

Freight Flows And Transport Costs On The Logistics Corridors Of Uzbekistan

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Abstract – Being double-landlocked poses formidable constraints to Uzbekistan’s growth, increasing logistics and transport costs considerably. Internationally, long distances, high transportation costs, and low regional integration limit Uzbekistan’s access to economic centers in China and Western Europe. This article represents the most actual problems connected with freight flow and transport costs in Uzbekistan. We used the freight flow model to estimate domestic flows in Uzbekistan and freight flows beyond its borders.

Keywords – Freight flow model, international corridors, transport costs, logistics, Free economic zones.

I. INTRODUCTION

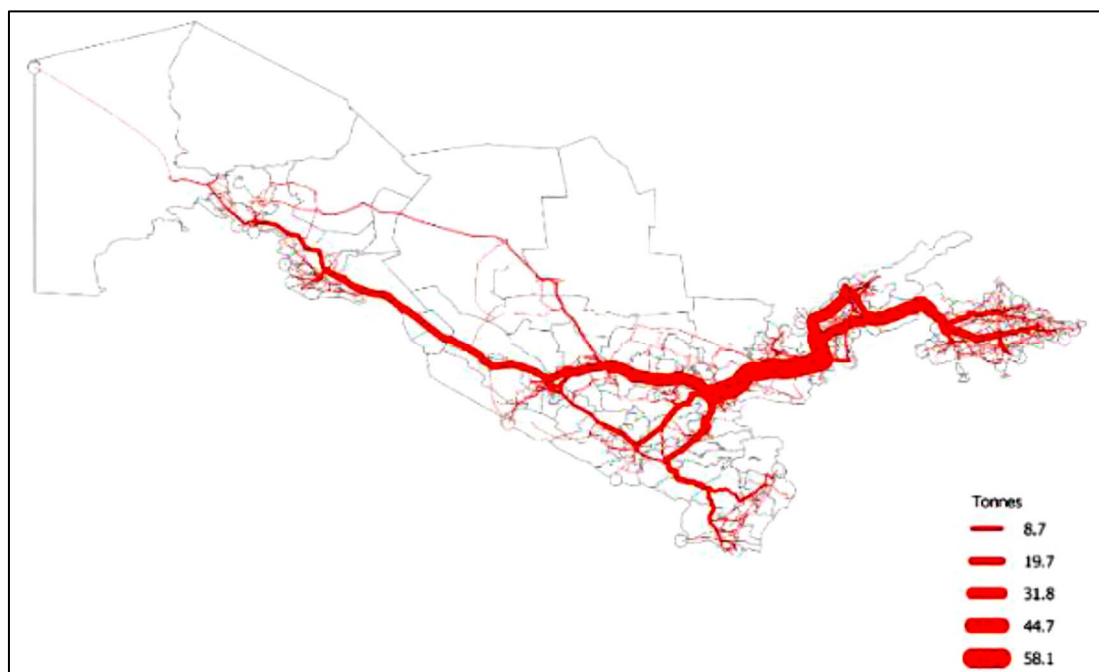
High transport costs limit Uzbekistan’s ability to exploit its potential for agricultural exports and to integrate into the global value chains. Transport constrains firms, since Uzbekistan’s transport infrastructure and logistics services restrict the country’s comparative advantage and productivity. Farmers and Small and Medium Enterprises face transport costs of up to 200 percent of production costs. When transporting freight to and from the Ferghana Valley, selling costs increase significantly during weather-related road closures due to inadequate transport links that often require several transshipments. On international shipments, the costs are also high (country ranked 120 in 2018 Logistics Performance Index (LPI) ranking on international shipments). For instance, it costs more than €5,000 to ship a container from Uzbekistan to the port of Rotterdam and about €5,500 to ship one to the port of Shanghai. 71 Connectivity to European countries and Central Asian neighbors is also limited [1].

