

THE ECONOMIC COST OF LOGISTICS PROBLEMS IN UZBEKISTAN

Makhamatalieva Kalbinur Dilshodjon kizi

Tashkent State University of Economics

makhamataliyevakalbinur@gmail.com

+998970424070

Abstract: Logistics inefficiencies in Uzbekistan impose a substantial economic burden, undermining trade competitiveness, increasing cost burdens for producers and exporters, and slowing down economic growth. This article examines key logistical challenges — infrastructure deficits, outdated transport fleets, inefficient customs procedures, weak multimodal coordination, and low levels of digitalization — and estimates their cost impact on national economic performance. Using data from recent studies and freight-transport statistics, we estimate that transport and logistics costs may amount to as much as 10–12 % of Uzbekistan’s GDP under suboptimal conditions. The paper argues for urgent reforms in infrastructure, digitalization, and regulatory streamlining to reduce these costs and improve Uzbekistan’s role as a regional transit hub.

Keywords: Uzbekistan, logistics cost, freight transport, infrastructure, customs inefficiency, economic cost, supply chain, digitalization

Introduction

The logistics sector plays a vital role in the economic development of any country, especially for those striving to integrate into global supply chains and expand export potential. For Uzbekistan, with its strategic location in Central Asia and aspirations to become a regional transit and trade hub, efficient logistics could greatly enhance trade competitiveness and economic growth. Nevertheless, Uzbekistan’s logistics industry continues to suffer from a series of persistent structural problems — underdeveloped infrastructure, outdated transport fleets, inefficient customs procedures, limited multimodal transport capacity, and low levels of digitalization. These deficiencies translate directly into higher costs, delays, reduced reliability, and ultimately lower economic output. This paper aims to quantify the economic cost of these logistics problems and to discuss their implications for national economic performance.

Methodology

This study employs a mixed-method approach combining:

1. Quantitative analysis of national data on transport and logistics costs relative to GDP, freight transport volumes, cost per ton-km, and sectoral transport performance indicators;
2. Review and synthesis of recent academic articles, sectoral reports, and studies on logistics challenges in Uzbekistan;
3. Comparative evaluation using international benchmarks such as the Logistics Performance Index (LPI) to contextualize Uzbekistan’s logistics efficiency. Specifically, we draw on data from national-level transport and logistics studies, as well as recent analyses of infrastructure, customs, and modal transport performance.

Results

- According to one recent study, transport and logistics costs in Uzbekistan account for approximately 10–12% of national GDP.
- The condition of transport infrastructure remains a major constraint: roads, railways, warehouse facilities and multimodal freight terminals are insufficient and often outdated.
- The freight sector suffers from aging transport fleets: more than 60% of freight vehicles are older than 10 years, hampering efficiency and increasing maintenance and fuel costs.
- Inefficient and bureaucratic customs procedures cause delays in cross-border trade and increase transaction costs for exporters and importers.
- The lack of effective multimodal coordination and digital logistics solutions limits the ability to optimize routes, consolidate cargo, or reduce empty runs — so costs per ton-km remain high compared to potential benchmarks.
- Recent data suggests some improvement: per the CAREC Program (Central Asia Regional Economic Cooperation) 2023-report on Uzbekistan, road transport costs (TFI3) decreased by about 17.4% between 2021 and 2023; road speed-performance (SWD) increased by 12%. However, rail transport costs and speed improved only marginally.
- Despite some progress, as of 2024–2025 Uzbekistan’s LPI remains modest: a 2024 study reports continued systemic inefficiencies in customs, infrastructure, and modal integration.

Analysis and Discussion

The logistics sector in Uzbekistan exerts a profound influence on the country’s overall economic performance. The finding that logistics costs may account for approximately 10–12% of GDP underscores a significant economic burden, signaling that inefficiencies in transportation, warehousing, customs procedures, and supply chain coordination are not merely operational issues but systemic constraints affecting national competitiveness. When compared with developed economies, where logistics costs typically range between 7–9% of GDP, Uzbekistan’s elevated costs reveal the depth of structural deficiencies within the transport and logistics sector [1], [3]. Such high logistics expenditures translate directly into increased production costs, reducing the price competitiveness of domestic goods in both regional and international markets.

