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## The impact of logistics on economic cooperation in Central Asia

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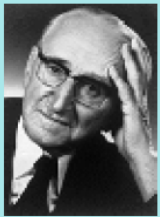
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# Ordnungspolitische Diskurse

## Discourses in Social Market Economy



**Hans-Christian Brauweiler; Aida  
Yerimpasheva; Assem Zakirova**

**The Impact of Logistics on Economic  
Cooperation in Central Asia**

**Diskurs 2023 - 1**

# The Impact of Logistics on Economic Cooperation in Central Asia

Hans-Christian Brauweiler; Aida Yerimpasheva; Assem Zakirova

## Abstract

The logistics sector is integrally connected to the growth of Central Asia's (CA) economies and the regional cooperation that underpins those economies. The research aims to demonstrate and justify the significance of the creation and execution of logistical initiatives and cooperative projects to expand economic cooperation in Central Asia.

In this article, an exploratory design is used based on collecting secondary qualitative and quantitative data and analyzing selected cases of logistics routes, projects, and initiatives. The study is based on the positive and nominative approaches used in economics. Qualitative research in the form of an in-depth interview with the participants of the International Round Table "Regional Development in Central Asia: Approaches and Priorities" helped identify the main problems in developing logistics infrastructure in the Central Asian countries. Relationships between logistics performance, global competitiveness, and GDP were analyzed. The condition of the logistics and transportation networks in Central Asia is described by the World Bank's Logistics Performance Index (LPI).

The growth of the logistics infrastructure influences the CA economies and fosters economic cooperation among Central Asian nations. Investing in logistics infrastructure generates employment opportunities and facilitates cross-border commerce in goods and services, which is crucial for economic cooperation. Likewise, Central Asia's logistics infrastructure and internal transport routes will never be able to compete with maritime transport. However, since the countries are at the crossroads of all routes in extensive Eurasia, they can discover their niche.

## Keywords

Economic Cooperation, Central Asia, Logistics, Logistics Performance Index (LPI), Regional Logistics Collaboration

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# The Impact of Logistics on Economic Cooperation in Central Asia

Hans-Christian Brauweiler; Aida Yerimpasheva; Assem Zakirova

## Introduction

When looking at economies in Central Asia initially, it seems that being “land-locked” results in a large “cost burden” (Raballand, 2003, p. 520) for transporting goods and people. For instance, shipping a container to Shanghai from any city in Central Asia is five times more expensive than shipping it from Poland or Turkey (Trade.gov., 2022). A shared history, strategically important location, and the possibility for increased economic and political integration unite them. According to Filippo Costa Buranelli (Aidarkhanova, 2021), geographical similarities are essential for identifying an area. However, we must also examine its history, religion, social relationships, families, cultures, and security dynamics. From this point of view, the concept of Central Asia is still accurate when all of these factors are considered “as if they were different pixels of a digital picture” (Aidarkhanova, 2021).

The transition from planned to market economies in Central Asia in the early 1990s was difficult (Tashmatov, 2000), which is quite similar to the experience of Germany during their transition in the 1990s (Brauweiler, 2002). While market reforms characterized Kazakhstan and Kyrgyzstan, the other three republics had partial reforms (Spoor, 1993). Nevertheless, by 2008, the CA countries had “completely restructured their systems” during the transition from a planned to a market economy (Friz & Günther, 2021, p. 537).

Between 1999 and 2014, CA economies were primarily driven by the resource boom (Pomfret, 2021). According to Pomfret (2021), freeing Central Asia from dependence on commodity exports and remittances and transitioning to an open, diversified economy is only possible with institutional change. Central Asia is currently the focus of a “fierce game” between major countries and regions that include the Russian Federation, China, the European Union, the United States, Japan, India, Iran, and Turkey over “energy geopolitics” (Zhou, He, & Yang, 2020, p. 1871). On the one hand, the “BRI (Belt and Road Initiative) initiative presents a colossal opportunity” for Kazakhstan to become a central logistics center; however, “this

prospect is overshadowed by geopolitical risks that have escalated since the beginning of 2022” (Brauweiler & Yerimpasheva, 2022).

