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Transport Sector Development in Uzbekistan: Structural Analysis, Logistics Performance and Forecasts to 2030

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Abstract: Uzbekistan, one of only two doubly landlocked countries in the world, depends on efficient transport to reach external markets. This article analyses the development of the national transport sector over 2010–2025 and forecasts freight and passenger volumes to 2030. The study uses official annual data of the National Statistics Committee, World Bank Logistics Performance Index (LPI) results and project documentation of international corridors. Methods include growth-rate and CAGR analysis, modal-structure analysis, linear and log-linear trend regression, and scenario forecasting. Total freight transported rose from 763.1 million tonnes in 2010 to 1,609.6 million tonnes in 2025 (CAGR 5.1%), and passengers carried rose from 4.07 to 7.90 billion (CAGR 4.5%). Road transport dominates freight, carrying about 1.4 billion tonnes in 2024, while rail carries 73.9 million tonnes but handles nearly four fifths of transit cargo. The linear trend model fits freight data closely ($R^2 = 0.991$; MAPE 1.7%) and projects about 1.89 billion tonnes in 2030 in the baseline scenario, with a range of 1.87–2.15 billion tonnes. Passenger traffic is projected at 9.2–11.1 billion trips by 2030. The LPI score has stagnated at about 2.6, with customs and tracking the weakest components. The article argues that new corridors, notably the China–Kyrgyzstan–Uzbekistan railway, can shift the modal split toward rail only if matched by digital customs, multimodal hubs and fleet renewal.

Keywords: transport sector; Uzbekistan; freight transport; passenger transport; logistics performance index; modal split; transit corridors; trend forecasting; landlocked economy; Central Asia.

1. Introduction

Transport is a binding constraint on Uzbekistan's growth because every export must cross at least two borders to reach a seaport. The country lies at the centre of Central Asia, borders all four other Central Asian republics and Afghanistan, and sits on several historical Silk Road routes. Its nearest seaports (Bandar Abbas, Poti, Constanța via the Caspian, and Chinese Pacific ports) are 2,500–5,000 km away, so logistics costs absorb a large share of the value of traded goods.

Since 2017 the government has liberalised the economy, unified the exchange rate and opened the transport market to private operators. Transport services reached 188.2 trillion soums in 2025, up 10.8% on 2024 (NSC, 2026a). At the same time, international corridor projects such as the China–Kyrgyzstan–Uzbekistan (CKU) railway and the Trans-Afghan railway aim to turn the country from "landlocked" to "land-linked".

The aim of this article is to assess the structure and dynamics of Uzbekistan's transport sector and to forecast its key volumes to 2030. Three research questions guide the study:

1. How have freight and passenger volumes and their modal structure changed over 2010–2025?

2. How does Uzbekistan's logistics performance compare internationally, and where are the main bottlenecks?

3. What freight and passenger volumes can be expected by 2030 under alternative scenarios?

The article contributes a consistent long-run series from official SIAT data, a statistically validated trend model, and a scenario forecast linked to concrete corridor projects. Section 2 reviews the literature, Section 3 describes data and methods, Section 4 presents results, Section 5 gives forecasts, Section 6 discusses policy implications, and Section 7 concludes.

2. Literature Review

The link between transport infrastructure and growth is well established. Aschauer (1989) showed that core public infrastructure, including transport, raises private-sector productivity. Banister and Berechman (2001) qualified this finding: transport investment promotes growth only when supported by complementary economic, institutional and policy conditions. Rodrigue (2020) frames transport as a derived demand whose structure reflects the spatial organisation of production and trade.

A second strand addresses landlocked countries. Limão and Venables (2001) estimated that being landlocked raises transport costs by about half and sharply reduces trade volumes, with infrastructure quality in transit neighbours explaining much of the penalty. Faye, McArthur, Sachs and Snow (2004) identified dependence on neighbours' infrastructure, political relations and border administration as the core challenges for landlocked developing countries. Arvis, Raballand and Marteau (2010) argued that the main cost of being landlocked is unreliability and delay rather than distance, which shifts the policy focus from building roads to reforming border procedures and logistics services.

