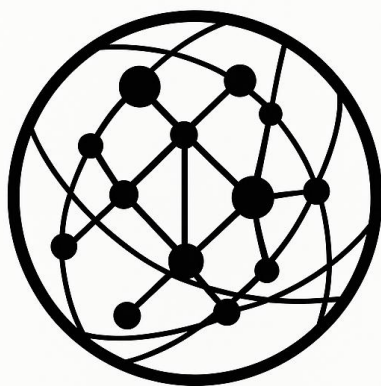


Policy Brief

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A Preliminary Assessment of Eastward and Northward Logistics Alternatives under Hormuz Pressure:

The China–Russia–Central Asia–Caspian Network

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Key Judgments

- **Pressure on the Strait of Hormuz is increasing the strategic value of Eurasian inland and Caspian routes, but these corridors provide redundancy rather than a substitute for Persian Gulf maritime scale.**
- **China–Central Asia rail is being used more intensively.** From January to June 2026, outbound TEU increased by 8.23 percent, compared with a 2.68 percent rise in outbound train numbers, indicating higher reported container volume per train.
- **The Caspian port system shows recurrent activation and broadly balanced turnover.** Baseline Output repeatedly exceeded the historical reference level, while strong arrival–departure coupling and limited directional imbalance suggest sustained activity rather than persistent vessel accumulation. These indicators do not, however, establish higher port efficiency.
- **The northern Caspian node became more visibly active during June and July.** Russian-flagged cargo-vessel presence rose in several waves to approximately 28–31 vessels, substantially above most April observations.
- **The emerging pattern is best understood as a distributed logistics redundancy network.** Chinese rail capacity, Central Asian transit space, Russian-flagged Caspian shipping, and regional port systems collectively provide greater routing flexibility, although the evidence does not establish that all additional activity was conflict-driven or Iran-bound.

Executive Summary

The U.S.–Israel–Iran conflict and sustained pressure on the Strait of Hormuz have underscored the vulnerability of logistics systems concentrated around a small number of maritime chokepoints. Hormuz remains indispensable to Gulf energy exports and bulk trade, but military risk, higher insurance costs, and uncertainty over passage are increasing the strategic value of alternative routes. The principal adaptation is not a single substitute corridor, but a more distributed Eurasian logistics network linking China, Central Asia, Russia, and the Caspian Sea.

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Three indicators support this assessment. China–Central Asia rail data for January–June 2026 show that outbound TEU increased by 8.23 percent, compared with a 2.68 percent rise in train numbers. Reported TEU per train increased from approximately 88.1 to 92.9, indicating more intensive use of existing services, although train composition and reporting coverage may vary. Caspian monitoring also shows repeated Baseline Output surges above the historical reference level, elevated vessel counts, and recurring periods of balanced arrival–departure turnover. Russian-flagged cargo-vessel presence likewise increased markedly during June and July, indicating stronger activity at the northern Caspian node.

The evidence demonstrates higher corridor activity and utilization more clearly than conflict causality, cargo composition, or final destination. Its policy significance lies in the emergence of a more resilient regional network in which China provides rail scale, Central Asia provides transit geography, Russia provides Caspian maritime depth, and regional ports provide intermodal links toward Iran, the South Caucasus, and wider Eurasian markets.

From a supply-chain perspective, the shift is from route substitution to network reconfiguration. Greater uncertainty encourages diversification across modes, nodes, border crossings, inventories, and contractual arrangements. Some of these adjustments may persist after immediate pressure eases because they create sunk investments, operating routines, and institutional learning.

Why This Matters

Chokepoint pressure does not need to produce a complete closure to reshape regional logistics. Even partial disruption can alter routing decisions, inventory policies, insurance costs, and the strategic value assigned to alternative corridors. The relevant question is not whether Eurasian routes can replace the Strait of Hormuz, which remains implausible at comparable scale, but whether sustained uncertainty is accelerating the utilization, institutional development, and operational learning of routes that previously functioned mainly as secondary or latent capacity.

A corridor can become strategically important before it becomes dominant. Repeated use can improve scheduling, customs coordination, port handling, transshipment routines, and commercial familiarity. Over time, these gains may convert temporary adaptation into more durable regional connectivity. Supply-chain resilience therefore depends not only on total transport capacity, but also on lead-time variability, node substitutability, inventory placement, visibility, and the ability to shift between modes without losing control of delivery schedules.