According to Vanderhill, Joireman, & Tulepbayeva (2020), despite their dependence on natural resources, they “helped Kazakhstan’s foreign policy success because it was able to use access to natural resources to influence its relations with Russia, China, and the EU” (Vanderhill, Joireman, & Tulepbayeva, 2020, p. 975). Rich hydrocarbon resources have played an essential role in the political and economic development of Central Asian states. However, “the failed transition to a capitalist economy and democratic political system has included them in the category of states suffering from the resource curse” (Siraj & Javaid, 2021). Kazakhstan shipped 65.7 million tons of crude oil worth \$31.1 billion in 2021 (Kapital.kz, 2022) and is the world’s thirteenth largest oil producer (86 million tons of oil in 2021) according to British Petroleum; Uzbekistan is 48th (2.7 million tons for 2021); Turkmenistan was 33rd with 12 million tons of oil in 2021 (bp Statistical Review of World Energy 2022, 2022). Turkmenistan is the world’s fourth-largest country by natural gas reserves, and the commissioning of the fourth branch of the Turkmenistan-Uzbekistan-Kazakhstan-China gas pipeline will “increase Turkmen gas exports to the PRC to 65 billion cubic meters per year” (Boyarov, 2023). In 2022, Turkmenistan “exported \$10.25 billion worth of natural gas to China” (Business Turkmenistan, 2023). According to Zhou Q., He Z., & Yang Y. (2020), Central Asia plays “an important role in China’s strategy to reduce its dependence on energy supplies from the Middle East.”

Migrant remittances play a substantial role in the CA economies: Kyrgyzstan (35% of GDP) and Tajikistan (33% of GDP), Uzbekistan (13% of GDP). Kazakhstan's share of remittances in GDP is just 0.2%. There is no data on Turkmenistan (Brownbridge and Canagarajah, 2020).

At the same time, it must be recognized that Central Asian economies are poorly diversified, which makes the CA countries vulnerable to external shocks and fluctuations in commodity prices: therefore, they need varying degrees of modernization of industrial and social infrastructure. This article will focus on logistics infrastructure and what role it can play in the development of economic cooperation in Central Asia. Establishing economic cooperation across the vast region of Central Asia can only develop with logistics, the technology that plans and manages the transit of goods. Effective goods transportation is essential to this region’s economic prosperity since it is a crucial trade route between Europe and Asia. Hence, efficient logistics infrastructure and services are essential to guaranteeing the smooth flow of goods, reducing transportation costs, and promoting local trade.

First, logistical infrastructure is essential for transporting goods throughout Central Asia, home to landlocked countries that make maritime travel impossible. Furthermore, evidence shows that the “number of border crossings” can explain a “major part of the extra cost of overland transport in comparison with maritime transport” (Raballand, 2003, p. 520). Thus, low-cost transportation systems and corridors are essential for the CA region’s economic development. An efficient and effective logistics infrastructure would enable CA nations to access global markets and increase their competitiveness. The logistics infrastructure also facilitates intraregional trade, providing platforms for exchanging products and services. Efficient and effective logistics services may “implement better route optimization to avoid potential disruptions and also save on operational and fuel costs,” increasing business profitability (FarEye, 2022). Particularly in landlocked Central Asian countries, transportation costs may make up a significant portion of the total cost of the goods. Creating a solid logistics system might significantly reduce transportation costs, making goods more affordable and available to consumers. It may cause a boost in commodity demand, promoting economic growth of the CA countries and cooperation between them.

The logistical infrastructure and services may facilitate greater regional integration and cooperation among Central Asian nations. These nations share a similar past, culture, and economy. Governments can foster economic cooperation, expand trade, and improve regional integration by establishing the necessary logistical infrastructure. It may bolster ties between the nations and pave the way for increased cooperation in security, education, and tourism.