A third strand measures logistics performance. The World Bank LPI (Arvis et al., 2023) benchmarks six components: customs, infrastructure, international shipments, logistics competence, tracking and timeliness. Studies of Uzbekistan using the LPI (Yusufkhonov et al., 2021; Yarashova, 2023) find persistent weaknesses in customs efficiency and shipment tracking and propose digitalisation of border procedures and development of logistics centres.

Regional studies focus on corridors. The CAREC Transport Strategy 2030 (ADB, 2020) and the World Bank (2023) study of the Middle Trade and Transport Corridor emphasise that Central Asian corridors are constrained more by border crossings and multimodal transhipment than by line capacity. However, few studies combine a long official time series for Uzbekistan with formal

trend modelling and scenario forecasts tied to specific corridor projects. This article addresses that gap.

3. Data and Methodology

The analysis uses annual official data for 2010–2025 and cross-sectional modal and LPI data. The year 2010 is chosen as the start because the national series shows a methodological break in 2009–2010 (freight fell from 1,078.0 to 763.1 million tonnes in one year).

Table 1. Data sources

Data	Period	Source
Freight transported, all modes (million t)	2010–2025	NSC SIAT, indicator 1.06.01.0001
Passengers carried, all modes (million)	2010–2025	NSC SIAT, indicator 1.06.01.0011
Freight by mode	2024	NSC (2025)
Transit cargo by mode	Jan–Jun 2024	NSC (2024)
LPI scores and components	2018, 2023	World Bank; UzDaily (2023)

The study applies four methods. First, year-on-year growth rates and the compound annual growth rate (CAGR) describe dynamics:

$$CAGR = \left(\frac{Y_{T}}{Y_{0}} \right)^{1/n} - 1$$

Second, modal-structure analysis computes the share of each mode in total freight and transit. Third, two trend models are estimated by ordinary least squares, with t = 0 in 2010:

$$\text{Linear: } Y_t = a + b\,t + \varepsilon_t \qquad \text{Log-linear: } \ln Y_t = \alpha + \beta\,t + \varepsilon_t$$

Model fit is compared by the coefficient of determination (R^2) and the mean absolute percentage error (MAPE). For passengers, 2020 is excluded from estimation as a COVID-19 outlier. Fourth, scenario forecasting to 2030 combines the best-fitting trend with pessimistic and optimistic growth paths that reflect corridor and policy assumptions (Hyndman & Athanasopoulos, 2021).

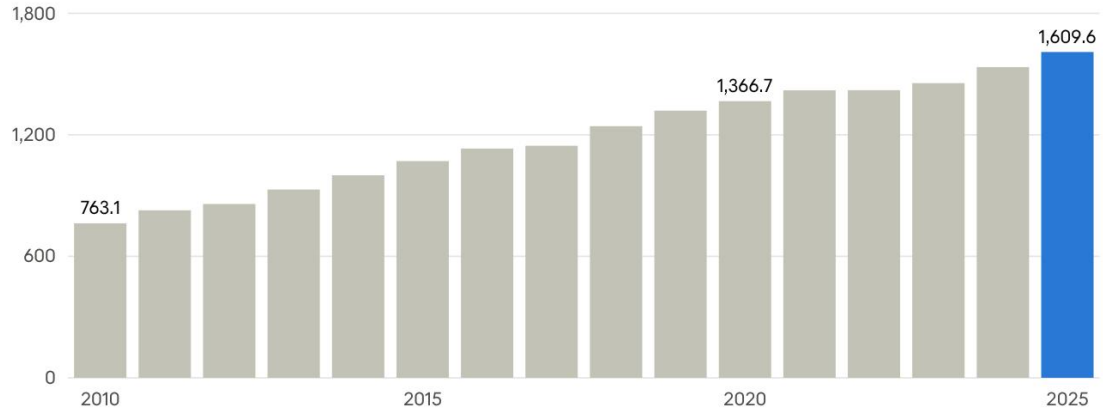
4. Results

4.1 Dynamics of freight and passenger transport

Freight transported reached 1,609.6 million tonnes in 2025, 2.1 times the 2010 level (NSC SIAT, 2026a). Growth has been steady but is slowing: CAGR was 5.1% over 2010–2025, 4.2% over 2015–2025 and 3.3% over 2020–2025.

