Review Article

**A Review of Railway Transport in Central Asia for Corridors and the Revival of Great Silk Road**

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**HIGHLIGHTS**

\* The state of railway transport in Central Asia is summarized.

\* The impact of pandemic on transport in Uzbekistan is summarized.

\* Major corridors in Central Asia are identified.

\* Opportunities for the revival of the Silk Road with respect to Uzbekistan are summarized.

**ABSTRACT**

The Central Asian region became an area of interest when the United States announced its *New Silk Road* strategy and subsequent initiatives launched by China and other countries. The Silk Route eventually became the roadmap for major countries such as the US and China to enhance their interests and acquire a foothold in Central Asia. In the modern geo-strategic situation, the Silk Road strategy is undoubtedly a means for various extra- and regional powers to advance their military, political, and economic interests in Central Asia. With time, it has become the route of cooperation, competition, containment, and engagement. However, the efforts to implement the Silk Road strategy have slowed down in the past few years. Despite the slowed efforts, there are many corridors in the Central Asian region such as Kazakhstan’s Terminal, Kuryk Port, and the China-Kyrgyzstan-Uzbekistan-Afghanistan corridor that can be further improved to revive the Silk Road initiative. Uzbekistan and its China-Kyrgyzstan-Uzbekistan corridor have a vital role to play in facilitating the recovery and revival of the Silk Road strategy that can be beneficial for Central Asian countries.

**Keywords:** Central Asian region, New Silk Road strategy, Kazakhstan’s Terminal, Kuryk Port, and the China-Kyrgyzstan-Uzbekistan corridor

**1. Introduction**

In the early 1990s, the independence of Central Asian states redefined the role of the region and its external and internal relations (Amirbek, Makhanov, Tazhibayev, & Anlamassova, 2020). The early 21st century marked a period of transition with a significant level of socio-political tension, which was affected extensively by the unstable situation in Afghanistan (Pomfret, 2012). It eventually led to the securitization of the image of Central Asia in international relations. The Secretary of the US, Hilary Clinton, in 2011, announced that the US would maintain its interest in the region of Central Asia by launching a comprehensive initiative, *New Silk Road,* which would improve stability by enhancing and facilitating regional cooperation in transportation, energy, and trade (Clinton, 2011). The initiative by the US acquired a lot of interest but it was not the only country that aimed to capitalize on the recovery of the ancient Silk Road. China also sought similar initiatives to increase its geopolitical position (Liu, 2010).

The historic Silk Road was the most vital land route that connected Asia and Europe for many centuries (Yang, Bork, Fang, & Mischke, 2019). It consisted of several routes and stretched out across a wide geography, and was a rather unique path that served as a source of trade relationships and prosperity but also facilitated the exchange of experience and knowledge. It even promoted cultural integration and information sharing to a significant extent. Due to trade-driven interaction, small villages were also exposed to the exchange of beliefs, knowledge, and ideas (Whitfield & Sims-Williams, 2004). The Silk Road was a consequence of the multifaceted combination of expectations, supplies, and demands emerging from different sources that range from smallest towns or largest empires. However, with time, it lost its importance and value in modern times due to political circumstances and advancements in maritime transportation (Frankopan, 2017).



**Figure 1:** Old Silk Road (Self-Created)

The *New Silk Road Strategy* by the US aimed to enhance trade volume, economic cooperation, and liberalization of trade within and between Central and South Asia (McBridge, 2015). Another critical goal of the initiative was to offer an economic boost to Central Asian republics. After all, despite possessing vast natural resources and economic potential, Central Asia is still among the least integrated regions in the international economy (Zimmerman, 2015). The new strategy could promote and facilitate economic growth throughout the region. However, due to geopolitical circumstances and the pandemic, efforts to implement the strategy slowed down substantially.