Logistics are essential for fostering economic cooperation in Central Asia: Investments in efficient logistics infrastructure and services may result in reduced transportation costs, increased intraregional trade, and enhanced regional integration. We believe Central Asian nations must invest in logistical infrastructure and services to guarantee economic growth and development in the region.

The article illuminates Central Asia’s complicated logistics-economic cooperation relationship and aims to show how logistics promotes regional and intra-regional economic cooperation. The logistics infrastructure and services’ importance for regional economic development will be discussed.

## Literature Review

Logistics organizes and oversees “resources needed to move products in a smooth, timely, cost-effective, and reliable manner” (MSU, 2023). Businesses, consumers, and states need logistics to move products, services, and information. “The technology boom and the complexity” have made logistics a complex process (Kenton, 2023) that involves planning, organizing, and executing the delivery and storage of goods, services, and information from origin to consumption. Logistics include “managing pipelines, vehicles, storage facilities, and distribution centers” (The Economic Times, 2023).

Logistics is crucial to CA integration and trade barrier reduction, and it helps these nations cooperate economically. Based on panel data from 2010 to 2019, Abula et al. (2022) evaluated the implications on China-Central Asian agricultural product cross-border supply chains. Their results show that economic growth, market size, logistics development, and railway and road connections positively affect the development of the supply chain (Abula et al., 2022). However, railroads have a long-term sustainable influence despite their hefty investment costs. Road building is inexpensive and has an immediate impact but needs ongoing maintenance (Karymshakov & Sulaimanova, 2020).

A technique for assessing the Logistics Performance Index (LPI) was initially established by the World Bank and the University of Turku (Finland) in 2007 (Kurochkin, 2013). One of the critical benefits of LPI is that it “provides a framework for identifying the challenges and opportunities that countries face in their performance on trade logistics” (Bhukiya & Patel, 2023, p.1505). Also, “LPI provides general information on logistics costs, customs processes, and the quality of the necessary infrastructure for transportation for each country” (Bilgin, 2022, p. 345).

The essence of the Logistic Performance Index is providing the “Quality of trade and transport-related infrastructure.” In other words - trade facilitation is calculated as a country’s weighted average score on six key components that indicate how easily and efficiently goods can be brought into and transported within a country. These components are:

1. Speed and simplicity of customs control
2. Development of trade and transport infrastructure
3. Organization of deliveries at competitive prices
4. Competence of logisticians and quality of logistics services
5. Ability to track cargo (monitoring and tracking)
6. Timeliness of cargo delivery (*Logistics performance index*, 2023).

So important to note that increasing trade facilitation in the Central Asian countries has resulted in considerable trade benefits (Felipe & Kumar, 2012). Nevertheless, the countries of Central Asia have one of the lowest LPI indices, even though “they are quite attractive due to their available natural resources, large markets for industrial and consumer goods, and a convenient transit position” (Azimov & Nadzhmiddinov, 2019, p. 87).

Logistics have become strategic, allowing organizations to reduce costs for sustainable competitive advantage. Shang & Marlow (2007) proved that logistics performance is correlated with financial one. Moreover, their data also showed that logistics expertise indirectly influences financial performance via logistics performance (Shang & Marlow, 2007).

Successful companies practice logistics management to reduce production and transportation costs, increase their competitiveness in local and international markets, and enhance operational efficiency (Ristovska et al., 2017). It, in turn, gives new opportunities for international trade and investment and encourages economic cooperation.