Figure 1. Freight transported more than doubled, 2010–2025

Million tonnes, all modes · 763.1 → 1,609.6 · CAGR 5.1% a year

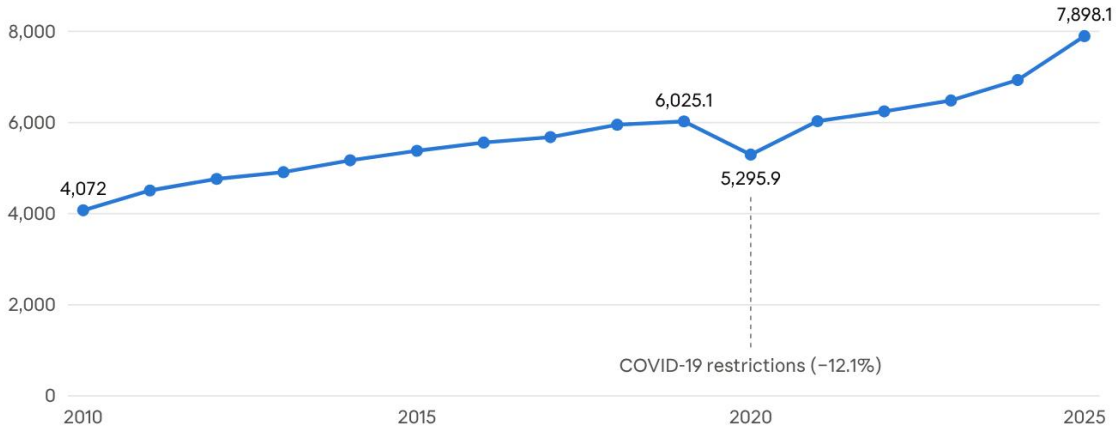


Source: NSC SIAT, indicator 1.06.01.0001 (updated 14 July 2026)

Annual growth peaked at 8.4% in 2011 and 2018 and fell to zero in 2022, when sanctions on Russia disrupted northern transit routes. Growth then recovered to 2.4% in 2023, 5.4% in 2024 and 4.9% in 2025. Freight growth closely tracks GDP growth, which suggests that the sector still mainly serves domestic demand rather than transit.

Figure 2. Passengers carried recovered from the 2020 shock and hit a record in 2025

Million passengers, all modes · CAGR 4.5% a year, 2010–2025



Source: NSC SIAT, indicator 1.06.01.0011 (updated 29 July 2026)

Passengers carried rose from 4.07 billion in 2010 to 7.90 billion in 2025 (NSC SIAT, 2026b). Traffic fell by 12.1% in 2020 but surpassed its pre-pandemic level already in 2021. The 13.9% jump in 2025 is the largest annual increase in the series. Rail carried 10.5 million passengers in 2025, 0.7 million more than in 2024 (NSC, 2026b), and air carried 4.5 million passengers in January–June 2026, up 8.3% year on year (NSC, 2026c).

4.2 Modal structure of freight

Road transport carries over nine tenths of all freight, while rail carries less than 5% (Table 2). This is an unusually road-heavy split for a large continental economy, where rail typically carries bulk cargo over long distances.

Table 2. Freight transported by mode, 2024

Mode	Freight (million t)	Share (%)
Road	≈1,385.5	91.1
Rail	73.9	4.9
Pipeline (gas)	61.8	4.1
Air	0.0144	<0.01
Total	**1,521.2**	**100.0**

