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The World Has a Chokepoint Problem

Global trade became extraordinarily efficient by removing redundancy. Recent disruptions suggest some systems may need more of it.

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EXECUTIVE SUMMARY

Global trade benefits from concentrating flows through efficient corridors, but the same concentration can create outsized exposure when a chokepoint is disrupted. The strategic question is not whether every route should be duplicated; it is where selective redundancy, inventory, alternative routing, or spare capacity is worth paying for.

KEY FINDINGS

- Concentrated corridors are often economically efficient in normal conditions, so concentration alone is not evidence of poor system design.
- Recent Suez and Hormuz disruptions show that route failure can transmit costs far beyond the affected geography.

- For highly concentrated flows, existing bypass capacity may cover only a fraction of normal throughput.
- The economics of resilience should compare contingency costs with the losses created by interruption — not only with the cheapest normal route.
- Selective redundancy is more defensible than blanket duplication, and any proposed alternative still requires engineering, financial, political, environmental, and security feasibility work.

RESEARCH ARTICLE

Modern globalization depends on moving extraordinary volumes of goods through a relatively small number of physical corridors. Most of the time, that concentration is efficient. When a corridor fails, however, the geography beneath the system becomes impossible to ignore.

Red Sea disruptions forced vessels away from the Suez Canal and around the Cape of Good Hope. Drought constrained the Panama Canal. The 2026 near-closure of the Strait of Hormuz demonstrated how rapidly a narrow waterway can become a global energy and trade problem.

These disruptions have different causes. The shared question is broader: **How much redundancy should exist in a global economy that depends so heavily on a small number of physical chokepoints?**

Efficiency Has a Hidden Cost

About 80% of worldwide merchandise trade by volume moves by sea.[1] There is a straightforward economic reason: ships can move enormous quantities of cargo at unit costs that other modes generally cannot match. Trade therefore gravitates toward efficient ports, canals, straits, and shipping lanes.

Concentration is not automatically a design failure. Building fully separate transport systems for every conceivable emergency would often be prohibitively expensive. The calculation changes, however, when the consequences of a route failure become large enough.

During the first two months of 2024, IMF PortWatch data showed trade volume through the Suez Canal falling about 50% year over year as vessels diverted around the Cape of Good Hope. The diversion added roughly 10 days or more to average delivery times on affected routes.[2] UN Trade and Development documented the resulting increases in distance, fuel use, operating costs, and emissions. By May 2025, tonnage transiting Suez remained about 70% below 2023 levels.[3]

The shipping system adapted. The problem was that adaptation frequently meant taking the long way around an entire continent.

Hormuz Shows How Concentrated the Risk Can Become

The Strait of Hormuz is one of the clearest examples of physical concentration. In 2025, an average of about 20 million barrels per day of crude oil and petroleum products moved through the Strait—around one-quarter of world seaborne oil trade. The IEA estimates only about 3.5 to 5.5 million barrels per day of crude-export capacity could potentially bypass the Strait through operational Saudi and Emirati pipelines.[4]

Gas exposure is similarly concentrated. Just over 112 billion cubic metres of LNG transited Hormuz in 2025, equal to almost 20% of global LNG trade.[4]

There is also a less obvious exposure: fertilizer. The World Trade Organization estimated in March 2026 that around one-third of global fertilizer exports normally pass through the waterway.[5]

The effects of a transport disruption rarely stop with the product on the vessel. Fertilizer shortages can raise agricultural input costs. A missing specialized component can interrupt manufacturing. Energy constraints can affect transport, industry, power, and household budgets simultaneously.

Inventories, substitution, alternative suppliers, policy intervention, and demand changes can absorb some shocks. But the underlying vulnerability remains: a problem in a geographically narrow corridor can propagate far beyond that location.