Furthermore, railway transportation is vital for the stability of Central Asia mainly because it represents landlocked economies. Thus, the economies rely exclusively on road and rail transport for trade. Long-distance cargo generally moves through the rail networks, which have great potential to facilitate regional and international trade, and even revive the Silk Road. Rail transport is also safer, cheaper, and less prone to delays (Karimova, 2022). The existing rail network also interlinks all economically important areas and capitals. The trade structure of Central Asian region is dominated by exports and imports, which makes railway transport more important than any other mode (Kulipanova, International transport in Central Asia: Understanding the patterns of (non-) cooperation, 2012).

Currently, there is a lack of research studies that identify the most relevant corridors in Central Asian countries that could be used for the revival of the Silk Road (Barisitz, 2017). In this article, there is a review of corridors in Central Asian countries including Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, and Turkmenistan. It sheds light on which corridors can be further developed and utilized for the revival of the Silk Road. The current research article also highlights the corridors that require attention for the revival and development of the Silk Road.

**2. Railway Transportation in Central Asia**

In the Central Asian region, the trade structure continues to be governed and dominated by exports and imports of basic commodities. It established the significance of railways as a critical mode of transport (Strong & Meyer, 1996). Rail transport, in the Soviet Union, was recognized as the major unifying factor in the economic processes and activities, accounting for almost 70% and sometimes even more than 85% of the total freight transports. In terms of international freight transport, railways remain the most critical mode with its share ranging from more than 60% in Kazakhstan to around 90% in Uzbekistan and Tajikistan (Kulipanova, International transport in Central Asia: Understanding the patterns of (non-) cooperation, 2012). The following figure shows the extent to which different rail routes are used:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Domestic | Kyrgyzstan | Tajikistan | Turkmenistan | Uzbekistan (estimated) |
| Domestic | 140.3 | 0 | 0 | 10.0 | 54.2 |
| Export | 93.3 | 1.5 | 0.9 | 1.3 | 5.1 |
| Import | 20.1 | 5.4 | 4.5 | 1.2 | 8.0 |
| Transit | 15.4 | 0 | 9.0(RU)21 | 8.5 | 11.0 |
| Total | 269.1 | 6.9 | 14.4 | 21.0 | 78.3 |

**Table 1:** Freight Transportation through Railways (Kulipanova, International transport in Central Asia: Understanding the patterns of (non-) cooperation, 2012)

Uzbekistan and Kazakhstan are the largest countries and economies with the most developed and adequate railway infrastructure. As a result, they have the largest freight volumes transferred by rail. The share of transit, however, is rather low, particularly in Kazakhstan where it accounts for around 6% of all the freight traffic (Kulipanova, International transport in Central Asia: Understanding the patterns of (non-) cooperation, 2012). It is, however, critical to consider that transit volumes have decreased exponentially below the volumes transported during times of Soviet. Still, Kazakhstan continues to be the central position as a transit nation in the Central Asian region. In addition to it, nearly, 20% of the overall transit freight through Kazakhstan tends to go from China using the BCP or Dostyk–Alashankou border-cross point, which was the only railway border station of CA with China (Rastogi & Arvis, 2014).

**2.1 *Uzbekistan***

The railway network of Uzbekistan spans 4,714 kilometers and 2,500 kilometers of this network is electrified. The main application of railway transport is undoubtedly the transportation of passengers and goods on suburban, inter-city, and inter-regional connections, in which cargo transportation is recognized as a priority (Шодмонов, 2022). It also makes up for over 80% of the overall revenue. In Uzbekistan, the density of railway network is around 0.51km per 100 sq.km, which is comparatively lower than the density of railway networks in other developed countries. The main line is generally the portion of the broader Transcaspian Railroad that connects Amu Darya with Tashkent (o’g’li & o‘g‘li, 2022). In addition, there are other rail links with Turkmenistan, Afghanistan, Tajikistan, Kyrgyzstan, and Kazakhstan.

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**Figure 2:** Uzbekistan’s Railway Network (Railway, 2023)

Uzbekistan has railway links to several areas and regions including Kharkiv, Saint Petersburg, Penza, Saratov, Novosibirsk, Chelyabinsk, Ufa, and Moscow. Connecting trains are generally offered from Almaty to Urumchi in China. The Karshi-Termez line is being electrified and a new service was initiated by Uzbekistan Railways in 2018 with the goal of connecting Balykchy with Tashkent (Yoshino & Abidhadjaev, 2017).

