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.

Uzbekistan

Building Blocks for Integrated Transport and Logistics Development

Policy Paper

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Abbreviations and Acronyms

AADT	Average Annual Daily Traffic
AMSA	Agency for Management of State Assets
ANSP	Air Navigation Services Provider
AIRCUZ	Association of International Road Carriers of Uzbekistan
BASA	Bilateral Air Services Agreement
BRI	Belt and Road Initiative
CAAU	Civil Aviation Agency of Uzbekistan
CAR	Committee for Automobile Roads
CIS	Commonwealth of Independent States
EU	European Union
FEZ	Free Economic Zone
GDP	Gross Domestic Product
GoU	Government of Uzbekistan
ICAO	International Civil Aviation Organization
IFC	International Finance Corporation
IFI	International Financial Institution
IRU	International Road Transport Union
LPI	Logistics Performance Index
MIGA	Multilateral Investment Guarantee Agency
MoF	Ministry of Finance
MoT	Ministry of Transport
MTRC	Mass Transit Railway Corporation
NAIA	Ninoy Aquino International Airport
NAK	National Air Company Uzbekistan Airways
OAG	Official Aviation Guide
OD	Origin-Destination
OECD	Organisation for Economic Co-operation and Development
OIDI	Optimal Infrastructure Development, Inc.
OPBRC	Output and Performance-based Road Contract
PPP	Public-Private Partnership
RAMS	Road Asset Management System
RRF	Republican Road Fund
SAM	Single Aviation Market
SCAR	State Committee for Automobile Roads
SEZ	Special Economic Zone
SIZ	Small Industrial Zone
SMEs	Small and Medium Enterprises
SOE	State-owned Enterprise
SPV	Special Purpose Vehicle
TIR	International Road Transports (*Transports Internationaux Routiers*)
UFFM	Uzbekistan Freight Flow Model
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UTY	Uzbekistan Railways (*Uzbekistan Temir Yo'llari*)

Executive Summary

1. Objective of the Policy Paper

The policy paper has been produced by the World Bank to underpin the Strategy for the Development of the Transport System of the Government of Uzbekistan (GoU) as it continues structural reforms and transitions to a competitive market-oriented economy. The policy paper aims to provide a vision to policy makers and practitioners for improving transport and logistics connectivity and service delivery and to define the building blocks of a comprehensive strategy by (a) laying out the higher-level objectives and priority directions for developing the sector, (b) defining the key aspects of advancing the institutional reforms, (c) identifying main transport and logistics gaps and barriers, and (d) presenting options for introducing innovative financing and funding mechanisms and public-private partnerships (PPPs) in transport and logistics. At the same time, the paper points out areas needing further diagnostics and data gathering to better determine deficiencies, calculate transport and logistics costs, and identify further areas for improvement.

2. Structure of the report and methodology

After an introductory chapter 1, chapter 2 presents the institutional and policy framework for transport sector. Chapters 3–5 detail the challenges facing roads, railways, and aviation sectors for carrying both freight and passengers and recommend priority actions to address them. Chapter 6 presents an analysis of logistics performance, a study of logistics costs based on a freight flow model, and recommendations for priority actions to address the imbalances the analysis uncovers. Chapter 7 discusses opportunities for innovative financing for transport investments. Going beyond traditional public spending on infrastructure, whether through the state budget or state-owned enterprises (SOEs), nonconventional infrastructure financing mechanisms can maximize access to private financing for infrastructure investments and reduce the burden on public resources. Chapter 8 presents a matrix summarizing the key policies and recommendations.

3. Country and sector background

The government has taken major steps to transform the country from a centrally planned to a competitive market-oriented economy. The 2017–21 Development Strategy stipulates reforms to improve the investment climate, the efficiency of public sector investments, and service delivery mechanisms in various sectors of the economy. On January 8, 2019, the government officially adopted a 2019–21 Reform Roadmap providing the main directions for structural reforms for accelerating the transition of Uzbekistan to a competitive market economy.

Uzbekistan's geography has influenced the development of transport, with a long spinal corridor connecting the country internally and extending to its neighbors. 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. Limited connectivity with neighboring countries and international economic growth poles hampers job creation and commercial growth in such key sectors as tourism, mining, handicrafts, horticulture, and agro-processing.

