



## ***Policy Brief***

# **Trade Facilitation Cost of Regional Uncertainties**

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# Trade Facilitation Cost of Regional Uncertainties<sup>1</sup>

## Introduction

The Russian-Ukraine conflict has significantly disrupted regional supply chain on the North Route (Russia and Ukraine, figure 1 gray color) and diverted trade to Middle Corridor<sup>2</sup> (see figure 1, green color). Middle Corridor which is a key trade route connecting PRC, Central Asia, Caucasus and Europe by land and sea (Caspian Sea)<sup>3</sup>. Train shipments from PRC, as well as truck shipments from other Central Asian Republics enter Kazakhstan and move along CAREC Corridor to Kazakh seaports, namely Aktau and Kuryk. Aktau (Kazakhstan) is the main seaport while Kuryk (Kazakhstan) is a new and smaller port south of Aktau.

The shipment is then transported on water to the new seaport of Baku (Azerbaijan) at Alyat<sup>4</sup>. The shipment is then transported on trains or trucks across the Caucasus before reaching Poti or Batumi in Georgia. From there, the shipment can be transported across the Black Sea to Varna in Bulgaria, Constanta in Romania or Chernomorsk in Ukraine. Alternatively, the shipment can continue on land into Türkiye, crossing the Sarpi Border Crossing Point (BCP).

Primarily the paper is analyzing how regional uncertainties particularly Russian-Ukraine Conflict impacts trade facilitation in the region. Middle Corridor got significant importance after the conflict started off, however, the route was not ready to host large volume of traffic which significantly hindered the trade facilitation indicators (time delays and cost incurred at the BCPs) at the Middle Corridor. For the paper, we mainly considered Caspian crossing which is a sub-part of the Middle Corridor to make our analysis more explicit and provide a solid solution for trade facilitation.

To avoid the sanctions imposed on Russia, protect cargo security, avoid significant delays at the BCPs on the northern route, and insurer refusal to extend insurance to the conflict zone the Middle Corridor got significant international attention and attracted significant volume of traffic. From the World Bank, 2023 study we can see the container traffic skyrocket by 33 % in 22 after the conflicted started off<sup>5</sup>. However, latter with inadequate capacities of vessels, infrastructure insufficiency, custom control and handling procedures plummeted the container traffic by 37 % in 2023 (see figure 2). To overcome these challenges one of the proposed solutions is technological adoption for transport digitalization corridors is recommended.

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<sup>2</sup> Also, called CAREC Corridor 2 or Trans-Caspian International Route (TITR).

<sup>3</sup> Caspian Sea in inland sea.

<sup>4</sup> Azerbaijan policymakers relocated the new seaport south of Baku in the Alyat settlement. This allows Baku city to expand without interfering with the port's physical expansion.

<sup>5</sup> Middle Trade and Transport Corridor: Policies and Investment to Triple Freight Volumes And Halve Travel Time by 2030.

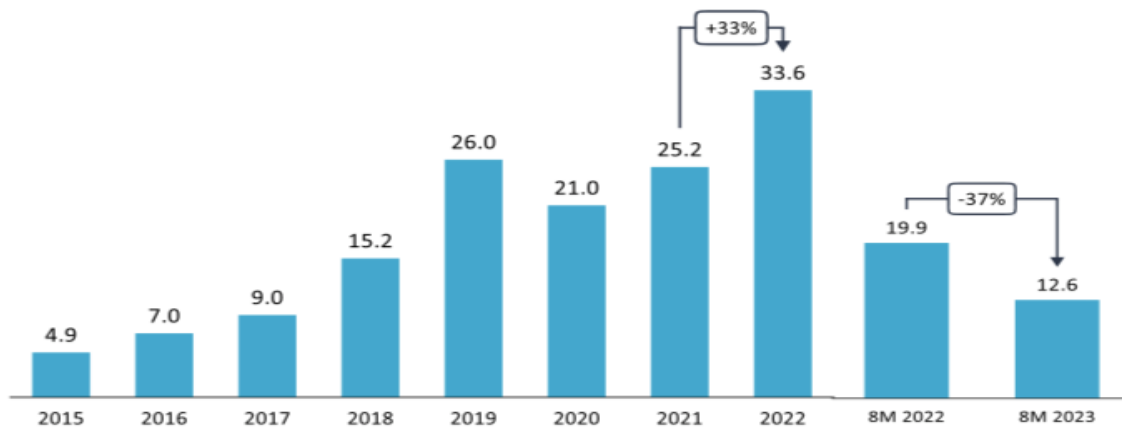
Next part of the paper is analyzing Caspian crossing in both directions. The impact of Russian-Ukraine Conflict is discussed in the following section 2. The final section of the paper elaborated the proposed solution derived from Georgian used case.