**2.2 *Kazakhstan***

In Kazakhstan, railway transport is considered the primary mode of transport. In fact, the strategic foundation for its development is laid down in the Development of the Transport Infrastructure’s Sectoral Program. In 1894, the first opening of the railway trunk took place after the development of Pokrovskaya Svoboda a narrow-gauge line. Another line was opened after 4 years, Urbah-Astrahan, which added more 77km to the existing railway infrastructure. Currently, the length of railway network in Kazakhstan is 21,000 kilometers (Bazarbekova, Assipova, Molgazhdarov, & Yessenov, 2018). 4,200 kilometers of these tracks are electrified and 11,100 kilometers are actually single-track. Of this railway network, the operational length is around 16, 100 kilometers. Meanwhile, the overall lengths of new railway tracks constructed during 1998-2016 were more than 24,000 kilometers.

The current density of railways is around 5.9 kilometers per 1000 sq.km, which shows a prominent lag in comparison with other developed nations. For instance, it is 1.5 to 3 times lower than other countries like India and Vietnam and dozens of times to developed European countries. In recent times, the development and application of new technologies for the organization of container traffic have made it easier to enhance the average speed of container trains in the country (Carbajo & Sakatsume, 2004).

**2.3 *Kyrgyzstan***

Generally, in the case of Kyrgyzstan, the railway network is represented by unconnected, scattered lines, divided geographically into two sections including southern and northern regions, spanning 101.2 kilometers and 323.4 kilometers respectively, offering a railway network to different states including Uzbekistan and Kazakhstan. The railway of the region serves around 424.6 kilometers of main track and around 220 kilometers of different station tracks. It also involves around 66.4 kilometers of access tracks. Multilateral and bilateral agreements on the coordination of transportation are assigned by Kyrgyzstan with other neighboring countries. In the region, the northern highway runs to Kazakhstan from Issyk-Kul and passed through Bishkek. Meanwhile, four lines at Kyzyl-Kiya, Osh, Jalal-Abad, and Tash-Kumyr tend to connect several densely populated centers (UNECE, 2020).

In Kyrgyzstan, Kyrgyzstan Railways is the sole operator of railways, which is engaged both in freight and passenger transport. The northern line is the main railway line that runs from Dzhambul’s Lugovaya station through Bishkek and it ends in Balykchy. On this line, more than 7 million tons of freight are effectively transported. Meanwhile, in the northern part of the country, different goods such as mineral fertilizers, oil products, and metals are transported by rail. International railways are primarily considered and used for the transport of goods and products such as industrial raw and mineral materials, building materials, lubricants, and fuels among others (ESCAP, 2022). Within the country itself, there is little to no rail freight except for a small amount of sugar and coal. In the country, the transport of goods is performed mainly using road transport.

**2.4 *Tajikistan***

The railway system in Tajikistan is segregated mainly into two unconnected sections, the south and the north. It primarily consists of around 950.7 kilometers in terms of tracks. Of these tracks, around 313.6 kilometers are based in the Sudg region, 214.7 kilometers are located in the Republic, and 422.4 kilometers in Khalton. In the country, Gorno Badakhshan is the only region that does not have any rail tracks and a total of 617.5 kilometers are covered by the main line of railways. Of the main line, around 62.1 kilometers are double track and 555.7 kilometers are single track. It is worth noting that transit rail traffic tends to make up about 2/3rd of the overall traffic on rail freight (Kie & Eshonov, 2009). Most of this traffic generally transits through the northern section, in particular through the cities of Khuzhand and Kanibadam.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | Local | Export | Import | Transit | Total |
| 2004 | 135.4 | 977.3 | 3,108.4 | 8,047.2 | 12,268.3 |
| 2005 | 146.1 | 870.8 | 3,441.1 | 7,656.2 | 12,114.2 |
| 2006 | 148.4 | 945.6 | 4,242.6 | 8,607.2 | 13,943.8 |
| Average | 143.3 | 931.2 | 3,597.4 | 8,103.5 | 12,775.4 |
| Avg. Share in Total (%) | 1.12 | 7.29 | 28.16 | 63.43 | …. |