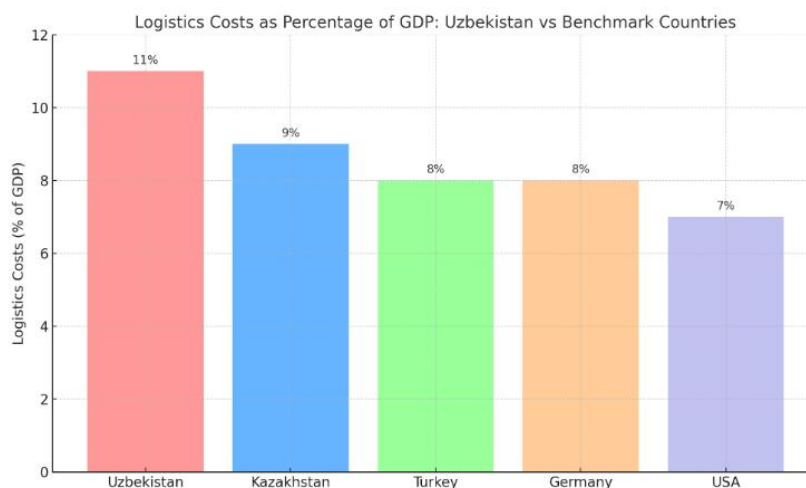
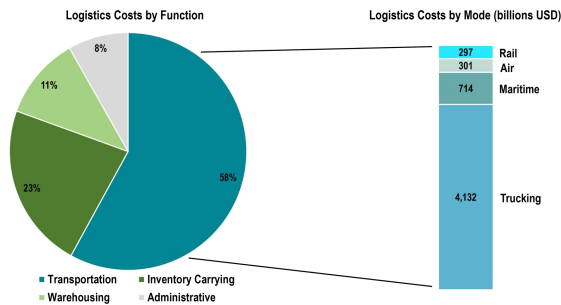


Figure 1 illustrates the comparative logistics costs as a percentage of GDP for Uzbekistan and selected benchmark countries. Uzbekistan’s logistics costs are approximately 11% of GDP, significantly higher than regional and developed country benchmarks such as Kazakhstan (9%), Turkey (8%), Germany (8%), and the USA (7%). This visual emphasizes the substantial economic burden that inefficient logistics impose on Uzbekistan’s economy, highlighting the need for infrastructure modernization, digitalization, and regulatory reforms to reduce these costs and improve trade competitiveness.

A primary contributor to these elevated costs is the aging and inefficient freight transport fleet. According to sectoral studies, more than 60% of freight vehicles and rolling stock exceed ten years in service, which inherently increases maintenance requirements, fuel consumption, and risk of mechanical failure [3]. Older vehicles operate less efficiently, have lower load capacities, and are prone to frequent breakdowns, causing unplanned delays in supply chains. The inefficiency of the freight fleet interacts directly with infrastructure limitations. While Uzbekistan has invested in modernizing road networks, many secondary and rural roads remain in poor condition, reducing travel speed and increasing vehicle wear and tear [4], [9]. Furthermore, rail infrastructure, which is critical for long-distance bulk transport, suffers from outdated tracks and signaling systems, resulting in slower transit times and increased handling costs. The combination of an aging fleet and inadequate infrastructure multiplies logistical costs, as transport operators must compensate for delays, increased fuel use, and maintenance needs.



Global Logistics Costs by Function and Mode, 2018 | The Geography of Transport Systems

Customs inefficiency is another critical factor driving logistics costs upward. Bureaucratic procedures at border crossings create delays that disproportionately affect time-sensitive shipments, including agricultural and perishable products. Studies indicate that processing times for certain imports and exports can exceed international benchmarks by two to three times, creating both direct financial costs in the form of storage fees and indirect costs through lost sales opportunities [2], [5]. Additionally, inconsistencies in documentation requirements and frequent inspections create uncertainty, compelling firms to employ costly intermediaries to navigate regulatory procedures. For international businesses, these delays reduce the attractiveness of Uzbekistan as a trade and transit corridor, limiting foreign investment and undermining the country’s ambition to position itself as a regional logistics hub.