**Figure 1: Middle Corridor**



Source: Middle Trade and Transport Corridor, World Bank November 2023.

**Figure 2: Container Traffic Middle Corridor thousand TEUs**



Source: Middle Trade and Transport Corridor, World Bank November 2023.

Before analyzing the impact of Russian-Ukraine conflict on trade facilitation indicators (time delays and cost occurrence), it is important to analyze the Trans-Caspian Crossing from West to East and East to West directions<sup>6</sup>. The Trans-Caspian analysis explores that in terms of cost per ton-km the Caspian crossing is three times costlier (0.21 vs 0.07) than overland crossing from West to East direction<sup>7</sup>. However, from East to West direction the difference is almost

<sup>6</sup> To control for different cargo weight, freight rate and each sample has different origin destination.

<sup>7</sup> CPMM Annual Report 2023 estimates

similar (0.06 vs 0.05). To attract return cargo, the Turkish and Georgian drivers offer lower rate as compare to the first leg from West to East. Interestingly, as the distance and payload increase train shipment cost per ton-km is lowest as compared to road shipment.

In terms of shipment, two measures are adopted, namely Speed Without Delay (SWOD, moving speed) and Speed With Delay (SWD, including the time stopped for waiting and completing border-crossing formalities). SWOD and SWD are used because shipments have multiple origins and destinations, resulting in different distances. Thus, using speed indicators allow cross-comparisons. CAREC Corridors Performance, Measurement and Monitoring (CPMM) analysis shows that:

- a) Multimodal shipment crossing Caspian moved faster (higher SWOD) than shipments that moved overland (entirely on land). Unfortunately, this advantage was negated by the longer delay for the multimodal shipment. Thus, SWDs for shipments crossing Caspian versus overland were similar.
- b) The longer delay for shipments crossing the Caspian Sea was due to the waiting time for vessels at the seaports (e.g. Aktau and Kuryk). The vessels do not operate on a fixed schedule. Vessels are deployed only when sufficient freight accumulates at the seaports. Shipments can wait for 5-7 days for the vessels to arrive.
- c) Trains moved faster than road shipments. However, significant delays at train stations and border-crossing points resulted in a lower overall speed compared to road shipments.

**Table 1: Trans-Caspian Crossing**

Direction	Performance	Indicators	Caspian Crossing <sup>a</sup>	Overland <sup>b</sup>	Train Shipments <sup>c</sup>
West to East	Unit Cost of Transport	Cost \$ per ton	734.85	357.21	N/A
		Cost \$ per km	2.21	1.19	N/A
		Cost \$ per ton-km	0.21	0.07	N/A
	Speed	SWOD, km/h	42.88	25.76	N/A
		SWD, km/h	10.52	15.53	N/A
East to West	Unit Cost of Transport	Cost \$ per ton	184.78	162.28	273.25
		Cost \$ per km	1.10	0.98	1.27
		Cost \$ per ton-km	0.06	0.05	0.03
	Speed	SWOD, km/h	42.10	24.09	43,34
		SWD, km/h	12.12	12.72	5.89

- a. These are the samples that crossed on land by road the Caspian Sea by ferry.
- b. These are the samples that moved on land by road around the Caspian Sea.
- c. These are the samples that moved on land by rail and crossed the Caspian Sea by ferry.

The Russian-Ukraine conflict impacted not only the crossing Caspian Sea operations but also average border crossing time and cost of land and seaports BCPs. The analysis shows that on average land BCPs consumed less time than seaports which was 2.7 times less than seaports (21.0 hours versus 7.8 hours). Similarly, the average border crossing cost was higher (3.8 times)

for seaports than land (\$236.80 versus \$62.60). Unpredictable weather conditions that cause vessels to stay in harbor, delay departure time, and the unscheduled nature of vessel services are some of the reasons for time and cost escalations.