Logistics systems also give businesses real-time visibility, which has become a need today (FarEye, 2022). It involves real-time tracking of products and shipments from suppliers, manufacturers, warehouses, and hubs to customers. Real-time visibility in the supply chain utilizes GPS-tracking and sophisticated software to enable organizations to plan, manage, and monitor their logistics process at all stages (FarEye, 2022). Supply officers may see real-time order receipts, raw material status, shipment details, regulatory information, and order status. Better management of numerous aspects of this complicated process helps organizations gain a competitive advantage, improve efficiency, transparency, customer satisfaction, and transportation costs, reduce the likelihood of disruptions, improve logistics systems' efficiency, and encourage economic cooperation (FarEye, 2022). However, the essential expenditures in infrastructure, such as ports, airports, roads, and trains, are necessary for logistics systems to operate at their best. These investments open employment possibilities and make cross-border trade in products and services more manageable, which is necessary for economic cooperation. Moreover, and vice versa, lower-quality transportation infrastructure and logistics services are adversely connected with fossil fuel use, carbon emissions, health spending, greenhouse gas emissions, and the country's political instability (Khan et al., 2019).

Zhang et al. (2023) have examined the impact of overseas economic and trade cooperation zones on economic growth and concluded that establishing overseas economic and trade cooperation zones promotes the host country's economic development. So, logistics and logistics infrastructure play a critical role in improving the efficiency and effectiveness of



logistics systems, ensuring that goods and services are delivered at the right time, place, and condition by lowering trade barriers, making businesses more competitive, improving supply chain visibility, and investing in infrastructure.

### *Logistics infrastructure in Central Asia*

The transport logistics of Central Asia will never be able to compete with sea routes, but it is strategically vital. The peculiarity of the CA logistics concept is based on the historical success of the Great Silk Road. Furthermore, today, as a result of the war in Ukraine, the countries of the South Caucasus and Central Asia have rebuilt the China-Europe freight route, which now passes through Kazakhstan, the Caspian Sea, Azerbaijan, Georgia, and Turkey before arriving in Europe (Carafano, 2022). It is the shortest route between Western China and Europe.

Today's regional integration of Central Asian countries along the "Middle Corridor," a rapidly growing land and sea freight route from Europe to China, has been one of the many geopolitical effects of Russia's war in Ukraine and can be considered a "viable alternative to the long-established northern route through Russia," ensuring high-value and urgent cargo delivery (Carafano, 2022). According to Carafano (2022), the development will likely "continue receiving increased support from the European Union and the United States, engagement from Turkey, and eventually meeting reluctant acceptance by Russia, China, and Iran."

According to Gu Ho (2022), despite China's growing influence in Central Asia, Russia remains the region's dominant political, economic, and security actor, making it difficult for Central Asia to reduce its reliance on Russia. Kazantsev et al. (2021) argue that CA nations can only integrate with Russia and China. Furthermore, this opinion was shared by the majority of scientists and politicians of the Eurasian region, since Central Asia and, especially, Kazakhstan, in their opinion, should always remain in the sphere of interests of the former "Russian Empire" and the independence gained by the countries of Central Asia is just a gift from the Soviet Union. After February 2022, the discourse shifted substantially. The Ukrainian conflict has highlighted the flaws and shortcomings of transport and logistical networks that have been shut off due to conflicts and economic sanctions. The CPC pipeline system, with a length of 1,511 km and a present capacity of 67 million tons of oil per year (Milkin, 2022) and linking Western Kazakhstan with an oil terminal near the Russian city of Novorossiysk, proved to be unsafe connection.

At the same time, the CPC pipeline system is the main export route for Kazakhstani oil, and this is about 80% of oil exports from Kazakhstan (Milkin, 2022). The Kazakhstani government has repeatedly expressed its intention to diversify its oil export routes through the Baku-Tbilisi-Ceyhan pipeline, enhance the capacity of the pipelines Atyrau-Kenkiyak and Kenkiyak-Kumkol and increase crude transport through the Caspian ports of Aktau and Kuryk to 20 million tons annually (Milkin, 2022). According to experts, these statements are more of a political nature since diversification is feasible only in the long term. Soon, any alternative routes will increase oil transportation, mainly since the Baku-Tbilisi-Ceyhan pipeline is operating at total capacity and cannot wholly replace oil (Milkin, 2022).

