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The Strategic Implications of Red Sea: Disruptions on Global Supply Chains

Shamshil Arefin[1]

Background and Current Context

Origins and Escalation of the Red Sea Crisis

The Red Sea crisis originated on 19 October 2023, when Yemen's Houthi rebels, an Iran-aligned militant group controlling much of western Yemen, launched missiles and drones at Israel in response to its military operations in Gaza. By November 2023, the Houthis expanded their campaign to target commercial shipping in the Bab el-Mandeb Strait, a critical chokepoint connecting the Red Sea to the Gulf of Aden. The group justified these attacks as retaliation for Israel's blockade of Gaza, declaring they would continue until humanitarian aid was allowed into the Palestinian territory[2]. However, their targeting criteria quickly broadened; by January 2024, over 40 vessels from more than a dozen nations had been attacked, including those with no apparent links to Israel[3].

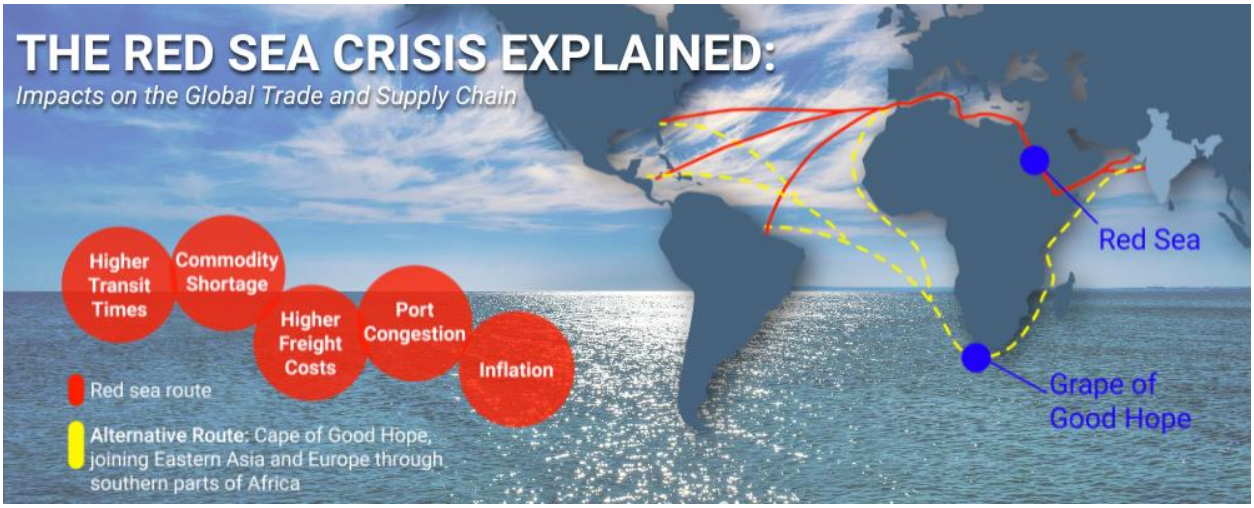
The scale of hostilities escalated rapidly. Between October 2023 and March 2024, Houthi forces executed more than 60 attacks on maritime traffic, employing anti-ship ballistic missiles, drones,

[1] Shamshil Arefin is a Research Assistant at Bangladesh Institute of Peace and Security Studies (BIPSS) He has completed his BSS in International Relations from Bangladesh University of Professionals (BUP).

[2] Al Jazeera, "Yemen's Houthis Warn Israel of Naval Attacks over Gaza Blockade," Al Jazeera, March 8, 2025, https://www.aljazeera.com/news/2025/3/8/yemens-houthis-threaten-israel-over-gaza-aid-blockade.

[3] Joshua Minchin, "A Year of Houthi Terror in Numbers," Lloyd's List, 2024, https://www.lloydslist.com/LL1151497/A-year-of-Houthi-terror-in-numbers.

and unmanned surface vessels[4]. These strikes claimed the lives of at least three sailors aboard the True Confidence in March 2024 and resulted in the seizure of the Galaxy Leader car carrier in November 2023, whose 22 crew members remained captive for over a year. In February and June of 2024, two vessels named the Rubymar and Tutor were sunk by Houthi munitions, marking the first total losses of commercial ships to asymmetric naval warfare in decades[5].



