UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

2024 Review of maritime transport

Navigating maritime chokepoints

OVERVIEW

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Foreword

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Maritime transport serves as the main artery of global trade. Intricate networks of shipping routes, ports and maritime chokepoints have enabled globalization and strengthened the interconnectedness of the world economy. However, the sector is facing numerous challenges that threaten the efficiency, reliability, resilience and sustainability of maritime transport.

A key feature of maritime transport is its reliance on chokepoints: strategic, narrow maritime passages such as the Suez Canal and the Panama Canal. These critical waterways provide shortcuts to lengthy intercontinental maritime journeys and reduce time and costs. Yet the essential role of these chokepoints makes them particularly vulnerable to disruptions—whether climatic, economic, geopolitical or operational—leading to severe consequences for global shipping.

As a case in point, the 2021 blockage of the Suez Canal by the Ever Given, a large container ship, underscored the grave implications of such disruptions for trade and the global economy. Delays, logistical hurdles, costs and financial losses arising from maritime disruptions are usually significant. Yet, just after recovering from the upheaval of the COVID-19 pandemic and having started to adjust to new shifts in trade patterns triggered by the war in Ukraine, global supply chains and trade are now grappling with an additional wave of disruptions.

Recent challenges faced since late 2023 in the Red Sea and the Suez Canal as a result of Houthi attacks on ships crossing the waterway have added more complexity to the maritime operating landscape. The attacks have caused vessels across most fleet segments to avoid the Red Sea and the Suez Canal and to navigate around the Cape of Good Hope. This has led to extended distances and transit times and higher operational costs for shipping companies, ports and trade. The attacks have compounded environmental challenges for the sector due to the additional carbon emissions generated from higher fuel consumption and the increased sailing speeds needed to maintain service schedules. Elsewhere, reduced water levels in the Panama Canal—a crucial connector of the Atlantic and Pacific Oceans—caused daily ship transits to be slashed and maritime trade to divert onto longer routes.

The escalating costs arising from maritime chokepoint disruptions translate into higher shipping rates that are inevitably passed on to consumers. In addition to uncertainty and volatility, this situation exacerbates inflation and undermines economic growth, with Small Island Developing States (SIDS) and Least Developed Countries (LDCs) hit the hardest.

Maritime transport is also facing the twin challenge of decarbonizing and the need to transition to cleaner energy sources. The urgency to reduce greenhouse gas (GHG) emissions and overhaul the industry's reliance on traditional fossil fuels has never been more critical. Swift action is needed, and this will require significant operational shifts, innovation, investments in a new and younger fleet, and crucially, a transition to cleaner technologies and ships equipped to run on alternative fuels. While the bill for this transformation will be considerable, shying away from the sector's decarbonization and sustainability goals is not an option. Failing to act would jeopardize the achievement of the global Sustainable Development Goals and threaten our collective climate targets.

Building sustainable and resilient maritime transport is not just an option—it is a strategic necessity. Future-proofing global supply chains depends on strengthening maritime chokepoints, which are vital to the resilience of maritime trade. Achieving more robust, reliable and resilient maritime chokepoints requires maritime transport and logistics to embrace green technologies, digitalization and greater international cooperation. It also demands significant investment, leveraging data and intelligence and ensuring that all stakeholders—shipping, ports, policymakers, Governments, trade entities and supply chain managers—work together.