To address these shortcomings, Uzbekistan has fostered greater cooperation within Central Asia by opening several previously closed border posts, relaxing visa requirements, and revitalizing land transport connections, for example by reopening a rail link to Tajikistan. Uzbekistan is investigating various initiatives for enhancing regional integration and connectivity; diversifying trade routes in the context of

China's Belt and Road Initiative (BRI); and exploring maritime access options, including the proposed Trans-Afghan railway corridor and the Kyrgyz greenfield rail link to China.

The government has made significant undertakings to modernize the transport sector. The changes include unbundling the aviation sector, establishing the Ministry of Transport (MoT) and granting it oversight of all transport modes and logistics, creating a PPP Unit, and reorganizing the Agency for Management of State Assets (AMSA).[1]

The GoU is finalizing a national transport sector strategy[2] to develop an integrated multimodal transport system, which aims, among others, to

- Position the country to capitalize on international and regional trade;
- Optimize logistics and land transport connections with the hinterland and provide small farmers, local industry, and small and medium enterprises (SMEs) with more reliable and cost-effective access to domestic and export markets;
- Institute policies to help foster and strengthen competition in and for the transport market;
- Establish governance structures and systems to properly plan, manage, and maintain transport assets, supported by independent policy making and sector regulation;
- Plan for prioritizing investments and financing them, including through adequate cost recovery and an accelerated transition to market-based financing and management mechanisms such as PPPs; and
- Enhance and encourage the role of the private sector in service delivery combined with unbundling of vertically integrated SOEs.

4. The Institutional and policy framework

Establishing a new MoT was a considerable step toward improving transport sector governance and moving from fragmented unimodal planning to integrated multimodal planning.[3] Previously, separate sectoral state entities and SOEs that were almost self-regulating handled transport policy making, planning, and operations: the State Committee for Automobile Roads (SCAR), Uzbekistan Railways (*Uzbekistan Temir Yo'llari*, UTY), and National Air Company Uzbekistan Airways (NAK). That structure presented a conflict of interest between policy and operations and threatened inefficiency and duplication in service. The MoT has taken over developing transport policies and regulating the sector. The reforms in the aviation industry[4] resulted in the unbundling of the previously vertically integrated monopoly NAK in line with international practices.

However, institutions governing other transport and logistics subsectors are lagging in the government's program to reform the economy and open the country. Strengthening the institutional and governance

[1] Annex 2 provides a list of laws, decrees, resolutions, and technical documents pertaining to GoU's transport sector reform agenda.
[2] Ministry of Transport. 2019. "Strategy for the Development of the Transport System of the Republic of Uzbekistan until 2035." Draft.
[3] The MoT was created by Presidential Decree No. 5647 "On measures to fundamentally improve the public administration system in the field of transport" (February 1, 2019) and Resolution of the President No. 4143 "On the organization of the activities of the Ministry of Transport of the Republic Uzbekistan" (February 1, 2019).
[4] Presidential Decree No. 5584, dated November 27, 2018, with support of the technical assistance from the World Bank Group under the Reimbursable Advisory Services.

framework and creating an enabling policy environment to facilitate logistics and connectivity are key challenges that remain to be addressed as the institutional reforms continue.

4.1. The Ministry of Transport

The first objective of modernizing the institutional framework should be to separate policy making and regulation from operations. The new MoT should develop policies to address performance issues, enhance domestic and international connectivity, and accelerate the transition from publicly driven mechanisms to market-based solutions for financing and managing transport sector services.

In MoT's new organization, this will need to be augmented by transport demand modeling, transport economics, and environmental assessment. Sector priorities can be established at two levels. At the intermodal level, priorities must consider whether planned investments are in sync with transport demand and reflect modal complementarity in service provision. At the modal level, priorities must address, first, whether investments achieve a rational balance between operation and maintenance of existing assets and provision of new capacity (especially through high visibility megaprojects such as high-speed access-controlled expressways and railway systems) and, second, whether planned investments achieve an optimal balance between transport modes and among the regions of the country.