Source: Pangea Network

The international response coalesced around Operation Prosperity Guardian, a U.S.-led naval coalition launched in December 2023 to secure shipping lanes. This effort involved over 20 nations, including the UK, France, and India, deploying warships to escort vessels and intercept Houthi projectiles. Despite these measures, the UN Conference on Trade and Development (UNCTAD) reported a 90% reduction in Red Sea container traffic by February 2024, with 2,000 ships diverting to longer routes around Africa[6].

[4] Jon Gambrell, "Houthi Rebels' Attack Severely Damages a Belize-Flagged Ship in Key Strait Leading to the Red Sea," AP News, February 19, 2024, https://apnews.com/article/yemen-houthi-rebels-attack-israel-hamas-war-gaza-67cf1acc17f4e17d04075a99688e4da8.

[5] ibid

[6] Ibid

Strategic Importance of the Red Sea Maritime Corridor

Before the crisis, the Red Sea-Suez Canal corridor facilitated 12% of global trade volume and 30% of containerized cargo, serving as the primary artery between Asian manufacturing hubs and European consumer markets[7]. The Suez Canal's efficiency savings are staggering: a typical Asia-Europe voyage via the canal spans 6,000 nautical miles, compared to 11,000 nautical miles around Africa's Cape of Good Hope, the journey if taken around the Cape of Good Hope also adds 10 days of transit time and and extra $1 million in fuel costs per vessel[8]. This route's historical significance dates back to 1869, when the canal's opening revolutionized global commerce by eliminating the need to circumnavigate Africa.

Regional economies remain acutely dependent on Red Sea shipping. Egypt derived $9.4 billion in Suez Canal revenue in 2022, representing 2.3% of its GDP. Saudi Arabia's Yanbu and Jeddah ports, which are critical for oil exports and Hajj pilgrimage logistics, processed over 4 million Twenty-Foot Equivalent Units (TEUs) of Containers annually before the crisis[9]. The disruption's cascading effects became evident by March 2024, when Suez Canal transits plummeted from 2,068 monthly vessels to 877, resulting in an estimated $700 million in lost revenue for Egypt[10]. Globally, the Russell Group calculated $1 trillion in trade value disruption from October 2023 to May 2024, with spot freight rates from Shanghai to Europe surging 256% year-over-year[11].

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[7] UNCTAD, "Navigating Troubled Waters: Impact to Global Trade of Disruption of Shipping Routes in the Red Sea, Black Sea and Panama Canal," Unctad, February 22, 2024, https://unctad.org/publication/navigating-troubled-waters-impact-global-trade-disruption-shipping-routes-red-sea-black.

[8] Jeff Seldin, "Houthi Attacks Take Steady Toll on International Shipping," Voice of America (Voice of America (VOA News), June 13, 2024), https://www.voanews.com/a/houthi-attacks-take-steady-toll-on-international-shipping/7654756.html.

[9] ibid
[10] ibid
[11] ibid

Source: Intueri Consulting

The crisis has exposed vulnerabilities in just-in-time supply chains, particularly for industries reliant on Red Sea transit. European automakers faced parts shortages due to delayed component shipments, while QatarEnergy paused liquefied natural gas exports through the strait in January 2024, citing security concerns. These disruptions underscore the corridor's role as a linchpin of globalization, one whose instability now compels systemic reevaluation of maritime trade networks.

Economic Implications

Cost Structure Shifts

The Red Sea crisis has triggered unprecedented increases in global shipping costs, fundamentally altering the cost structure of international trade. Container rates from China to Europe surged to approximately $4,000 per forty-foot equivalent unit (FEU) by January 2024, representing a 248% increase from the $1,148 baseline recorded on November 21, 2023, when attacks began[12]. The

[12] Fareed Rahman and Alvin R. Cabral, "Shipping Costs Rise by up to 250% due to Red Sea Attacks," The National, January 9, 2024, https://www.thenationalnews.com/business/2024/01/09/shipping-costs-have-risen-up-to-250-since-the-red-sea-attacks-began/.

Drewry World Container Index composite experienced a dramatic 61% week-over-week increase in early January 2024, standing 88% higher than the 2019 average[13]. Asia to Mediterranean shipping rates more than doubled, with CMA CGM announcing rates exceeding $6,000 per FEU starting January 15, 2024 [14]. Even routes not directly utilizing the Red Sea experienced significant cost pressures, with Asia-to-U.S. East Coast rates climbing 52% to $3,900 per FEU and West Coast rates increasing 63% to $2,713 per FEU[15].

