



Shipping Disruptions in the Red Sea: Ripples across the Globe

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Recent geopolitical tensions across various regions of the world have increased the risk of shipping disruptions. While geopolitical conflict often takes place in relatively narrow geographic areas, the global nature of the market for international shipping services could act as a channel through which local shocks are amplified and transmitted to the rest of the global economy. In this blog post, we investigate the extent to which this may be the case following recent shipping disruptions in the Red Sea.

After the start of the latest Israel-Hamas war in October 2023, Yemen's Houthi rebels began attacking vessels in the Red Sea. In response, shipping companies have altered their routes to avoid the Suez Canal and the Red Sea. Detouring around the Cape of Good Hope has extended voyages by approximately 3,500 nautical miles (6,482 km) and increased shipping times by at least 14 days. Trade flows between Europe and Asia, which ship primarily through the Suez Canal, have been particularly affected.

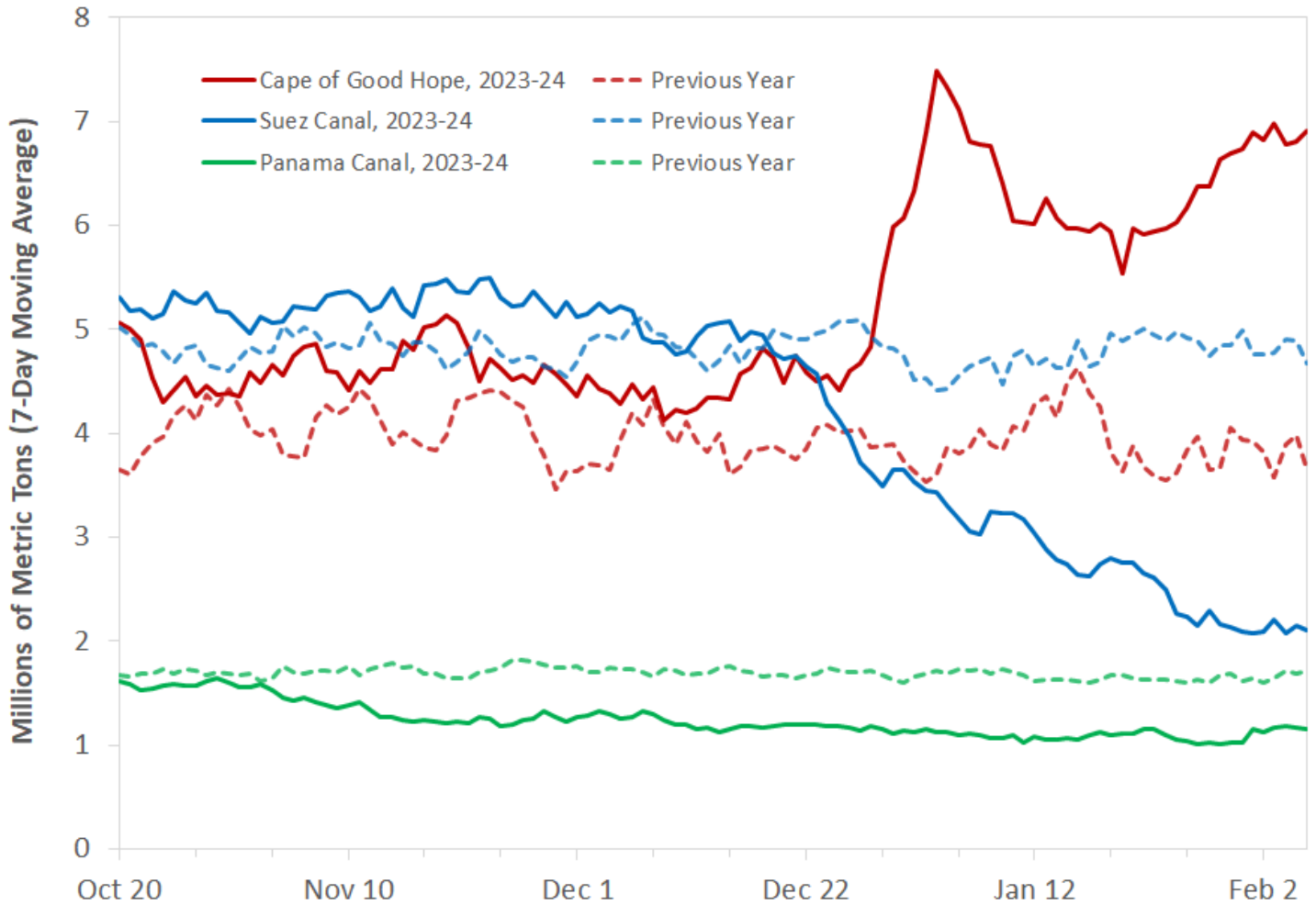
While a nontrivial fraction of global trade—approximately 12% of the global value shipped—moves through the Suez Canal, most international trade is not directly affected by the situation in the Red Sea. Yet, the integrated nature of the global shipping market implies local shocks can indirectly impact other countries, potentially affecting both trade flows and shipping costs.

