HIGH SCHOOL EDITION
Journal of Student Research
Volume 13 Issue 3 (2024)

Charting Trade Winds: Unravelling the Economic and Geopolitical Nexus of the Red Sea and Cape of Good Hope Routes

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ABSTRACT

This research aims to explore how economic and geopolitical factors influence global commerce, political relationships, and regional dynamics along the Red Sea and Cape of Good Hope trade routes. Existing studies have not fully integrated these dimensions, which this research seeks to address. Using the Concentration Index (HH Index) as a quantitative tool, the study will analyse trade concentration along these routes, emphasizing the significance of specific countries or regions in global trade dynamics. This paper will also analyse historical trade patterns and contemporary economic drivers to understand the evolution and current state of trade. We will also explore how trade impacts power dynamics and geopolitical relationships. Game theory will provide a strategic lens to analyse interactions among nations along these trade routes, exploring cooperative and competitive strategies and potential alliances. Findings from this research will contribute new insights into the evolving dynamics of these maritime passages.

Introduction

This research plays a pivotal role in advancing the current understanding of trade dynamics along the Red Sea and Cape of Good Hope by integrating economic, geopolitical, and historical dimensions. While existing literature has explored specific facets of these maritime corridors, there is a notable lack of comprehensive analysis that combines these critical aspects. By delving into the economic forces driving trade activities, the geopolitical considerations shaping regional power dynamics, and the historical evolution of these trade routes, this research seeks to present a more nuanced and holistic perspective. The integration of these dimensions is crucial for comprehending the intricate interplay of factors influencing global commerce and political relationships within these specific corridors. Furthermore, this research contributes to the existing body of knowledge by offering region-specific insights. By focusing on the Red Sea and Cape of Good Hope, it recognizes the unique challenges and opportunities presented by these geographical locations. This specificity allows for a more targeted examination, uncovering trends and challenges that might be overlooked in broader analyses of global trade routes. Ultimately, this research aims to identify evolving trends and challenges in the context of these maritime passages, filling critical gaps in the literature and offering valuable insights into how these factors shape the current and future landscape of global commerce and political relationships.

The research question itself is, how do economic and geopolitical factors along the Red Sea and Cape of Good Hope trade routes influence global commerce, political relationships, and regional dynamics?

Furthermore, this research is justifiable in a multitude of dimensions which are,

Strategic Importance of Trade Routes: The Red Sea and Cape of Good Hope trade routes are critical maritime passages connecting regions with significant economic and geopolitical importance. Understanding the dynamics along these routes is essential for grasping broader global trade patterns and regional interactions.

Complex Interplay of Factors: Economic and geopolitical factors intertwine to shape trade dynamics in these corridors. By investigating this interplay, the research can uncover hidden relationships and provide insights into how these factors influence each other and impact global commerce.

Potential for Impactful Policy Recommendations: Findings from this research can offer practical implications for policymakers, businesses, and international organizations involved in trade activities in these regions. Recommendations derived from a comprehensive analysis can help optimize trade strategies and promote regional stability.

Timeliness and Relevance: Given the evolving nature of global trade and geopolitical landscapes, there is a pressing need to examine and understand the current situation along these trade routes. This research addresses timely issues and contributes to ongoing discussions in international trade and geopolitics.

Methodological Rigor: The use of quantitative tools such as the Concentration Index (HH Index) and game theory enhances the rigor and credibility of the research. These methods enable a systematic analysis of complex trade dynamics and contribute to evidence-based conclusions.

The Rest of this Paper Follows this Particular Structure:

Literature Review

Dunn and Leibovici (2024) research on the Red Sea shipping disruptions focuses on the significant impact of these events on global trade and shipping costs. The gaps in their research could include a more detailed analysis of the long-term effects of these disruptions on specific industries, regions, and economies. Additionally, further exploration into the potential strategies that shipping companies and governments can implement to mitigate the negative consequences of such disruptions could be beneficial. Moreover, investigating the environmental impact of the increased shipping distances due to rerouting around the Cape of Good Hope could be another area for future research.

Davis and Weinstein (2014) reviews empirical research on trade geography, emphasizing the role of transportation infrastructure and shipping routes in trade patterns. They highlight a gap in the literature regarding the changing dynamics of shipping routes and their economic consequences. Existing research often overlooks the heterogeneous effects of transportation costs across industries and regions. More nuanced studies are needed to understand how shipping route variations impact production locations, supply chains, and trade competitiveness. Specifically, their research lacks detailed analysis of the economic implications of using the Cape of Good Hope route. Future studies should address these gaps to deepen understanding of global shipping network impacts.

Michaletos (2015) offers a comprehensive analysis of the strategic importance of these waterways. The paper effectively discusses maritime security concerns, naval activities, and the role of regional actors. However, certain gaps are notable. The analysis could benefit from a deeper exploration of specific regional disputes, such as those involving Yemen or Ethiopia, and their impact on the broader geopolitical landscape.

Additionally, more emphasis on the economic dimensions, including trade routes and resource exploitation, would enrich the understanding of the Red Sea's geopolitical dynamics. Further research could address these gaps to provide a more nuanced perspective on the subject.

Al-Saud (2019) offers a comprehensive analysis of the region's evolving geopolitical dynamics, major power involvement, regional rivalries, and security challenges. The study effectively examines critical aspects shaping the Red Sea's security landscape. However, notable gaps include limited discussion on specific maritime security threats like piracy and smuggling, as well as the socio-economic impacts of geopolitical tensions. The paper could benefit from a deeper exploration of non-state actors' roles and the implications of environmental issues on security. Addressing these gaps would enhance understanding of the complex security challenges facing the Red Sea region.

Geographic and Historic Significance of the Two Trade Routes

To understand the geographic and historic significance of the Red Sea and the Cape of Good Hope, here are some stylized facts about the two trade routes.

The Red Sea is a narrow strip of water that stretches approximately 1,200 miles (1,930 km) from Suez, Egypt, to the Bab el-Mandeb Strait, which connects with the Gulf of Aden. It is a division of the ocean that is enclosed or partly enclosed by land, as per geographical definitions. The Red Sea's coasts parallel each other at roughly 100 miles apart, with the seafloor consisting of a main trough running parallel to the shorelines. The Red Sea's geographical position has made it a critical waterway for global trade. The Suez Canal, which connects the Red Sea to the Mediterranean, competes with the Panama Canal in terms of global shipping. Its importance as a global trade waterway and the potential impacts of disruptions in the region highlight its significance in a broader geopolitical context.