Operational Cost Increases

The necessity of circumnavigating Africa via the Cape of Good Hope has imposed substantial operational cost burdens on shipping companies. This detour adds approximately 9,000 kilometers to vessel journeys, resulting in 7-20 additional days of transit time, depending on vessel speed[16]. Large container vessels face additional expenses of $30,000-$35,000 per voyage when taking the Cape route[17] . Shipping companies have implemented various surcharges to offset these increased costs. Carriers announced surcharges ranging from $500 to $2,700 per container, and these surcharges reflect not only fuel costs but also extended crew expenses, equipment positioning challenges, and schedule disruptions caused by longer voyage times[18].

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[13] The Maritime Executive, "Repercussions of Red Sea Turmoil Mount as Box Rates Jump 60% in One Week," The Maritime Executive, January 4, 2024, https://maritime-executive.com/article/repercussions-of-red-sea-turmoil-mount-as-box-rates-jump-60-in-one-week.

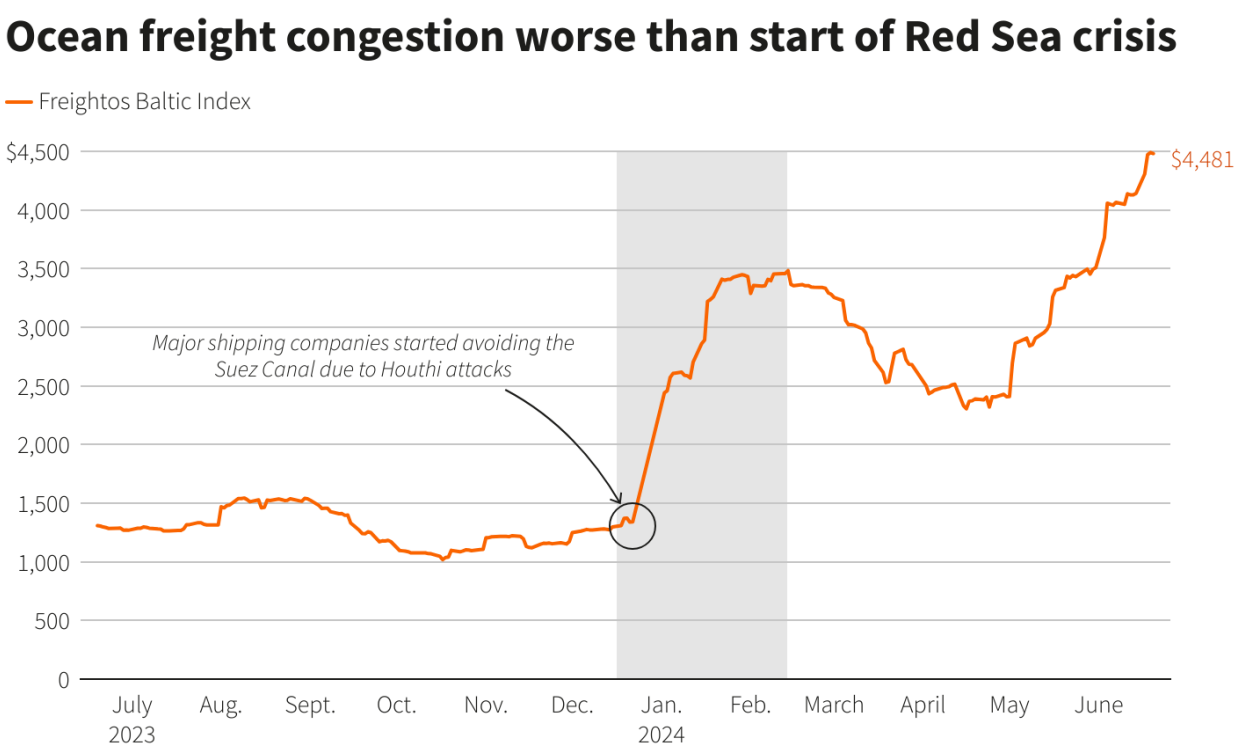
[14] Kelly Stroh, "Red Sea Attacks: Ocean Shipping Rates Jump More than 50% in Key Lanes," Supply Chain Dive, January 5, 2024, https://www.supplychaindive.com/news/red-sea-attacks-spike-ocean-shipping-rates/703680/.