**Table 2:** Volume of Cargoes in Tajikistan

In Tajikistan, the key products transported by rail include low-value and high-volume commodities including cement, wheat, cotton, and building materials. The east and north lines are not actually connected and going to east from north through these lines needs passing through different enclaves. In addition, the construction of any railway that would connect the east and north lines would be a very costly project (Bank, 2011).

**2.5 *Turkmenistan***

The railway network of Turkmenistan spans over 4,000 kilometers and there is a lack of electrified railways in the country. Meanwhile, the total length of the road is approximately 14,000 kilometers, which is around 2/3 developed in over a decade. Furthermore, there is no highway that could be considered and used for the transport of materials. Turkmen Railways is accountable for operating the railway system and belongs to the Ministry of Railways. Currently, efforts are being made by the country to expand its railway network and cover around 5,256 kilometers more by 2025. In 2020, the country had around 6,561 kilometers of rail lines, close to the southern and northern borders (Gao, 2016). It is important to note that the Tejen-Sarahs-Mashdad railway, established in 1966 by Iran and Turkmenistan links European, Russian, and Central Asian rail systems with the Persian Gulf, South Asia, and Turkey.

**3. Impact of the Pandemic on Transport in Uzbekistan**

With the onset of the pandemic, transportation sectors around the world suffered significantly. In the case of Uzbekistan, the transportation of passengers by rail decreased to 81% in the first quarter of 2020. It decreased to a further 83.4% for air carriers. The introduction and implementation of quarantine measures do not affect the traffic but it resulted in a sharp decrease in passenger traffic in road transport (Primova, 2020). The spread of the pandemic, however, did not impact the cargo transportation activities of the country. The evaluation of cargo shipments in the first quarter of 2020 indicated a 35.5% decrease in the volumes of traffic due to restrictions imposed. By March 2020, public transport was closed in Tashkent and it was followed by restrictions in other cities as well. In April of the same year, all automobile trips were restricted. As a result of substantial losses due to decrements in the number of services and goods, a decline of 1.5-2.5% in GDP was registered by the Central Bank in Uzbekistan (Tursunbaevich, Bulturbayevich, & Rahmat, 2021)

Transportation was undoubtedly one of the most severely affected sectors in Uzbekistan. In the sector, a drop in freight resulted in an increase in unemployment. For instance, the decrease in employment in the transportation sector in Uzbekistan was 35-57% in 2021.

**4. Transport Corridors and Opportunities for Silk Road**

The following are the economic corridors in Central Asia and the most important ones will be discussed in this section:

* Kazakhstan’s Terminal in Lianyungang
* Kuryk Port
* Kashgar - Irkeshtam - Osh - Andijan – Tashkent Highway
* China-Kyrgyzstan-Uzbekistan Railway
* China- Kyrgyzstan- Tajikistan-Afghanistan-Iran Railway
* Lapis - Lazuli Transport Corridor
* Mazar-e-Sharif - Herat Railway
* Uzbekistan – Turkmenistan – Iran – Oman - India Corridor

There are several transport corridors in the Central Asian region and one of them is the Kazakh terminal in Lianyungang port (Golden, 2011). It has the potential to be not only a crucial part of the logistics chain of Kazakhstan but also the starting for goods and commodities from and to Central Asia. However, it needs extensive work as not only Kazakhstan but also other Central Asian nations need to craft a mechanism for cooperation. For instance, preferences at the port for Central Asian countries and custom procedures only in Dostyk and Khorgos will help reduce bureaucratic barriers and time. The terminal also faces significant competition from other ports and corridors in Pakistan and Iran, which limits its internationalization (PeaceNexus Foundation, 2021).