**Table 2: Border-Crossing Performance of Shipments through Corridor 2 in 2022**

<b>Nodes</b>	<b>Border-crossing time (hours)</b>	<b>Border-crossing cost (\$)</b>
Land BCPs	7.8	62.60
Seaports	21.0	236.80

Source: CPMM Annual Report 2023 estimates

### **Impact of Russia-Ukraine Conflict**

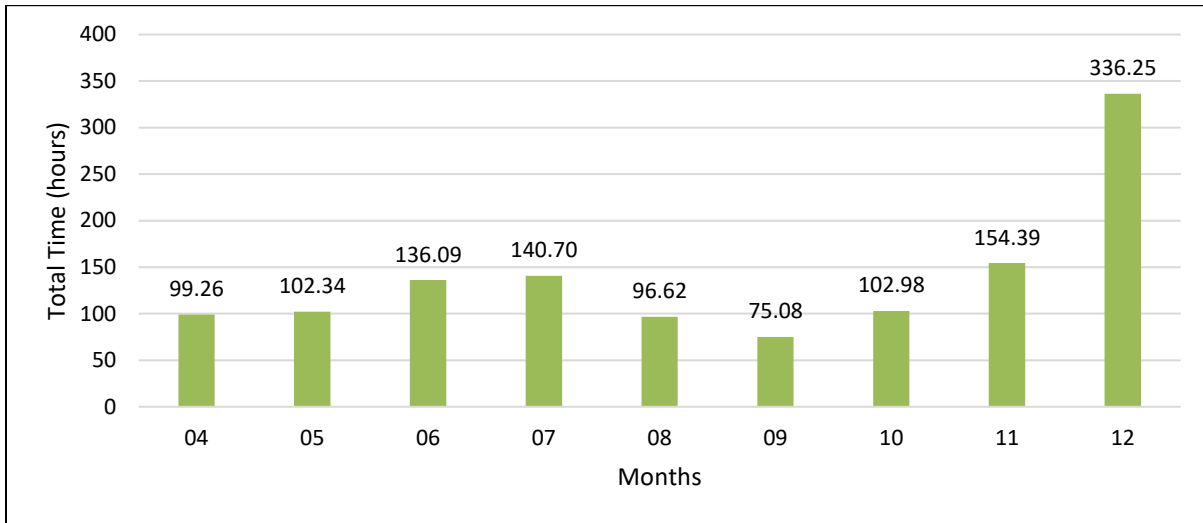
The Russia-Ukraine conflict has amplified the processing time (operation time and waiting time)<sup>8</sup> at the seaports. The figures, 3,4,5, and 6 posit the apparent volatility in the processing times at Baku and Kuryk seaports in 2022. The total processing time at Baku seaport jumped by 238 % from April to December, 2022 from West to East direction (see figure 3). Similarly, the monthly total processing time at Kuryk jumped by 87 % from West to East direction (see figure 4). The increased processing time at both the seaports clearly indicates the surge in freight traffic diverted towards seaports due to Russia-Ukraine conflict.

In contrast, from the East to West direction, the total processing time decreased for both the seaports, Baku and Kuryk (see figure 5, and 6). In the months of April and March, Kuryk shows a longer processing time as compared to Baku. These observations are in line for the waiting time in reverse direction for a ferry to pick up cargoes at Kuryk and heads towards Baku. However, gradually the tendencies went down by December. Shipments at Kuryk faced a surge in duration during May-June when the containers from Aktau were diverted due to the volume surpassing Aktau’s handling capacity. Similarly, the total processing time for Kuryk also dropped significantly. To conclude, the waiting time of vessels (unless sufficient cargoes are accumulated) at both the seaports for departure significantly add to the unpredictability of the transportation time. In a nutshell, the Russian-Ukraine conflict increased freight diversion and led to increased total processing time.