[15] ibid

[16] Jenna Slagle, "Unraveling the Global Ramifications of the Red Sea Conflicts on Shipping, Costs, and Commerce," project44, March 2024, https://www.project44.com/blog/unraveling-the-global-ramifications-of-the-red-sea-conflicts-on-shipping-costs-and-commerce/.

[17] Gordon Feller, "Red Sea Crisis - the Spotlight Is Now on Alternatives," Tomorrow's Affairs, April 30, 2024, https://tomorrowsaffairs.com/red-sea-crisis-the-spotlight-is-now-on-alternatives.

[18] Bertling, "The Red Sea Shipping Crisis: What's Driving the Increase?," Bertling.com, 2024, https://www.bertling.com/news-pool/blog/what-s-driving-the-2024-increase-in-shipping-costs/.



Source: Reuters

Insurance Premium Escalation

War risk insurance premiums have experienced dramatic increases, adding another layer of cost pressure to Red Sea shipping operations. War risk premiums escalated from 0.05% to 0.7% in early December 2023, then surged to 1% of vessel value by late January 2024 [19]. By September 2024, additional war risk premiums reached up to 2% of vessel value for single Red Sea transits, more than doubling from 0.7% at the beginning of September [20]. Commercial vessels require three types of insurance coverage: hull insurance for vessel damage, cargo insurance for load protection,

[19] ibid
[20] Jonathan Saul and Carolyn Cohn, "Red Sea Insurance Costs Skyrocket amid Rising Houthi Shipping Threats," MarineLink, September 19, 2024, https://www.marinelink.com/news/red-sea-insurance-costs-skyrocket-amid-517244.

and protection and indemnity insurance for third-party damage coverage[21]. The unprecedented nature of targeting commercial shipping by non-state actors has forced insurers to reassess risk models, with some smaller insurers refusing to provide Red Sea coverage entirely [22].

Industry-Specific Impacts

Automotive Sector Disruptions

The automotive industry has experienced severe disruptions due to its heavy reliance on Asian component suppliers. Approximately 70% of components in the European automotive industry are transported from Asia via the Red Sea, making this sector particularly vulnerable to shipping delays[23]. Tesla's German Gigafactory suspended most electric vehicle assembly production from January 29 to February 11, 2024, attributing the shutdown to extended transit times causing supply chain disruptions[24].

European manufacturers are now strategically considering inventory buffer increases, supplier diversification to include sources in Mexico and Brazil, and emergency air freight solutions to mitigate ongoing risks. The crisis has highlighted the vulnerability of concentrated supplier networks and the need for more resilient supply chain architectures in the automotive sector.

Fashion and Retail Industry Challenges

The fashion and retail industry faces unique challenges due to its seasonal nature and demand for rapid inventory turnover. The British Chambers of Commerce survey of 1,087 businesses found some firms experiencing 300% increases in container hire prices, with logistical delays adding three to four weeks to delivery times[25]. Major fashion brands have reported supply chain

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[21] Emeline BURCKEL and Marie-Morgane Le Moel, "Shipping Insurance Rates Soar on Red Sea Missile Attacks," Al-Monitor, 2024, https://www.al-monitor.com/originals/2024/02/shipping-insurance-rates-soar-red-sea-missile-attacks.

