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Diversifying Transport and Transit Routes in Central Asia: Key Insights

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Abstract

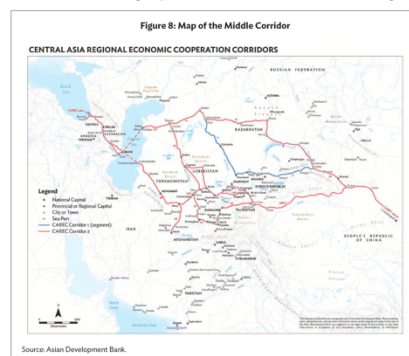
Diversification of transport and trade routes has been the key element of the CAREC Program since its inception in 2001. For this purpose, the concept of six CAREC corridors has been developed.¹ The purpose of these corridors is to provide connectivity within and outside the CAREC region in various directions and to expand the economies' access to new markets. The demand for such diversification in CAREC economies has been greatly amplified by recent external shocks, which have affected the traditional CAREC transport and transit routes crossing Russian territory. The CAREC Corridor 2, which largely coincides with what is called the Middle Corridor, provides the only feasible alternative to these traditional routes. For this reason, this corridor has attracted a lot of attention from the CAREC governments and development partners.

Introduction

Most CAREC economies, except the PRC, Georgia, and Pakistan, are landlocked, and Uzbekistan is a double-landlocked country. This means that for a significant part of their trade, these economies need to cross the territories of other countries. There are several transit options available for them, including the routes via (i) Russian Federation westward; (ii) Russian Federation eastward; (iii) the PRC eastward; (iv) Afghanistan, Iran, or Pakistan southward; and (v) the Caspian Sea and South Caucasus westward, e.g., the so-called the Trans-Caspian International Transport Route (TITR) or Middle Corridor.²

As mentioned earlier, CAREC has its own set of six corridors (footnote 7); the CAREC Corridor 2: Europe–Mediterranean–East Asia (along with a segment of Corridor 1) serves the role of providing transport connectivity for CAREC economies in the west–east direction (Figure 8). In this paper, the Middle Corridor is understood as equivalent to the CAREC Corridor 2 (supplemented by a segment of the CAREC Corridor 1, blue in Figure 8), and these two names for this corridor are used interchangeably.³

Figure 8: Map of the Middle Corridor



Source: Asian Development Bank.

¹ CAREC Program. CAREC Corridors.

² ADB placed its regular assistance to Afghanistan on hold effective 15 August 2021.

³ In the literature on the subject, the Middle Corridor and the Trans-Caspian International Transport Route (as well as the Northern corridor mentioned later) could also refer to somewhat different routes. For example, the Trans-Caspian International Transport Route is often understood as a subcorridor going from the western border of the PRC via Kazakhstan, the Caspian Sea, Azerbaijan, and Georgia to Black Sea ports or Türkiye.

The external shocks discussed have also affected the transit flows in the region. Border closures during the COVID-19 pandemic adversely affected trade flows in the region in 2020–2021. These border crossing issues have eased or disappeared in 2022–2023. In 2022, there were several occasions of crude oil shipment interruptions at the Russian port of Novorossiysk and rail service limitation on the borders between the EU, Russian Federation, and Belarus. The ongoing military activities on the Black Sea create a highly uncertain and risky environment for maritime transportation in the region.

There are two key transit trade streams crossing the CCA territories in the west–east direction: one involving the transit trade between the PRC and Europe, and the other originating from, or directed to, the Central Asian economies. The PRC–Europe stream involves the rail service called the China Rail Express (CRE), whose block trains travel from the PRC via Kazakhstan, Russian Federation, Belarus, and Poland through to other European destinations (this route is called the Northern Corridor in this paper) and back since 2011, or from the PRC via Kazakhstan, the Caspian Sea, Azerbaijan, Georgia, and then Türkiye or the Black Sea to Europe (the Middle Corridor) since 2017. The segments between the PRC–Kazakhstan border and Belarus–Poland or Georgia–Türkiye borders use a rail gauge (1,520 millimeters) that is different from that used in the PRC and Europe (1,435 millimeters). The 1,520-millimeter part of the Northern Corridor is served by the United Transport and Logistic Company – Eurasian Rail Alliance (ERA), a joint venture of the railway companies of Belarus, Kazakhstan, and Russian Federation. The Central Asian stream typically goes via Russian Federation to the Baltic or Black Sea ports or to Belarus and then the EU. This stream is also served by the CAREC Corridor 2 connecting points of origin and/or destination in Central Asia via the ports of Aktau or Kuryk (Kazakhstan) or Turkmenbashi (Turkmenistan) to the port of Baku/Alyat (Azerbaijan) and then through Azerbaijan and Georgia to Türkiye, Europe, and elsewhere (e.g., Africa or Americas). The Central Asian stream has energy and non-energy components.