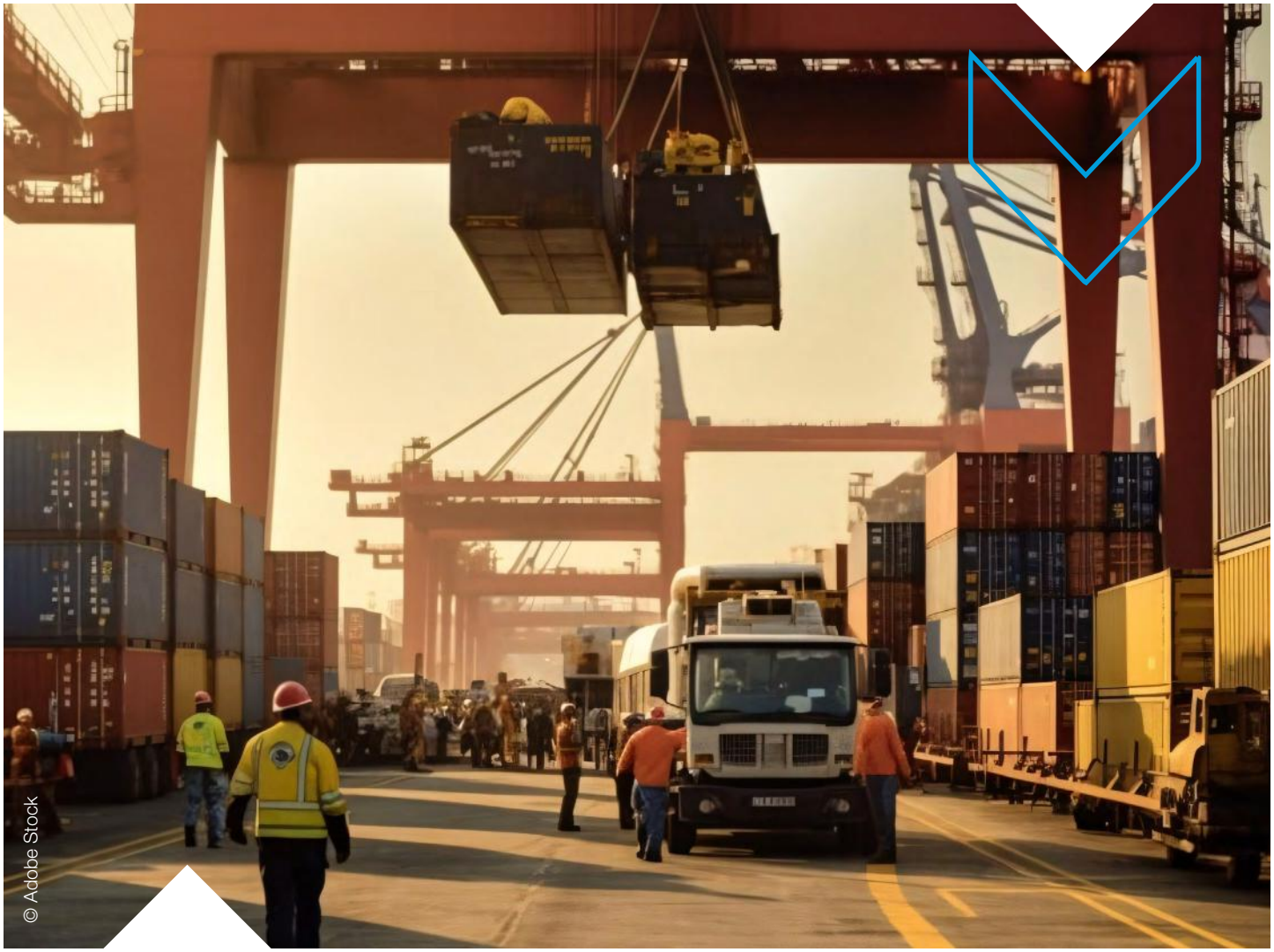
As the sector navigates these complexities and, in a world, where disruption is becoming part of the "new normal", prioritizing the energy transition and fostering agile, resilient transport and logistics will go a long way to helping global trade and the world economy thrive, while withstanding and adapting to shocks and disruption.

The *Review of Maritime Transport 2024* discusses the multifaceted challenges facing maritime transport today. It provides insights into current trends and the outlook for maritime transport and trade. It discusses how maritime trade is being upended by disruptions including in maritime chokepoints. It examines the implications for the shipping fleet which delivers international trade and is at the front line of vessel rerouting. It analyses the implications of soaring shipping rates on consumer prices, and how this particularly affects the GDP of SIDS and LDCs. Additionally, it outlines how port performance monitoring, measurement and reporting can gauge the pulse of the maritime sector and support the Sustainable Development Goals, including those related to gender equality and women's empowerment. The importance of transport and trade facilitation across ports and hinterland connections for sustainability, efficiency and resilience is emphasized.

I am convinced that this edition of the *Review of Maritime Transport* will help foster a deeper understanding of key developments, inform debates and accelerate progress towards sustainability and resilience in maritime transport, with a sharp focus on the pivotal role of maritime chokepoints.

Rebeca Grynspan
Secretary-General of UNCTAD

Content



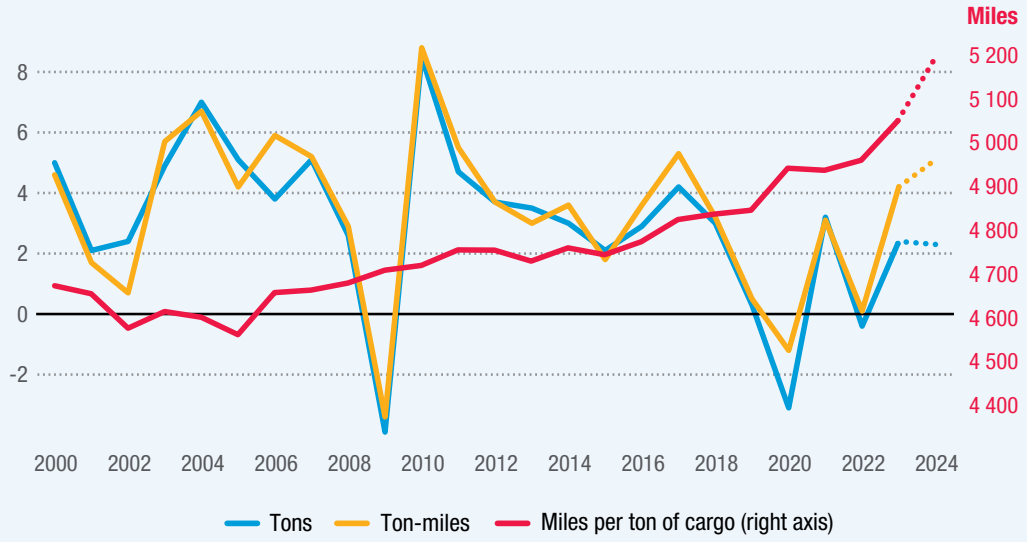
Maritime trade flows recovered in 2023 with ton-mile trade growing at a faster pace