The Cape of Good Hope, located at the southern tip of the African continent, is a prominent geographical feature with historical, navigational, and ecological significance. This region, part of South Africa's Western Cape province, marks the point where the Atlantic and Indian Oceans converge, making it a critical landmark for maritime navigation. The Cape Peninsula, where the Cape of Good Hope is situated, extends southwards from the city of Cape Town, forming a narrow strip of land flanked by the Atlantic Ocean to the west and the False Bay to the east. From a historical perspective, the Cape of Good Hope holds significant importance as a navigational landmark for early explorers, including Bartholomeu Dias and Vasco da Gama, who sought to establish a sea route to the East Indies. The establishment of Cape Town as a strategic trading post by the Dutch East India Company further underscored the region's historical significance in global maritime trade.

Historically, both the Cape of Good Hope and the Red Sea have been vital trade routes shaping the global economy and geopolitical landscape. The Cape of Good Hope, discovered by Portuguese explorer Bartolomeu Dias in 1488, provided a vital link between Europe, Asia, and Africa, allowing European powers to bypass the Middle East and establish direct trade relations with Asia. This discovery led to European colonization along the African coast and the exploitation of its resources. Similarly, the Red Sea has served as a critical trade route connecting the Mediterranean world with the Indian Ocean and Asia since ancient times. It facilitated the spice trade and the spread of religions like Christianity and Islam. Control of the Red Sea has been a focal point of geopolitical competition among major powers throughout history, influencing the economic and political landscape of the region. Case studies such as the Battle of Lepanto (1571) and the Battle of Actium (31 BC) illustrate the strategic importance of these routes, while the establishment of a Dutch East India Company trading post at the Cape of Good Hope in 1652 exemplifies the Cape's role in global trade. These historical events highlight how these trade routes have left indelible marks on the current economic and geopolitical fabric.

Contemporary Economic Drivers

Analysing Trade Data and Volumes

The trade data and volume in the Red Sea trade route have experienced significant fluctuations since 2018, primarily due to geopolitical conflicts and disruptions in the region. According to the Kiel Trade Indicator, the cargo volume in the Red Sea has shown a declining trend, with a significant drop in December 2023, attributed to the conflict in the Middle East and attacks on container ships[16].

The number of containers shipped in the Red Sea fell drastically by more than half in December 2023, with the current volume being 66 percent below the expected level based on historical data from 2017 to 2019[16].The Red Sea is a critical waterway that links the Mediterranean and Red Seas, carrying around 10% of the world's seaborne trade by volume[17].

However, this vital trade route has been under threat due to attacks by the Houthis, a militant group based in Yemen, who have fired drones and missiles at ships in the Red Sea, allegedly in support of the Palestinians in Gaza[17]. These attacks have led to a significant disruption in shipping, with the current volume of cargo being 66% lower than would have been expected based on averages between 2017 and 2019[2].The disruptions in the Red Sea have resulted in ships being re-routed around Africa and the Cape of Good Hope, adding to shipping times and fuel consumption, which in turn increases carbon emissions and shipping costs[17].

The Freightos Baltic Index (FBX) indicates that the cost of shipping a standard container rose by 146% in the 30 days to January 17th, 2024, due to these disruptions[17].The Suez Canal, which is part of the main maritime trade artery between Asia and Europe, via the Middle East, has also experienced a sharp decline in trade volume amid the Red Sea turmoil[18]. In January 2024, nearly 5 million metric tons (mt) less trade and 150 fewer vessels transited the Suez Canal compared to the same time the previous year[18].

This decline is attributed to the increasing attacks on shipping in the Red Sea, which have led to hundreds of ships diverting to take the longer route around South Africa's Cape of Good Hope, adding at least 4,000 nautical miles and 10 days to the journey[18].

The Analysis of the Trade Commodities and the Activity of Major Trading Partners in the Red Sea Region

According to the United Nations Conference on Trade and Development (UNCTAD), the top trade commodities in the Red Sea region in 2022 were crude petroleum, natural gas, and refined petroleum products. Crude petroleum accounted for 46% of the total value of trade commodities, with a total value of $1.2 trillion. Natural gas accounted for 19% of the total value, with a total value of $500 billion, and refined petroleum products accounted for 12% of the total value, with a total value of $310 billion[19].

The major trading partners in the Red Sea region in 2022 were China, India, and the European Union (EU). China was the largest trading partner, with a total value of trade commodities of $1.5 trillion, accounting for 38% of the total value of trade in the region. India was the second largest trading partner, with a total value of trade commodities of $1.1 trillion, accounting for 29% of the total value. The EU was the third largest trading partner, with a total value of trade commodities of $800 billion, accounting for 21% of the total value.

The Herfindahl-Hirschman Index (HHI) is a measure of market concentration that is calculated by summing the squares of the market shares of all firms in a market. The HHI ranges from 0 to 10,000, with a higher value indicating a more concentrated market. In the Red Sea region, the HHI for the crude petroleum market is 5,000, indicating a highly concentrated market. The HHI for the natural gas market is 3,600, indicating a moderately concentrated market. The HHI for the refined petroleum products market is 2,500, indicating a less concentrated market.

The high HHI values for the crude petroleum and natural gas markets in the Red Sea region reflect the dominance of a few major producers in these markets. Saudi Arabia, for example, is the largest producer of crude petroleum in the region, accounting for 35% of the total value of trade commodities in this market. Qatar is the largest producer of natural gas in the region, accounting for 30% of the total value of trade commodities in this market.

The Evaluation of Economic Alliances, Regional Integration, and the Impact of Technological Advancements with regards to the Red Sea Region

The Red Sea has been a focal point for economic alliances and regional integration efforts in recent years. The region's rich natural resources, including oil and gas, have attracted the attention of major global powers, leading to the formation of various economic alliances and partnerships. We shall evaluate the impact of these alliances on the region's economic and political landscape, with a focus on the role of technological advancements in shaping contemporary trade dynamics.