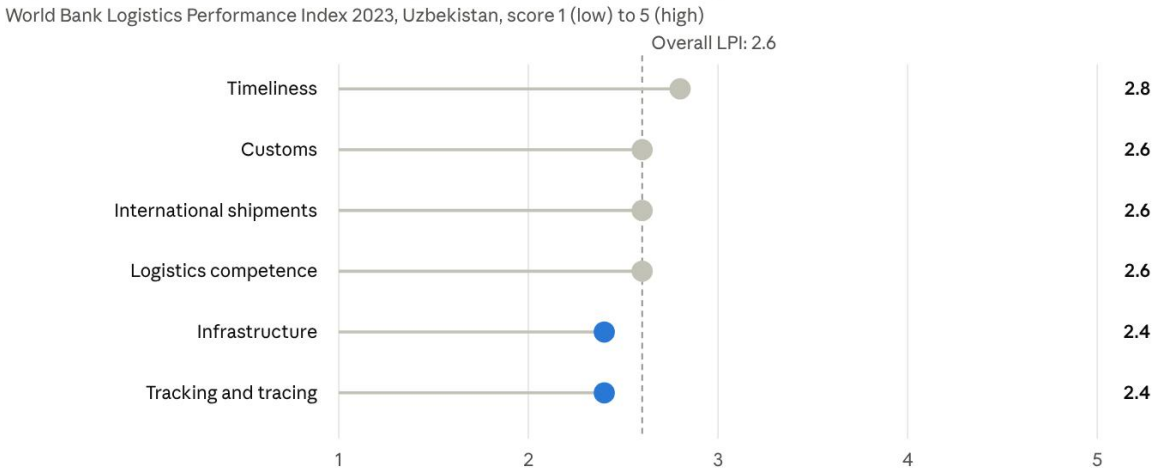
Source: NSC (2025); road volume derived as total minus other modes (preliminary total; the revised SIAT total for 2024 is 1,534.7 million t).

Transit shows the opposite pattern. Of 5.3 million tonnes of transit cargo in January–June 2024, rail carried 4.1 million tonnes (77.9%) and road 1.2 million tonnes (22.1%) (NSC, 2024). Rail is therefore the backbone of international and transit flows, and road the backbone of domestic distribution.

4.3 Logistics performance

Uzbekistan's logistics performance improved in rank but not in substance. Its LPI score barely moved from 2.58 in 2018 to 2.6 in 2023, while its rank rose from 99th to 88th (UzDaily, 2023). In 2014 the country ranked 129th (Times of Central Asia, 2025). The government's target is a place in the top 50 by 2030 (Kun.uz, 2020).

Figure 3. Infrastructure and tracking are the weakest LPI components



Source: World Bank LPI 2023, as reported by UzDaily (2023)

Timeliness scores highest (2.8), reflecting improved rail scheduling. Infrastructure and tracking score lowest (2.4), which points to gaps in terminals, warehousing and digital cargo

visibility rather than in line capacity alone. Regional peers score similarly: in the 2023 LPI Kazakhstan ranked 79th, Tajikistan 97th and Kyrgyzstan 123rd (Railway Supply, 2023).

4.4 International transport corridors

Two railway projects will reshape Uzbekistan's external connectivity after 2030 (Table 3). Both shorten routes to major markets and shift transit toward rail.

Table 3. Key railway corridor projects

Project	Route	Length	Estimated cost	Capacity	Status (October 2026)
China–Kyrgyzstan–Uzbekistan railway	Kashgar–Torugart–Jalal-Abad–Andijan	532.5 km (≈305 km in Kyrgyzstan)	US$4.7 bn	up to 15 million t/yr	Under construction since December 2024; about 17% complete in April 2026; completion targeted for 2030 or earlier
Trans-Afghan railway	Termez–Mazar-i-Sharif–Logar–Kharlachi–Peshawar	573 km	US$4.8–8.2 bn (Uzbek and Pakistani estimates)	up to 20 million t/yr	Feasibility study under way; framework agreement July 2025, ratified February 2026

The CKU railway is expected to shorten the China–Europe route via Uzbekistan by about 900 km and cut delivery time by 7–8 days (Kun.uz, 2025). The Trans-Afghan line would give direct rail access to Pakistani seaports, but its cost estimate has risen to over US$7 billion and its financing depends on Afghanistan's political risk (Daryo, 2026).

5. Forecasts to 2030

5.1 Trend model estimation

The linear model describes freight best and is used as the baseline. Table 4 reports the OLS estimates (t = 0 in 2010).