What 2026 Revealed

The 2026 Hormuz disruption turned a long-discussed vulnerability into an observed stress test. The International Energy Agency described the event as the largest supply disruption in the history of the global oil market. According to its June assessment, oil flows through Hormuz fell from around 20 million barrels per day before the conflict to an average of about 2.7 million barrels per day during March, April, and May, while cumulative Middle Eastern supply losses exceeded 1.3 billion barrels.[6]

The episode illustrated an important distinction between *production capacity* and *market availability*. A commodity can exist. A producer can have customers. Demand can remain strong. Yet supply to the market can still collapse if the physical connection between producer and buyer is interrupted.

> A product that cannot reliably reach the market is not fully available to the market.

That is a transport-resilience problem, not merely a production problem.

The Wrong Benchmark for a Backup System

A common objection to redundant infrastructure is that it cannot compete economically with the primary system during normal conditions. Often, that is true. A backup route may be slower, more expensive, or capable of handling less volume.

But normal operation is not the only relevant benchmark. Emergency generators are not valuable because they beat the grid on ordinary electricity costs. Strategic inventories are not maintained because storage is cheaper than continuous market supply. Insurance is not purchased because premiums are profitable when nothing goes wrong.

The more useful question is: **What economic loss could additional flexibility prevent during a serious disruption?**

A producer may be unable to export billions of dollars in goods. A factory may stop because one essential input fails to arrive. Agricultural producers may face shortages of a critical material. In those cases, the backup option should be evaluated against the cost of failure—not only against the cheapest normal route.

This does not justify unlimited redundancy. The World Bank has explicitly highlighted the need to examine efficiency–resilience trade-offs in global logistics.[7] The point is narrower: resilience economics should include the cost of interruption.

The Goal Is Not to Replace Maritime Trade

Trying to recreate maritime commerce on land would make little economic sense. Ships, ports, pipelines, railways, and established maritime corridors will remain central to global trade.

The more realistic objective is selective flexibility: enough alternative capacity, inventory, routing options, or substitution capability that a severe disruption does not immediately become paralysis.

Time matters as much as capacity. Governments can announce pipelines, ports, railways, and other infrastructure after a crisis begins, but major infrastructure takes years to plan and build. Markets react in hours. Firms operate every day. Populations need fuel, food, medicines, and industrial inputs continuously.

There is therefore a gap between the beginning of a disruption and the arrival of a permanent solution. Some resilience options have to exist *before* the emergency.

Resilience Should Reduce Vulnerability, Not Shift It

Hormuz cannot be discussed seriously without considering Iran's geographic position, but transport resilience should not be evaluated by whether it economically harms one country or population. The relevant measure is whether a system reduces the vulnerability created by excessive dependence on a single route.

Replacing one strategic dependency with another may simply relocate the problem. A more resilient system would reduce the ability of any single event—conflict, political confrontation, infrastructure failure, accident, climate stress, or geography—to impose disproportionate costs on the wider system.

That principle applies beyond Hormuz to Suez, Panama, ports, pipelines, and other concentrated infrastructure.

The Counterargument Deserves to Be Taken Seriously

Markets already adapt. Ships reroute. Firms change suppliers. Inventories absorb temporary shortages. Price signals encourage substitution and additional production. Why invest heavily in disruptions that may be rare?

That is a legitimate objection. Redundancy is costly, and the economics vary sharply by commodity. A contingency network suitable for high-value or strategically critical inputs may make little sense for low-value bulk cargo. Infrastructure built around a temporary geopolitical problem can also become an expensive stranded asset.

Nor does diversification eliminate risk. OECD analysis emphasizes that well-diversified supply chains can create more options during shocks, while also warning that resilience policies can impose costs and create new trade-offs. It further finds that most global trade is relatively diversified overall, even though important concentrations remain in specific products and sectors.[8]

So “diversify” is not a complete strategy. The serious questions are narrower:

- Which flows are genuinely critical?
- Where is concentration unusually high?
- How much damage would an interruption cause?
- How long can inventories compensate?
- What alternatives already exist?
- What new dependencies would an alternative create?

This Goes Beyond Oil

Oil makes chokepoint risk easy to visualize because energy markets are enormous and energy prices affect much of the economy. But the underlying problem is broader.