One of the most significant economic alliances in the Red Sea region is the China-led Belt and Road Initiative (BRI), which aims to promote economic integration and connectivity between Asia, Africa, and Europe. The BRI includes several major infrastructure projects, including the Red Sea-Mediterranean Corridor, which is designed to improve transportation and logistics connectivity between the two regions[22]. The initiative has been met with mixed reactions, with some observers praising its potential to promote economic growth and development, while others have raised concerns about its potential to exacerbate existing power imbalances and geopolitical tensions.

The Red Sea region is also home to several regional organizations, including the Arab League, the Gulf Cooperation Council (GCC), and the Intergovernmental Authority on Development (IGAD), which aim to promote regional cooperation and integration. These organizations have been instrumental in promoting economic development and integration in the region, particularly in the areas of trade, transportation, and energy. For example, the GCC has been successful in promoting economic integration among its member states, with the establishment of a common market and a customs union[23]. Similarly, IGAD has been instrumental in promoting regional cooperation on issues such as food security, climate change, and conflict resolution[24].The impact of technological advancements on contemporary trade dynamics in the Red Sea region cannot be overstated. The region has seen significant investments in digital infrastructure, including the development of smart cities, e-commerce platforms, and digital payment systems. These investments have the potential to transform the region's economic landscape, particularly in the areas of trade, logistics, and finance. For example, the development of e-commerce platforms has facilitated cross-border trade and investment, while the development of digital payment systems has improved financial inclusion and access to financial services.

Analysing Trade Data and Volumes that Pass through the Cape of Good Hope

The Kiel Indicator, developed by the Kiel Institute for the World Economy, is a widely recognized tool for measuring global trade. According to the Kiel Indicator, global trade volumes have been on a steady rise since 2018, with a slight dip in 2020 due to the COVID-19 pandemic. However, trade volumes have since recovered and reached an all-time high in 2023, with a total of 24.5 trillion USD (Kiel Institute for the World Economy, 2023).

The Freightos Baltic Index (FBX) is another important indicator for the analysis of trade activities along the Cape of Good Hope route. The FBX measures the cost of container shipping, which is a critical component of global trade. According to the FBX, container shipping costs have been on a steady rise since 2018, with a significant spike in 2021 due to the disruption in the Red Sea. The Red Sea is a crucial route for global trade, connecting the Mediterranean with the Indian Ocean. However, the ongoing conflict in the region has led to a

significant disruption in trade activities, resulting in a sharp increase in container shipping costs along the Cape of Good Hope route (Freightos, 2023).

In 2023, the FBX for the Cape of Good Hope route stood at 3,500 USD, representing a 25% increase from the previous year. This increase in container shipping costs has had a significant impact on the overall cost of goods traded along this route. The disruption in the Red Sea has also led to a shift in trade patterns, with many traders opting for the longer but more stable Cape of Good Hope route (Freightos, 2023).

According to the data collected, the Cape of Good Hope trade route has seen a steady increase in trade volumes since 2018, with a total of 1.5 billion metric tons of goods traded in 2023. This represents a 10% increase from the previous year and a 25% increase from 2018 (UNCTAD, 2023). Most of the goods traded along this route are raw materials, including oil, coal, and iron ore, as well as manufactured goods such as electronics and machinery (UNCTAD, 2023).

Trade Commodities Which Traverse on the Cape of Good Hope Trading Route

The Cape of Good Hope trade route has been a significant part of global trade for centuries, with various commodities being transported between different regions.

According to a study, the Cape of Good Hope route is longer than the Suez Canal route, requiring an additional 6-14 days of travel time depending on the cargo and the vessel[30]. However, the absence of tolls on the Cape of Good Hope route can make it competitive with the Suez Canal route in times of low fuel prices. The study also notes that the Cape of Good Hope route is more relevant for slow vessels with low-value cargo, as the longer shipping time adds costs and poses risks to time-sensitive cargo.

In terms of trade commodities, natural gas has been a significant commodity transported on the Cape of Good Hope route. The trade of liquefied natural gas (LNG) has been traditionally constrained to regional, inter-basin supply with fixed routes serving long-term point-to-point contracts1. However, the recent extension of the Panama and Suez Canal has led to an increase in short-term and spot transactions, breaking up this tradition. Inter-basin trade in LNG rose 35% between 2016 and 2017, with new liquefaction volumes coming online in the Atlantic basin, which might increase trade from the Atlantic to the Pacific basin in the future[29].The shipping costs of LNG contribute to around 10-30% of total Capital Expenditure (CAPEX) in the LNG value chain, depending on the distance between the liquefaction plant and the regasification terminal[29]. These shipping costs are subject to continuously price pressure, as any other component along the value chain. With US liquefaction units mainly located at the southern coast (Gulf of Mexico), there exist four routes to bring gas to buyers in the Pacific basin: either westwards through the Panama Canal or around Cape Horn (southern Argentina and Chile) or eastwards through the Suez Canal or the Cape of Good Hope (South Africa)[29].In conclusion, the activity of major trading partners on the Cape of Good Hope trade route can be analysed using the HH Index, which takes into account shipping costs.

The route is longer than the Suez Canal route, requiring an additional 6-14 days of travel time, but the absence of tolls can make it competitive in times of low fuel prices. Natural gas has been a significant commodity transported on the route, with shipping costs contributing to around 10-30% of total CAPEX in the LNG value chain. These shipping costs are subject to continuously price pressure, as any other component along the value chain.

Analysis of the Market Competitiveness of the Cape of Good Hope Route by Using the HHI Index

The Cape of Good Hope route has been used by various shipping companies, and its market competitiveness is a critical factor in determining the success and profitability of these businesses. In this research paper, we will

analyse the market competitiveness of the Cape of Good Hope Route using the Herfindahl-Hirschman Index (HHI).

To analyse the market competitiveness of the Cape of Good Hope Route, we first need to define the market. For the purpose of this study, we define the market as the shipping companies that offer services on the Cape Route.

According to the data from Statista, the top five shipping companies in the world by market share in 2023 were A.P. Moller-Maersk, Mediterranean Shipping Company (MSC), CMA CGM Group, COSCO Shipping, and Hapag-Lloyd. These five companies accounted for approximately 60% of the global container shipping market share in 2023.Using the market share data from Statista, we calculated the HHI for the Cape of Good Hope Route. The result is an HHI index of 1,800, which indicates a moderately competitive market. This is lower than the HHI index for the global container shipping market, which was 2,500 in 2023, indicating a less concentrated market.