Analysis and Findings

The first transit stream has many alternative routes, including the relatively inexpensive but time consuming maritime transportation from the PRC ports to the ports in Europe. Any potential interruption associated with the current CRE route could be addressed by sending goods via the sea instead; conversely, any issues with the sea route could be addressed by switching to the CRE rail service (subject to this rail service’s capacity, which is much smaller than the capacity of the ocean route). However, for the flows between Central Asia and its trade partners in the west, the Middle Corridor seems to be the only alternative route leading in the same direction as the current one. The CRE trains also eventually go via the Middle Corridor but much less frequently than via the Northern Corridor (see the next section).

The Middle Corridor stands as a potentially viable alternative route to Europe and other western and many southern markets for the economies of Central Asia. For that reason, it currently attracts much attention. There are, however, many pros and cons for this route associated with infrastructure, the throughput capacity, and the organization of logistics on this multimodal route covering several countries, including the weather and climate change vulnerabilities of the Caspian Sea segment. The development of this corridor requires a careful assessment of all factors influencing its performance.

Responding to the reinvigorated interest in the Middle Corridor development agenda, several recent studies have been published discussing its different aspects.⁴ The key takeaways of these studies might be summarized as follows:

(i) This corridor needs to compete with the Northern Corridor and the ocean route. This means it should be competitive on its performance despite its multimodality and the need to cross more customs borders.

⁴ These studies include (listed in chronological order) those by ADBI (2021), International Transport Forum (2022), EBRD (2023), ERA Index (2023), World Bank (2023), and OECD (2023).

(ii) Its past performance makes it less attractive for the present than its competing alternatives. When demand rose in 2022, transport costs were high due to the elevated tariffs, comparatively long lead times and delays, and poor predictability of transit and border crossing times.

(iii) The corridor has been afflicted by sea, rail, and road infrastructure bottlenecks, but in the short and medium terms the main challenges are the cumbersome transit and trade procedures and suboptimal organization of logistics. For example, complications (including the end-to-end cost calculations) arise from the fact that multiple logistics operators are involved along the route, compared with the single company that operates all the rail traffic on the Northern Corridor between the PRC and Poland's border. There are issues of transport mode interoperability as well. Digitalization is lacking. Without soft infrastructure fixes, costly investments in hard infrastructure might be ineffective.

(iv) To address these issues, the CCA governments need to implement a comprehensive and coordinated set of policy measures. These policies should aim to improve trade facilitation and foster the development of logistics business and infrastructure. The goals should be strict environmental, social, economic, and fiscal sustainability and political viability.

(v) Regional policy dialogue and cooperation should play an integral part in the Middle Corridor's development.

(vi) The Middle Corridor must contribute to the socioeconomic development of the CCA countries through which it crosses, and not merely serve the long-haul transit needs of economies beyond their territories. This means that it must be conceived and developed as an economic corridor.

(vii) Even if trans-Eurasian transit traffic increases, the Central Asian stream may continue to dominate the Middle Corridor's transport flows. The PRC–Europe stream accounted for only a third of the 2022 container throughput at the port of Aktau, which is the main Middle Corridor conduit for trans-Caspian crossings on the Kazakhstan coast—and this container traffic comprised only a small fraction of the total goods Aktau handled during the year. A World Bank scenario raises the possibility of tripling the 2021 trade flow through Aktau by 2030 but perceives the PRC–Europe stream accounting for only 25% of the expanded total.

(viii) The European Bank for Reconstruction and Development (EBRD 2023) has projected a sevenfold increase in the PRC–Europe transit traffic through the Middle Corridor between 2022 and 2040 under a business-as-usual scenario and an almost 50-fold increase under its optimistic assumptions. According to EBRD (2023), the containerized flows of the Central Asian stream are also going to increase considerably.

The analysis in these studies focuses mostly on Azerbaijan, Georgia and Kazakhstan, i.e., the countries serving the rail transit between the PRC and Europe. This approach somewhat sidelines other trade flows in the region, especially the intraregional ones, and the role of the road transport, which in reality serves a significant part of this trade.