Logistics and international road freight services must be improved to facilitate regional connectivity and integrate Uzbekistan into global value chains. This will require adapting the Ministry of Transport organizational structure to the requirements of seamless intermodal transport and logistics. A new policy are expected to support a competitive market for transit management and domestic and international freight transport under revised legal regimes for international transit including modernization of customs. In this process, the following actions are proposed at the institutional level:

- Building the capacity of the Ministry of Transport and its Center for Investigation of Logistics Problems to develop strategic solutions.
- Setting up a system of reliable and useful statistics that would support national policy development and decision making.
- Involving all stakeholders in strategic decision making on logistics based on analyzed statistics.
- Developing a system for monitoring supply chain and logistics service delivery from the perspective of logistics users and not just providers [2].

II. METHODS

A concept freight flow model-the Uzbekistan Freight Flow Model¹ (UFFM) - was developed to estimate domestic flows in Uzbekistan (figures 1) and freight flows beyond its borders. Data used for building the model are not complete, specifically on railway operations, but the model can still provide a useful basis for understanding the country's freight flow patterns and identifying challenges. With additional data, the accuracy of model's results can be improved and applied in analyzing freight flow and logistics costs to inform responses to the challenges [3].



Source: World Bank, based on UFFM.

Figure 1. Freight flows within Uzbekistan

Based on UFFM, freight demand within the borders of Uzbekistan is estimated at 194.6 million tonnes and 77.6 billion tonne-kilometers. These include all domestic freight flows, flows toward border posts for exports, and flows from border posts for imports by land transport and pipeline .

Uzbekistan's freight flow emerging from UFFM raises questions about the development potential of the western part of the country as well as the inordinately long distances of cross-border flows. A logistics action plan should consider development

¹ Note: Uzbekistan Freight Flow Model (UFFM) is a gravity model based on supply and demand within the economy. Supply comprises local production and imports, while demand comprises intermediate demand, consumption, and exports. Due to the vast differences in the limited data available, data were aligned as much as possible to the commodities in the customs data.

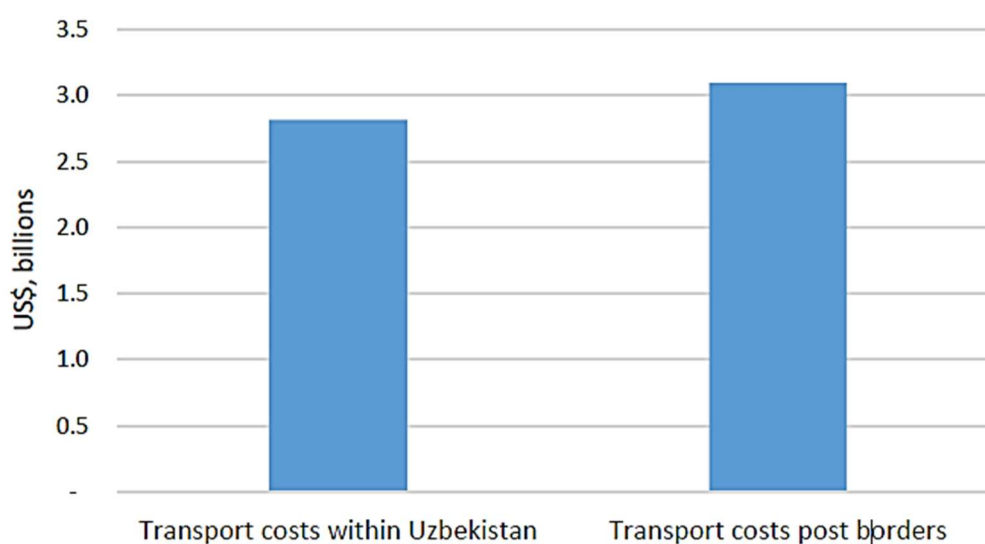
objectives in the western part of the country and strategies to streamline border crossings and reduce exposure to freight risks beyond the borders [4].