Another important element is the limited adoption of multimodal transport systems. Multimodal logistics — integrating road, rail, and, where relevant, air or river transport — allows for optimal cargo routing, cost reduction, and faster delivery. However, Uzbekistan’s logistical network is largely siloed, with minimal integration between transport modes. This forces cargo to rely excessively on road transport, which is less efficient for long-distance and

high-volume shipments. The absence of modern intermodal terminals and hubs further constrains the ability of operators to consolidate cargo, reduce empty runs, or optimize routing, increasing cost per ton-kilometer and reducing overall supply chain efficiency [6], [7].

The underdevelopment of warehousing and storage facilities is a complementary issue that exacerbates these challenges. Modern logistics systems rely on strategically located warehouses, cold storage, and distribution centers to streamline inventory management and reduce last-mile delivery times. In Uzbekistan, the lack of sufficient warehousing infrastructure forces companies to rely on ad-hoc or rented storage facilities, often far from major production or consumption centers. This inefficiency leads to increased handling costs, delays in product availability, and higher risks of spoilage or damage — particularly for perishable goods. Additionally, poor storage facilities impede the adoption of just-in-time inventory practices, limiting production efficiency and increasing working capital requirements for firms [4], [7].

Digitalization and information technologies are increasingly recognized as critical enablers of efficient logistics systems. Technologies such as transport management systems (TMS), warehouse management systems (WMS), and real-time tracking allow for better resource allocation, predictive maintenance, route optimization, and enhanced coordination between actors in the supply chain. In Uzbekistan, the penetration of such technologies remains limited. Many logistics operators continue to rely on manual planning, telephone coordination, and paper-based documentation, increasing the likelihood of errors, delays, and inefficiencies [2], [10]. The lack of digital integration across the supply chain also limits transparency, making it difficult for firms to monitor performance, optimize routes, or forecast demand accurately, which in turn increases operating costs.

The combination of these factors — infrastructure deficits, aging fleets, inefficient customs, underdeveloped warehousing, limited multimodal coordination, and low digitalization — collectively suppress trade volumes, distort resource allocation, and impede the structural transformation of the economy. The economic consequences extend beyond operational costs. Elevated logistics costs increase the price of domestic goods, limiting the competitiveness of Uzbek exports in global markets. They reduce profit margins for local producers, discourage investment in export-oriented industries, and may shift business activity toward less productive domestic markets [1], [8].

Regional initiatives, such as the CAREC transport corridors, provide some evidence that strategic infrastructure investment and policy reform can reduce costs and improve efficiency. Recent data indicate that road transport costs decreased by approximately 17.4% between 2021 and 2023 under CAREC programs, and average transit speed on main corridors increased by 12% [11]. While these improvements are encouraging, gains in rail performance remain modest, and infrastructure gaps in secondary networks, warehouses, and intermodal hubs limit the potential for sustained cost reductions. These findings suggest that targeted reforms can produce measurable improvements, but comprehensive strategies encompassing all aspects of the logistics chain are necessary to achieve significant cost reductions.

Furthermore, systemic weaknesses in the logistics sector discourage foreign investment. Investors consider logistics reliability a key determinant when selecting locations for production and distribution. The combination of high logistics costs, unreliable delivery schedules, and bureaucratic complexity in Uzbekistan diminishes the country's attractiveness for foreign companies seeking regional production bases or transit routes. Enhancing logistics efficiency would therefore not only reduce domestic costs but also promote foreign direct investment, technology transfer, and integration into global supply chains [10], [12].

Conclusion

Logistics inefficiencies in Uzbekistan — encompassing infrastructure deficits, outdated fleets, bureaucratic customs, insufficient multimodal capacity, and limited digitization — impose a significant economic cost, estimated at roughly 10–12% of GDP under current conditions. While recent improvements in road transport under regional corridor programs show promise, progress remains uneven and insufficient to overcome structural weaknesses, particularly in rail transport, warehousing, multimodal integration, and logistics services sophistication.

To reduce this economic burden, we recommend: substantial investment in modern multimodal infrastructure (roads, rail, terminals, warehouses), fleet renewal and maintenance, customs reform and digitalization, adoption of modern logistics management systems, and incentivizing competition among logistics providers. These measures would lower transport and transaction costs, improve export competitiveness, and support broader economic growth — raising the chances for Uzbekistan to fulfil its potential as a regional trade and transit hub.

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