Local Shocks: Red Sea Disruptions Divert Vessels to Cape of Good Hope

To document the direct impact of disruptions in the Red Sea, we used data from PortWatch, a joint effort by the International Monetary Fund (IMF) and Oxford University to track the global commercial fleet daily using signals from ships' automatic identification system, or AIS, to obtain high-frequency global trade information.¹

The figure below plots trade flows through two key chokepoints relevant to recent disruptions in the Red Sea. The solid blue line tracks the movement of vessel trade, measured in metric tons, flowing through the Suez Canal (located at the northern end of the Red Sea) from Oct. 20, 2023, to Feb. 6, 2024. The solid red line tracks vessel trade flows around the Cape of Good Hope (located at the southern tip of Africa) over the same time frame. The figure also includes a solid green line that tracks vessel trade movement through the Panama Canal, another global chokepoint, which was experiencing congestion during this period as the result of a drought that has restricted passage due to low water levels.²

Trade Flows in the Red Sea, around the Cape of Good Hope and through the Panama Canal, October 2023-February 2024



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SOURCE: IMFPortWatch’s Daily Chokepoint Transit Calls and Trade Volume Estimates.

The figure shows that trade flows through the Red Sea have declined since disruptions began. This reflects the extent to which shipping companies have opted to reroute shipments away from the Suez Canal. The figure also shows that trade flows around the Cape of Good Hope have increased in tandem, compensating for the decline of shipments through the Suez Canal, suggesting that this has been the alternative route for much of the trade initially intended to ship through the Red Sea.³ While trade flows through the Panama Canal have also declined somewhat in recent months from an unrelated event, the shock there began earlier and seems to be much more muted than the reallocation taking place around the Red Sea.