### *Previous studies on logistics and economic cooperation in Central Asia*

Integration logistics projects in the 21st century have covered the five post-Soviet countries of Central Asia, formerly known as “Kazakhstan and Central Asia.” Let’s consider the main infrastructure projects in Central Asia. The New Silk Road is the largest project - a geopolitical initiative of Chinese President Xi Jinping, put forward in 2013 to create a trade, energy, and transport corridor linking the countries of Central and South Asia, Europe, and Russia. Transport infrastructure within the One Belt – One Road (OBOR) could boost intra-Eurasian trade (Bazarov, 2018).

According to Carafano (2022), China attempted to develop a freight corridor through the region’s center within the BRI, with varied results. As a result of the limited success of the Pakistan-China Economic Corridor and their growing mistrust of Beijing’s motives, many regional partners developed skepticism towards joint initiatives with Beijing (Carafano, 2022).

At the same time, the New Silk Road program overlaps existing integration logistics projects, such as TRACECA and CAREC. TRACECA (Transport Corridor Europe-Caucasus-Asia) consists of 13 states from Europe, the Caucasus, and Asia and carries out a range of operations to “accomplish freight transportation by land, rail, and sea as well as the quickest state border crossing” (TRACECA ORG., 2023), must connect Europe, the countries of the Caucasus region and Central Asia and take over a significant part of the cargo traffic of many countries as an alternative to the Russian Trans-Siberian Railway. It is assumed that the implementation of the program will promote integration between the European Union and the partner countries, more efficient distribution of resources between the West and the East, improve the investment climate in the countries through which the transport corridor will pass, and positively affect their scientific and cultural development (Amanova, 2013). TRACECA

corridor was planned by analogy with the “Great Silk Road” involving the Black Sea ports (Batumi, Poti), the railways of Georgia and Azerbaijan, the Caspian ferry crossing (Baku - Turkmenbashi), the railway networks of Turkmenistan, Uzbekistan, Kyrgyzstan, Kazakhstan, and China, as well as Chinese ports on the Pacific coast. The European Union funds the program. Timakova (2020) states that Kazakhstan and Turkmenistan “occupy a key geoeconomic position in the Caspian region.” Nevertheless, this is not related to the possibility of access to the Black Sea “because Russian authorities are overcharging ships crossing the Volga-Don canal (13,300 USD), the Volga-Baltic (10,000 USD), thus drastically limiting exports via inland waterways from Central Asian countries” (Raballand, 2003, p. 536). On the other hand, the Arab Gulf countries are interested in strengthening economic ties with CA nations through established regional transportation corridors and the developing infrastructure of the Belt and Road initiative, as they anticipate the significance of the role of Kazakhstan and Turkmenistan as critical hubs to increase (Timakova, 2020).

China, Russia, and Mongolia established the Central Asia Regional Economic Cooperation (CAREC) in 1997. CAREC, a cooperation of 11 countries and development partners, intends to boost economic growth and alleviate poverty (CAREC, 2020). The program actively supports regional projects and policy initiatives essential to the region’s shared prosperity and sustainable economic development.

Bazarov (2018) believes that the potential of TRACECA and CAREC depends on the development of the New Silk Road and the geopolitical situation in the world and Central Asia. Moreover, in the Russian discourse, TRACECA and CAREC are opposed to the “New Silk Road” because, according to Bazarov (2018), “The absence of Russia in these projects makes them territorially inferior and competitive with Russian ones since the project paths run through the territory of the CIS (Commonwealth of Independent States) countries in bypassing the Russian Federation.”