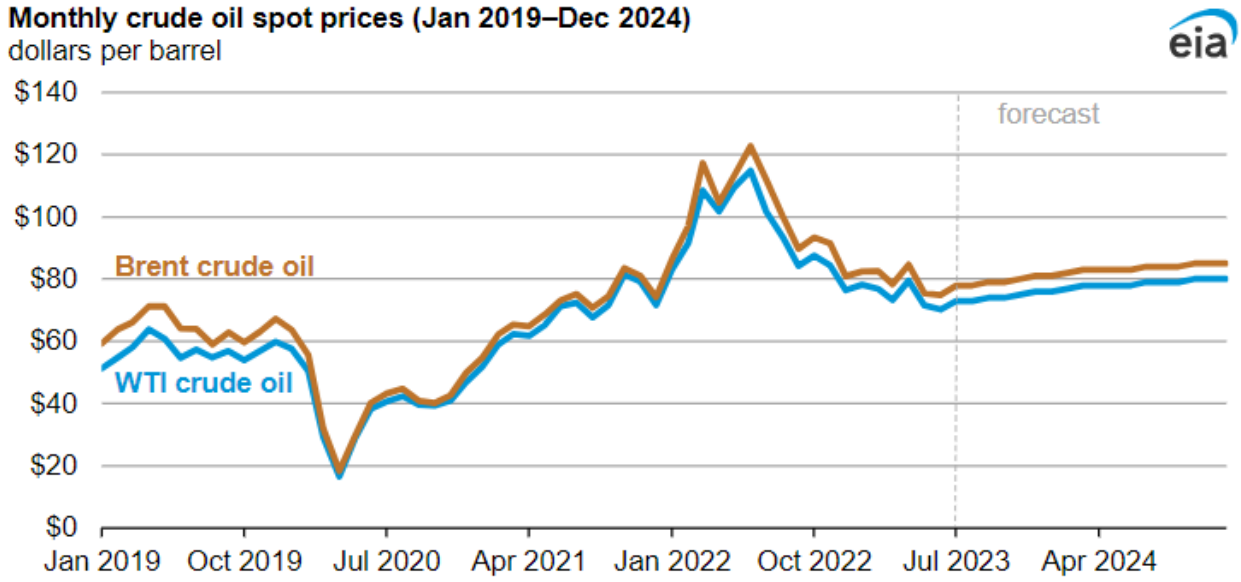
[22] ibid

[23] Eric Huang, "Red Sea Crisis Sends Shockwaves through Global Automotive Industry," Team Global Logistics Co.,Ltd., 2024, https://www.tgl-group.net/en/news-detail790_0.htm.

[24] ibid

[25] Hannah Abdulla, "Explainer: Fashion Firms Face Cost Spike as Red Sea Crisis 'Widens,'" Just Style, May 10, 2024, https://www.just-style.com/features/explainer-fashion-firms-face-cost-spike-as-red-sea-crisis-widens/.

disruptions affecting millions of daily EU apparel imports from Asia, with limited practical alternatives available in the short term [26]. Urban Outfitters reported that 25-30% of their operations were affected by Red Sea routing disruptions[27] . The disruption has the ability to extend beyond finished goods, as raw materials, raw fabrics, textile furnishings, and apparel accessories undergo price fluctuations throughout the supply chain.



Source: EIA

Petroleum Industry Impact

The Red Sea crisis has severely disrupted energy sector shipping, particularly for oil and liquefied natural gas (LNG) exports that typically transit the Suez Canal. Major energy companies like Shell and BP have indefinitely halted Red Sea shipments due to escalating attacks, while QatarEnergy confirmed that Red Sea tensions have forced LNG carriers to reroute around the Cape of Good Hope, adding significant time and cost to deliveries[28]. The oil and gas sector witnessed significant

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[26] Isatou Ndure, "Vigilance, Agility Urged as Fashion Sector Grapples with Red Sea Crisis," Just Style, January 25, 2024, https://www.just-style.com/news/vigilance-agility-urged-as-fashion-sector-grapples-with-red-sea-crisis/.

[27] Abeeha Zaidi, Numair Haq, and Seohee Kim, "Industries Impacted by the Red Sea Crisis," ISCRO, February 29, 2024, https://www.iscromsu.com/post/industries-impacted-by-the-red-sea-crisis.

[28] Bachar Halabi and Samuel Good, "Qatar Confirms Red Sea Tension Disrupting LNG Shipments | Latest Market News," www.argusmedia.com, January 24, 2024, https://www.argusmedia.com/en/news-and-insights/latest-market-news/2530939-qatar-confirms-red-sea-tension-disrupting-lng-shipments.

responses, with BP and Equinor suspending shipments through the Red Sea in December 2023, while QatarEnergy paused liquefied natural gas exports through the strait in January 2024, citing security concerns[29]. These decisions by major energy companies contributed to global oil price volatility and highlighted the strategic importance of the Red Sea corridor for energy security 16. Following the rise in the intensity of Hothi attacks on LNG shipping vessels, global prices of crude oil started to increase, upto $93 per barrel in mid-April of 2025, with an average of $75–$89 per barrel[30].

Strategic Alternatives and Adaptations

Alternative Delivery Routes

Sea Route Considerations

The Cape of Good Hope route around the southern tip of Africa (the primary alternative to Red Sea transit) adds approximately 3,500 nautical miles and 10-12 days of sailing time, costing an additional $30,000-$35,000 per voyage compared to the Suez Canal route [31]. The routing change has contributed to industry-wide capacity losses of 15-20% during the second quarter of 2024 [32].