Global maritime trade rebounded in 2023, up from the marginal contraction in the previous year. Volumes reached 12,292 million tons in 2023, following an annual increase of 2.4 per cent. Trade in ton-miles (a measure of distance-adjusted maritime shipments), expanded at a faster rate than trade in tons. Total estimated ton-miles reached 62,037 billion in 2023, an increase of 4.2 per cent over 2022 (figure 1). Growth was driven by the recovery in the world economy, as well as increased demand caused by vessel rerouting. Together, the war in Ukraine, the disruption in the Red Sea and the reduced water levels in the Panama Canal have caused maritime shipping and trade to shift onto longer routes. Average distances travelled per ton of cargo continued to expand in 2023, part of a trend that began about two decades earlier, with distances increasing from an average of 4,675 miles in 2000 to 5,186 miles in 2024.

Figure 1

Seaborne trade growth, tons and ton-miles, and average distance travelled per ton of cargo: Trade gets a boost in 2023 and 2024 by shifting to longer shipping routes

(Annual percentage change)



Source: UNCTAD calculations, based on Clarksons Research Shipping Intelligence Network (time series, July 2024).
Note: Figures for 2024 are forecasts.

Steady growth is projected for maritime trade in 2024, but headwinds remain

UNCTAD projects total maritime trade to expand by 2 per cent in 2024, on the back of strong demand for major bulks such as iron ore, coal, grain, oil and containerized goods. UNCTAD also projects containerized trade to rebound by 3.5 per cent, up from 0.3 per cent growth in 2023. Projected growth is supported by trends in the world economy, some easing in economic headwinds such as inflation and a moderate rise in exports from a range of liquified natural gas suppliers, including the Russian Federation and the United States of America.

Looking beyond 2024, UNCTAD expects maritime trade to increase by an average annual rate of 2.4 per cent between 2025 and 2029, while containerized trade is projected to increase by 2.7 per cent. This growth will be further supported by technological advancements, the transition to cleaner energy and infrastructure developments. Medium-term projected growth will depend on how downside risks play out. These include the war in Ukraine, heightened geopolitical tensions and ongoing economic uncertainties.

On the upside, recovery in global merchandise trade is projected to continue, driven by the export performance of major Asian economies, particularly in the technology sector. Sectors such as green energy and artificial intelligence-related products are expanding, while supporting trade growth. Potential interest rate cuts in the United States and a depreciating dollar could enhance the competitiveness of United States exports, while a gradual moderation of global inflation and improving economic forecasts may contribute to a more stable environment.

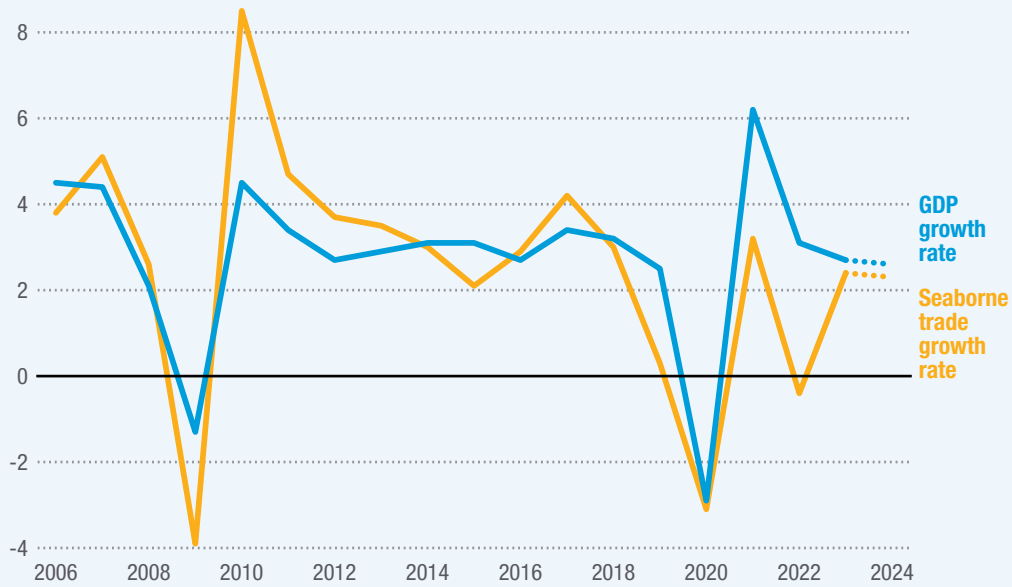
There is a need to monitor the evolving relationship between global economic output and maritime trade. In 2023, maritime trade volumes grew at a slower pace than gross domestic product (GDP), a different pattern than the one observed since 2006, (figure 2). Both structural and cyclical factors influence this relationship, raising the question as to whether there could be a decoupling of maritime trade and GDP.

A change in the merchandise trade-to-GDP ratio, with trade growing at a relatively slower rate than GDP, was first observed in 2010. Since 2018, a weakening in the maritime trade-to-GDP ratio has become more apparent. Inflationary pressures, which negatively affected the consumption of trade-intensive goods, the coronavirus disease (COVID-19) pandemic, recent disruptions to global supply chains, a slower pace of globalization in goods trade in contrast with services trade, are also at play. The climate agenda is also driving a reduction in seaborne-intensive industries such as fossil fuels. Increasing trade protectionism and more localized supply chains could constrain maritime trade growth. However, some supply chain de-risking strategies might involve longer distances, while the increased trade in goods – linked to the transition to cleaner energy – could be an offsetting factor.