The PRC–Europe Transit

It is well-known that most trade between the PRC and Europe is operated via sea transport connecting

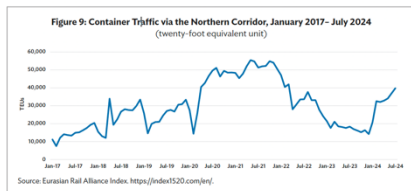
the PRC and the European ports. Air transport is used for the trade in products with a high value-to-weight ratio. Recently, the Eurasian land bridge service has emerged, and expanded, which uses railways to transport relatively high-value and time-sensitive products.

The CRE operations service two main sets of trading partners: (i) the PRC and European countries, i.e., the PRC–Europe stream; and (ii) the PRC and its Russian and Belarusian trading partners. The CRE reports that the overall container traffic it moved along these separate trading flows rose in total by 10% in 2022 to 1,614,000 twenty-foot equivalent units (TEUs) despite the external shocks during the year and rose 15% in 2023. However, the traffic on the PRC–Europe stream, which is served by the ERA, fell by 34% in 2022 from its 2021 peak of 618,000 TEUs and dropped by another 49% in 2023 (Figure 9). Given the higher overall CRE figures, this means that

the greater container traffic between the PRC, Russian Federation, and Belarus more than made up the precipitous decline in the overland PRC–Europe stream.

The decline in 2022–2023 in the PRC–Europe container traffic via the Northern Corridor was mostly because of the dramatic fall from their highs in 2021 of ocean shipment tariffs globally and particularly on this major route. For example, the cost of container shipping between Shanghai and Rotterdam fell from a peak of \$14,800 per forty-foot equivalent unit (FEU) in October 2021 to a low of \$1,000 per FEU in October 2023. The international sanctions imposed on trade with Russian Federation and the general uncertainty related to the transit operations via the Northern Corridor could be another possible explanation for this decline in container traffic via this corridor.

Figure 9: Container Traffic via the Northern Corridor, January 2017– July 2024
(twenty-foot equivalent unit)



Source: Eurasian Rail Alliance Index. <https://index1520.com/en/>.

The recent declines aside, container rail traffic via the Northern Corridor continues to offer viable transit for PRC–Europe trade whenever the current tariff levels on the ocean route justify choosing a speedier delivery. In July 2024, the World Container Index spiked to \$8,270 per FEU after armed attacks on shipping in the Red Sea started at the end-2023.¹¹ The result was almost tripling of traffic on the Northern Corridor from the level recorded in December 2023 (Figure 9). This demonstrates the corridor’s capacity to serve as an alternate route on the PRC–Europe stream when ocean shipping prices are driven up.

By contrast, the CAREC Corridor Performance Measurement and Monitoring (CPMM) data for March 2024 indicated that the Middle Corridor had not attracted more traffic or thus played a similar role. The Northern Corridor’s cost attractions may change if the PRC’s provincial governments gradually phase out their subsidization of the CRE’s tariffs, a plan initially scheduled for 2020 and still in place to begin at an unannounced future date. In the meantime, the Middle Corridor’s lack of competitiveness, especially at its current level of development, is starkly evident from the traffic figures. In 2022, it handled only 10,800 TEUs of trans-Eurasian container traffic, a mere 2.6% of the volume on the northern route.¹² This flow subsequently fell to 2,600 TEUs in 2023. Notwithstanding its current drawbacks and limitations, the Middle Corridor—with further investments and reforms—can provide an additional strategically important alternative to the sea route and the Northern Corridor for both the PRC–Europe and Central Asian streams’ trade. During the official visit of the President of Kazakhstan to the PRC in October 2023, an agreement was signed on the Middle Corridor’s development. The PRC will support investments in Kazakhstan in port and other infrastructure upgrades, transit containers, and combined transport. Azerbaijan, Georgia, and Kazakhstan signed an agreement in the same month to establish a joint venture between railway operators similar to the ERA.

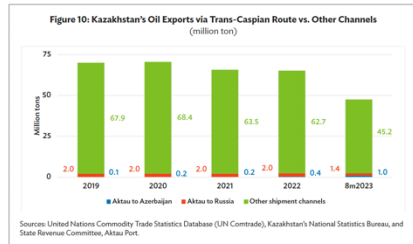
The possibility of developing another trans-Caspian route branch through Uzbekistan and Turkmenistan via Turkmenbashi port to Azerbaijan and further west is also under consideration.