The Northern Sea Route (NSR) through the Arctic has garnered increased attention as a potential alternative, though significant limitations constrain its viability. Russia has sought to capitalize on Red Sea disruptions to promote the NSR as an alternative to the Suez Canal[33]. In 2021, approximately two million tonnes of cargo passed through the NSR, representing a record level of international transit before Western sanctions halted most international shipping through the route following Russia's invasion of Ukraine.

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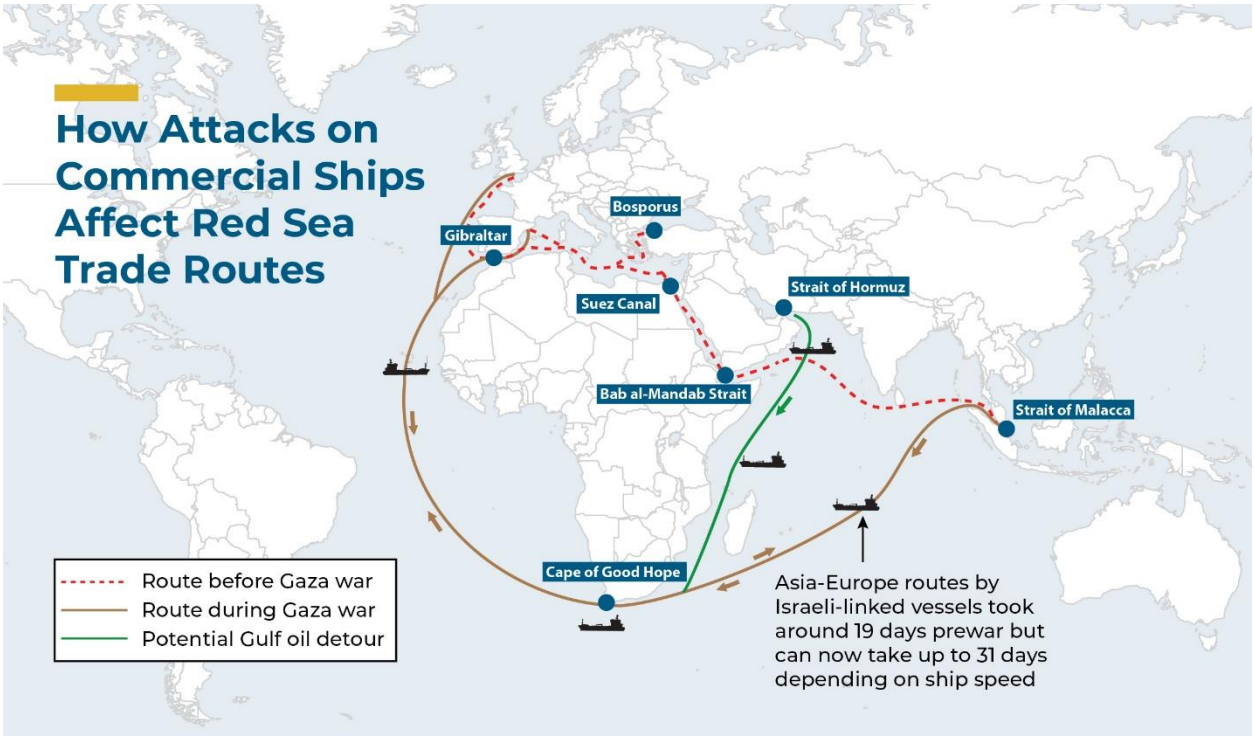
[29] ibid
[30] Cristian Cochintu, "Oil Analysis and Price Prediction Today I Oil Price Prediction 2023, 2025-2030," capex.com, July 18, 2024, https://capex.com/en/overview/oil-price-prediction.

[31] ibid
[32] ibid
[33] Alex Blair, "Will the Northern Sea Route Become Commercially Viable in the near Future? - Ship Technology Global | Issue 91 | September 2024," Nridigital.com, October 30, 2024, https://ship.nridigital.com/ship_sep24/northern_sea_route_become_commercially_viable.



Source: The Washington Institute

The NSR offers potential advantages in terms of distance, with the Shanghai-Petropavlovsk-Murmansk-Rotterdam route spanning 8,079 kilometers compared to 10,521 kilometers via the Suez Canal[34]. However, the route remains constrained by seasonal ice conditions, requiring specialized icebreaker support, and faces geopolitical complications due to ongoing sanctions on Russia.

