-bien-do-tac-dong-the-nao-den-doanhnghiep-viet/22891488.

Benamara, H. (2018). "UNCTAD Multiyear Expert Meeting on Transport, Trade Logistics and Trade Facilitation 'Sustainable freight transport in support of the 2030 Agenda for Sustainable Development' Role of International Shipping", *unctad.org*, Available at: https://unctad.org/system/files/non-official document/MyEM6th_day01ppt_Benamara_en.pdf.

Chi, M. (2023). "Căng thẳng trên Biển Đỏ, doanh nghiệp vận tải biển Việt Nam hưởng lợi lớn", *Nguoiquansat.vn*, Available at: https://nguoiquansat.vn/cang-thang-tren-bien-do-doanh-nghiep-van-tai-bien-viet-nam-huong-loi-lon-106434.html.

Clapp, S. (2024). "AT A GLANCE Maritime security: Situation in the Red Sea and EU response", *www.europarl.europa.eu*, Available at: https://www.europarl.europa.eu/RegData/etudes/ATAG/2024/757606/EPRS_ATA%282024%29 757606_EN.pdf.

Cruz, C.O. & Marques, R.C. (2012). "Risk-Sharing in Seaport Terminal Concessions", *Transport Reviews*, Vol. 32 No. 4, pp. 455–471.

Dai, H. (2024). "'Cục máu đông' trên Biển Đỏ - cơn ác mộng mới của kinh tế toàn cầu", *Báo điện tử Dân Trí*, Available at: https://dantri.com.vn/kinh-doanh/cuc-mau-dong-tren-bien-do-con-ac-mong-moi-cua-kinh-te-toan-cau-

20240129164214459.htm#:~:text=Bi%E1%BB%83n%20%C4%90%E1%BB%8F%201%C3%A 0%20m%E1%BB%99t%20trong.

Do, S. (2024). "Đã có giải pháp đặc biệt cho vấn đề Biển Đỏ", *baomoi.com*, Available at: https://baomoi.com/da-co-giai-phap-dac-biet-cho-van-de-bien-do-c48153849.epi.

Dung, D. (2024). "Căng thẳng Biến Đỏ tác động như nào tới doanh nghiệp cơ khí?", *bnews.vn*, Available at: https://bnews.vn/cang-thang-bien-do-tac-dong-the-nao-toi-doanh-nghiep-cokhi/321033.html#google_vignette. Dung, K. & Minh, D. (2024). "Doanh nghiệp Việt vào thế khó khi căng thẳng Biển Đỏ leo thang", *vnexpress.net*, Available at: https://vnexpress.net/doanh-nghiep-viet-vao-the-kho-khi-cang-thang-bien-do-leo-thang-4700183.html.

Fratila, A., Gavril, I.A., Nita, S.C. & Hrebenciuc, A. (2021). "The Importance of Maritime Transport for Economic Growth in the European Union: A Panel Data Analysis", *Sustainability*, Vol. 13 No. 14, p.7961.

General Statistics Office of Vietnam (2023). "Xuất, nhập khẩu năm 2023 nỗ lực phục hồi, tạo đà bứt phá cho năm 2024", Available at: https://www.gso.gov.vn/du-lieu-va-so-lieu-thong-ke/2024/01/xuat-nhap-khau-nam-2023-no-luc-phuc-hoi-tao-da-but-pha-cho-nam-2024/.

Giap, V. (2024). "Căng thẳng Biển Đỏ và những tác động tới doanh nghiệp Việt Nam", *baotintuc.vn*, Available at: https://baotintuc.vn/kinh-te/cang-thang-bien-do-va-nhung-tac-dong-toi-doanh-nghiep-viet-nam-20240115141554620.htm.

Ha, S. (2019). "Tăng năng lực cạnh tranh của logistics Việt Nam", *Mof.gov.vn*, Available at: https://mof.gov.vn/webcenter/portal/vclvcstc/pages_r/l/chi-tiet-tin?dDocName=MOFUCM156846.

Hetherington, C., Flin, R. & Mearns, K. (2006). "Safety in shipping: The human element", *Journal of Safety Research*, Vol. 37 No. 4, pp. 401–411.

Huynh, T. (2023). "Gần 90% thị phần vận tải hàng không thuộc về nước ngoài", *VOV.VN*, Available at: https://vov.vn/kinh-te/gan-90-thi-phan-van-tai-hang-khong-thuoc-ve-nuoc-ngoai-post1040672.vov.

India Today (2024). "Why Red Sea crisis could see businesses in red | Explained in maps", *India Today*, Available at: https://www.indiatoday.in/world/story/red-sea-crisis-suez-canal-map-trade-routes-panama-canal-drought-supply-chains-2490518-2024-01-19.

Interlink (2017). "Vận tải đường biển nội địa và quốc tế khác nhau thế nào?", Interlink, Available at: https://interlink.com.vn/vi/van-tai-duong-bien-noi-dia-quoc-te-khac-biet/.

InterLog (2023). "Dịch vụ vận chuyển hàng hóa quốc tế bằng đường biển", *interlogistics.com.vn*, Available at: https://interlogistics.com.vn/vi/tin-tuc/blog/dich-vu-van-chuyen-hang-hoa-quoc-te-bang-duong-bien-n-494#:~:text=V.