Global Implications: Trade and Shipping Costs

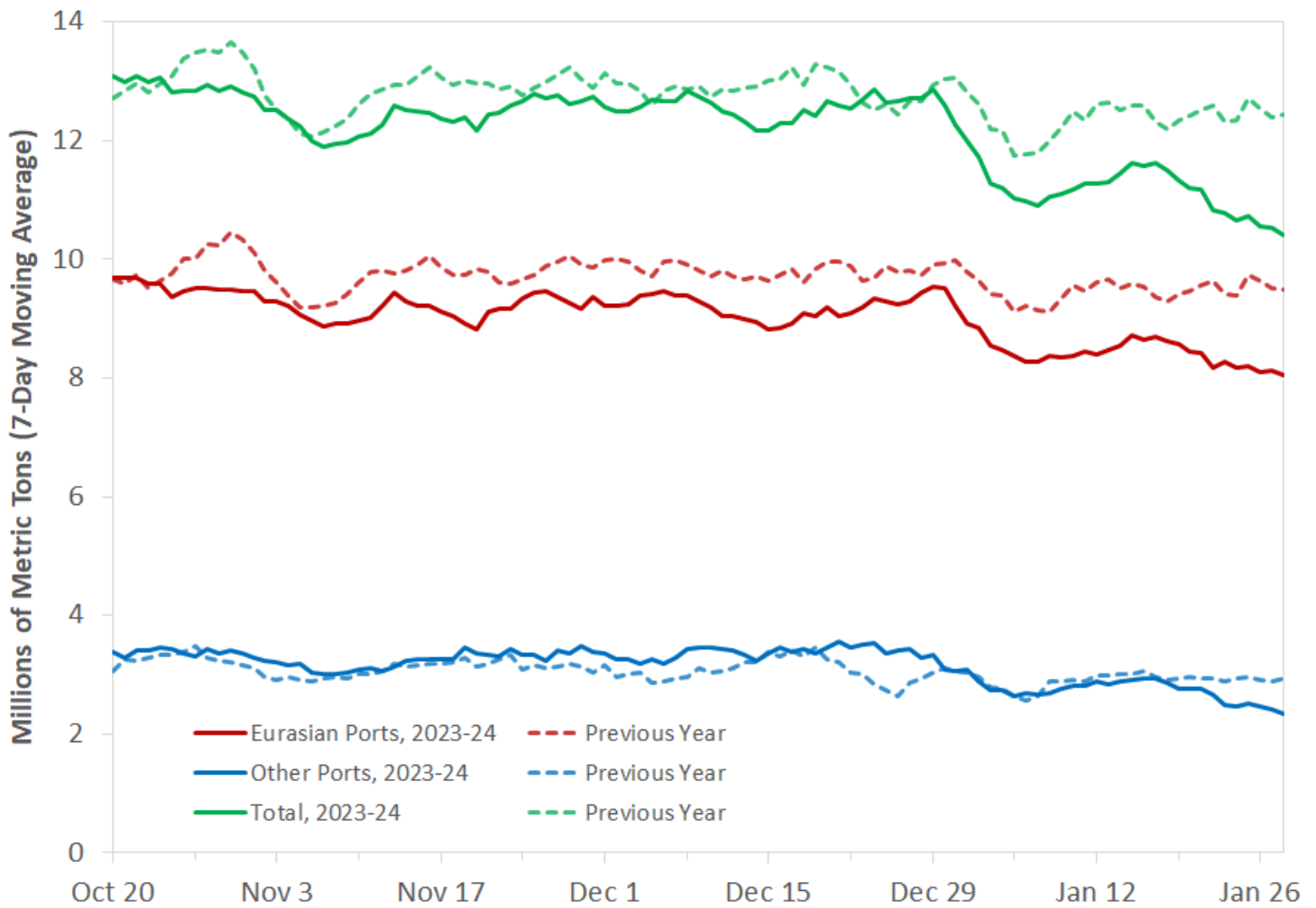
We examine the global implications of these shipping disruptions for global trade and shipping costs. To assess the implications for global trade, we used IMF PortWatch data to examine the amount of trade flowing through major

ports around the world. To identify the local versus global impact of the Red Sea disruptions, we partitioned the 1,378 ports in the data into two groups:

- The first group consists of ports that rely on trade through the Suez Canal to reach major destinations (East Asia and the Pacific, Europe and Central Asia, the Middle East and North Africa, and South Asia). We called these the Eurasian ports.
- The second group consists of ports that can reach most major destinations without relying on trade through the Suez Canal (Latin America and the Caribbean, North America and sub-Saharan Africa).

As in the first figure, each dotted line in the figure below represents the previous year's values for its respective series. In addition, we report total trade through both groups of ports (green lines). Not surprisingly, Eurasian ports (red lines) saw a decline in the amount of trade from Oct. 20, 2023, to Jan. 28, 2024, relative to last year's volume, with the gap widening since the beginning of the Red Sea disruptions. More interestingly, while trade in ports outside this region (blue lines) was largely unaffected during this period relative to last year's volume, we began to observe a sizable gap opening, with trade in these ports declining over the most recent few weeks by about *one-fifth* relative to last year. While the extent and causes of these differences remain to be fully discerned, our findings suggest that the local shock may already be impacting trade flows globally.