4.2. Unbundling the road sector at the institutional and policy level

The current approach to managing the road sector in Uzbekistan is highly centralized and fully integrated (vertically and horizontally) leading to poor sector governance, including conflict of interest, lack of accountability and transparency, and inefficient use of public resources. A single entity—Committee for Automobile Roads (CAR)—is responsible for policy, planning, operations, and maintenance of the road sector.[5] As a result, about 90 percent of maintenance and 70 percent of capital works are awarded to CAR-owned companies (157 SOEs) through administrative fiat rather than a competitive process. This structure leads to lack of accountability for efficiency of road expenditures and even less for effectiveness (value for money). This monopolistic behavior in the road sector is based on the Road Law, which specifies CAR as the owner of the entire public (also referred to as 'common use') road network and obligates it to maintain all roads. CAR's structure includes the Republican Road Fund (RRF) and the Design Institute (Uzyulloyiha). Until recently, the RRF was under the Cabinet of Ministers and funded road maintenance and construction of common use roads.[6] With the abolition of the corporate tax in 2018, the RRF lost its main earmarked income and was integrated into CAR in December 2018. The Design Institute (Uzyulloyiha) is responsible for the preparation of feasibility studies and designs for common use network.

In the medium term, CAR's organizational structure, staffing, and operations must be restructured to separate the client and supplier functions, improve the efficiency and effectiveness (value for money) of road expenditures, and enhance service delivery to road users. To create competitive road construction and maintenance markets, a new road law must be enacted to formally separate road sector policy, planning, and oversight from operations (including construction and maintenance) and split the functions of CAR into client and supplier. Reforming CAR's regional construction companies and its district road

[5] Initially, SCAR, formed in February 2017 through Presidential Decree No. 4954, was the successor to the state joint stock company for the construction and operation of highways Uzavtoyul. With integration into the new Ministry of Transport in February 2019, SCAR became Committee for Automobile Roads (CAR).

[6] Prior sources of financing included corporate taxes, vehicle registration fees, and central budget allocations, including those loans and grants from international financial institutions (IFIs).

maintenance SOEs should be carefully planned and transparent to enable an environment in which SOEs are progressively exposed to greater competition.

A tentative reform agenda could include the following key proposed actions: (a) define clearly the administrative and reporting relationships between the MoT and CAR; (b) separate management and oversight from service delivery (maintenance and construction), consolidating or rationalizing the 157 SOEs into larger independent enterprises (one or two per province); (c) rationalize CAR headquarters and territorial establishments, consolidating 11 provincial offices into 3–4 regional offices with substantial delegated authority; (d) establish a policy and planning department at CAR headquarters responsible for physical, economic, and environmental planning; strategic road asset management; and programming and budgeting; (e) redesign CAR's administrative and operational systems and procedures and adopt information technology-based administration and record-keeping systems, including e-procurement, e-payments, and e-human resources management; (f) implement asset management systems for pavement, bridges, road furniture[7], traffic control, and maintenance; and (g) establish an office for development and management of planned access-controlled expressways, including PPP arrangements.

4.3. Unbundling the railway sector at the institutional and policy level

UTY's activities include not only rail operations but also construction and manufacturing and interests in several subsidiaries with little direct connection to the rail sector. Some noncore activities have been divested or transferred, but UTY's internal structure and operations have changed little in nearly 30 years. Until recently, UTY was the policy maker, regulator, and operator of all railway services on Uzbekistan's main line network. In early 2019, pursuing a May 2018 presidential decree, the policy and regulatory responsibilities for the rail sector were transferred from UTY to the newly created MoT. Despite this significant progress, the development of further railway sector policies remains paramount.

The efficiency and sustainability of UTY's rail operations are hampered by noncore activities. The current internal structure of UTY is too complicated to operate effectively in a liberalized market and to adapt quickly to changing transport patterns. It includes six regional railway companies, together with specialized companies responsible for various aspects of rail operations (passengers, refrigerated transport, interface with customers, and so on).

In the medium term, UTY needs to be restructured from a centrally planned to a market- and client-oriented railway operation to improve its competitiveness and respond to the country's accelerated transition, by implementing reforms that: (a) fully separate railway sector governance from UTY corporate governance by transferring policy and regulatory functions to the MoT; (b) develop a new strategy for railways to refocus on the core railway business, spinning off ancillary/noncore businesses, and realign UTY to a more commercial mindset; (c) further divest subsidiary companies that are not essential to the railway operations (the Tashkent metro, the nature reserve, and the coal mines); (d) transfer social activities to other government bodies, such as education and health ministries; (e) revise railway tariff policies to ensure that traffic covers incremental costs; and (f) establish safety requirements for third-party operators and independent contractors, to be overseen by the independent safety authority.