Modal Shift Strategies

The Red Sea crisis has triggered a significant modal shift toward air freight as companies seek to avoid maritime delays. Air cargo volumes on major apparel routes spiked 62% during mid-January 2024, demonstrating a rapid response to disruptions [35]. Despite the high premiums and cost of air

[34] Vitaly Chernov, "Trans-Siberian Railway to Have an Alternative," Portnews.ru, December 14, 2014, https://portnews.ru/comments/1886/.

[35] Lori Ann LaRocco, "Air Freight Volumes Soar as Red Sea Delays, Risks Make More Big Retailers, Auto Companies Nervous," CNBC, January 19, 2024, https://www.cnbc.com/2024/01/19/air-freight-soars-as-red-sea-vessel-risks-make-more-shippers-nervous.html.

freight, their stable price ranges and lack of cost fluctuations among the transport industry have made many manufacturers switch completely to air freight [36].

Companies are also increasingly adopting multimodal transportation strategies that integrate rail, road, and air transportation to navigate Red Sea disruptions. Globalink Logistics has developed multimodal approaches utilizing the Silk Road, with service stations across Western China, Central Asia, the Caucasus, and extending to the Black and Baltic Seas, cutting costs by up to 50% compared to direct airfreight from China to Europe[37].

Supply Chain Reconfiguration

Reassessment of Just-in-Time Models

Supply chain experts note that the companies focused too much on streamlined supply chain optimisations, and geopolitical disruptions now require them to adjust by putting a greater focus on regional networks[38]. The pandemic, combined with geopolitical events, has made nearshoring supply chain inventories a viable alternative for manufacturers. Companies are increasingly willing to accept higher holding costs and reduced efficiency in exchange for greater supply chain stability. Companies have also started utilising real-time monitoring technology of their multi-tier supply chains as these have demonstrated the ability to respond to and forecast disruptions[39]. This recognition is driving investment in supply chain mapping and monitoring technologies to provide early warning of potential disruptions.

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[36] Asharq Al Awsat, "Air Freight Rates Rise amid Red Sea Crisis," Aawsat.com, 2024, https://english.aawsat.com/business/4824751-air-freight-rates-rise-amid-red-sea-crisis.

[37] Sophie Barnes, "Logisticians Consider Multimodal Response to Red Sea Crisis," Heavy Lift & Project Forwarding International (Heavy Lift & Project Forwarding International, February 9, 2024), https://www.heavyliftpfi.com/business/logisticians-consider-multimodal-response-to-red-sea-crisis/30741.article.

[38] Farida Ali, "Steps to Managing Geopolitical Risk on the Road to Supply Chain Resiliency," Dynamic Technology Solutions, July 5, 2022, https://dynamictech.solutions/steps-to-managing-geopolitical-risk-on-the-road-to-supply-chain-resiliency.

[39] project44, "Securing the Supply Chain: Lessons from a Year of Disruption in the Red Sea," project44, December 16, 2024, https://www.project44.com/blog/securing-the-supply-chain-lessons-from-a-year-of-disruption-in-the-red-sea/.

Nearshoring and Reshoring Acceleration

The Red Sea disruptions have accelerated existing trends toward nearshoring and reshoring as companies seek to reduce dependence on distant suppliers and disruptions that come with long supply chains. Mexico expects nearshoring to contribute significantly to its economic growth as U.S. companies traditionally sourcing from China consider alternatives to enhance supply chain resiliency and reduce transit times[40]. This trend represents a fundamental shift from pure cost optimization strategies to risk-adjusted sourcing strategies, allowing for supply chains that are resilient to geopolitical shocks. While nearshoring may involve higher unit costs compared to distant low-cost suppliers, companies are willing to accept these increased costs in exchange for reduced transportation risks, shorter delivery times, and greater supply chain control [41].

Regional Supply Chain Development

The crisis has prompted companies to develop more regionalized supply chain networks that reduce dependence on single transportation corridors. Strategic agility has become essential for managing geopolitical supply chain risks, requiring companies to monitor major supply routes and assess how existing or emerging conflicts could create vulnerabilities. Companies are establishing multiple sourcing regions to create redundancy in their supply networks. This approach involves developing supplier bases in different geographic regions, enabling companies to shift sourcing volumes based on transportation availability and cost considerations [42]. Companies can invest in warehouse networks positioned to serve regional markets, which can reduce dependence on global distribution centers that may be vulnerable to transportation disruptions .