Figure 2

International maritime trade and world gross domestic product evolve in tandem but at a diverging pace

(Annual percentage change)



Source: UNCTAD calculations. Seaborne trade figures based on data from Clarksons Research Shipping Intelligence Network (time series, July 2024). GDP figures projections based on UNCTADstat data and, for 2023 and 2024, on table I (world output growth, 1991–2024) from UNCTAD *Trade and Development Report Update*, April 2024.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Shipping is the backbone of globalized trade, and smooth navigation through maritime chokepoints is crucial

Maritime trade has been significantly affected by the new wave of disruptions in the Red Sea, the Suez Canal and the Panama Canal. These disruptions have impacted the number of daily ship transits, the shipping routes and the distances travelled by ships and cargo. Climate change factors, conflicts and geopolitical tensions pose some of the most substantial risks currently facing global maritime trade. These factors have exposed the vulnerability of international maritime chokepoints and continue to threaten the reliability of these crucial routes, while exerting pressure on global supply chains.

Maritime chokepoints are critical points along transport routes. They facilitate the passage of substantial trade volumes and connect the world. Due to limited alternative routes, disruptions at chokepoints have negative impacts on supply chains and lead to systemic consequences affecting food security, energy supply and the global economy.

Disruptions to shipping routes and chokepoints also lead to shifts in network configurations and trade patterns. For instance, the war in Ukraine and constrained shipping in the Black Sea have led Egypt to source grain from Brazil or the United States instead of Ukraine and oil shipments from the Russian Federation have been directed towards China and India instead of Europe.

Since 2023, the Turkish Straits have experienced disruptions due to geopolitical tensions, increased maritime traffic, environmental concerns and infrastructural challenges. Türkiye implemented regulations in September 2023, including enhanced environmental standards and safety protocols, and delays and congestion have been experienced in the period of adaptation to these regulations.

The Suez Canal and the Panama Canal experienced new disruptions in 2023 and 2024 due to geopolitical tensions and reduced water levels, respectively. Meanwhile, ongoing conflict in the Middle East has heightened the risk of disruptions in the Strait of Hormuz, while piracy continues to affect the Strait of Malacca.

Troubles in the Red Sea, Suez Canal and Panama Canal have upended global shipping networks and trade

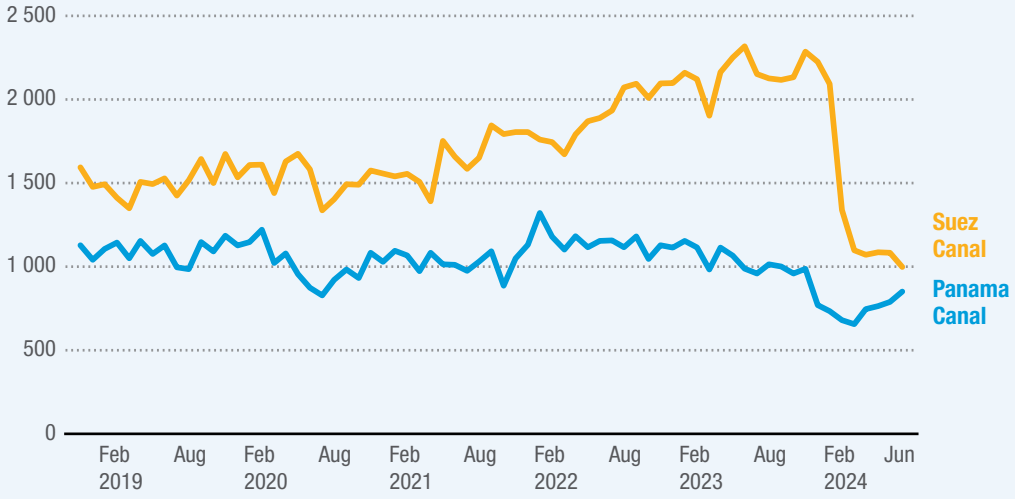
Since late November 2023, attacks on vessels in the Red Sea have undermined shipping in the Mandeb Strait and the Suez Canal, prompting shipping lines to reroute around the Cape of Good Hope. At the same time, the Panama Canal has cut daily ship transits due to climate change-induced drought. About 10 per cent of world maritime trade by volume and 22 per cent of containerized trade cross the Suez Canal annually. The Panama Canal facilitates approximately 3 per cent of global maritime trade volume.

By June 2024, transits though the Panama Canal and the Suez Canal were down by over half compared to the peaks in December 2021 and May 2023 (figure 3). Most of the decline in the Suez Canal has happened since December 2023, with the onset of the disruptions in the Red Sea; ship transits through the Panama Canal have been decreasing over the last two years.

Rerouting vessels around Africa adds to the distance and extends transit times, while increasing global vessel demand by 3 per cent and container ship demand by 12 per cent. This reflects the uplift in ton-mile demand for global vessels and container ships in June 2024 compared to the demand if there had been no rerouting away from the Red Sea and the Suez Canal. Rerouting ships also causes operational shifts and market inefficiencies such as port congestion and higher costs. Longer routes raise costs for crew wages, chartering, insurance and fuel. Rerouting vessels also threatens seafarers' safety, increases exposure to piracy incidents, generates more greenhouse gas emissions, make it more difficult to comply with environmental rules and creates capacity management challenges.