Scope and Analytical Approach

This assessment examines whether the U.S.–Israel–Iran conflict and pressure on the Strait of Hormuz are coinciding with greater use of eastward and northward logistics alternatives linking China, Russia, Central Asia, and the Caspian Sea. It evaluates corridor activity and regional connectivity without assuming that additional traffic is conflict-driven or Iran-bound.

The analysis draws on monthly rail data, Caspian port activity, arrival–departure patterns, and visible Russian-flagged vessel movements. These indicators suggest a more active and strategically relevant regional network, although more detailed official data are needed to assess causality, cargo composition, and final destinations.

Data cutoff: July 16, 2026, Iran Time (UTC+3:30).

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1. Analytical Frame: From Substitution to Distributed Redundancy

The adjustment should not be framed as a choice between Hormuz and a single substitute route. Hormuz remains the world’s largest oil-transit chokepoint by volume, while existing bypass capacity can absorb only a fraction of normal flows (U.S. Energy Information Administration [EIA], 2026). The more plausible response is a portfolio of partial alternatives spanning rail, Caspian shipping, road links, and regional ports.

This logic is consistent with the development of Eurasian multimodal corridors. The Middle Corridor links China and Europe through Kazakhstan, the Caspian Sea, Azerbaijan, and Georgia, but its performance depends on coordinated improvements in infrastructure, border procedures, ports, and logistics services (World Bank, 2023a, 2023b; Trans-Caspian International Transport Route Association [TITR Association], n.d.).

The China–Russia–Central Asia–Caspian system is broader because it also incorporates Russian Caspian shipping and north–south connectivity. Its value lies in redundancy rather than equivalence: combined rail, port, vessel, and border capacity can preserve selected flows and reduce chokepoint dependence without replacing Gulf maritime scale. The International North–South Transport Corridor provides an additional institutional basis for this network (United Nations Economic Commission for Europe [UNECE], 2004).

Table 1. Evidence Structure for a Distributed Eurasian Redundancy Network

Component	Directly Observed Signal	Functional Role	Inferred Significance	Main Limitation
China–central Asia Rail	Monthly train and TEU growth; TEU rises faster than train numbers	Eastward overland scale and containerized capacity	Higher reported TEU per train and more intensive service utilization	No confirmed final destination; train composition may vary
Central Asian Transit Space	Continued regional rail services and the introduction or extension of regional routes	Intermodal bridge among China, Russia, Iran, and wider Eurasia	Greater routing availability and network redundancy	Customs, gauge, and border frictions
Russian-flagged Caspian Vessels	Russian-flagged cargo-vessel counts rise in repeated waves	Northern maritime depth and supply participation	Stronger visible activity by a key Caspian node	Vessel visibility does not reveal cargo content or ownership
Caspian Port System	Baseline Output surges and recurring arrival–departure coupling	Short-window processing and regional redistribution	Higher system activity and sustained turnover	Standardized output measure, not audited tonnage

Source: Author’s synthesis based on the Central Asia freight-train dataset, the AIPAMS Caspian Port System Monitor, the Russian-flagged Caspian vessel-monitoring dataset, and the corridor literature cited in Sections 1–5 (World Bank, 2023b; Wu, 2026a, 2026b, 2026c).

Note: The table distinguishes directly observed activity from inferred significance. “Russian-flagged vessels” refers to vessels identified as flying the Russian flag at the time of observation. Flag status does not necessarily indicate beneficial ownership, cargo origin, or final destination.

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2. Central Asian Rail: Growth in Utilization, Not Only Frequency

January–June 2026 rail data show that reported freight volume grew faster than train frequency. Outbound TEU increased by 8.23 percent, compared with a 2.68 percent rise in outbound trains; total TEU and train numbers increased by 6.94 percent and 6.07 percent, respectively (Wu, 2026b). Reported outbound TEU per train consequently rose from approximately 88.1 to 92.9, a gain of about 5.4 percent.

This indicates more intensive use of existing services, but not necessarily higher physical loading efficiency, as train composition, empty-container shares, route mix, and reporting coverage may vary. The trend is consistent with continued expansion of China’s western rail gateways and new Central Asia-bound and trans-Caspian services through Alashankou, Horgos, and Tianjin (Belt and Road Portal, 2026a; State Council Information Office of the People’s Republic of China [SCIO], 2026a, 2026b; Tianjin Economic-Technological Development Area, 2026).