Table 4. Trend model estimates, 2010–2025

Series	Model	Intercept	Slope	Implied growth	R^2	MAPE (%)
Freight	Linear	775.10	55.82 million t/yr	—	0.991	1.75
Freight	Log-linear	6.695	0.0486	4.98%/yr	0.969	3.38
Passengers*	Linear	4,286.1	193.8 million/yr	—	0.926	2.99
Passengers*	Log-linear	8.386	0.0340	3.46%/yr	0.928	3.51

Source: author's calculations. *2020 excluded as a COVID-19 outlier.

The freight series grows by a nearly constant absolute amount each year, so the linear model outperforms the exponential one on both R^2 and MAPE. The exponential model would overstate 2030 freight (2.14 billion t) because it extrapolates the faster growth of the early 2010s. For

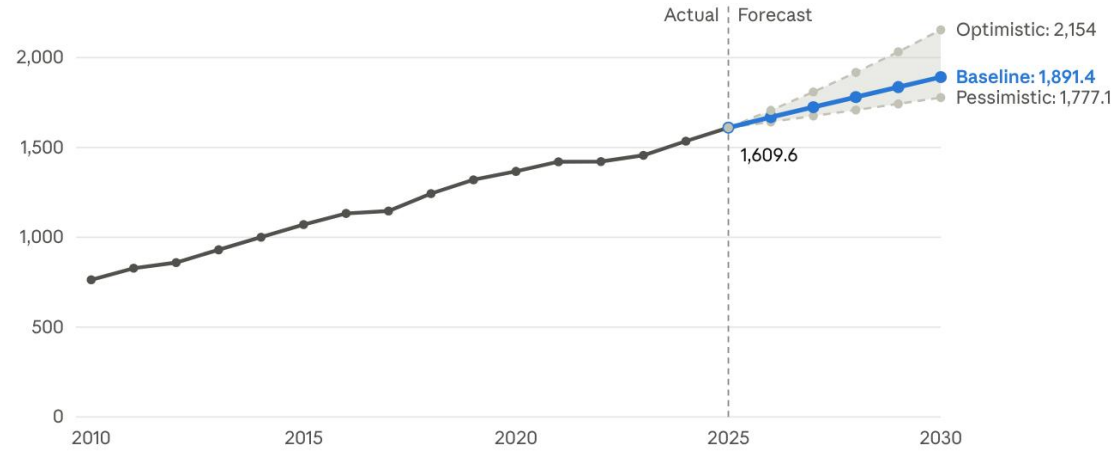
passengers, both models fit less well and both underpredict the 2025 level of 7.90 billion; the 2025 surge therefore serves as the base for passenger scenarios.

5.2 Scenario forecasts

Three scenarios are defined. The **pessimistic** scenario assumes 2% annual freight growth, reflecting slower GDP growth and continued disruption on northern transit routes. The **baseline** follows the linear trend (≈3.3% a year), consistent with the 2020–2025 CAGR. The **optimistic** scenario assumes 6% growth, driven by the CKU railway entering service by 2030, faster industrial output and higher transit.

Figure 4. Baseline forecast: about 1.9 billion tonnes of freight by 2030

Million tonnes, all modes · actual 2010–2025, scenario forecasts 2026–2030



Source: author's estimates based on NSC SIAT data, 2010–2025

Table 5. Forecasts for 2030 by scenario

Indicator	2025 (actual)	Pessimistic	Baseline	Optimistic
Freight, million t	1,609.6	1,777.1 (2.0%/yr)	1,891.4 (≈3.3%/yr)	2,154.0 (6.0%/yr)
Passengers, million	7,898.1	9,156.1 (3%/yr)	10,080.2 (5%/yr)	11,077.5 (7%/yr)
Rail share of freight, % (expert estimate)	4.9 (2024)	5	6–7	8–10

Source: author's calculations. Passenger baseline (5%) is close to the 2019–2025 CAGR of 4.6%.

In the baseline, freight rises by about 282 million tonnes, or 17.5%, over 2025–2030, and passengers by about 2.2 billion. The gap between the pessimistic and optimistic freight paths reaches 377 million tonnes by 2030, roughly the size of four years of baseline growth. Which path materialises depends less on demand than on whether new rail capacity and border reforms arrive on schedule.