Since January 2024, the Panama Canal situation has improved due to the onset of the rainy season, combined with water-saving measures implemented by the Panama Canal Authority

Figure 3
Panama and Suez Canals: Number of monthly ship transits



Source: UNCTAD calculations, based on data from Clarksons Research Shipping Intelligence Network.

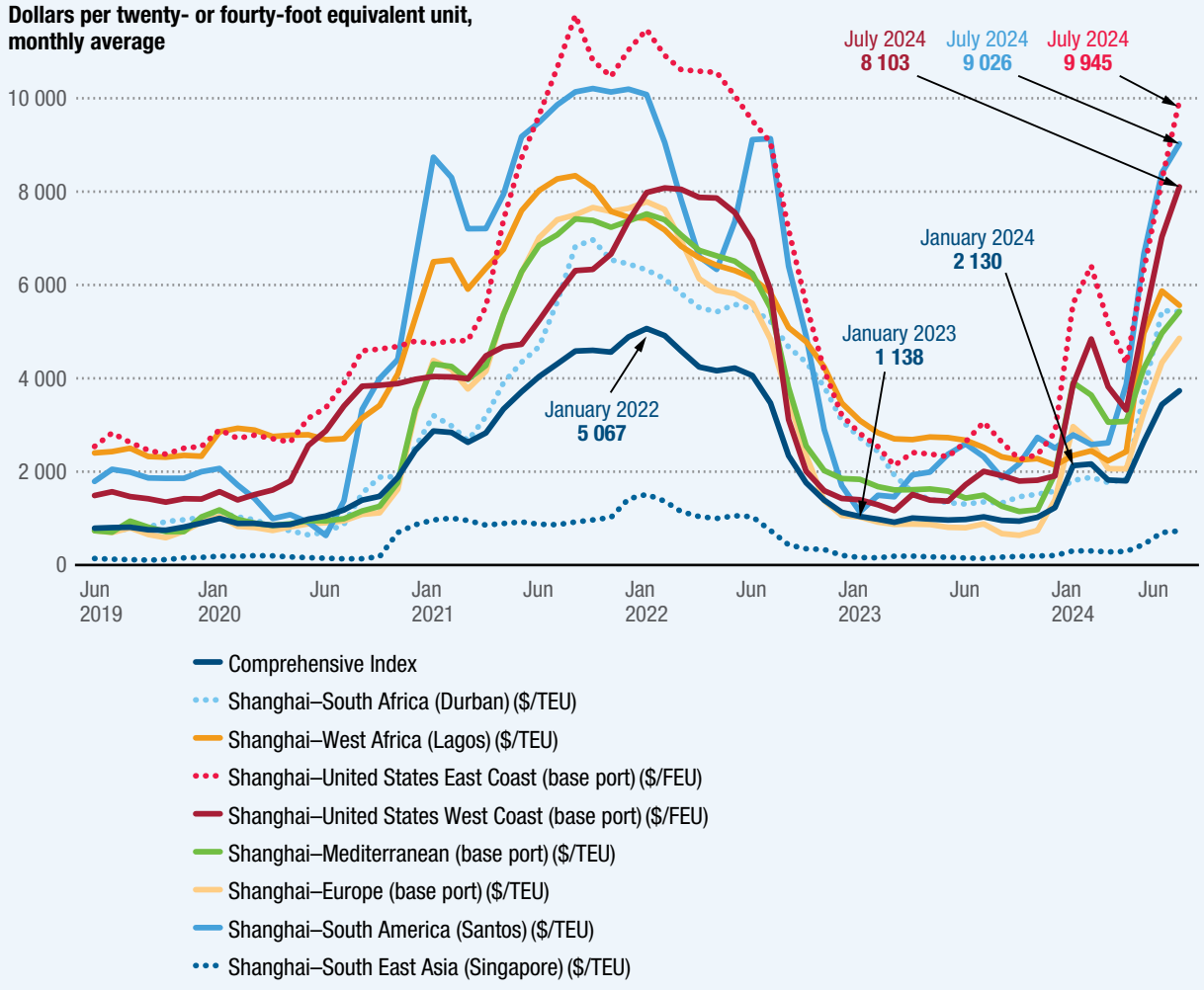
In a highly disrupted operating environment, efforts should be directed towards building resilient and reliable maritime chokepoints and supply chains. This involves intervention by all relevant stakeholders including Governments, the maritime transport industry, infrastructure managers and authorities managing maritime passages. Key actions include the following:

- Using technology, data, demand forecasting and early warning systems to enhance preparedness and optimize capacity at chokepoints.
- Engaging in collaborative efforts among maritime chokepoint managers, operators and users, to manage risks and respond to disruptions.
- Expanding and combining transport modes, to reduce dependence on chokepoints and bypass disruptions.
- Enhancing infrastructure facilities, including port capacity, storage facilities, pipelines and bunkering facilities, to reduce congestion and build buffers that minimize fuel shortages or delays caused by disruptions.
- Ensuring that the role of supply chain workers is recognized and that workers are properly compensated; this can help avoid workforce shortages during critical times, which can exacerbate supply chain disruptions.
- Avoiding reliance on one single input source by diversifying sourcing and manufacturing locations or diversifying fuel sources and types.
- Increasing inventory levels, to enhance capacity to absorb supply chain shocks.
- Diversifying shipping routes to avoid over-reliance on a limited number of major hub ports; developing contingency plans that envisage using alternative routes and ports.
- Enhancing cooperation among maritime supply chain actors, to optimize supply chain efficiency, reduce transit times and decrease transport costs.
- Enhancing international collaboration.