The data do not establish that incremental cargo was Iran-bound. They do, however, indicate greater capacity to absorb selected rerouted, containerized, and time-sensitive goods and support the assessment that the network is developing as a regional distribution system rather than a single end-to-end route (Belt and Road Portal, 2026b; State Council of the People’s Republic of China, 2025).

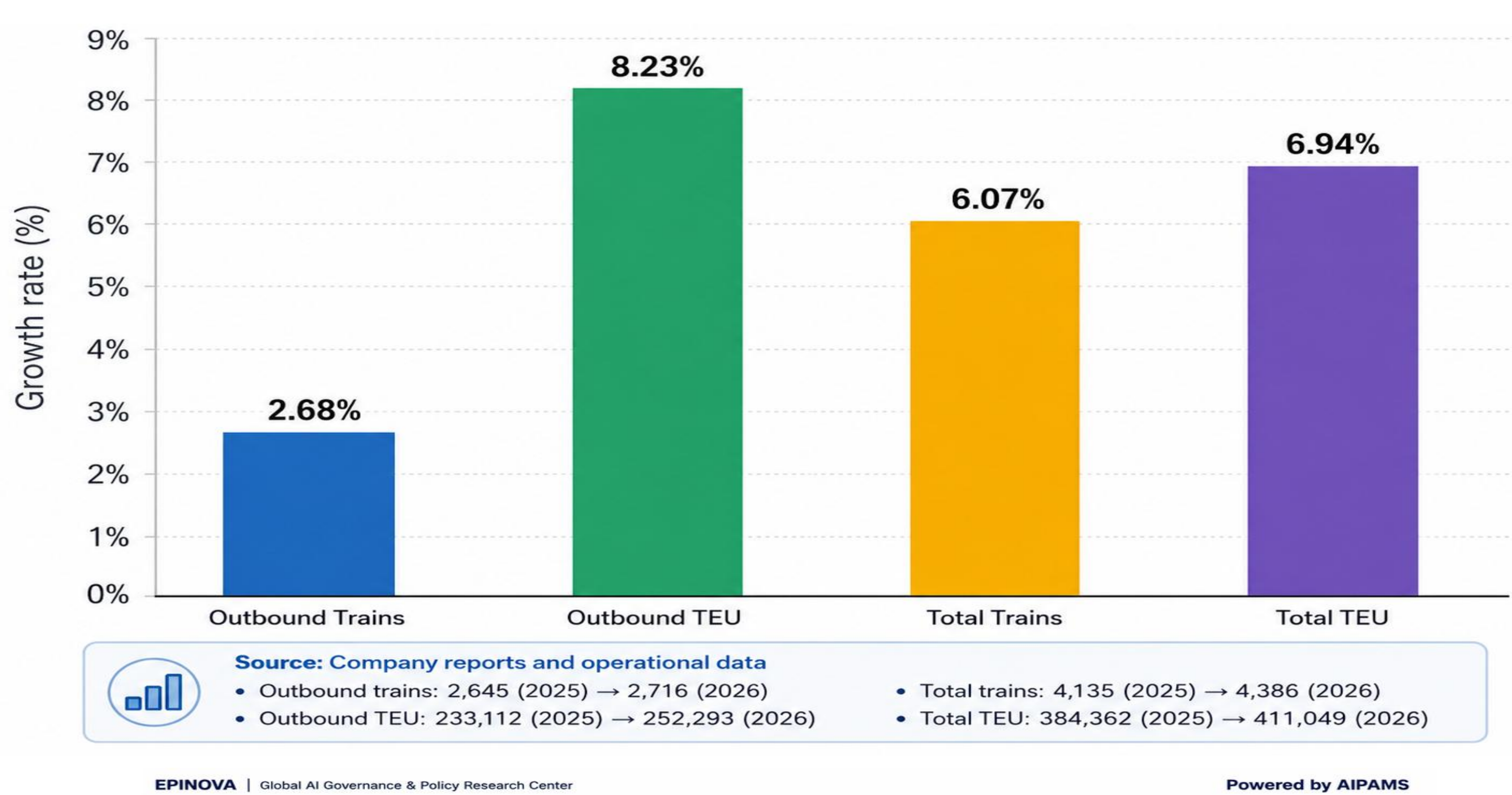


Figure 1. Central Asia Freight-Train Activity, January–June 2025 and January–June 2026

Source: Author’s calculations based on company reports and operational data compiled in the Central Asia freight-train dataset (Wu, 2026b).