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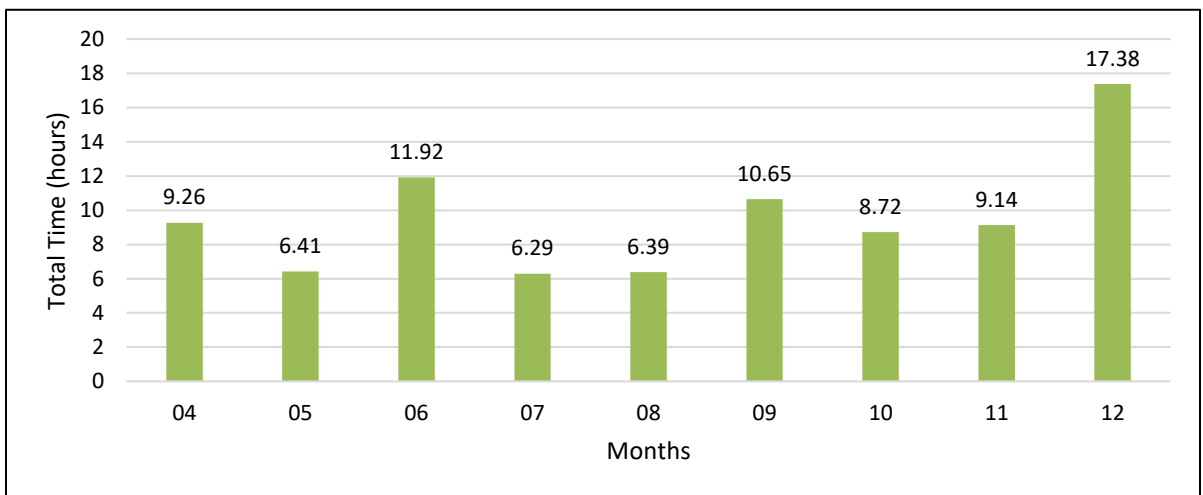
<sup>8</sup> Operation time refers to customs controls, inspections, immigration, and materials transfer (e.g. moving containers to the docks). Waiting time refers to the time when the shipment is waiting in the port for the vessel to arrive, or for the shipment to be cleared for onward journey.

**Figure 3: Monthly Total Processing Time at Baku Seaport in 2022 (West to East Direction)**



Source: CPMM Annual Report 2023 estimates

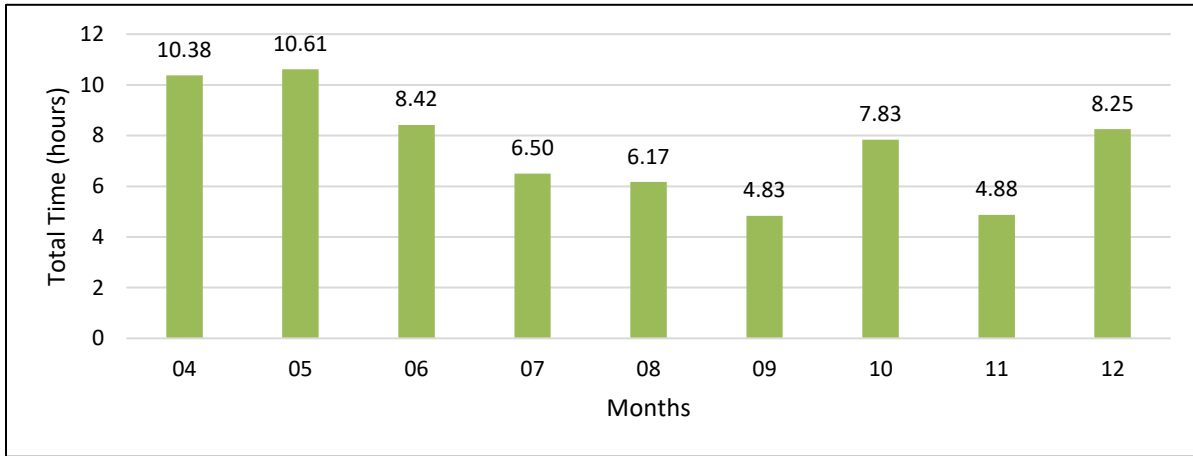
**Figure 4: Monthly Total Processing Time at Kuryk Seaport in 2022 (West to East Direction)**