Container freight rates have reached new peaks in 2024

In 2023, container shipping freight rates stabilized after the exceptional highs in 2021 and 2022. The Shanghai Containerized Freight Index, a key metric used to track the spot rates for shipping containers from Shanghai, China, to various major ports around the world, remained relatively stable in 2023, averaging around 1,000 points (figure 4). This was in contrast to the peak of about 5,067 points in January 2022, although the Index spiked again in late 2023 due to the Red Sea and Suez Canal disruptions that extended average distances travelled by ships.

Figure 4
Shanghai Containerized Freight Index spot rates



Source: UNCTAD calculations, based on data from Clarksons Research Shipping Intelligence Network.

In January 2024, the Index averaged 2,130 points, more than double the level in December 2023, yet over 50 per cent below the high during the COVID-19 pandemic. Rates spiked again in May 2024, averaging approximately 2,644 points, due to general rate increases and coincidence with the peak season for container trade, together with various additional costs, including those related to the European Union Emissions Trading System, Panama Canal tolls and increased war risk insurance premiums. Spot freight rates on most routes were affected. Charter rates initially responded slowly to the disruption in the Red Sea but began to surge from January 2024 onwards.

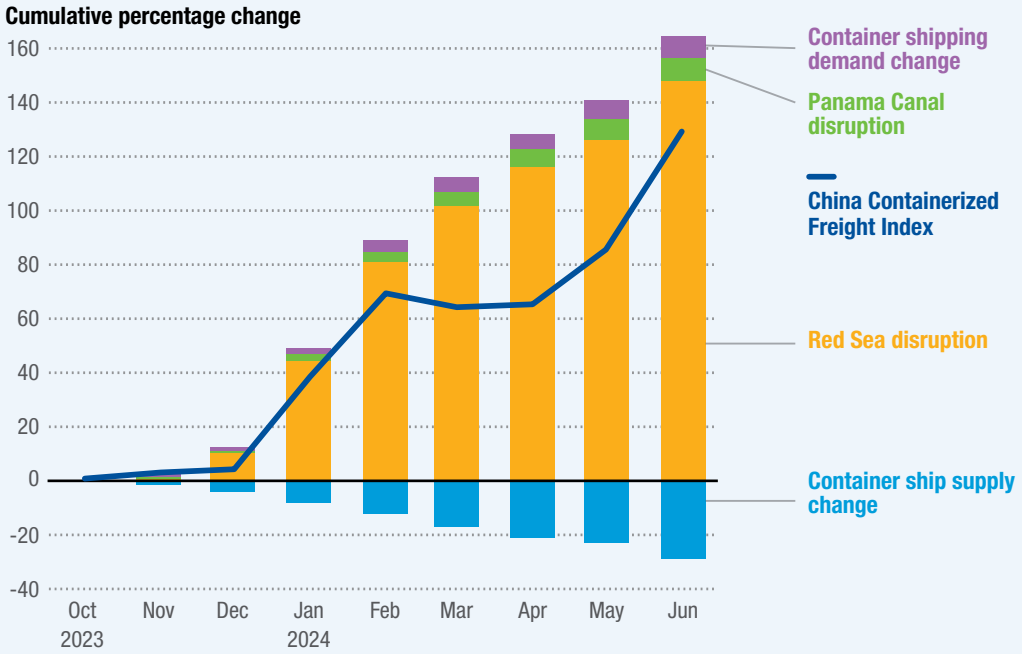
From mid-December 2023 to June 2024, the demand for additional container ship capacity increased by around 12 per cent, to accommodate for the increased distances due to the disruptions. In addition to absorbing excess capacity, these diversions led to increased vessel speeds to meet delivery schedules (sailing speeds increased by approximately 25 per cent, from 16 to 20 knots) and the tripling of bunker consumption, which in turn increased freight rates and shipping costs.

By mid-June 2024, port congestion meant that vessel capacity of 2.5 million twenty-foot equivalent unit (TEU) waited at anchorages (deep water areas, usually off coasts). This represented 8.4 per cent of the global capacity and also contributed to the increase in freight rates.

At the start of the disruption in the Red Sea, there was sufficient container capacity in the market to handle the additional tonnage required to divert around the Cape of Good Hope. However, any further disruptions could severely strain supply chains, potentially leading to additional increases in freight rates.