Global Trade Flows by Port, October 2023-January 2024



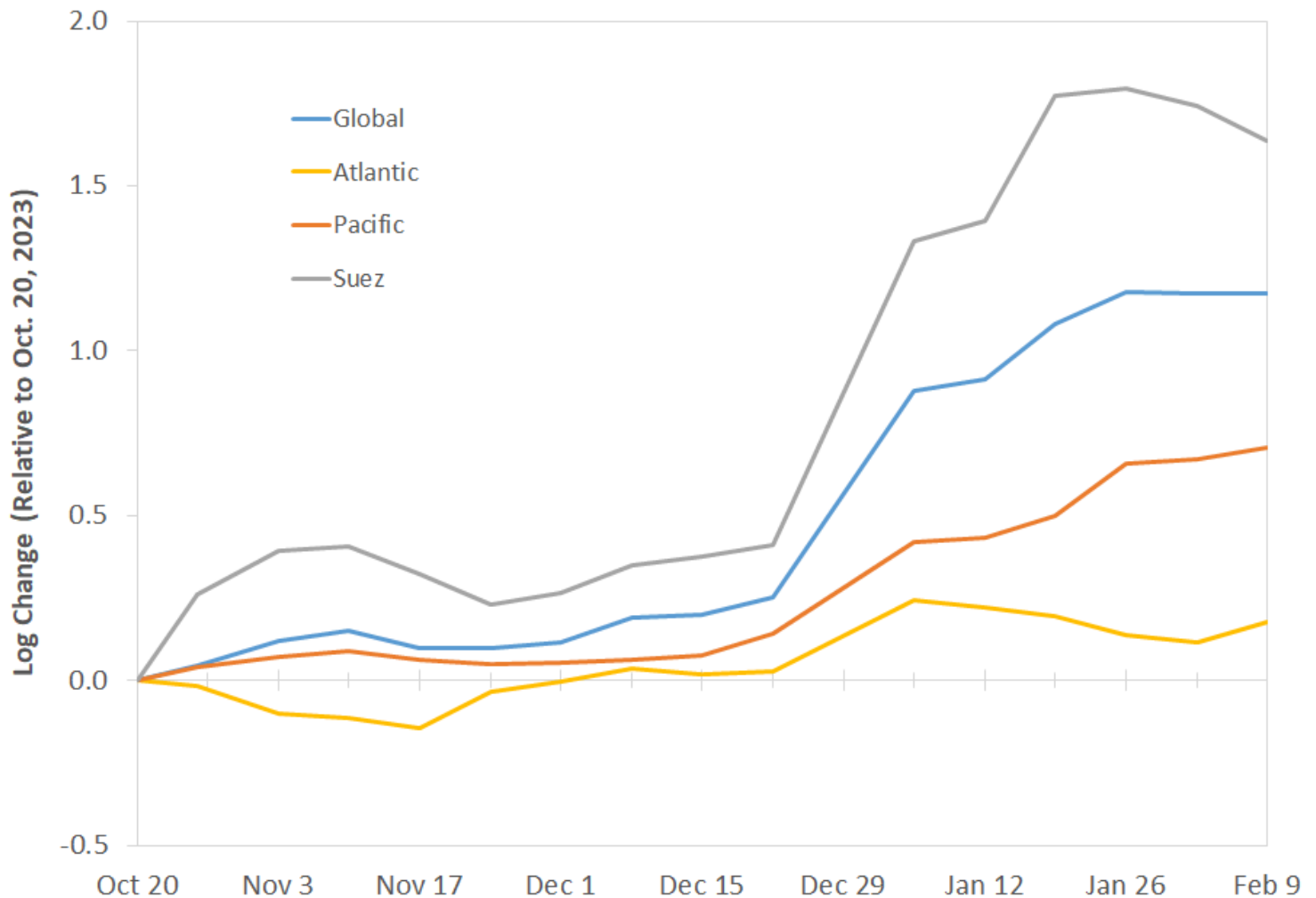
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SOURCES: IMFPortWatch’s Daily Chokepoint Transit Calls and Trade Volume Estimates and Daily Port Activity Data and Trade Estimates.