Note: TEU denotes twenty-foot equivalent units. Percentage changes compare January–June 2026 with January–June 2025. The data measure aggregate corridor activity and do not identify final cargo destination. Reported TEU per train is a derived ratio and should not be interpreted as a verified physical load factor.

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3. The Caspian Port System: Recurrent Activity Above the Historical Reference Level

Caspian monitoring adds a maritime and intermodal dimension to the rail evidence. Between April and July 2026, Baseline Output repeatedly exceeded its historical reference level, including several episodes above 100,000 tons per day, with recurring cycles of expansion, contraction, and renewed activity (Wu, 2026a). These standardized estimates are not audited cargo totals; their value lies in showing relative intensity and recurrent system activation.

The pattern aligns with broader trans-Caspian growth. Freight through Kazakh and Azerbaijani ports reached 3.3 million tons in 2024, while container traffic rose to 56,500 TEU (TITR Association, 2025). The Caspian crossing remains both a central link and a major bottleneck, with performance dependent on port capacity, vessel availability, scheduling, and border procedures (World Bank, 2023b).

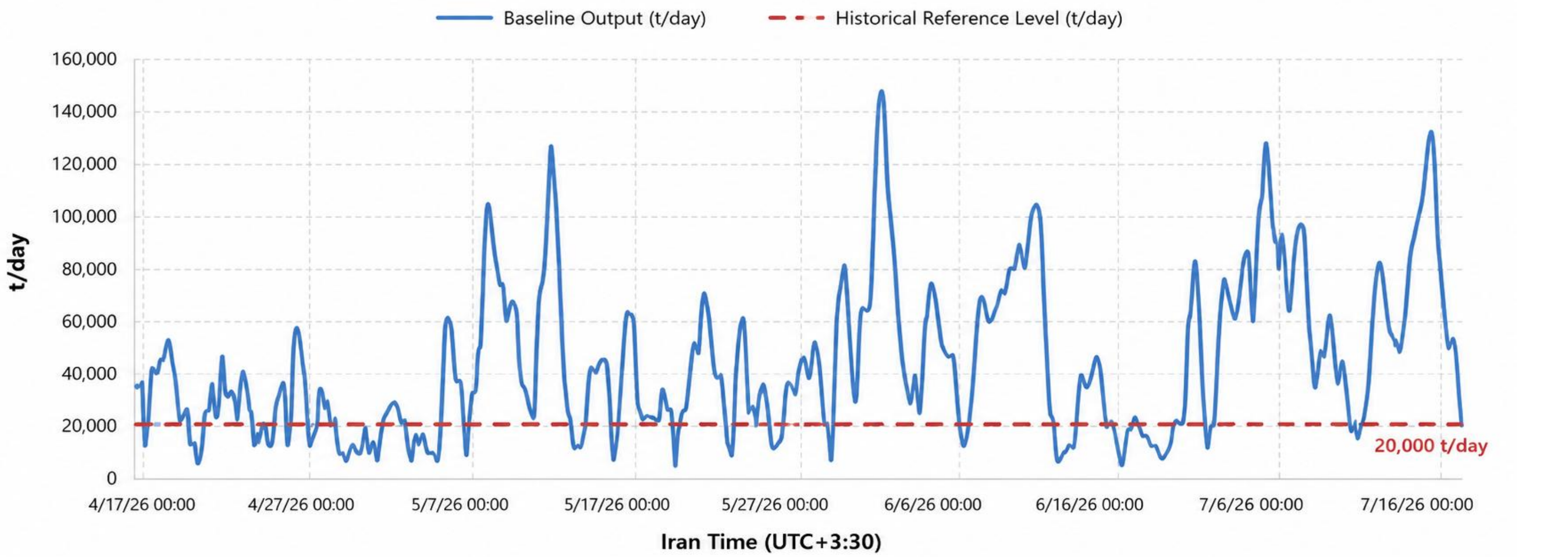


Figure 2. Caspian Port-System Baseline Output Relative to the Historical Reference Level, April–July 2026

Source: Author’s calculations using the AIPAMS Caspian Port System Monitor (Wu, 2026a).