UNCTAD analysis shows that between October 2023 and June 2024, disruptions in the Red Sea and the Suez Canal had a greater impact on the China Containerized Freight Index, a key indicator of freight rates for container shipping. This disruption contributed 148 percentage points to the cumulative increase of 120 per cent in the Index (figure 5). The disruption in the Panama Canal also contributed to an increase in the Index, but to a lesser extent, accounting for 9 percentage points. The impact on container freight rates caused by these disruptions was partly offset by the growth in container ship supply capacity; when rerouting vessels away from maritime chokepoints has boosted distances travelled and increased demand for ship capacity, the market absorbed this by using available extra ship capacity. Additional capacity mitigated the rise in the Index by about 30 per cent.

Figure 5
China Containerized Freight Index and breakdown

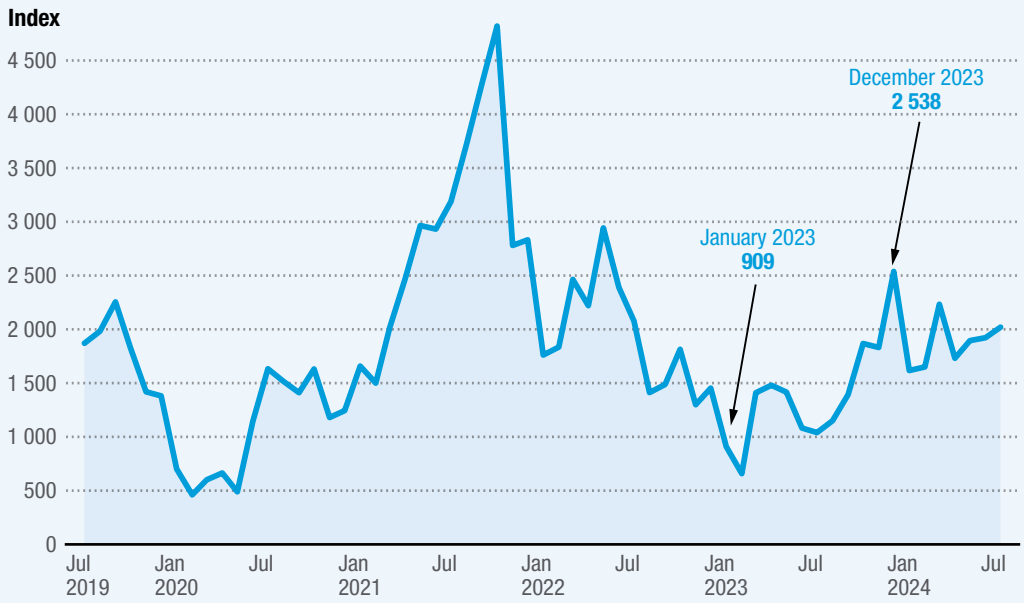


Source: UNCTAD calculations, based on data provided by Clarksons Research Shipping Intelligence Network and Maritech Services Limited, Sea.
Notes: Cumulative changes from October 2023. Seasonally adjusted. The sum of the four presented components does not fully add up to the combined impact because "other" logistics shocks is not included in the figure.

Dry bulk freight rates continue to fluctuate

The dry bulk freight market saw significant volatility in 2023, with rates generally lower than in previous years. The Baltic Exchange Dry Index, which measures shipping costs for commodities such as coal, iron ore and grain, averaged 1,398 in 2023. This is down from the 2022 average of 1,930 and is close to the 10-year average of 1,318 (figure 6). In the first half of 2024, the Index averaged 1,867, compared with 1,142 in the same period in 2023. The Index is projected to be over 34.5 per cent higher for the full year, compared with the average in 2023. These trends reflect ongoing disruptions in the two maritime chokepoints of the Red Sea and Panama Canal, as well as supply and demand factors such as dry bulk demand from China and potential weather-related disruptions affecting key exporters such as Australia, Brazil and Indonesia.

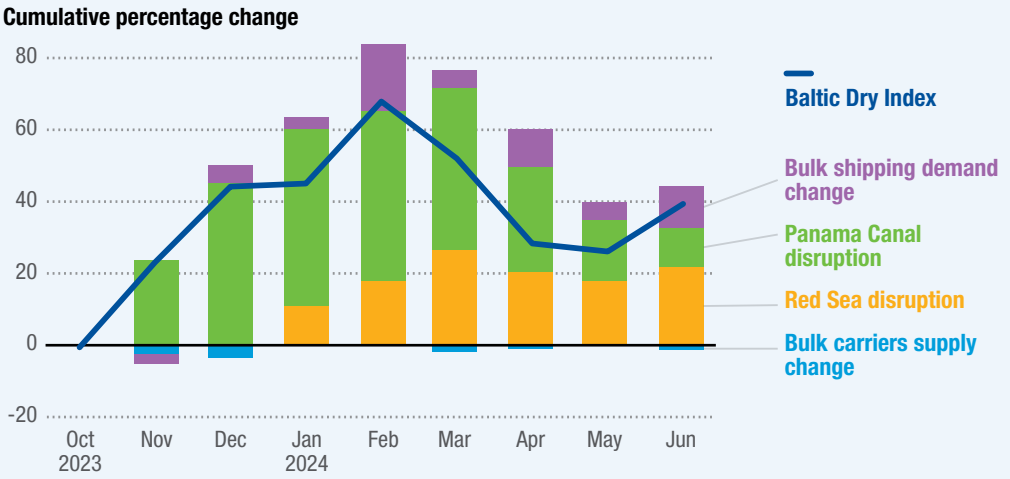
Figure 6
Highs and lows of the Baltic Exchange Dry Index



Source: UNCTAD calculations, based on data from Clarksons Research Shipping Intelligence Network.