Two key options were investigated through the model: improved efficiency of the railway and clustering freight by developing special economic zones (SEZs) and, ultimately, freight villages:

- Improved efficiency of the railway (lower rail costs). According to UFFM, around 21.9 million tonnes of freight or 17.9 billion tonne-kilometers can shift to rail from road transport, saving US\$430 million (due to lower rail costs). The combined savings would reduce logistics costs from 16.5 percent to 15.0 percent of GDP, and from 32.6 percent to 29.6 percent of transportable GDP (the GDP for mining, agriculture and manufacturing). A logistics cost shift of 1.5 percentage points of GDP, considerable for any country, is an important opportunity for improvement.
- Clustering freight. Clustering freight in special economic zones and ultimately, freight villages, will reduce Uzbekistan's logistics costs. Freight villages shorten distances in the supply chain, enable smaller, more accurate delivery windows and consolidate long-distance freight, facilitating modal shift and decreasing the unit cost of both road and rail transport. If only 5 percent of current freight flows are affected by the current design (of logistics centers), but an improved design captures 10–20 percent of freight, transport costs could be reduced by US\$100–US\$200 million (depending on the design of the freight villages) [5,9].

III. RESULTS AND DISCUSSION

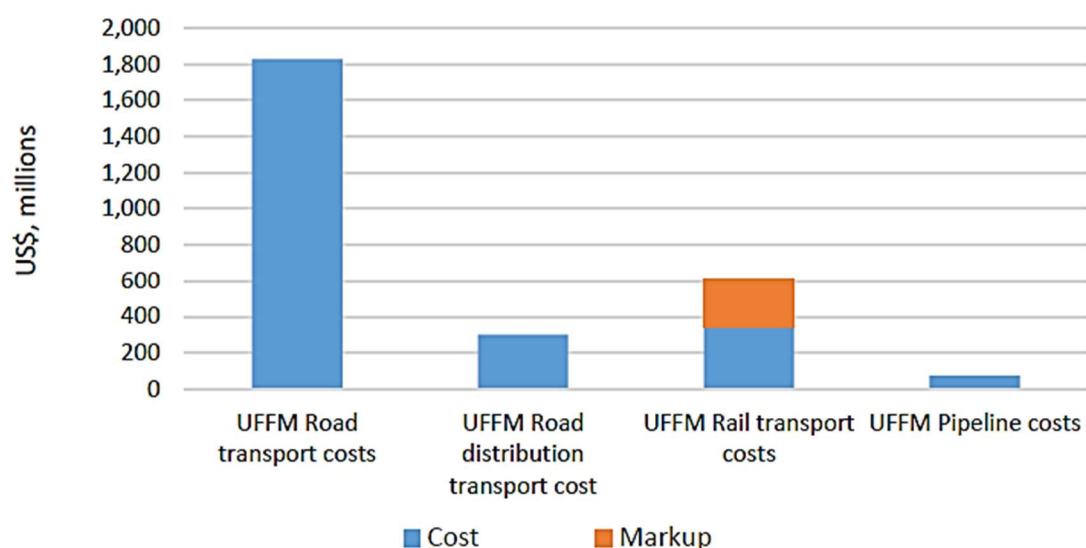
About 52 percent of freight transport costs are incurred outside the country. Controlling them requires an increased focus on improving regional efficiency, which depends on local freight consolidation centers, regional network planning, and regional cooperation.



Source: World Bank, based on UFFM.