Various countries followed various options for restructuring railways, such as: (a) separating freight, passenger, and infrastructure businesses into independent companies; (b) integrating three subsidiary companies for freight, passenger, and infrastructure under an overall holding company; or (c) separating just one business (for example, the passenger business), and integrating freight and infrastructure under

[7] This includes safety-related infrastructure such as guard rails, median barriers, channelization, traffic signals, road signs and markings, road lighting, and bus bays/shelters.

one. If UTY chooses to remain integrated, a rational structure would include the main businesses (passenger, freight, and infrastructure) either as divisions of the corporation or statutory authority or as subsidiaries of the holding company. The divisions or subsidiaries should be independent and viable business units with own balance sheets, profit and loss accounting, and financial and performance targets.

4.4. Policy framework for road freight and logistics services

Uzbekistan is signatory to many international conventions and agreements on transport facilitation in line with the United Nations Economic and Social Commission for Asia and the Pacific resolution 48/11 dated April 23, 1992, and one World Customs Organization convention. However, some key conventions, though ratified, have been completely ignored,[8] and enforcing them would have a high potential to contribute to trade, border crossing, and transport facilitation. Difficulties have also been reported in the implementation of bilateral transport agreements between Uzbekistan and several partner countries.[9]

The definition of 'logistics' and its actors in Uzbekistan is vague. Review of documents and interviews with key stakeholders reveal that while almost all actors claim to be a critical component of the logistics chain, no one can provide a single and precise definition of 'logistics'. Legislation, regulations, and resolutions refer to logistics in general terms without giving a clear and simple definition. Lack of generalized conditions for accessing road transport and logistics professions weakens the overall performance of transport and logistics services.

In the short term, Uzbekistan should facilitate regional connectivity and better integrate into global value chains by improving logistics and international freight services through: (a) developing a consolidated regulation or law on entering transport and logistics professions (including professional renters of commercial vehicles and transport intermediaries) and increasing professional competence based on international best practices and stakeholder consultations; (b) establishing policy and legal frameworks to facilitate a competitive market for transit and domestic and international road freight transport; (c) revising legal regimes for international transit to improve both transport and customs and facilitate Uzbek operators' access to the regional and international road transport markets; (d) revisiting existing bilateral transport agreements to enhance Uzbekistan's regional and international transport market share; (e) signing remaining key international conventions for trade and transit facilitation and enforcing them; and (f) joining the recommended international instruments and initiating the accession procedures.

4.5. Aviation sector policy

The GoU should continue implementing the reforms initiated in the air transport to encourage private sector investments and promote competition. The next steps in the reform process entail the completion of the full corporatization of the unbundled NAK entities and formulation of the national aviation sector policy. During the unbundling process, the division of responsibilities and functions should be clearly defined among MoT as a policy maker, AMSA as a shareholder, management and supervisory boards of newly created join stock companies (Uzbekistan Airports and Uzbekistan Airways), and other stakeholders, including Ministry of Finance (MoF). A few important gaps in the new governance

[8] These are the International Convention on the Harmonization of Frontier Controls of Goods, October 21, 1982, and the Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage, September 1, 1970.

[9] Uzbekistan has bilateral road transport agreements with 30 countries to complement and sometimes facilitate the implementation of the international conventions on road transport.

framework should also be addressed, specifically ensuring the independence of the accident investigation body and the technical regulator from the policy maker (MoT).

Despite the separation of the airline from the airports, foreign airlines' use of negotiated traffic rights still requires the consent of the national air carrier. This constitutes an inherently anticompetitive practice as viewed by modern antitrust legislation around the world. The Form R could be modified to eliminate the need for Uzbekistan Airways to consent to flight schedules for other airlines operating regular air service in Uzbekistan. Consent (to determine, for instance, slot availability) should be exclusively the responsibility of the airport operator, not the airline.

The aviation policy should essentially define the following areas for the development of the sector, *inter alia*: (a) the government's role toward the airline, airports, and air navigation service; (b) a clear strategy for the future development of Uzbekistan Airways; (c) the policies for providing market access to other carriers and liberalizing air transport on both domestic and international routes (see details in section 7 below); (d) plan for the liberalization of services at the airports; (e) the priorities and a clear strategy for development of airports, including PPP options and risk and mitigation measures; (f) the approach to aeronautical fees and charges; (g) a financial mechanism for supporting domestic air services; (h) licensing procedures for additional slots and airlines; (i) strategy for human resources and deployment of expert resources; and (j) policy for managing the sector's environmental and social impacts.