Jiang, H., Xiong, W. & Cao, Y. (2017). "Risk of the Maritime Supply Chain System Based on Interpretative Structural Model", *Polish Maritime Research*, Vol. 24 No. 3, pp.28–33.

Khanna, P. (2024). "The Red Sea Crisis Proves China Was Ahead of the Curve", *Foreign Policy*, Available at: https://foreignpolicy.com/2024/01/20/url-red-sea-houthis-china-belt-road-suez-trade-corridors/.

Khoi, C. (2024). "Xuất khẩu tôm năm 2024: Khó ở EU, thuận lợi tại Nhật Bản và Trung Quốc", *Nhịp sống kinh tế Việt Nam & Thế giới*, Available at: https://vneconomy.vn/xuat-khau-tom-nam-2024-kho-o-eu-thuan-loi-tai-nhat-ban-va-trung-quoc.htm.

Khoi, M. (2024). "Khủng hoảng Biển Đỏ ảnh hưởng ra sao tới thương mại toàn cầu?", *TUOI TRE ONLINE*, Available at: https://tuoitre.vn/khung-hoang-bien-do-anh-huong-ra-sao-toi-thuong-mai-toan-cau-20240104111421252.htm.

Linh, N. (2024). "Cước vận tải biển tăng nóng theo căng thẳng Biển Đỏ", *stockbiz.vn*, Available at: https://stockbiz.vn/tin-tuc/cuoc-van-tai-bien-tang-nong-theo-cang-thang-bien-do/22636550.

Lu, C.-S. & Shang, K. (2005). "An empirical investigation of safety climate in container terminal operators", *Journal of Safety Research*, Vol. 36 No. 3, pp. 297–308.

Mani, V., Delgado, C., Hazen, B. & Patel, P. (2017). "Mitigating Supply Chain Risk via Sustainability Using Big Data Analytics: Evidence from the Manufacturing Supply Chain", *Sustainability*, Vol. 9 No. 4, p.608.

Maritime Transport Committee (2003). "Security in maritime transport: risk factors and economic impact", *ROSA P*, Available at: https://rosap.ntl.bts.gov/view/dot/15845.

Minh, T. (2024). "Căng thẳng Biển Đỏ ảnh hưởng thế nào đến xuất nhập khẩu của Việt Nam với châu Âu?", *Nhịp sống kinh tế Việt Nam & Thế giới*, Available at: https://vneconomy.vn/cang-thang-bien-do-anh-huong-the-nao-den-xuat-nhap-khau-cua-viet-nam-voi-chau-au.htm.

Nam, S.V. (2024). "Khủng hoảng Biển Đỏ: Hàng Việt Nam đi châu Âu bằng máy bay tăng cao", *Sputnik Việt Nam*, Available at: https://sputniknews.vn/20240122/khung-hoang-bien-do-hang-viet-nam-di-chau-au-bang-may-bay-tang-cao-27723629.html.

Nam, T. báo T. chính V. (2024). "Giá cước vận chuyển hàng hóa qua Biển Đỏ tăng 248%", *Thời báo Tài chính Việt Nam*, Available at: https://thoibaotaichinhvietnam.vn/gia-cuoc-van-chuyen-hang-hoa-qua-bien-do-tang-248-143297.html.

Nga, N., Nhan, C. (2024). "Xuất khẩu 'sốc' theo giá cước tàu", *thanhnien.vn*, Available at: https://thanhnien.vn/xuat-khau-soc-theo-gia-cuoc-tau-185240109231138076.htm.

Ngoc, A. (2024). "Tình hình Biển Đỏ ảnh hưởng tới chuỗi cung ứng tồi tệ hơn cả Covid-19", *http://petrotimes.vn/*, Available at: https://kinhtexaydung.petrotimes.vn/tinh-hinh-bien-do-anh-huong-toi-chuoi-cung-ung-toi-te-hon-ca-covid-19-697884.html.

Notteboom, T., Haralambides, H. & Cullinane, K. (2024). "The Red Sea Crisis: ramifications for vessel operations, shipping networks, and maritime supply chains", *Maritime Economics & Logistics*, Available at: https://doi.org/10.1057/s41278-024-00287-z.

Obe, M.B.E. & Xhaferraj, L. (2024). "Red Sea Route Disruption and Supply Chain". *ResearchGate,* Available at: https://www.researchgate.net/publication/377656680_Red_Sea_Route_Disruption_and_Supply_ Chain. Ouedraogo, C., Rosemont, C., Namakiaraghi, S., Montarnal, A., Gourc, D., Cheik, A., Cedric, O., Sina, R., Aurelie, N. & Didier, M. (2020). "Maritime risks taxonomy: A structured literature review of maritime risks classification", Available at: https://hal.science/hal-03048795/document.

Phuong, T. (2019). "United Nations Office for the Coordination of Humanitarian Affairs - occupied Palestinian territory", *Ochaopt.org*, Available at: https://www.ochaopt.org/.