Note: Baseline Output is a standardized estimate derived from observed port activity and an assumed tonnage-per-departure conversion. It is intended to show relative system rhythm and deviation from the historical reference level, not audited cargo throughput. Observations end on July 16, 2026, Iran Time.

4. Arrival–Departure Coupling and Sustained Turnover

Repeated periods of high activity are most significant when arrivals and departures rise together. In the Caspian series, the Arrival–Departure Coupling (ADC) indicator showed recurring synchronization, while the Arrival–Departure Balance (ADB) remained relatively close to its reference level during much of the observation period (Wu, 2026a, 2026d). This combination suggests sustained and broadly balanced turnover rather than persistent vessel accumulation.

The indicators do not establish centralized coordination, shorter processing times, higher port efficiency, or cargo composition. They nevertheless provide preliminary evidence of continued vessel processing during periods of elevated activity. This interpretation is consistent with the CAREC framework, which assesses corridor performance through time, cost, border delays, and operational efficiency, and with the World Bank’s emphasis on waiting times, rail–port coordination, and predictable Caspian schedules (Central Asia Regional Economic Cooperation Program [CAREC], n.d.; World Bank, 2023b). Vessel identities, manifests, berth records, and port-call data would be required to determine the underlying mechanisms.

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5. Russian-Flagged Vessels: Strengthening the Northern Caspian Node

Visible Russian-flagged cargo-vessel counts rose sharply in June and July, reaching approximately 30–31 in mid-June and 28–30 in mid-July, well above most April observations (Wu, 2026c). Tanker counts remained lower and more volatile but recovered in July, while special craft and tug activity was broadly stable. The pattern indicates repeated activation at higher cargo-vessel levels rather than continuous growth.

These data strengthen the assessment that the northern Caspian node became more active within networks linking Russia, Central Asia, and the International North–South Transport Corridor (UNECE, 2004, 2020). They do not, however, establish cargo ownership, composition, origin, or destination.