5. The roads sector

Uzbekistan has the highest road density in Central Asia, with 41 km of roads per 100 km^2 area. The total size of the road network is 185,000 km, of which 42,700 km are common use public roads. Common use roads are functionally disaggregated into international roads (3,981 km), national roads (14,100 km), and regional roads (24,614 km). The entire common use road network is under CAR's responsibility and ownership. For the most part, Uzbekistan has achieved basic road connectivity and only a few remote regions lack all-weather road access. About 95 percent of the network is paved[10] and less than 5 percent is gravel and earth surfaced. At the end of 2017, nearly two-thirds of the common use roads were assessed as being in good or excellent condition.[11] This assessment is based on biannual visual inspections, which are highly subjective and may not be based on a consistently applied metric. This casual, albeit informed, observation of road condition suggests that only about half of the international/national roads may be in fair condition, reflecting a large backlog of periodic maintenance. Much road deterioration is due to aging infrastructure, which needs both structural and safety upgrades.

Expenditures in the road sector in 2016 and 2017 averaged about 1.8 percent of gross domestic product (GDP). This compares favorably with a typical annual outlay of 1–2 percent of GDP to maintain and construct roads in Organisation for Economic Co-operation and Development (OECD) countries. While current operations and maintenance funding may appear adequate to keep the common use road system serviceable, it is insufficient to meet the critical needs such as safety improvements, rectification of traffic bottlenecks, pavement and bridge strengthening to accommodate the increased standard axle load limit from 11.5 to 13 tonnes, and enhancement of the road network's climate resilience. Public expenditures are mostly directed to improve and maintain international and national (state) roads. The public expenditure share of regional and local (intra-provincial and district) roads needs to be significantly

[10] Paved with asphalt concrete (54.4 percent), bituminous surface treated/stabilized (41.93 percent), and cement concrete (0.73 percent or 312 km).
[11] CAR. 2018.

boosted to develop a balanced system that supports tourism growth, improves access to markets, serves the rural population, and allows for diversification of rural production.

As most of the country's poor live in rural areas, improving local roads can make a big dent in alleviating rural poverty. Regional and local roads constitute 75 percent of the country's road network and serve 90 percent of Uzbekistan's citizens. Much of the rural road network has structurally degraded to a point, where operational and safety features are poor and maintenance is no longer cost-effective. Hence, rural roads are in urgent need of rehabilitation and upgrading and clearly should rank high in GoU spending priorities in the transport sector.

The 2030 Road Development Plan envisages improvement of some 28,000 km of regional roads and construction/reconstruction of 8,000 km of a national highway system, which together will require some US$2 billion a year to implement. This compares with about US$500–700 million actual expenditure per year (over the last five years), of which about one-half was for current (maintenance) expenditures, leaving an annual funding gap of about US$1.5 billion.

Strategic transport planning is currently focused on physical (engineering) planning of road assets. It needs to balance other transport modes with roads, balance new construction with maintenance, and distribute investments fairly across classes of roads and regions of the country.

Most road infrastructure falls shy of international safety standards. Uzbekistan has the second highest rate of road fatalities per 100,000 vehicles among Commonwealth of Independent States (CIS) countries: 164, about eight times higher than Europe's average of 19.

In the medium to long term, the GoU should tackle the gaps found in the roads sector pertaining to infrastructure investments and planning, by implementing the following recommended measures: (a) mainstreaming road asset management practices to improve efficiency in prioritizing and spending on road works while bolstering objective planning, programming, and budgeting; (b) strengthening the capacity of CAR's vehicle overloading control and enforcement of axle load limits to reduce damages to roads; (c) increasing funding for maintenance and preservation of road assets, including regional and local roads, from additional dedicated and steady sources of revenue such as direct road user-based charges (tolls, vehicle licensing fees, parking fees, transit fees, and so on); (d) strengthening institutional capacity for road safety management and interagency coordination and adopting a Safe System approach, which takes into account human fallibility and vulnerability; and (e) updating road engineering standards and specifications in line with international standards and with consideration of disaster and climate risks and road safety measures.