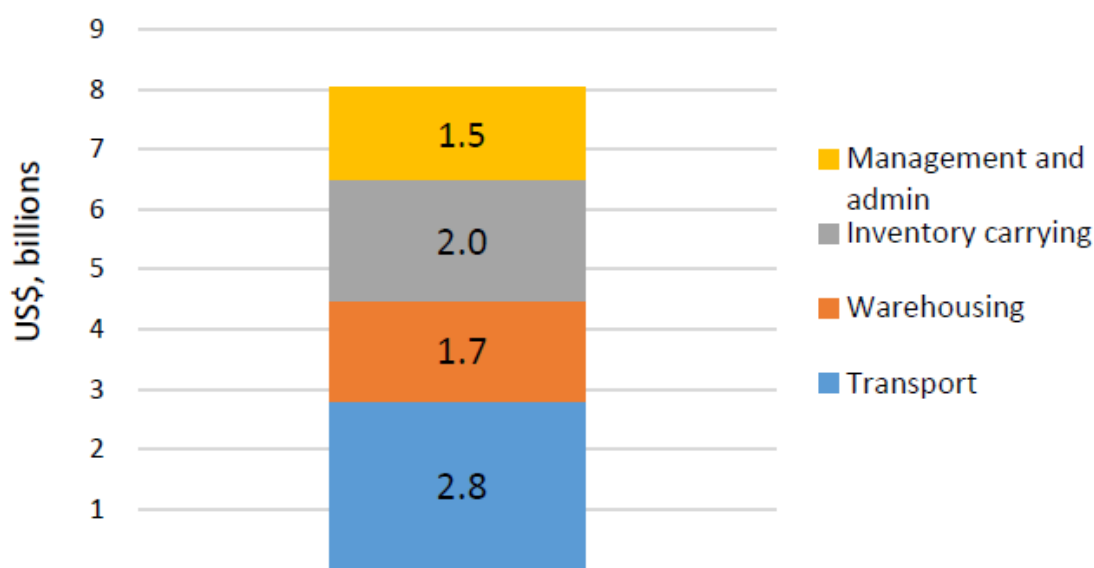
Figure 3. Transport costs inside and outside Uzbekistan.

Logistics costs include transport, warehousing, carrying inventory, and management and administration. Total transport costs for Uzbekistan, estimated through UFFM, are around US\$2.8 billion (figure 3), most of which are road transport costs. Warehousing, carrying inventory, and management and administration add another US\$5.2 billion, for a total logistics costs estimate of US\$8 billion (figure 4).



Source: World Bank, based on UFFM.

Figure 4. National transport costs by mode.



Source: World Bank, based on UFFM.

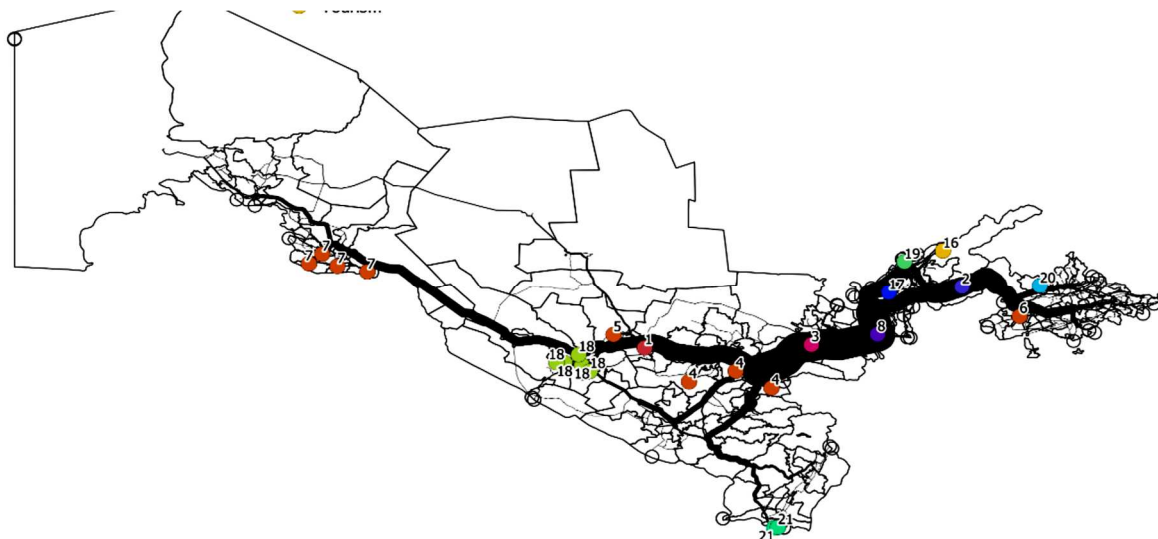
Figure 5. National logistics costs for Uzbekistan.

While industrialists, manufacturers, and producers enjoy fiscal privileges and various financial incentives from the Free economic zones, the road transport and logistics operators have not benefited from them.