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[40] RETAIL BOSS, "Red Sea Crisis: Fashion Retailers Turn to Nearshoring - RETAILBOSS," RETAILBOSS, February 6, 2024, https://retailboss.co/fashion-retailers-turn-to-nearshoring-amid-red-sea-crisis/.

[41] Inverto, "Responding to the Red Sea Crisis," Inverto, 2024, https://www.inverto.com/en/insights/addressing-the-red-sea-crisis-understanding-the-situation-and-formulating-a-strategic-response/.

[42] Stuart Swindell, "Navigating the Red Sea Supply Chain Crisis," The-european.eu (The European Magazine, 2025), https://the-european.eu/story-34652/navigating-the-red-sea-supply-chain-crisis.html.

Resilience Building Frameworks

Advanced Risk Monitoring Systems

Companies are implementing sophisticated risk monitoring systems to provide early warning of potential supply chain disruptions. These systems utilize real-time data analytics and intelligence to track geopolitical developments, transportation route conditions, and supplier performance indicators[43]. Technology applications for real-time risk monitoring enable companies to assess evolving situations and implement contingency plans before disruptions severely impact operations.

Effective risk management requires collaboration with various stakeholders, including shipping companies, governments, and regional entities, to understand developing situations and develop robust risk mitigation strategies. Companies are establishing information-sharing networks that provide visibility into transportation conditions, security threats, and alternative routing options . This collaborative approach enhances the collective ability to respond to disruptions and share best practices for crisis management[44].

Inventory Strategy Optimization

The Red Sea crisis has prompted fundamental changes in inventory management strategies, with companies moving away from extreme lean approaches toward more balanced inventory positioning. Safety stock calculations now incorporate longer and more variable lead times, requiring higher inventory investments to maintain service levels. Companies are implementing sophisticated inventory buffer strategies that balance carrying costs against the risk of stockouts during transportation disruptions[45]. Capacity buffers represent another critical element of resilience strategies, involving contingency plans for overtime production, temporary staff

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[43] Andrew Yeoman, "A Personal View on the Situation in the Red Sea," iumi.com (International Union of Marine Insurance, March 24, 2024), https://iumi.com/newsletter-march-2024/a-personal-view-on-the-situation-in-the-red-sea/

[44] ibid

[45] Cirro Global, "Assessing the Red Sea Crisis Impact on E-Commerce Inventory Management," Cirroglobal.com, 2025, https://www.cirroglobal.com/red-sea-crisis-impact-on-ecommerce-inventory-management/.

recruitment, and emergency sourcing arrangements[46]. Companies are establishing relationships with backup suppliers and maintaining dormant capacity that can be activated during disruptions.

Conclusion

A New State of Global Business

The recent disruptions to international shipping caused by Houthi attacks in the Red Sea have prompted global industries to adjust to a shifting operational reality. Many companies had become overly dependent on supply chains structured around rapid delivery schedules and cost-reduction strategies. This model left them highly vulnerable to unexpected geopolitical shocks such as the current attacks affecting maritime transport. The Red Sea is among the most critical global shipping routes, serving as a vital link between East and West. A significant portion of raw materials from Asia travels through the Red Sea and the Suez Canal to reach markets in Europe and North America. Any disruption to this corridor can cause severe delays in transit and delivery processes. The economic impact of such disruptions is multifaceted, encompassing increased fuel prices, extended delivery times, and operational inefficiencies. Industries that relied on cost-effective and timely logistics have consequently suffered substantial losses due to their dependency on globalized supply chains.

To navigate these challenges, industries are developing new frameworks that emphasize regional supply chains through nearshoring and inventory restructuring. This trend contrasts sharply with the strategies of previous decades, where profitability and streamlined, global logistics were prioritized. Companies are now increasingly focused on building resilient supply chains with real-time inventory systems and risk-management protocols. These adaptations allow businesses to anticipate and respond to market shocks, even if they lead to slower deliveries. This cultural shift within global industry practices may become the prevailing norm, as firms recognize the necessity of less risk-prone supply networks. Ensuring continuity and flexibility in the face of global uncertainty is emerging as a key consideration for long-term operational success.

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[46] Mark Chapman, "How to Overcome Red Sea Supply Chain Disruption," Easystock (blog), February 9, 2024, https://www.eazystock.com/blog/how-to-overcome-red-sea-supply-chain-disruption/.