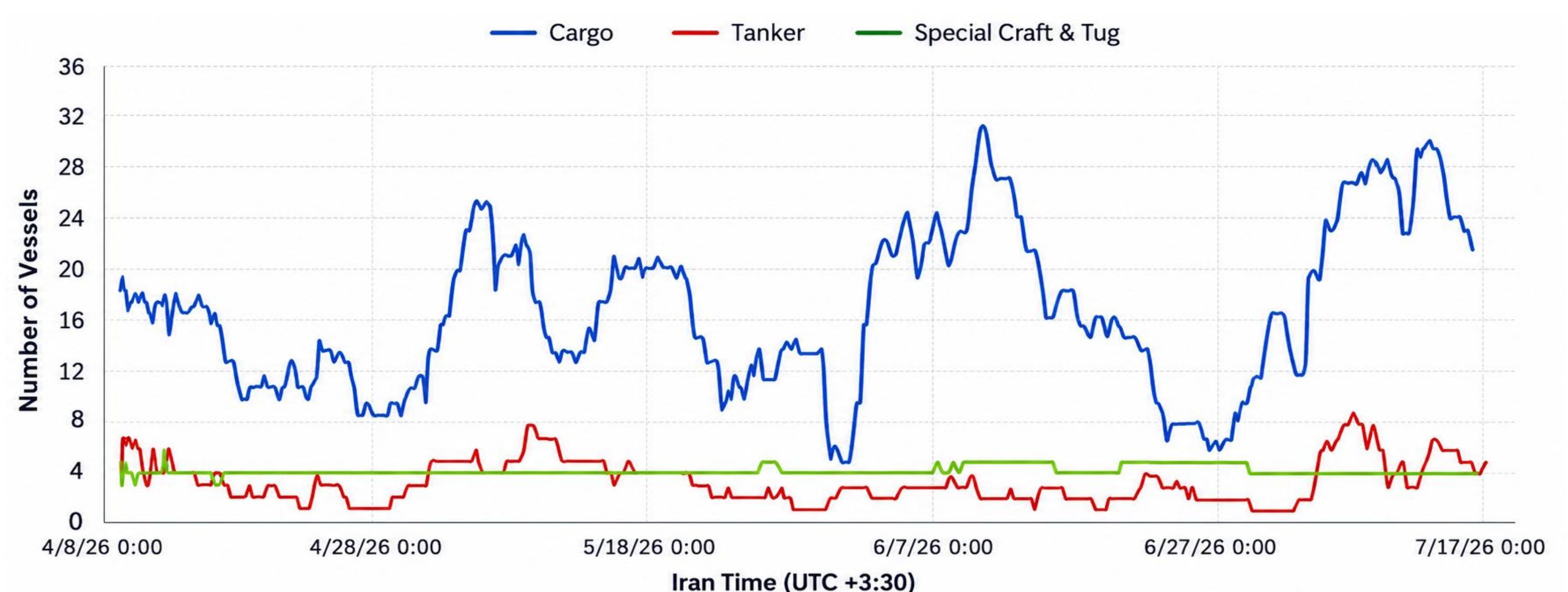


Figure 3. Visible Russian-Flagged Cargo Vessels, Tankers, and Special Craft in the Caspian Sea, April–July 2026

Source: Author’s Russian-flagged vessel-monitoring dataset (Wu, 2026c).

Note: Vessel counts reflect visible observations and flag classification at each monitoring point. AIS deactivation, reflagging, duplicate records, classification changes, and incomplete transmission may affect totals. Flag status does not establish beneficial ownership, cargo origin, cargo type, or final destination. Data end on July 16, 2026, Iran Time.

6. What Is Driving the Change?

Conflict-related pressure is likely contributing to the observed shift, but it is interacting with broader structural trends: China’s expansion of continental rail connectivity, Russia’s pursuit of sanctions-resilient routes, Central Asian interest in transit development, and the gradual operationalization of east–west and north–south corridors.

- **Risk diversification.** Higher costs and uncertainty around Hormuz increase incentives to use alternative routes, although existing bypass capacity can absorb only a fraction of normal flows (EIA, 2026).
- **Capacity utilization.** Additional traffic can be accommodated through more intensive use of existing railways, ports, terminals, and border facilities, alongside new Central Asia-bound and trans-Caspian services (Belt and Road Portal, 2026a, 2026b; SCIO, 2026b).

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- **Sanctions resilience.** Russia and Iran have incentives to expand routes that reduce exposure to Western maritime, insurance, and financial systems, despite lower capacity and reliability than established ocean routes (UNECE, 2004; World Bank, 2023b).
- **Central Asian agency.** Regional states can gain transit revenue, investment, and bargaining leverage, although benefits depend on customs reform, coordination, and bottleneck removal (Asian Development Bank [ADB], 2021; World Bank, 2023b).
- **Operational learning.** Repeated use can improve schedules, customs procedures, intermodal transfers, and commercial familiarity, reinforcing both institutional and physical corridor development (TITR Association, 2025, n.d.).

7. Supply-Chain Interpretation: From Rerouting to Network Reconfiguration

The observed shift is better understood as network reconfiguration than simple route diversion. Under Hormuz pressure, the China–Russia–Central Asia–Caspian network expands routing options across transport modes, border crossings, ports, inventories, carriers, and contractual relationships, even where alternatives are slower, more costly, or lower-capacity than Gulf maritime routes.

The principal effects are greater modal diversification, larger and more distributed inventory buffers, stronger emphasis on node reliability, and growing path dependence. Rail supports higher-value and time-sensitive cargo, Caspian shipping connects discontinuous land corridors, and road transport adds local flexibility. At the same time, corridor performance depends on terminals, customs interfaces, vessel and wagon availability, schedule coordination, and information visibility.

Repeated use may also make temporary adjustments more durable by creating contracts, operating routines, tracking systems, and consolidation hubs. The key policy question is therefore not simply how much cargo moves through the network, but whether it reduces lead-time volatility, expands modal options, improves recovery, and limits dependence on any single node.

8. Strategic Assessment

The emerging network is distributed and selective, while its strategic effects are reconfigurative and cumulative. Its resilience derives from the combined use of railways, inland terminals, Caspian ports, Russian-flagged shipping, and Central Asian border crossings rather than from a single substitute route. It is best suited to containerized, higher-value, and medium-volume cargo, not Gulf-scale bulk replacement. Its strategic value lies in expanding modal choice, node substitutability, inventory options, and recovery capacity, while repeated use builds operating experience, contractual familiarity, and institutional coordination.