However, the port of Pakistan requires a connection through Afghanistan. In these conditions, Kazakhstan can develop and improve the terminal to foster trust among other states, which can contribute significantly to the recovery of the Silk Road. In the framework of improving the Silk Road and trans-Caspian multimodal transport, an important role is played by Kuryk Port (Indeo, 2018). It is a railway ferry terminal, inaugurated in 2016 with a capacity of 4 million tons. The port offers a transshipment of cargo such as chemicals, metal products, consumer goods, and oil products. Through Kuryk, the trans-Caspian route offers not only efficient logistics for the exports and imports from China, the Ural-Siberian region of Russia, and China. By the end of 2019, the reconstruction of the Beineu-Akzhigit highway was finalized, which increased the capacity of the route to a significant extent. It increased the road transit through Kuryk port and offered a new connection between Uzbekistan and the Trans-Caspian corridor (Shaikova, Dronzina, & Zholdasbekova, 2023).

It is, however, critical to note that the Kuryk port works and cooperates with only the Azerbaijani port of Alat (Hoh, 2019). While there are plans to expand the ferry service with Iran and Turkmenistan, progress has yet to be made. There is a need to improve the corridor as it can help enhance the collaboration of the port with others and contribute to the revival of the Silk Road. Another vital corridor in the Central Asian region is the Kashgar – Irkeshtam – Osh – Andijan – Tashkent highway. It was originally discussed by the nations in the late 20th century and was postponed for several economic and political reasons (BAIZAKOVA, 2022). Since the launch of this highway corridor, the transportation of goods along the network has been facilitated. Similarly, the Silk Road International as a venture between Chinese and Uzbekistan has facilitated the transportation of goods and products along the transport corridor of China-Kyrgyzstan-Uzbekistan-Afghanistan.

The highway connects the external world with Ferghana Valley, which leads to the reformatting of the region. It is capable of having a positive influence on the economic conditions and circumstances of the Kyrgyz citizens living along the route. However, the project itself faces many risks including competition with Kazakhstan and corruption among others (Kholiskhon & JianPing, 2020). In addition to it, the China-Kyrgyzstan-Uzbekistan railway is yet another corridor that offers significant potential (Smith, 2012). In fact, it may even become the primary link in the central part of the route that connects China with Europe-Turkey-Iran. It integrates directly Uzbekistan, Kyrgyzstan, and even Turkmenistan, Afghanistan, and Tajikistan. It is worth noting that this route crosses the region’s center and integrates into the identified countries (Muzalevsky, 2012). Therefore, it has a great opportunity to be the core of the transport system of the region – a connecting artery that can stimulate the business ecosystem of the region while reviving the Silk Road effectively along its traditional route through Ferghana Valley and Kashgar (Hudajberganov, Ikramov, & Kajumov, 2019).

Uzbekistan, therefore, has a critical role to play in positively influencing the image and reputation of the region. It is mainly because the China-Kyrgyzstan-Uzbekistan railway corridor is capable of connecting not only the region but also its individual cities with the outside world. It can be rather helpful and significant in the revival of the Silk Road. The project is capable of changing the geoeconomics of the region and strengthening the position of Uzbekistan further as a regional transport hub. It can also bring both Uzbekistan and Kyrgyzstan closer to China, which will facilitate their interaction and interaction.

**5. Conclusion**

The policy of the US on the Silk Road and the struggle to attain geopolitical advantage have shifted the attention of countries to the Silk Road and its development. It is, however, critical to consider that efforts to build and improve the Silk Road have slowed down in the past few years. Regardless, Central Asia has the potential to be one of the dominant economic hubs with its several economic corridors. While all countries have their respective corridors, Uzbekistan and Kazakhstan are the most prominent as they boast not only wider transport networks but also strong economic corridors. Uzbekistan supports not only the Uzbekistan – Turkmenistan – Iran – Oman - India corridor but also the China-Kyrgyzstan-Uzbekistan railway, both of which are rather prominent corridors and have the potential of reviving the Silk Road.

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