The Trans-Caspian Energy Transit

Energy is the main item of trade between the CCA and Europe. It consists mostly of crude oil and natural gas exports from Azerbaijan and Kazakhstan, very little of which are moved through the trans-Caspian Middle Corridor route. Kazakhstan’s crude oil is delivered to Europe mainly through the Caspian Pipeline Consortium that circumvents the Caspian Sea on its way to Russia’s Black Sea port of Novorossiysk. Azerbaijan, lying west of the Caspian, does not require trans-Caspian transit for its energy exports to Europe using oil and gas pipelines accessing Europe and Mediterranean ports via Georgia and Türkiye. Figure 10 illustrates the extent to which various channels are used to export crude oil from Kazakhstan. Trans-Caspian oil shipments on the Middle

Corridor from Kazakhstan’s Aktau port to Azerbaijan and further west rose sharply due to the various external shocks during 2020–2023, but even then they represented a mere 2.1% of Kazakhstan’s total exports in the first 8 months of 2023 (up from 0.2% during 2019).

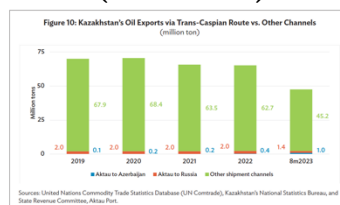
The diversion of what was only a fraction of Kazakhstan’s overall oil exports shipments to Caspian ferry crossings largely explained the freight turnover growth at the country’s Caspian seaport at Aktau in 2022 and 2023 (Figure 11a). Turkmenistan, another CCA country and participant in the Middle Corridor’s development, exports crude oil and oil products across the Caspian Sea from its port at Turkmenbashi, mostly to the Middle Corridor port of Baku in Azerbaijan and onward to Europe. Crude oil and oil products constitute a significant part of non-containerized goods shipped through Turkmenbashi (Figure 11b). The port reportedly handled 1.3 million tons of oil product exports in 2023 (Turkmenportal 2024).



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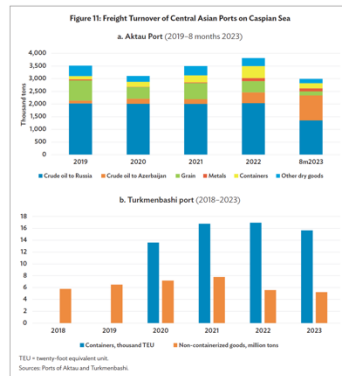
Figure 10: Kazakhstan’s Oil Exports via Trans-Caspian Route vs. Other Channels (million ton)



Sources: United Nations Commodity Trade Statistics Database (UN Comtrade), Kazakhstan’s National Statistics Bureau, and State Revenue Committee, Aktau Port.

Increasing the oil throughput capacity of Aktau and Kuryk ports in Kazakhstan might require significant infrastructure investments. The same might be required on the Azerbaijan side of the

Caspian. More oil tanker capacity is another likely need. Costs would be particularly high due to the multimodal nature of current and potential Middle Corridor energy transport—e.g., the need to move crude by rail or pipeline from Kazakhstan oil fields and then by vessels across the Caspian Sea, and then by rail or pipeline again through Azerbaijan and Georgia toward the EU and other destinations. These factors and the small fractional share of the overall oil export transport business the Middle Corridor has been able to capture so far, leave it unclear whether it could be made a significant alternative to the existing pipelines, even after heavy investments.



4.5: Trade and Transport Flows between Countries Central Asia and their Partners

Apart from the containers that move through it on the PRC–Europe stream and some energy shipments, the Middle Corridor also services part of the trade between the CCA economies and the EU, Türkiye, and other partners west of the CCA. Containerized machinery, equipment, and consumer goods flow along this route into the CCA countries, while exports of such dry bulk goods as metals, fertilizers, chemicals, and agricultural products move in the other direction. The non-energy exports to the EU by the CCA6 economies (Turkmenistan data unavailable) stood at \$6 billion in 2022, with imports reported to be \$19 billion.

While most Middle Corridor discussions center on rail and sea transport, trucking plays an important role in the CCA’s overall international trade, especially in the delivery of several CCA countries’ imports (Figure 12a). About 83% (by weight) of total trade of the mountainous, landlocked Kyrgyz Republic potentially served by the Middle Corridor now moves entirely by road. In Azerbaijan and Georgia, road transport covers more than 50% of such trade. Even in vast Kazakhstan with its comparatively more developed rail network, trucks still transport 20% of this trade.