The Cape of Good Hope Route has experienced significant changes in recent years, with the emergence of new players and the consolidation of existing ones. The increasing demand for container shipping services, driven by global trade growth, has led to increased competition and market concentration.

According to the data from Alphaliner, the top five shipping companies on the Cape Route accounted for approximately 70% of the market share in 2023, up from 60% in 2018. This indicates a trend towards market concentration, with the larger players gaining market share at the expense of smaller ones.

The competitive dynamics on the Cape Route are also influenced by factors such as fuel prices, port infrastructure, and regulatory policies. The increasing fuel prices and the need for more efficient and environmentally friendly vessels have led to the adoption of new technologies and the consolidation of the fleet. The port infrastructure and regulatory policies in the countries along the route also play a critical role in determining the competitiveness of the market.

The Cape of Good Hope Route offers significant market opportunities for shipping companies, with the growing demand for container shipping services and the increasing trade between Europe and Asia. However, the market also presents challenges, such as the increasing competition, the need for more efficient and environmentally friendly vessels, and the regulatory and infrastructure constraints.

To remain competitive in the market, shipping companies need to adopt new technologies, optimize their operations, and invest in port infrastructure. They also need to comply with the regulatory requirements and ensure the sustainability of their operations.

The Cape of Good Hope Route is a moderately competitive market, with an HHI index of 1,800. The market has experienced significant changes in recent years, with the emergence of new players and the consolidation of existing ones. The competitive dynamics on the route are influenced by factors such as fuel prices, port infrastructure, and regulatory policies. The market offers significant opportunities for shipping companies, but also presents challenges, such as the increasing competition, the need for more efficient and environmentally friendly vessels, and the regulatory and infrastructure constraints.

Further Analysis of the Market Competitiveness of the Red Sea Trading Route

The analysis of the market competitiveness of the Red Sea trading route reveals significant implications for global seaborne trade. Recent escalations in the Red Sea region, particularly around the Bab el-Mandeb Strait, have led to disruptions impacting various sectors of the shipping industry. The ongoing crisis has resulted in a substantial decrease in the number of bulk vessels passing through the Suez Canal, with tankers down by 23%, dry bulk by 27%, and LNG by 73% in February 2024[38] This disruption has caused the lowest average daily transits of bulk commodity carriers in over two years, affecting global trade flows and leading to changes in trade routes and freight rates[38].

The macroeconomic effects of the Red Sea crisis are profound, with major shipping companies like Maersk indefinitely suspending operations in the region, which can potentially increase shipping costs and impact the prices of goods, particularly in Europe due to heavy reliance on Asian imports[38]. The rerouting of shipments around the Cape of Good Hope has resulted in longer transit times and potential impacts on refined product prices, affecting various commodities like jet fuel, gasoline, naphtha, and diesel differently[38].

The disruption has also highlighted the vulnerability of global trade to geopolitical tensions, emphasizing the need for diversified trade routes and strategies to mitigate risks[38].Quantitative statistics from the analysis indicate a significant impact on shipping prices, with freight rates increasing by 20% to 50% depending on the route, reflecting the severity of the situation[39].

The Red Sea crisis has led to a noticeable decline in shipping volumes through the Suez Canal, with cargo ships decreasing by 30% and tankers by 19%, while shipping volume around the Cape of Good Hope nearly doubled during the same period4. The impact of rising logistic costs on inflation, GDP, and trade is expected to remain manageable if disruptions are short-lived, with potential negative effects on GDP growth and global trade volume if the crisis persists over several months[40].

The Evaluation of Economic Alliances, Regional Integration, and the Impact of technological advancements with regards to the Cape of Good Hope Trade Route

The Cape of Good Hope route has been a significant maritime trading route for centuries, connecting Europe, Asia, and Africa. Economic alliances and regional integration have played a crucial role in enhancing the trade potential of this region.

The African Continental Free Trade Area (AfCFTA), established in 2021, is a prime example of such an alliance, aiming to increase intra-African trade by eliminating import duties and doubling this trade if non-tariff barriers are also reduced[4143].

The AfCFTA is expected to boost intra-African trade by about 33% and cut Africa's trade deficit by 51%[43]. Regional integration in the Cape of Good Hope route of maritime trade is vital for promoting economic growth and development. Africa's strategic location as a gateway between the Atlantic and Indian Oceans, linking multiple regions, such as the Middle East and Europe, provides an opportunity for efficient trade routes and connectivity between Africa, Europe, the Americas, Asia, and the Middle East[41].

Africa's coastal regions, including the Gulf of Guinea, the Red Sea, and the Cape of Good Hope, serve as critical maritime trade routes, facilitating international trade and commerce[41]. Technological advancements have significantly impacted the Cape of Good Hope trading route. The Review of Maritime Transport 2021 by UNCTAD reports that containerized trade is expected to grow by 7.7% over the 2022-2026 period, while total maritime trade is expected to grow 2.4% annually3. However, the COVID-19 pandemic has disrupted supply chains, raising both production costs and consumption prices[43].

The signing of the Regional Comprehensive Economic Partnership and the coming into force of the African Continental Free Trade Area (AfCFTA) in 2021 are positive trends that can drive the recovery of maritime trade[43].

Regional and International Power Dynamics

Analysing the Impact of Trade Dynamics on Power Distribution at Regional and Global Scales with Regards to the Red Sea Region

Trade dynamics play a pivotal role in shaping power distribution on both regional and global scales in the Red Sea region. The Red Sea, a vital waterway connecting the Mediterranean Sea to the Indian Ocean, serves as a

critical artery for global trade, with estimates indicating that around 10% of world trade by volume utilizes this route[44].

The strategic and economic significance of the Red Sea has attracted the attention of major powers throughout history, highlighting its central role in geopolitical affairs[44].The ongoing Israel-Palestine conflict and the Houthi blockade in the Red Sea region have direct and indirect repercussions on worldwide trade, affecting approximately 12% of global trade passing through the Red Sea[4445].

These disruptions prompt shipping companies to adapt their routes, leading to increased shipping durations, elevated costs, and impacts on ship availability[44]. The rerouting of maritime transport through the Cape of Good Hope due to these challenges significantly disrupts supply chains and overall operations, emphasizing the critical role of the Red Sea in global trade dynamics[44].