More than 22 Free economic zones in Uzbekistan, of which 10 are specialized for industrial production, 8 for pharmaceutical production, 1 for the fisheries industry and others. Logistics and infrastructure facilities are provided through the Free economic zones for storage, handling, and connectivity to transport infrastructures. But road transport operators and logistics operators receive no incentive or fiscal privilege for establishing themselves in these zones.

Our country produces a large amount of vegetables and fruits. But because it lacks appropriate logistics centers for processing, packaging, and storage, more than 50 percent of its agricultural products become noncompetitive in foreign markets. Providing timely information on warehouse terminals would permit more effective planning of production and transportation, reduce the cost of goods, and increase profitability.

- Agriculture
- Chemical, petrochemical and light industries, mining, construction materials
- Chemical, petrochemical, construction materials, light industry, food industry, electronics and electrical engineering
- Deep processing of mineral resources and agricultural raw materials, light industry, construction materials
- Deep processing, storage, packaging of freight, vegetable and other agriculture products, light industry, chemical and petrochemical industry, pharmaceutical industry, food, autoMinistry of Transportive, construction materials
- Fish Farming
- Light industry
- Light industry, construction materials, food industry, chemical and pharmaceutical industry
- Mineral recsources, agriculture products, high-tech products production
- Mineral recsources, agriculture products, light industry
- Pharmaceutical – Created to solve a specific sectoral task i.e. to decrease dependance on medicine import that increased medicine cost due to exchange rate difference.
- Tourism



Source: World Bank, based on UFFM.

Figure 6. Map of FEZ investments relative to freight flow activity.

Instituting a logistics council or similar platform would improve interagency coordination and public-private dialogue for improving logistics performance. Logistics performance primarily concerns the reliability (rather than the speed or costs) of supply chains and service delivery, which depends on several factors such as infrastructure, competition, skills, and stakeholder coordination. Most logistics reforms involve more than one agency and many stakeholders, slowing or even reversing implementation [5,6,10,11].

A logistics council could help establish a coalition where key government agencies for trade, customs, industry, and transportation work together on physical, institutional, regulatory, and operational bottlenecks. It is also essential to engage both logistics users and logistics providers as well as other private sector stakeholders in this platform.

IV. CONCLUSION

Creating operating conditions for transport carriers and logistics operators, while safeguarding environmental protection, would be essential for facilitating trade and transit development. This could entail the following actions:

- Introducing a new legal and regulatory principle that the carrier's remuneration or transport tariffs should cover the real production cost of services.
- Introducing a rule for the direct and personal liability of consignors, forwarders, charterers, agents, consignees, or any other principal for instructions or behavior resulting in breaches of security regulations by the carrier.
- Modernizing the legal framework for creating and managing Free economic zones.
- Setting up a modern Fleet Renewal Program for road transport.

Little evidence supports the current positioning and design of Free economic zones and Small industrial zones. Evidence from other countries indicates that these features are vital and should be informed by in-depth freight flow analysis and forecasts. The creation of logistics centers with the functions and proper infrastructure of a dry port could be a good solution for Uzbekistan to optimize the international transport of goods [7].

Countries bordering Uzbekistan intend to upgrade international corridors that form part of their own road networks, and the Government should sequence improvements on its side of the border with those of its neighbors. A first step is to eliminate gaps in connectivity by developing missing links and upgrading existing sections of international corridors that link Uzbekistan with

- Kazakhstan, the Caucasus, and Europe;
- Tajikistan, the Kyrgyz Republic, and China; and
- Afghanistan, Iran, Pakistan, and South Asia/Persian Gulf.

Many of these links only require basic improvements, such as strengthening pavements, providing safety upgrades, constructing urban bypasses, improving intersections, and widening or rehabilitating bridges and border crossing facilities, and could be completed within three to five years, provided funding is available.

Corridor planning for freight transport in Uzbekistan should consider Uzbekistan's development objectives and programs for western Uzbekistan as well as streamlining border crossings and minimizing exposure to freight risks beyond the country's borders. The transport corridors should include modern cargo handling and transit facilities, with a special focus on agricultural products—for storing, processing, and distributing internal cargoes, export and import cargoes, and cargoes transiting through Uzbekistan [8,12].

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