According to UNCTAD analysis, the impact of the Panama Canal disruption on dry bulk freight rates peaked in January 2024, contributing 49 percentage points to the cumulative 45 per cent increase in the Baltic Exchange Dry Index between November 2023 and January 2024 (figure 7). The rise in rates slowed significantly from April 2024 to June 2024, as restrictions in the Canal eased. The Red Sea disruption has had a lesser impact on dry bulk rates, contributing 26 percentage points to the Index increase by March 2024. The impact of the Panama Canal disruption on dry bulk freight rates was more pronounced, partly because containerized trade can use the North American landbridge, while dry bulk trade cannot be easily transported along this alternative route.

Figure 7
Baltic Dry Index and breakdown



Source: UNCTAD calculations, based on data provided by Clarksons Research Shipping Intelligence Network, and Maritech Services Limited, Sea.
Notes: Cumulative changes from October 2023. Seasonally adjusted. The sum of the four presented components does not fully add up to the combined impact because "other" logistic shocks is not included in the figure.

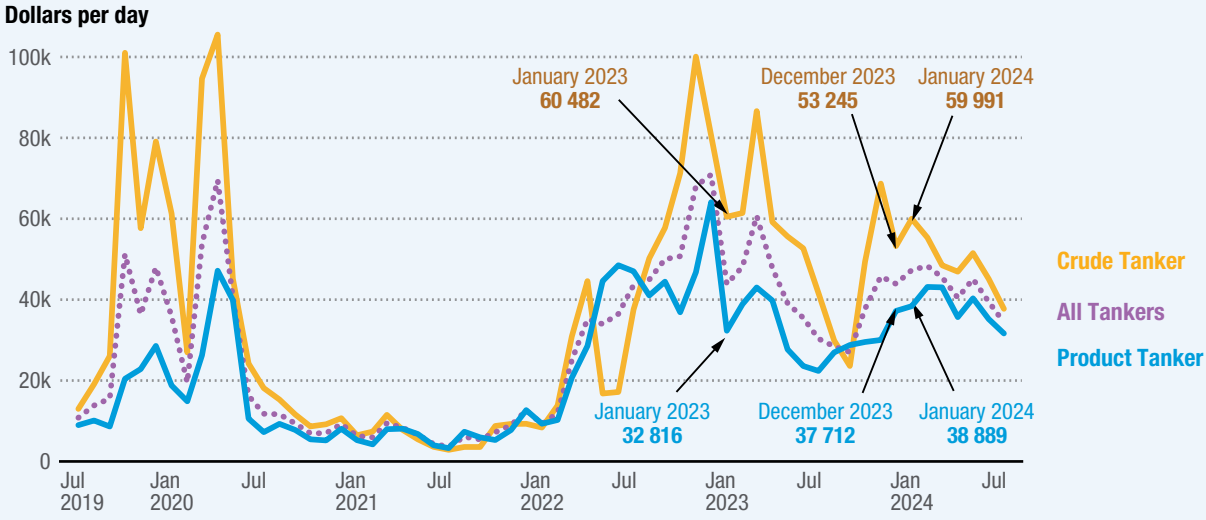
Tanker freight rates are stronger but highly volatile in 2024

In 2023, tanker freight rates declined but remained elevated and volatile. The effects of geopolitics, a redirection of cargo from the Russian Federation, increased distances, supply cuts by the Organization of the Petroleum Exporting Countries plus , Atlantic oil supply growth, environmental regulations, economic uncertainty and modest tanker fleet growth all shaped this trend.

Crude tanker spot earnings (payments earned by crude oil tankers per trip) outperformed those of product tankers (ships that transport refined petroleum products such as diesel fuel). Average spot earnings for crude tankers rose by 21 per cent to $53,541 per day in 2023 compared with in 2022, while product tanker earnings decreased by 14 per cent to $32,181 per day, still above the 10-year average due to longer travel distances and limited fleet growth (figure 8). Weaker spot earnings in June–August 2024 reflect seasonal factors, softer crude import demand in China and reduced oil product exports from the Russian Federation. Tanker markets remain strong, with earnings above long-term averages.

Figure 8

Average earnings, crude and product tankers, highly volatile in 2023 and 2024



Source: UNCTAD, based on data from Clarksons Research Shipping Intelligence Network.
Note: Average earnings across range of tanker sizes, weighted by the number of ships in each sector.

If sustained, freight rate hikes can exacerbate inflation in small island developing States and the least developed countries and constrain economic growth

By the end of 2025, global consumer price levels are forecast to increase by 0.6 per cent due to the disruptions in the Red Sea and the Panama Canal (figure 9). UNCTAD assumes that the combined impact on freight rates of the two disruptions, namely, a contribution of 157 percentage points to the increase in the China Containerized Freight Index and of 33 percentage points to the increase in the Baltic Exchange Dry Index between October 2023 and June 2024, will be sustained over the period. This assumption is conservative, as freight rates have already continued to increase in June 2024. If freight rates rise beyond the current assumption, the impact on global consumer prices will be greater than projected in the present analysis.

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