One significant project that matured despite the many concerns over regional stability was the Southern Gas Corridor, linking gas fields in Azerbaijan with a pipeline across the Caspian Sea to Georgia, Turkey, and the Mediterranean Sea to Italy. This project proceeded despite regional challenges, as well as opposition from Germany and Russian efforts to thwart the initiative by funding environmental and political groups to bring challenges against it. The final leg of the system is now operational, in part thanks to U.S. lobbying in Italy. In addition to the pipeline, regional logistics hubs continue to develop. The projects include the modernization of the port in the Georgian city of Poti and the redevelopment of the port of Baku in Azerbaijan.

## Methodology

We employed an exploratory approach for this study, collecting secondary qualitative and quantitative data and examining chosen examples of logistics routes, projects, and initiatives. Through the use of primary qualitative research in the form of in-depth interviews with the attendees of the International Round Table “Regional Development in Central Asia: Approaches and Priorities,” it was possible to determine the most pressing challenges facing the expansion of logistics infrastructure in the Central Asian nations. Analysis was done on how GDP, global competitiveness, and logistics performance are related.

To achieve the goal of the study, we planned to study the following aspects of the object and subject of the study:

1. Studying the current state of the logistics infrastructure in Central Asia;
2. Studying the relationship between the level of development of logistics and logistics infrastructure and the level of the country’s GDP;
3. Problems and opportunities of logistics projects for developing economic cooperation in Central Asia.

The study's theoretical underpinning is the notion of new regionalism. In contrast to the old regionalism, which was defined as “competition between two superpowers (bipolar)” and was “shaped by the interests of the dominant superpowers in the Cold War context,” the new regionalism is defined by “interests of actors such as domestic civil society in addition to the states themselves” (Buzdugan, 2017). According to Zimmerbauer and Paasi (2013) “regional identity ... should be understood as important ingredients in contemporary regional transformation.” Zvyagelskaya (2022) also confirms that “the concept of regionalism is based on identity, i.e., the cultural, historical, political association of individuals, peoples, states, leaders with a certain region.” The author then concludes: “building of new logistics and transport routes, the expansion of trade and economic relations between individual countries have all contributed to the regionalization (Zvyagelskaya, 2022, p. 55). On the other hand, “logistics change working lives and contribute to the making of world regions” and “remake urban and regional territories and produce new forms of *governance and subjectivity*” (Neilson et al., 2018, p.5).

## Results and Discussion

The fact that Central Asian nations are landlocked is one of the primary drawbacks of their international trade, despite their advantageous position, which may be considered a crucial

element in improving regional international trade performance. In contrast to marine trade, this might entail substantial transport and logistics expenses (Raballand, 2003). Since the states of Central Asia are rich in natural and other resources, the ability to effectively interact with world markets is a decisive factor in achieving sustainable economic growth (Azimov & Nadzhmiddinov, 2019).

In the last decade, Central Asian countries implemented many infrastructure projects, including road and railroad networks. It has also been argued that air transportation should be developed as one of government policy priorities.

There is a clear link between the level of development of logistics and the reduction of formal trade barriers. Felipe and Kumar (2012) believe that the Central Asian countries' trade would grow due to better trade facilitation. Therefore, the World Bank Logistics Performance Index can be used to analyze trade facilitation (*Logistics performance index 2023*). Also, Felipe & Kumar (2012) discovered that infrastructure development leads to the highest rise in overall commerce, followed by logistics and the effectiveness of customs and other border services among the several LPI components. Moreover, it is proved by Karymshakov and Sulaimanova (2020), who consider that “physical infrastructure itself may not have a sufficient impact on trade if conducive customs services and border management do not support it.”

Table 1 presents Aggregate Indicators of Central Asian countries. The population in CA ranges from 6,7 million in the Kyrgyz Republic to 34,9 million in Uzbekistan, and economic performance ranges from \$7.9 billion GDP in the Kyrgyz Republic to \$168.7 billion in Kazakhstan.