6. Discussion

The results confirm the central argument of the landlocked-economy literature: Uzbekistan's constraint is less the volume of transport than its reliability and cost. Freight volumes grew steadily, yet the LPI score stayed flat at about 2.6, and the weakest components are infrastructure and tracking. This matches the finding of Arvis, Raballand and Marteau (2010) that delay and unpredictability, not distance, drive logistics costs for landlocked countries.

Table 6. SWOT analysis of Uzbekistan's transport sector

Strengths	Weaknesses
Central position in Central Asia, bordering all regional states and Afghanistan	Doubly landlocked; 2,500–5,000 km to the nearest seaports
Stable long-run freight growth (CAGR 5.1%, 2010–2025)	Road carries over 90% of freight; rail under 5%
Rail dominates transit (77.9% of transit tonnage)	LPI stagnant at 2.6; low infrastructure and tracking scores
Rising passenger demand and air traffic	Ageing rolling stock and truck fleet; limited multimodal terminals
Opportunities	**Threats**
CKU railway (US$4.7 bn, up to 15 million t/yr) linking directly to China	Sanctions and geopolitical shocks on northern routes (zero growth in 2022)
Trans-Afghan railway access to Pakistani ports (up to 20 million t/yr)	Political and financing risk in Afghanistan; cost estimates rising to over US$7 bn
Middle Corridor growth via Kazakhstan, the Caspian and the South Caucasus	Competing corridors in Kazakhstan and Turkmenistan
Digital customs, e-CMR and single-window reforms	Debt burden of large projects; climate and water stress on infrastructure

Source: compiled by the author.

Four policy implications follow.

1. **Shift bulk freight from road to rail.** A road share above 90% raises costs, emissions and road wear. Tariff reform, private rail operators and container block trains can lift rail's share toward the 6–10% range assumed in the baseline and optimistic scenarios.

2. **Prioritise border and digital reforms over new lines.** The LPI profile shows that customs, tracking and infrastructure quality, not route length, limit performance. Electronic transit declarations, mutual recognition of inspections and real-time cargo tracking offer high returns at low cost.

3. **Build multimodal logistics hubs at corridor nodes.** Andijan (CKU), Termez (Trans-Afghan) and Tashkent need container terminals, bonded warehouses and gauge-change facilities so that corridor capacity translates into actual flows.

4. **Diversify routes to manage geopolitical risk.** The 2022 stagnation shows the cost of dependence on one direction. Parallel development of eastern, southern and western corridors reduces exposure to any single transit country.

The study has limitations. Trend models assume structural continuity and cannot capture regime shifts such as a corridor opening. Tonnage data do not reflect distance or value, so ton-kilometre and cost data would strengthen future analysis. Finally, LPI scores are perception-based and published irregularly.

7. Conclusion

Uzbekistan's transport sector has grown steadily but remains road-dependent and logistically inefficient. Freight transported doubled from 763.1 million tonnes in 2010 to 1,609.6 million tonnes in 2025, and passengers carried rose from 4.07 to 7.90 billion. Growth, however, has slowed from over 5% a year in the early 2010s to about 3.3% in 2020–2025.

The modal structure is strongly unbalanced: road carries about 91% of freight, while rail carries under 5% of total freight but nearly 78% of transit. The LPI score has stagnated at 2.6, with infrastructure and tracking as the weakest components.

The linear trend model (R^2 = 0.991; MAPE 1.75%) projects about 1.89 billion tonnes of freight in 2030, within a scenario range of 1.78–2.15 billion tonnes. Passenger traffic is projected at 9.2–11.1 billion by 2030. Reaching the upper path requires timely completion of the China–Kyrgyzstan–Uzbekistan railway, progress on the Trans-Afghan corridor, and, above all, digital border reforms and multimodal hubs that turn new routes into reliable services.

Future research should use ton-kilometre and logistics-cost data, apply multivariate models linking transport to GDP and trade, and assess the regional effects of the new corridors.

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Data availability: All data are publicly available from the National Statistics Committee of the Republic of Uzbekistan (siat.stat.uz) and the World Bank.

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