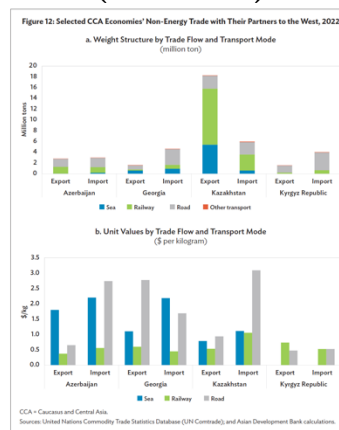
Considering the road transport factor in the Middle Corridor, analysis requires an understanding of the scale and features of the trucking firms involved. While the rail and sea transport companies in the region are large, those in the road sector come in multiple sizes and include many small and medium-sized enterprises. These enterprises are a separate breed in terms of corridor development. They operate in a more competitive environment than large rail and sea transport firms. They are more flexible than rail and sea carriers in choosing their transit routes but have less room than bigger companies to pass on increases in their transport and transit costs to clients. The asymmetry in transport flows by mode and direction can also bear on a corridor’s efficiency. For one thing, trade flow asymmetry drives up transport costs. For example, in terms of rail transport, Kazakhstan exports more than 3.5 times the goods it imports (by weight). Similar asymmetries exist for other transport modes and economies. One result is that a significant part of a corridor’s traffic is devoted to returning empty containers and other equipment to the point of origin. Some containers are never returned and can be seen in various CCA countries serving as storage units or trade outlets.

Conclusion and Discussions

The relatively modest unit values of the CCA countries’ transit trade flows highlight the comparatively heavy impact that high prevailing Middle Corridor costs have on their choice of

transport routes. Figure 12b illustrates the difference in unit values of these non-energy exports and imports. As may be expected by the composition of the flows in either direction, the CCA imports have higher values in many (but not all) cases. Perhaps more importantly for any Middle Corridor analysis, however, is a comparison between the average overall unit value of the CCA economies' internationally traded goods with those that transit the CCA to and from Europe—i.e., in the range of \$0.40–\$3.10 per kilogram (kg) compared with \$7.40/kg by sea and \$10.70/kg by rail for mostly manufactured goods and high-tech products moving between the PRC and Germany. This means two things. First, transport, border-crossing, and logistics costs constitute a much higher share of the traded goods value on the Central Asian stream than they do on the PRC–Europe routes. Second, the CCA trade is thus more sensitive and vulnerable to the various inefficiencies in Middle Corridor performance. This is likely one reason that only a small portion of the overall Central Asian stream has been moving through the Middle Corridor. Due to the cost and infrastructure advantages and historical reasons, most of this trade gets to its destinations via the Russian Federation.

Figure 12: Selected CCA Economies' Non-Energy Trade with Their Partners to the West, 2022
a. Weight Structure by Trade Flow and Transport Mode
(million tons)



CCA = Caucasus and Central Asia.

Sources: United Nations Commodity Trade Statistics Database (UNComtrade); and Asian Development Bank calculations.

To fulfil its potential as the only practical alternative route for these flows, should the transit between the CCA countries and Europe through Russian Federation be disrupted, the Middle Corridor would need to overcome its fundamental performance issues. Its current inability to compete in costs and delivery times with the alternative sea, rail, and truck routes is because of numerous challenges, such as the port backups and lack of sufficient shipping services that make the Caspian crossing slow, and 18 ADB Central and West Asia Working Paper Series No. 15 the ferry rates that make it costly; plus the need farther west (just beyond the CAREC Corridor 2) for upgrades and further development on the rail system through Türkiye. These in turn are often rooted in key hard and soft infrastructure inadequacies, including the following:

- (i) The hard infrastructure barriers include limited handling capacity at the Caspian seaports of Aktau and Kuryk in Kazakhstan, Alyat in Azerbaijan, and Turkmenbashi in Turkmenistan. Shipping capacity across both the Caspian and Black seas is also a constraint. The Black Sea ports of Poti, Batumi, Constanta, and Varna would require improvements for the Middle Corridor to compete better on speed and costs. Rail networks need upgrades, and rolling stock needs expansion.
- (ii) The soft infrastructure challenges include cumbersome border-crossing and customs clearance procedures that boost transit time and costs. Logistics organization along the corridor is poor, partly due to insufficient use of digital technology, which also makes end-to-end rate quotation

and shipment tracking a challenge. Caspian ferry service is irregular and unpredictable. This creates traffic jams in ports even when handling is adequate. Shipping tariffs are not transparent.⁵

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⁵ The recently signed agreement on establishing a joint venture between railway operators in Azerbaijan, Georgia, and Kazakhstan could improve transparency, predictability, and traceability of rail shipments along the Middle Corridor.

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