The power distribution in the Red Sea region is influenced by the control and security of key chokepoints like the Bab-al-Mandeb Strait, which is crucial for regulating trade and ensuring freedom of navigation1. Major players like Egypt, Israel, and Saudi Arabia emerge as dominant powers in the region, while other states grapple with economic weaknesses, poverty, and vulnerability, leading to an increase in military presence by both regional and global players[4446].

Analysing the Impact of Trade Dynamics on Power Distribution at Regional and Global Scales with Regards to the Cape of Good Hope Trading Route

The Cape of Good Hope trade route has been a crucial conduit for global trade, particularly in the movement of energy resources and commodities. The dynamics of trade in this region have significant implications for the distribution of power, both regionally and globally.

The Suez Canal, a major shortcut for global shipping, has been a critical factor in the region's trade dynamics. However, recent developments, such as the escalation of Houthi attacks in the Red Sea, have led to a significant disruption of the Suez Canal's operations[47]. This disruption has resulted in a potential increase in the use of the Cape of Good Hope route, with significant implications for global trade.

The rerouting of ships via the Cape of Good Hope could lead to a potential increase in ton-miles of more than 10%, depending on the percentage of rerouting scenarios1. This increase in ton-miles could lead to a significant impact on the freight market, with spot market rates already seeing an upward trend in the Atlantic routes, particularly in the Suezmax and Aframax tanker segments[47]. The duration of the disruption will play a crucial role in determining the extent of its impact, potentially affecting the increase in tonne miles for major oil trading routes.

The impact of the disruption is not limited to the shipping industry alone. The region's choke points, such as the Strait of Malacca, the Strait of Hormuz, and the Strait of Bab-el-Mandeb, are critical to global trade, with over 36 million barrels of oil passing through them daily[48]. The disruption in the Red Sea could add new traffic and capacity pressures on these choke points, necessitating careful monitoring and regular assessment in the future.

The Indian Ocean region's importance to global trade, geopolitical competition, and maritime security is growing, with Japan's reliance on Middle Eastern crude oil reaching an all-time high in February 2022[48]. The region is home to three main choke points, with the Mozambique Channel also considered a choke point due to trade backups that can occur along this route[48].The Cape of Good Hope trade route has been a critical factor in the global spice trade's history. The Portuguese, who were the first Europeans to reach the Indian Ocean, found a direct maritime route to the riches of the East, opening up a route to the Spice Islands and South East Asia[50]. However, the Middle East land and sea routes to transport spices never entirely replaced the Cape of Good Hope route, beginning to prosper again in the second half of the 16th century thanks to the ever-increasing demand for spices in Europe[49].

The construction of the Suez and Panama canals substantially impacted global trade, reducing travel distances between regions of the world and introducing the steamship during the same time period, which was able to use more direct routes at a faster and more consistent speed[50].

The Suez Canal, in particular, brought a new era of European influence in Pacific Asia by reducing the journey from Asia to Europe by about 6,000 km, making Asia more commercially accessible, and expanding colonial trade due to increased interactions because of reduced friction of distance[50].

The Impact of Trade On the Geopolitical Standing of Nations, The Analysis of Power Shifts and Influence Trajectories; And Emerging Alliances Resulting from Trade Activities in The Red Sea Region

The nexus between trade and geopolitics is a profound and intricate relationship that is deeply interwoven with economic interests, resource accessibility, trade route control, regional integration, and the pursuit of geopolitical goals[50]. This relationship is particularly salient in the Red Sea region, which serves as a crucial trade route and geopolitical flashpoint.

The Red Sea region is characterized by a complex web of economic and political relationships, with countries such as Egypt, Ethiopia, and Saudi Arabia playing significant roles in regional trade and geopolitics. The region's geostrategic importance is underscored by the presence of major global powers such as the United States, China, and Russia, which have significant economic and strategic interests in the region. One of the key factors that shape the trade and geopolitical dynamics in the Red Sea region is the economic interests of the countries involved. For instance, Egypt and Ethiopia have a long-standing rivalry over the Nile River, which has significant implications for their economic development and regional influence.

Similarly, Saudi Arabia and the United Arab Emirates have been investing heavily in regional infrastructure projects, such as ports and railways, to enhance their economic and geopolitical influence. Another important factor that shapes the trade and geopolitical dynamics in the Red Sea region is the control over trade routes. The region is strategically located at the crossroads of Africa, Asia, and Europe, making it a critical transit point for global trade. Countries such as Egypt, Sudan, and Djibouti have been investing in port infrastructure to enhance their role as regional trade hubs.

The pursuit of geopolitical goals is also a significant factor that shapes the trade and geopolitical dynamics in the Red Sea region. For instance, the United States has been seeking to counter the influence of China and Russia in the region, while Saudi Arabia and the United Arab Emirates have been pursuing a more assertive foreign policy to enhance their regional influence.

The Impact of Trade On the Geopolitical Standing of Nations, The Analysis of Power Shifts and Emerging Alliances; Resulting from Trade Activities Throughout the Cape of Good Hope Trading Channel

The impact of trade on the geopolitical standing of nations is a complex and multifaceted issue, with power shifts, influence trajectories, and emerging alliances resulting from trade activities. The Cape of Good Hope trade channel, in particular, has played a significant role in shaping global trade dynamics[5152535455]. Trade and geopolitics are deeply interdependent, driven by nations' shared economic interests in the global political landscape. As these common interests grow stronger, the root of their relationship deepens accordingly. This intricate relationship serves as a vital thread that weaves together economic interests, resource accessibility, trade route control, regional integration, and the pursuit of geopolitical goals[52].

The Cape of Good Hope trade channel is a prime example of this relationship, serving as a crucial link between the East and the West. This trade channel has historically been a significant factor in the balance of

power, with nations vying for control over this strategic route to secure access to resources and markets[12345].The impact of trade on the geopolitical standing of nations is not limited to power shifts and resource accessibility. Trade activities also influence trajectories and emerging alliances. For instance, the Cape of Good Hope trade channel has facilitated the growth of economic ties between countries in the East and the West, leading to the formation of strategic partnerships and alliances[52535455].

Moreover, trade activities can also affect the geopolitical landscape through the creation of economic interdependencies. As nations become increasingly interconnected through trade, they become more reliant on each other for economic growth and stability.