Higher utilization is supported by multiple indicators and can be assessed with high confidence. Conflict-related pressure is a plausible contributor, but it cannot be separated from broader trade, infrastructure, and sanctions trends. Some traffic may be Iran-bound, but destination evidence remains incomplete. Longer-term corridor development is likely to be reinforced, while replacement of Hormuz at comparable scale remains implausible.

Table 2. Confidence-Calibrated Assessment of Corridor Utilization and Strategic Effects

Assessment Area	Current Judgment	Confidence	Policy Meaning
Regional corridor utilization	Increased utilization is observable across multiple indicators	High	The network is being used more intensively
Conflict contribution	Plausible, but not independently isolated from structural trends	Medium	Avoid monocausal attribution
Iran-bound diversion	Possible for part of the flow	Low–medium	Destination evidence remains incomplete
Long-term corridor development	Likely to be reinforced	Medium–high	Temporary pressure may create durable connectivity
Replacement of Hormuz	Not feasible at comparable scale	High	Alternatives provide resilience, not equivalence

Source: Author’s assessment based on the evidence and references presented in Sections 1–7, including EIA (2026), World Bank (2023a, 2023b), TITR Association (2024, 2025), and Wu (2026a, 2026b, 2026c, 2026d).

Note: Confidence levels are qualitative judgments. “High” indicates direct support from multiple observed indicators; “medium” indicates a plausible interpretation with competing explanations; “low–medium” indicates incomplete destination or cargo evidence. The categories are not statistical confidence intervals.

9. Policy Implications

- Monitor systems rather than individual shipments. Reported TEU per train, Baseline Output, vessel mix, arrival–departure coupling, directional imbalance, border processing, and transshipment time should be assessed together.
- Treat Central Asia as an active strategic space, not a passive bridge. Regional states can shape routing, access, fees, and corridor governance.
- Distinguish resilience from replacement. The strategic value of the network lies in preserving continuity and reducing dependence on any single chokepoint.
- Measure supply-chain resilience, not volume alone. Lead-time variability, inventory buffers, schedule reliability, node substitutability, and recovery time should be monitored alongside trains, vessels, and tonnage.
- Expect temporary rerouting to become partially durable. Once commercial actors establish contracts, schedules, and customs routines, some traffic may remain even after Gulf pressure eases.
- Avoid overstating Iran-specific conclusions. The broader and better-supported finding is growth in China–Russia–Central Asia–Caspian connectivity.

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10. Limitations

This assessment is based on monthly rail indicators, visible vessel counts, and author-compiled port-system monitoring. It does not provide a transaction-level cargo audit. AIS gaps, vessel reclassification, reflagging, opaque ownership, and incomplete destination data may affect the maritime series. The Baseline Output measure is a standardized estimate rather than verified tonnage.

The monthly rail data permit comparison of changes within the January–June period, but they do not independently establish conflict causality. Control corridors, cargo categories, route-specific composition, and destination evidence would be required for a stronger causal estimate. The analysis therefore distinguishes between observed utilization and inferred conflict effects. It also lacks firm-level inventory, lead-time, freight-rate, and delivery-reliability data, limiting the ability to quantify the supply-chain benefits and costs of route diversification.

Conclusion

The most important logistical development observed during the U.S.–Israel–Iran conflict may not be the creation of a single route around Hormuz, but the greater utilization of a wider Eurasian logistics network. China–Central Asia rail carried more reported TEU per outbound train; the Caspian port system repeatedly operated above its historical reference level; arrivals and departures frequently increased together; and visible Russian-flagged cargo-vessel presence rose in several strong waves.

Together, these signals support a preliminary assessment that eastward and northward logistics alternatives are becoming more actively utilized components of regional logistics infrastructure. The network does not replace the Strait of Hormuz, and the available evidence does not prove that all additional activity was conflict-driven or Iran-bound. It does, however, show that the China–Russia–Central Asia–Caspian network became more intensively utilized during a period of heightened geopolitical pressure.

The strategic consequence may be cumulative. Each disruption episode creates additional operating experience, infrastructure attention, and commercial familiarity with alternative routes. What may begin as crisis-related adaptation can contribute to longer-term corridor development. From a supply-chain perspective, the deeper transformation is a shift from minimum-cost routing toward risk-adjusted network design. The resulting system may be more expensive and complex, but also less dependent on a single maritime gateway and more capable of absorbing future shocks.

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