The WTO's *Global Value Chain Development Report 2025* found that global-value-chain trade still accounted for 46.3% of total global trade, only modestly below its 2022 peak of 48%.[9]

The importance of cargo is not necessarily proportional to its physical size. A small shipment of specialized components can support a much larger manufacturing system. A medical input may matter far more than its tonnage or market value suggests. Fertilizer, semiconductors, critical materials, spare parts, and pharmaceuticals can all create outsized downstream consequences when unavailable.

That suggests a second measure for transportation resilience. Instead of asking only **how much cargo can be moved**, decision-makers should also ask **what happens economically or socially if this specific cargo stops moving**.

What Needs to Be Studied

Before governments or businesses commit serious capital to new resilience systems, the case should be demonstrated rather than assumed. That requires identifying dangerous concentrations, estimating tolerable outage durations, testing inventory buffers, valuing exposed economic activity, mapping existing alternatives, and comparing temporary flexibility with permanent infrastructure.

Any proposed alternative must also be evaluated for the dependencies and risks it creates. Engineering capacity, financing, legal permissions, political relationships, operating economics, environmental consequences, and security all matter.

This article therefore stops short of proposing specific corridors, capacities, or transport configurations. Those are separate feasibility questions. The broader analytical point is that the vulnerability can exist even before the correct infrastructure response is known.

Evidence Approach

This article is a systems-analysis synthesis based on published data and analysis from organizations including the IMF, UN Trade and Development, the International Energy Agency, the World Trade Organization, the OECD, and the World Bank. It compares reported trade flows, disruption effects, concentration, bypass capacity, and resilience trade-offs across different sources.

It does not present original engineering design, project-level cost-benefit analysis, or a proprietary model of trade flows. The purpose is to establish and bound the strategic resilience question before any specific infrastructure proposal is evaluated.

Analytical Scope & Limitations

This article evaluates systemic exposure rather than recommending a specific new corridor, pipeline, port, railway, or investment. Chokepoint risk varies by commodity, inventory levels, destination, alternative suppliers, spare infrastructure, insurance, policy response, and the duration of disruption.

Flow estimates and bypass capacity also change over time. Any investment case should therefore be based on current route-specific engineering and economic analysis rather than on the general resilience principle alone.

The Broader Question

For much of the last half-century, one of the central questions in global logistics was: **How efficiently can we move goods around the world?**

The next question may be: **How reliably can we keep the most important goods moving when the most efficient route stops working?**

The answer is unlikely to be self-sufficiency, an end to globalization, or duplication of every route. It is more likely to be selective redundancy: identifying where spare capacity, inventory, alternative routing, diversified supply, or

contingency infrastructure is worth paying for.

That redundancy may look inefficient during normal conditions. Sometimes it will be. But spare capacity almost always looks unnecessary before the moment it is needed.

> We do not need to defeat geography. We need to become better at absorbing the moments when geography suddenly matters.

Sources & Verification

> This edition was proofread and checked against the cited institutional and primary sources on September 19, 2026. Statistics were updated or narrowed where the source supported a more precise formulation.

1. International Monetary Fund. (2025). *Nowcasting Global Trade from Space.*
2. International Monetary Fund. (2024). *Red Sea Attacks Disrupt Global Trade.*
3. UN Trade and Development. (2025). *Review of Maritime Transport 2025.*
4. International Energy Agency. (2026). *Strait of Hormuz Factsheet.*
5. World Trade Organization. (2026). *Middle East conflict weighs further on slowing trade outlook.*
6. International Energy Agency. (2026). *How global oil supplies have readjusted to help fill the huge gap left by the Strait of Hormuz shock.*
7. World Bank. (2022). *Global Supply Chain Disruptions: Competition Policy Implications.*
8. OECD. (2025). *Economic Security and Vulnerabilities in International Supply Chains.*

9. World Trade Organization. (2025). *Global Value Chain Development Report 2025.*

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