Phuong, T. (2023). "Tàu hàng né Biển Đỏ, nguy cơ giá cả tăng", *TUOI TRE ONLINE*, Available at: https://tuoitre.vn/tau-hang-ne-bien-do-nguy-co-gia-ca-tang-20231228212920004.htm.

Quang, D. (2023). "Gia tăng nguy cơ xung đột tại khu vực Biến Đỏ, PV Trans (PVT) hưởng lợi?", *Tạp chí Công Thương*, Available at: https://tapchicongthuong.vn/bai-viet/gia-tang-nguy-co-xung-dot-tai-khu-vuc-bien-do-pv-trans-pvt-huong-loi-115163.htm.

Quang, V. (2024). "Triển vọng lạc quan về xuất khẩu tôm", *Báo Đại biểu Nhân dân*, Available at: https://daibieunhandan.vn/kinh-te-phat-trien/trien-vong-lac-quan-ve-xuat-khau-tom-i358940/.

Quynh, N. (2024). "Xung đột Biển Đỏ: Doanh nghiệp xuất nhập khẩu tìm phương án thay thế", *Vietnam+ (VietnamPlus)*, Available at: https://www.vietnamplus.vn/xung-dot-bien-do-doanh-nghiep-xuat-nhap-khau-tim-phuong-an-thay-the-post921540.vnp.

Trang, N. (2021). "Tắc nghẽn cảng biển khắp châu Âu và Mỹ, cước vận tải tăng chóng mặt", *Nhịp sống kinh tế Việt Nam & Thế giới*, Available at: https://vneconomy.vn/tac-nghen-cang-bien-khap-chau-au-va-my-cuoc-van-tai-tang-chong-mat-645997.htm.

Trinh, L. (no date). "Các tuyến đường hàng hải quốc tế của Việt Nam", *AccGroup*, Available at: https://accgroup.vn/cac-tuyen-duong-hang-hai-quoc-te-cua-vietnam#:~:text=Tuy%E1%BA%BFn%20%C4%91%C6%B0%E1%BB%9Dng%20bi%E1%BB%8 3n%20t%E1%BB%AB%20Vi%E1%BB%87t.

Trung, C. (2024). "Cước vận chuyển hàng hóa tăng nóng", *TUOI TRE ONLINE*, Available at: https://tuoitre.vn/cuoc-van-chuyen-hang-hoa-tang-nong-20240125082000029.htm.

Tuong, N. & Le, N.K. (2021). "Tắc nghẽn kênh đào Suez: Chuỗi cung ứng toàn cầu bị ảnh hưởng nặng", *tin tức vlr.vn*, Available at: https://vlr.vn/tac-nghen-kenh-dao-suez-chuoi-cung-ung-toan-cau-bi-anh-huong-nang-1185.html.

Uğurlu, Ö., Yıldız, S., Loughney, S., Wang, J., Kuntchulia, S. & Sharabidze, I. (2020). "Analyzing Collision, Grounding, and Sinking Accidents Occurring in the Black Sea Utilizing HFACS and Bayesian Networks", *Risk Analysis*, Vol. 40 No. 12, pp. 2610–2638.

United Nations (2006). "MARITIME SECURITY: ELEMENTS OF AN ANALYTICAL FRAMEWORK FOR COMPLIANCE MEASUREMENT AND RISK ASSESSMENT", Available at: https://unctad.org/system/files/official-document/sdtetlb20054_en.pdf.

Vietnam News Agency (2024). "Khủng hoảng ở Biển Đỏ ảnh hưởng đến báo cáo thu nhập của các công ty", *Báo Thanh Hóa*, Available at: https://baothanhhoa.vn/phan-tich-binh-luan/khung-hoang-o-bien-do-anh-huong-den-bao-cao-thu-nhap-cua-cac-cong-ty/205241.htm.

Vilko, J.P.P. & Hallikas, J.M. (2012). "Risk assessment in multimodal supply chains", *International Journal of Production Economics*, Vol. 140 No. 2, pp. 586–595.

Vu, N. (2024). "Thế giới lo lắng vì cước vận tải hàng hóa qua Biển Đỏ tăng gần 250%", *TUOI TRE ONLINE*, Available at: https://tuoitre.vn/the-gioi-lo-lang-vi-cuoc-van-tai-hang-hoa-qua-bien-do-tang-gan-250-2024011014273028.htm.

Yerushalmy, J. (2023). "Red Sea crisis explained: what is happening and what does it mean for global trade?", *The Guardian*, Available at: https://www.theguardian.com/business/2023/dec/19/red-sea-shipping-crisis-bp-oil-explainedwhat-is-happening-and-what-does-it-mean-for-global-trade.

Yuan, C., Cui, H., Tao, B. & Ma, S. (2018). "Cause factors in emergency process of fire accident for oil & gas storage and transportation based on fault tree analysis and modified Bayesian network model", *Energy & Environment*, Vol. 29 No. 5, pp. 802–821.

Zheng, H., Wang, Z. & Liu, H. (2023). "The Integrated Rescheduling Problem of Berth Allocation and Quay Crane Assignment with Uncertainty", *Processes*, Vol. 11 No. 2, p.522.