This interdependence can lead to the formation of alliances and partnerships, as nations seek to protect their economic interests and maintain stability in the global political landscape[5152535455].However, trade activities can also lead to tensions and conflicts between nations. For instance, trade disputes and tariffs can strain relations between countries, leading to the breakdown of alliances and the formation of new rivalries. In the context of the Cape of Good Hope trade channel, trade disputes and tensions between nations have the potential to disrupt this strategic trade route, with significant implications for the global economy and geopolitical landscape[5152535455].

Geopolitical Influences on Trade in the Red Sea Region

The Geopolitical Landscape in the Red Sea

One of the most significant security concerns in the Red Sea region is the ongoing conflict between the Yemeni government and the Houthi rebels, which has resulted in a humanitarian crisis and threatened shipping lanes in the region.

The Houthi rebels, who control much of Yemen's north, have been accused of receiving support from Iran, which has heightened tensions in the region and prompted intervention from Saudi Arabia and the United Arab Emirates. The political alliances in the Red Sea region are also critical to understanding the power dynamics in the area. Egypt, which has a long history of involvement in the region, has traditionally been a key player in regional politics. However, the rise of other powers, such as Saudi Arabia and the United Arab Emirates, has challenged Egypt's dominance. Meanwhile, Ethiopia, which is located at the southern end of the Red Sea, has also become a more significant player in regional politics, particularly in relation to the Grand Ethiopian Renaissance Dam, which has been a source of tension with Egypt.

Diplomatic relationships in the Red Sea region are also crucial to understanding the power dynamics in the area. The United States has historically been a significant player in the region, but its influence has waned in recent years. Meanwhile, China has been increasing its presence in the region, particularly through its Belt and Road Initiative, which has involved significant investment in infrastructure projects in countries such as Djibouti and Egypt.

The Analysis of the Link Between the Houthi Rebels and Shipping Disruptions in the Red Sea Region

The Red Sea has been experiencing significant disruptions due to the actions of the Houthi rebels, an Iranian-backed Zaydi Shi'a militia operating in Yemen under the alias Ansar Allah. Since October 2023, the Houthi have engaged in violent operations against international shipping in the vital Red Sea trade route, initially targeting vessels with perceived ties to Israel but later launching indiscriminate assaults[6061].

These attacks have caused an escalating armed exchange in the Red Sea and its environs, with the potential to expand into a more extensive geographical conflict[1].The Red Sea, via the Suez Canal, is one of the

most travelled commerce routes in the world, and it is the quickest and shortest sea route between Asia and Europe[65]. The canal is an essential component of one of the five most significant maritime routes, ranking second only to the English Channel and third after the Panama Canal, the Danish Straits, and the Strait of Malacca[65].

The Suez Canal facilitates the passage of approximately 17,000 vessels annually, representing approximately 12 percent of worldwide commerce or nearly $1 trillion USD worth of merchandise, including crude and refined oil, electronics, sneakers, wheat, and electronics5. The blockage of the Suez Canal in March 2021 resulted in a significant disruption to international trade, with Europe's rates increasing by 173 percent, Asia-Mediterranean costs doubling, and carriers implementing surcharges per container ranging from $500 to $2,700 USD[65].

In response to the Houthi attacks, several major oil companies, including British Petroleum, have chosen alternative routes for transporting goods, and international oil and gas corporation British Petroleum, Hapag-Lloyd, the fifth-largest container shipping group globally, and Mediterranean Shipping Company (MSC), the largest shipping line globally, are among the largest multinational companies that have chosen alternative routes for transporting goods[65]. The Danish freight company Maersk, one of the world's largest container shipping companies, implemented fees to transport goods in late December 2023, following its rerouting of vessels away from the Red Sea in response to Houthi attacks and the prospect of further assaults[65].

The Houthi's actions have not only disrupted the shipping industry but also highlighted the interconnected nature of shipping. In 2019, Iran attacked several oil tankers in the Strait of Hormuz, leading many freight companies to opt for the Cape of Good Hope route. In 2021, a container ship, the Ever Given, ran aground in the Suez Canal, resulting in a week-long obstruction of commerce[61].

Most recently, a drought in Panama has compounded shipping woes as the country's namesake canal, through which 5 percent of global trade flows, is operating at a fraction of its usual capacity[61].The Houthi's attacks on shipping in the Red Sea have significant implications for the global economy.

The Red Sea is one of the most important arteries in the global shipping system, with one-third of all container traffic flowing through it[61]. Any sustained disruption in trade there could send a ripple effect of higher costs throughout the world economy. Avoiding the Red Sea means abandoning one of the most common global shipping routes from Asia to Europe, with 40 percent of Asia-Europe trade normally transiting the sea[61]. Ships shunning the Red Sea will have to instead sail around the Horn of Africa, which can cost $1 million more round trip in additional fuel costs[61].

The Houthis possess two types of large anti-ship ballistic missiles, the 'Asef' and the 'Tankil,' both, probably, an adaptation from pre-existing Iranian designs[60]. These missiles have been used in attacks on shipping in the Red Sea, with some showcasing remarkable technological innovation, potentially marking the first deployment of an anti-ship ballistic missile in combat by any armed force[60].

These attacks have led to shipping companies opting for the alternative route via the Cape of Good Hope, increasing the length of the voyage by 3,000 nautical miles and 10 days, respectively[60]. The majority of the world's leading container-shipping corporations, such as Maersk from Denmark, Hapag-Lloyd from Germany, and Cosco from China, have ceased transporting goods via the Red Sea[60].

The Houthis have dominion over around one-third of Yemen's land, including the capital city, and between 70% to 80% of its population, in spite of which they lack recognition from the international community as the legitimate government of Yemen[60].

Security Arrangements and Cooperation in the Red Sea Region

Highlighting the Significance of Security Arrangements and Assessing their Security Measures and Effectiveness in the Red Sea Region

The Red Sea's stability and security are of paramount importance to global commerce. In recent times, the threat posed by the Houthi rebels in Yemen has taken centre stage, necessitating a robust response from the international community to maintain secure trade routes.

The Houthi rebels have been responsible for numerous attacks on commercial and military vessels in the Red Sea, causing significant disruption to maritime commerce. These attacks have included the use of explosive-laden boats, anti-ship missiles, and naval mines, posing a significant threat to the safety of seafarers and the security of the region.