Source: CPMM Annual Report 2023 estimates

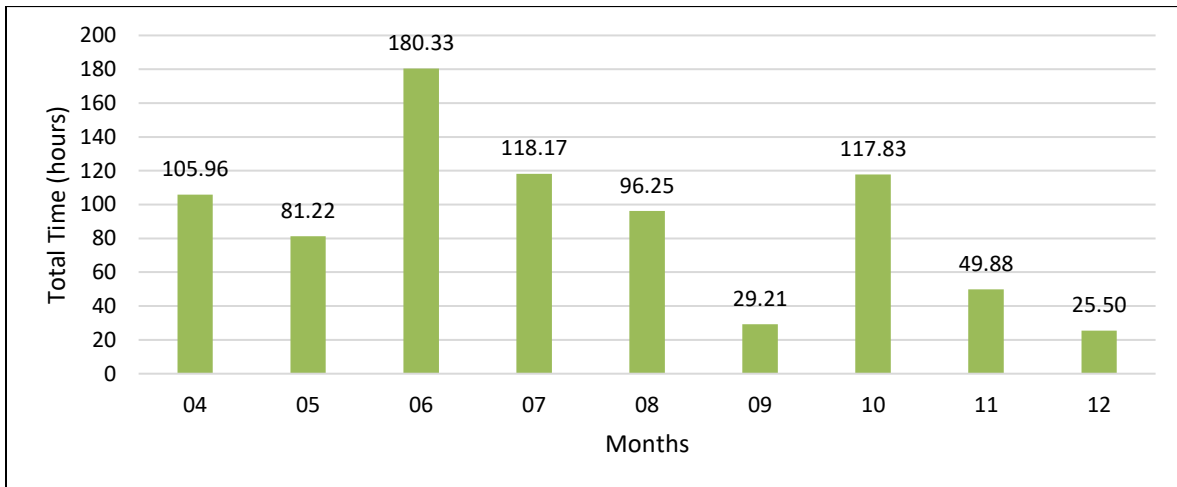


**Figure 5: Monthly Total Processing Time at Baku Seaport in 2022 (East to West Direction)**



Source: CPMM Annual Report 2023 estimates

**Figure 6: Monthly Total Processing Time at Kuryk Seaport in 2022 (East to West Direction)**



Source: CPMM Annual Report 2023 estimates

Real time data is not exchanged and the ports are disconnected, therefore, digitalization of the ports and land BCPs are extremely important to enhance operational time and efficiency. Similarly, knowing the nature of the products at the ports for clearance, tracking the status of shipment or disseminating changes in the shipment document (due to correcting errors or adding/removing freight along the way) is hard, therefore, advance messages interchanges (EDI) about shipments are also important but still relying mostly on manual efforts at the ports. Installation of simple internet technology like XML or other languages could be used for communication exchanges at the ports. Also, a unified port operating system is required that speaks in a same language to simplify and automate data and information exchanges within



terminal, currently Baku is using in house terminal operating system, Kuryk has no terminal operating system and Aktauuses Solvo, terminal operating system developed by a Russian company. Also, TITR is multi-party, multimodal route (road, railways, water) which deals with so many players and stakeholders. It would be appropriate to adopt digitalization initiatives for the transport corridors and operational entities, so that shipment information can be disseminated to all the parties efficiently. These parties include (1) Port authorities, (2) Customs, (3) Vessel operators, (4) Rail operator, (5) Truck operator, (6) Freight forwarders and customs brokers.

### **Proposed Solution: Transport Corridors Digitalization**

To reduce the impact of regional uncertainties on trade facilitation transport corridors digitalization could be considered one of the proposed solutions along with enhancing number of vessel and vessel capacity, cranes upgradation, and most importantly a workable operational mechanism (governance structure) signed by all the member countries<sup>9</sup>. In the latest regional study (see footnote 7) for the countries of Northern and Central Asia UNESCAP experts also recommended the use of national eLogistics systems (NELS) based on integrated digital platforms and implemented at the national level to optimize and streamline logistics operations within a country and its segments of international transport corridors.