**Table 1. Aggregate Indicators of Central Asian States, 2021**

	Population (million)	GDP Atlas method (billion US\$)	GDP per Capita Atlas method (US\$)	Merchandise exports (million US\$)	Merchandise imports (million US\$)
Kazakhstan	19,0	168.7	8,880	60,625	41,171
Kyrgyz Republic	6,7	7.9	1,180	1,659	5,570
Tajikistan	9,8	11.2	1,150	1,967	4,468
Uzbekistan	34,9	68.6	1,960	14,063	23,724
Turkmenistan	6,3	42.9	6,970	7,815	4,177

*Source: The World Bank. (2021); The World Bank. Merchandise imports. (2021); The World Bank. Merchandise exports. (2021).*

Table 1 also shows the export and import performance of Central Asian countries. According to Table 1, the highest export/import rates are typical for Kazakhstan, reaching \$60.625 million and \$41.171 million in 2021, respectively. The lowest export/import rates are typical for the Kyrgyz Republic, \$1,659 million and \$5,570 million in 2021. The excess of exports over imports is observed only in Kazakhstan and Turkmenistan.

*Assessment of the role of logistics in promoting economic cooperation among Central Asian countries*

Considering the logistics system in the countries of Central Asia, it should be noted that its main shortcomings are the organizational and technological imperfection of the transportation process and non-physical barriers; the main ones are (Azimov & Nadzhmiddinov, 2019):

- long-term downtime of vehicles at border checkpoints; none of the countries in the region has legally defined time limits for the passage of each type of control when crossing borders;
- stops of vehicles on route with frequent cases of forced opening and inspection of sealed transit vehicles and cargoes;
- low degree of orderliness and consistency of vehicle charges;
- permit system for international road transport, based on bilateral agreements on road transport;
- complex procedure for obtaining visas for drivers;
- the absence of a regional liability insurance system for vehicle owners and the requirement for compulsory insurance in national insurance organizations.

Table 2 provides the overall logistical performance index in Central Asian countries for the year 2018.

**Table 2. Logistical Performance Index in Central Asian Countries (1 = low to 5 = high), 2018**

	Logistical Performance Index (Overall)
Kazakhstan	2.81
Kyrgyz Republic	2.55
Tajikistan	2.34
Uzbekistan	2.58
Turkmenistan	2.41

*Source: The World Bank. Logistics performance index: Overall (1=low to 5=high). (2018).*

According to Table 2, the overall LPI for all CA states is at the level of the average, with the highest rates observed in Kazakhstan (2.81), Uzbekistan (2,58), and Kyrgyz Republic (2.55).

Regional logistics is an essential component of the regional economy and an “accelerator” of economic growth in the region. It plays a significant “role in optimizing the allocation of regional resources, promoting the upgrading of regional industrial structure, and promoting the sustainable development of the regional economy” (Zhao & Xie, 2022, p. 1872).

Duisen and Aitzhanova (2022) believe that it is crucial to strengthen multilateral cooperation and interaction, particularly in terms of industrial cooperation and integration, the resumption of ties in the fields of trade, science, transport and logistics, education, and culture, in order to ensure the security and stabilization of the national economies of the Central Asian countries. Thus, by implementing and developing mutual logistics projects, the countries of Central Asia are embarking on the path of cooperation and integration. On the other hand, logistics infrastructure affects the sustainability of supply chains (Khairova et al., 2019).

Taisarinova et al. (2020) identified a relationship between economic, road, transport, and logistics indicators. They conducted a retrospective study of the dynamics of freight turnover, the length of roads, the number of transport companies, and GDP from 1993 to 2017 in Kazakhstan and found that an increase in freight turnover and the number of transport companies leads to an increase in the regional economic indicator of GDP. Scientists have suggested that the regional economy’s development is associated with integrating the region into the international transport system.

Economic integration in Central Asia has improved regional logistical infrastructure and cross-border commerce. The Trans-Caspian International Transport Route (Middle Corridor), which runs through China, Kazakhstan, the Caspian Sea, Azerbaijan, Georgia, Turkey, and European countries, and the China-Kyrgyzstan-Uzbekistan railway has significantly reduced transportation costs, and the Digital Transport Corridor has streamlined document exchange, making the border crossing easier.