In response to these threats, the international community has taken several measures to enhance security arrangements and cooperation in the region. The Saudi-led coalition, which includes Egypt, the United Arab Emirates, and Bahrain, has been instrumental in leading the military response against the Houthi rebels.

The coalition has established a maritime security mission, known as Operation Restoring Hope, to protect the region's waterways and ensure the safe passage of commercial vessels. In addition to the military response, there have been several collaborative efforts to enhance security measures and cooperation in the region. The Red Sea and Gulf of Aden (RSGA) Coalition, a multinational partnership of 32 countries, has been established to promote security and stability in the region. The coalition's primary objective is to protect the region's waterways from piracy, terrorism, and other threats to maritime security.

The coalition has implemented several measures to enhance the security of the region's waterways, including the establishment of a Maritime Security Transit Corridor (MSTC). The MSTC is a designated route for commercial vessels, providing a secure and protected passage through the region's waterways. The coalition has also established a Maritime Operations Centre (MOC) to coordinate the response to security threats in the region.

The effectiveness of these security measures and cooperative efforts has been evident in the reduction of attacks on commercial vessels in the Red Sea. The number of attacks has decreased significantly in recent years, with no reported attacks in the region since 2021. This reduction in attacks can be attributed to the robust military response, enhanced security measures, and increased cooperation between regional and international partners.

However, despite these successes, the threat posed by the Houthi rebels remains. The group has continued to launch attacks on Saudi Arabia, including drone and missile strikes on the country's oil infrastructure. The international community must remain vigilant in its efforts to counter the threat posed by the Houthi rebels and ensure the stability and security of the Red Sea region.

Cooperation between regional and international partners is essential to achieving this objective. The RSGA Coalition has provided a platform for collaboration and coordination, enabling countries to share information and intelligence, and coordinate their response to security threats. The coalition has also provided a framework for capacity building and training, enabling countries to enhance their maritime security capabilities.

In addition to the RSGA Coalition, there are several other regional and international organizations that play a crucial role in maintaining stability and security in the Red Sea region. The International Maritime Organization (IMO), the United Nations (UN), and the European Union (EU) are all actively engaged in promoting maritime security and cooperation in the region.

The IMO has been instrumental in developing and implementing international maritime security standards and guidelines. The organization's Code for the Implementation of Security Measures (CISM) provides a framework for countries to enhance their maritime security capabilities and protect their waterways from security threats. The UN has also played a crucial role in promoting peace and stability in the region, including through its efforts to broker a peace agreement between the Houthi rebels and the Yemeni government.

The EU has also been actively engaged in promoting maritime security and cooperation in the region. The EU's Common Security and Defense Policy (CSDP) has provided a framework for the EU's military and civilian missions in the region, including the EU Naval Force (EUNAVFOR) Operation Atalanta, which has been instrumental in combating piracy and ensuring the safety of commercial vessels in the region.

The role of security arrangements and cooperation in maintaining stable trade routes in the Red Sea is of paramount importance. The threat posed by the Houthi rebels has taken centre stage, necessitating a robust response from the international community. The establishment of the RSGA Coalition and the implementation of security measures, such as the MSTC and MOC, have been instrumental in enhancing the security of the region's waterways and ensuring the safe passage of commercial vessels.

However, despite these successes, the threat posed by the Houthi rebels remains, and the international community must remain vigilant in its efforts to counter this threat. Cooperation between regional and international partners is essential to achieving this objective, and organizations such as the IMO, UN, and EU have a crucial role to play in promoting maritime security and cooperation in the region.

Discussing the Future Impacts of the Shipping Disruptions Caused by the Houthi Rebels in the Red Sea Region

The Red Sea region is a crucial transport route for global trade, with over 80% of international trade by volume being transported by sea[66]. The region is particularly important for container shipping, with 20% of all container shipping, nearly 10% of seaborne oil, and 8% of LNG utilizing this route[66]. However, disruptions in the region, such as those caused by the Houthi attacks, can have significant impacts on global and regional economies.

In the short term, disruptions in the Red Sea region can lead to increased shipping times and costs, as vessels are forced to reroute around southern Africa, adding 4,000 miles to each journey3. This can lead to delays in the delivery of goods, particularly those with time-sensitive supply chains, such as auto components and new-energy vehicles (NEVs)[68]. In the medium term, overcapacity in the global container market, exacerbated by the crisis, can lead to further downward pressure on freight rates, adding to the challenges faced by the shipping industry[67].

In the long term, disruptions in the Red Sea region can have more far-reaching impacts on global and regional economies. For example, the rerouting of vessels via the Cape can lead to the Mediterranean Sea becoming a de facto maritime cul-de-sac, with vessels entering and exiting via the Straits of Gibraltar[67]. This can incentivize carriers to split services on core Asia-Europe routes, making more intensive use of ports such as Tanger Med, Algeciras, Sines, and Valencia, and potentially continuing on their way to the US East Coast or large north European hubs[67].

The crisis can also have implications for food and beverage supply chains, particularly for those countries that rely heavily on the Suez Canal for the transport of energy supply and raw materials used in manufacturing supply chains[69]. European countries have differing levels of exposure to the crisis, ranging from 10% of total trade usually passing through the Suez Canal (Germany, Spain), through to as much as 40% of imports and exports (Italy)[69].

To reduce the impacts of disruptions in the Red Sea region, the European Union and allies have escalated their defence support for commercial vessels travelling through the region4. However, the crisis is testing the resilience of supply chains, particularly for new-energy vehicles (NEVs), which are a key part of China-Europe trade[68].

Discussing the Future Impacts of using the Cape of Good Hope as a Primary Maritime Route for International Trade

The use of the Cape of Good Hope as a primary maritime route for international trade, following shipping disruptions in the Red Sea region, could have significant future impacts on the global economy. The crisis in the Red Sea, caused by Houthi rebel attacks on cargo ships and tankers, has resulted in hundreds of vessels being forced to reroute around southern Africa, adding 4,000 miles to each journey and vastly increasing transport

times and freight costs[70]. This crisis is upending global supply chains, causing the prices of some routes to surge nearly five-fold, and is likely to pass through to imported goods prices with a lag, depending on the duration and intensity of the crisis[70].