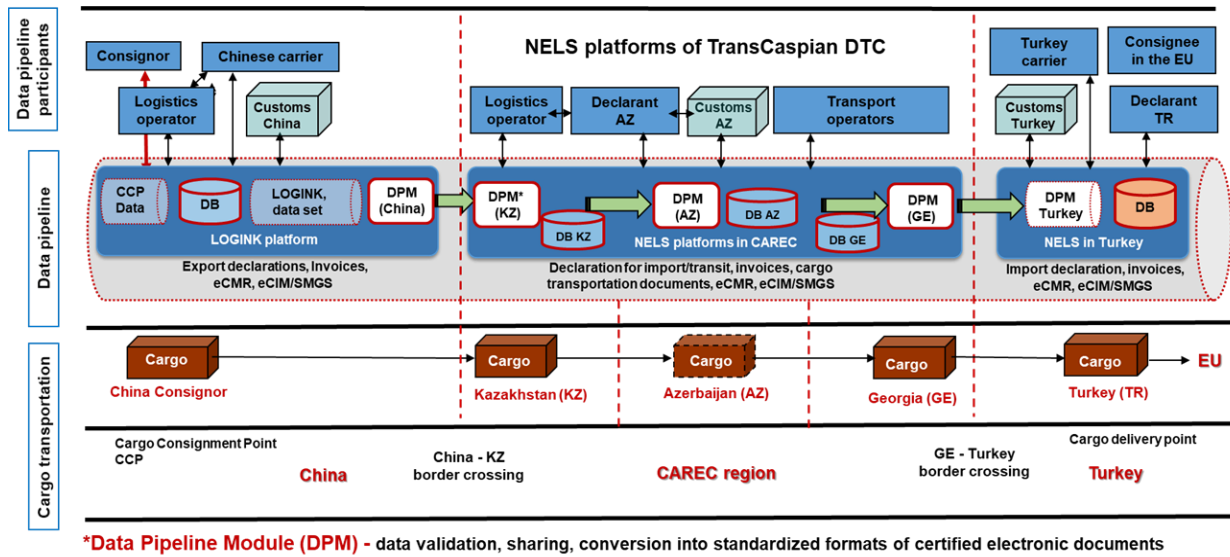
This approach became the foundation for the Digital Transport Corridors (DTC) concept developed in 2017-2020 by the inter-regional Working Group on eLogistics and DTC<sup>10</sup>. Primarily the DTC is a platform which unites information about international transport corridor to channelize it for multimodal cargo transportation to be used for various government and businesses services. Figure 7 depicts functional scheme for TITR Digitalization developed by experts from the interregional Working Group on eLogistics and DTC. The implementation of such platforms in the CAREC region potentially can reduce transaction cost in terms of delays and other associated risks for transit traffic in international supply chain.

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<sup>9</sup> The objective of this policy brief is to mainly highlight the importance of digitalization aspect of the solution not the governance aspect of the middle corridor which could be a separate discussion.

<sup>10</sup> [https://www.unescap.org/sites/default/d8files/event-documents/Apr27\\_6\\_DTC%20Virkovsky\\_CARECcountries\\_updated.pdf](https://www.unescap.org/sites/default/d8files/event-documents/Apr27_6_DTC%20Virkovsky_CARECcountries_updated.pdf)

**Figure 7: Functional scheme for TITR Digitalization**



Source: PLMO 2023 proceedings, Azerbaijan

Georgia pioneered DTC concept in 2023 by the Feasibility Study project and development of the Road Map for NELS implementation in the country. The comprehensive Road Map included the following stages: regulatory, organizational, development and deployment, integration and piloting, operational and capacity building. Before moving for a comprehensive road map implementation, the respective countries need to overcome the challenges associated with its implementation, for example, technological disparities, resistance to change, and need for investment in infrastructure, non-existence of data sharing and security protocols, mutual recognitions of the standards. Digitalization approach proposed for the national segments of TITR transport corridor will facilitate:

- Reduction of transport costs by optimizing the cargo handling in the national segment of international transport corridors and cross-border;
- Shortening the delays at seaports and land border-crossing points by better planning, coordination and control through timely sharing of data and information.
- Improving transparency and visibility of cargo location and status through the TITR. This is particularly important as a round trip from Poti to Almaty and back can take a month and shippers will benefit from monitoring the shipment status as it is highly opaque and hard to track now.

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