Second, we examined the implications of disruptions in the Red Sea for global shipping costs. To do so, we used price index data from Freightos on global freight costs and specific shipping routes. We partitioned shipping routes into Atlantic, Pacific and Suez regions.⁴

As shown in the figure below, the shipping prices that have experienced the greatest increase in recent months have been those in the Suez region, as expected. Shipping costs in this region increased by approximately 180% on average from Oct. 20, 2023, to their peak on Jan. 26, 2024. As firms reroute shipments, the companies that continue to ship through the Suez Canal are likely raising prices to compensate for the higher risk, as well as to take advantage of the reduced shipping supply.

Change in Regional and Global Shipping Prices, October 2023-February 2024



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SOURCES: Freightos price indexes and authors' calculations.

More surprisingly, we observed that shipping costs increased globally despite the local nature of the shock. Indeed, global freight rates, according to the Freightos index, increased by approximately 120% relative to those in late October. While some of this increase captures the impact of higher shipping costs in the Red Sea, prices have risen across all routes. For instance, shipping costs along the Pacific routes have increased by roughly 70% relative to those in late October, while those along the Atlantic routes have done so by around 20% over this period.

The impact of Red Sea shipping disruptions on shipping capacity likely accounts for recent global trade and shipping price dynamics. As trade flows reroute from the Red Sea toward the Cape of Good Hope, longer average shipping times mean that the amount of goods able to be shipped internationally declines because global shipping capacity is rigid in the short run. Since shipping companies typically operate at capacity, suddenly longer shipping times act as a global reduction of shipping capacity, not just in the Red Sea. Shipping prices thus increase along all routes to balance demand and supply. While shipping costs have already increased substantially, their impact on economic outcomes, such as international trade flows and aggregate economic activity, may have yet to be felt.

These effects would be consistent with those implied by the analysis in our recent St. Louis Fed working paper, which examines the [drivers and aggregate implications of shipping disruptions](#).

Potential Conflicts and Global Shipping Dynamics

Our findings suggest that global shipping dynamics may be a key channel through which local shocks affect global economic outcomes. With growing geopolitical tensions, shipping disruptions have become more frequent, thus leading to greater global economic turbulence arising from relatively local conflicts. However, these effects may be transitory. As shipping companies adjust their fleets to these developments, they may find it optimal to operate with greater slack to act as a buffer to insure their operations against such shocks, thereby mitigating potential disruptions.

Notes

1. For more information on these data, see PortWatch's [Daily Chokepoint Transit Calls and Trade Volume Estimates](#). The methodology for creating these data is described in the 2021 IMF working paper by Serkan Arslanalp, Robin Koepke and Jasper Verschuur, "[Tracking Trade from Space: An Application to Pacific Island Countries](#)."
2. See [this Jan. 26, 2024, article from *The New York Times*](#) for more information on the drought event affecting the Panama Canal.
3. PortWatch also collects data on trade flows measured in total number of ships. Trends in that data were similar to trends in the volume-based flows examined here.
4. For more information on these data, see the [Freightos Baltic Index \(FBX\)](#), which tracks global container pricing. The routes for each region break down as follows:
 1. Atlantic: North America East Coast to North Europe, North Europe to North America East Coast, Europe to South America East Coast, and Europe to South America West Coast
 2. Pacific: China/East Asia to North America West Coast, North America West Coast to China/East Asia, China/East Asia to North America East Coast, and North America East Coast to China/East Asia
 3. Suez: China/East Asia to North Europe, North Europe to China/East Asia, China/East Asia to the Mediterranean, and the Mediterranean to China/East Asia

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