However, a lack of similar regulations and standards might hinder commerce and investment, resulting in unequal CA growth. Poor transport networks and border crossings also slow commodities flow and raise transit costs.

All parties should collaborate to increase logistical capacities and encourage CA country integration. These efforts include infrastructure building and modernization, customs optimization, commerce growth, new technology innovation, human capital development, and uniform norms and standards. Regional economic stakeholders should support this activity.

These efforts will enable Central Asian nations to create logistics-based economic cooperation and sustainable growth.

## **Conclusion**

Logistics is essential to Central Asian integration and economic cooperation, lowering trade obstacles. Logistics provides the foundation for economic development and sustainable growth in Central Asia; therefore, its function in fostering economic interaction must be examined. Central Asia participates in worldwide and regional logistics infrastructure projects and cross-border commerce.

Logistics performance in a given country can be characterized by the Logistics Performance Index, which provides a basis for analyzing the challenges and opportunities that countries face in their trade logistics activities. This indicator provides general information on transport costs, customs processes, and quality—the necessary infrastructure for transportation in each country. At the same time, the countries of Central Asia have one of the lowest LPI indices, which indicates a low integration and cooperation of the CA countries. Also, the low LPI indices are the lack of common rules and standards and a fragmented logistics infrastructure, which, after gaining independence, developed in the CA countries separately and under-investment opportunities. All this speaks of the need for closer regional integration and cooperation. Another reason is that the development of infrastructure within one country without the support of international cooperation with other countries in the region is limited in bringing expected region-wide benefits (Karymshakov & Sulaimanova, 2020).

The Central Asian countries are landlocked, which puts the CA countries at a disadvantage in international trade and significantly increases transport and logistics costs (Raballand, 2003). At the same time, the countries of Central Asia are rich in natural resources, which contributed to establishing links with world markets and relatively stable economic growth.

Central Asian nations have developed various logistical infrastructure projects in the recent decade, eliminating formal trade obstacles and boosting commerce. Logistics infrastructure may have contributed to Central Asian trade growth, and trade facilitation is assessed using the Logistics Performance Index. Moreover, LPI makes it easy for countries to identify areas needing improvement to “compete effectively in the global marketplace” (Bhukiya & Patel, 2023, p. 1505). A causal relationship has also been found between logistics efficiency, environmental performance, ease of doing business, global competitiveness, and GDP. The



analysis results also showed that logistics performance has a significant impact on GDP growth, with a greater impact on low-income countries. The logistics industry is recognized as one of the world's foremost "pillars of development," and "improving the efficiency of logistics" is at the heart of the "economic growth and competitiveness agenda" (Arvis et al., 2014). Investment in logistics infrastructure creates employment opportunities and facilitates cross-border trade in products and services, which is essential for economic cooperation. At the same time, the inland logistics infrastructure and its internal transport routes will never be able to compete with maritime transport. However, it can find its niche since the countries are at the crossroads of all routes of vast Eurasia.

Filippo Costa Buranelli, in his interview with Aidarkhanova E., states that CA countries "may have some similarities, and more importantly some common understandings, norms or sense of being in the same regional order, and they all need to manage somehow to avoid conflict, cooperate, and live together," so "region-making and region-building are not about being but about speaking and practicing" (Aidarkhanova, 2021, September 9). It means that despite the existence of contradictions and their national interests, the countries of Central Asia should always strive for regional integration, which, first of all, occurs with the help of logistics.

### **Limitations and future research directions**

This study is based on exploratory secondary data sources and primary research. In the future, it is necessary to conduct a conclusive study and provide a clearer picture of the problems that the CA countries face in the logistics of sanctions goods prohibited for export to Russia. In particular, it is necessary to conduct surveys among logistics service providers, politicians, and other stakeholders.

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