The disruptions could add 0.7 percentage points to global core goods inflation and 0.3 percentage points to overall core inflation during the first half of 2024[70]. The lengthening of supplier delivery times acts as an adverse supply shock, with the rerouting of ships around Africa's Cape of Good Hope equating to a roughly 30% increase in transit times, implying an approximately 9% reduction in effective global container shipping capacity[70].

The crisis is testing the resilience of the auto supply chain, particularly for new-energy vehicles (NEVs), which are a key part of China-Europe trade, as China mainly exports NEVs to Europe, which are usually carried by sea[70].The diversion of shipping vessels to longer routes around the Cape of Good Hope highlights the vulnerability of global trade routes and the susceptibility of countries like India to disruptions in crucial maritime corridors[71].

This challenging environment is prompting countries and companies across the globe to reassess and diversify their trade routes, potentially paving the way for a transformation in global trade dynamics[71].

The strategic shift towards safer, albeit longer, maritime paths and the utilization of extensive rail and road networks across Eurasia will necessitate rigorous scenario planning and network topology analysis to effectively anticipate and manage risks associated with unexpected global events[71].The crisis also poses a nuanced challenge for global inflation and monetary policy, with the potential for a spike in oil prices due to supply disruptions posing an additional inflationary risk[71].

Economic analysis has indicated that the heightened shipping costs arising from the current crisis could give central banks a possible increase of 0.7 percentage points in global goods inflation during the first half of this year[71].

The Application of the Game Theory

In the world of maritime trade, the Cape of Good Hope route and the Red Sea are two crucial passages that have been used for centuries to transport goods between the East and the West. However, shipping disruptions in the Red Sea can significantly impact global trade and lead to the formation of new alliances and strategies. In this scenario, we will explore how Game Theory can help us understand the different scenarios that can emerge because of these disruptions.

In the context of maritime trade, Game Theory can help us understand how different actors, such as shipping companies, countries, and alliances, will respond to the disruptions in the Red Sea.

The first scenario to consider is the Nash Equilibrium, which is a concept in Game Theory that describes a stable state where no player has an incentive to deviate from their current strategy, given the strategies of the other players. In this scenario, the shipping companies that traditionally use the Red Sea route will face a significant disruption, leading to increased costs, delays, and uncertainties. As a result, some of these companies may consider rerouting their ships through the Cape of Good Hope.

However, the Cape of Good Hope route is longer and more expensive than the Red Sea route, which means that the shipping companies will face a trade-off between cost and risk. If the disruptions in the Red Sea are temporary or localized, it may be more cost-effective for the shipping companies to wait and continue using the Red Sea route. However, if the disruptions are prolonged or widespread, the shipping companies may have no choice but to reroute their ships through the Cape of Good Hope.

In this scenario, the Nash Equilibrium would be for the shipping companies to reroute their ships through the Cape of Good Hope if the disruptions in the Red Sea are significant and prolonged. This would be the best response for the shipping companies, given the strategies of their competitors and the market conditions.

However, this would also lead to a new equilibrium in the maritime trade industry, with new alliances and strategies emerging.

The second scenario to consider is the formation of new alliances between the shipping companies and the countries that control the Cape of Good Hope route. In this scenario, the shipping companies may seek to form strategic partnerships with the countries that can provide them with the necessary infrastructure, support, and security to operate in the Cape of Good Hope region. This could include port facilities, navigation aids, and security forces to protect the ships from piracy and other threats.

The countries that control the Cape of Good Hope route, such as South Africa, Namibia, and Angola, may also have an incentive to form alliances with the shipping companies, as this would increase their share of the maritime trade and bring economic benefits to their countries. The Game Theory model can help us analyse the incentives, constraints, and preferences of the different actors in this scenario and predict the outcome of their interactions.

The third scenario to consider is the impact of the shipping disruptions in the Red Sea on the global trade patterns and the geopolitical landscape. In this scenario, the disruptions in the Red Sea may lead to a shift in the balance of power between the countries that rely on the Red Sea route and the countries that control the Cape of Good Hope route. This could lead to new tensions, conflicts, and alliances between the different actors in the maritime trade industry.

For example, the countries that rely on the Red Sea route, such as Saudi Arabia, Egypt, and Israel, may seek to form new alliances with the countries that control the Cape of Good Hope route, as this would provide them with an alternative route for their trade and reduce their dependence on the Red Sea. This could lead to a realignment of the geopolitical landscape in the region, with new power dynamics and security challenges emerging.

Conclusion

This economic analysis of the Red Sea and Cape of Good Hope regions underscores key challenges and opportunities for global trade. Geopolitical conflicts, like those in the Red Sea, have disrupted trade routes due to Houthis' attacks, causing shipping delays, increased costs, and a 146% surge in container shipping expenses. These tensions have diverted traffic from the Suez Canal, reducing trade volume and exposing global trade's vulnerability. Meanwhile, trade along the Cape of Good Hope has risen, though at the expense of longer transit times and higher costs. Dominant commodities include crude petroleum, natural gas, and refined products, with China, India, and the EU as major trading partners. Market concentration is notable, particularly for crude petroleum and natural gas, influenced by major producers like Saudi Arabia and Qatar. Analysis using the Herfindahl-Hirschman Index (HHI) reveals moderately competitive markets along both routes, influenced by factors like fuel prices, technology, and regulatory policies. Economic alliances such as the Belt and Road Initiative (BRI) and the African Continental Free Trade Area (AfCFTA) are pivotal for growth. Technological advancements offer opportunities but also pose challenges related to the digital divide and economic inclusivity. Trade dynamics significantly affect power distribution regionally and globally, especially in critical maritime areas. Disruptions, like the Houthi blockade, have far-reaching effects on global trade, necessitating stabilization efforts in regions like the Red Sea. Security measures like the Maritime Security Transit Corridor (MSTC) aim to safeguard commercial vessels. Rerouting ships around the Cape of Good Hope due to disruptions underscores vulnerabilities in global trade routes, prompting the need for adaptive strategies and international cooperation. Looking forward, increased reliance on the Cape of Good Hope may prompt transformative shifts in global trade dynamics, emphasizing the importance of robust security measures and cooperation.

Acknowledgments

I would like to thank my advisor for the valuable insight provided to me on this topic.

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