The GoU should progressively open the market for road maintenance and construction to the private sector, phasing in private sector participation to coincide with the pace of institutional reform in the sector. This will require establishing a level playing field for private sector participation by (a) making the large construction SOEs financially and administratively independent, (b) eliminating the direct contracting method in tendering for works, and (c) reforming the unit cost system used in bidding documents. This policy is aligned with the GoU's economic development strategy to reduce barriers to foreign direct investment, expand the domestic private sector, and develop strategic growth sectors. The GoU should also consider piloting a program of output and performance-based road contracts (OPBRCs)[12] for maintaining its international road corridors. OPBRCs provide a novel contracting method to ensure the

[12] This type of contracts may require modifications to public procurement law and regulations.

quality of construction, the completion of construction at agreed prices, the proper maintenance of assets once completed, and essentially the value for money.

6. The railway sector

The rail infrastructure is in reasonable condition overall, with only 21 km under temporary speed restrictions.[13] Uzbekistan's rail network is 4,669 km long, of which some 2,350 km are electrified. Over the past three decades, UTY has progressively invested in new lines to physically connect its entire network inside the country's borders. UTY has electrified several main lines to improve hauling capacity, cut operating costs, and improve environmental performance. Major periodic repairs of the rail infrastructure are undertaken regularly.

UTY predominantly conveys freight—about 85 percent of traffic. The volume has grown steadily from 66 million tonnes in 2009 to 86 million in 2017 and 95 million in 2018. Most growth has been domestic, with imports and exports fairly stable and transit traffic decreasing (figure 1). The average haul is about 220 km. The largest category of freight UTY carries 'other' traffic, which comprises freight that is not in the tariff book, such as consolidated freight[14] consisting of different commodities. Other domestic traffic includes construction materials, coal and minerals, and oil and oil products. Agricultural goods are a relatively small part of domestic traffic, although they represent a larger share of imports, transit, and exports.

UTY's rail operations are profitable and do not receive state operating subsidies (figure 2). Its operating ratio of expenses to revenue increased steadily until 2016 but has since fallen and is now close to its historical range of 70–75 percent. In the past, the company generally financed investments needed in infrastructure and rolling stock from depreciation and retained earnings, but it could not do so for major infrastructure projects, so debt finance has become increasingly important.

Figure 1. UTY freight traffic, 2013–18

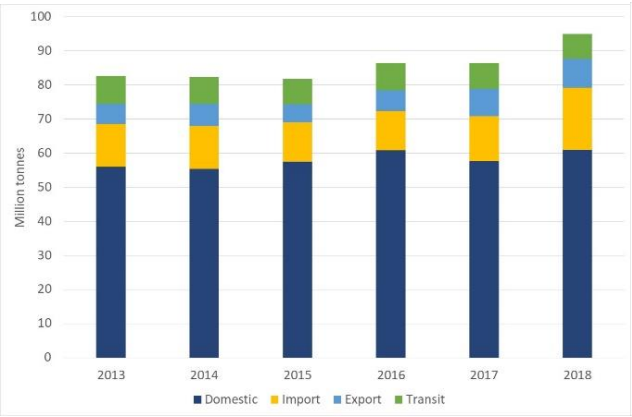
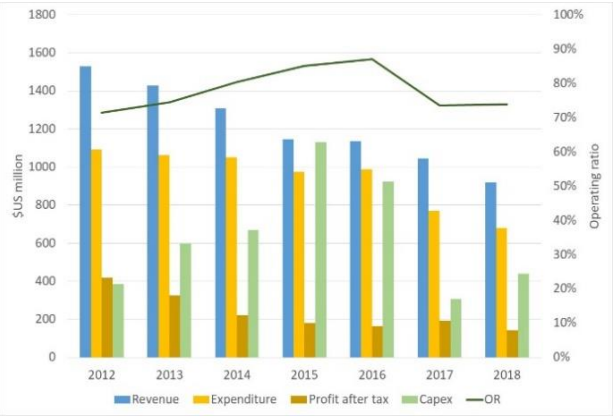


Figure 2. UTY financial results, 2012–18



Source: UTY.

Passenger traffic has increased by about 15 percent over the past 10 years to about 22 million passengers and 4.3 billion passenger-kilometers a year. About 80 percent of UTY's passengers ride local services, but two-thirds of passenger-kilometers are on regional intercity trains, which connect Tashkent and all major centers within the country. High-speed services use trains made by the Spanish company Talgo between

[13] Condition at the end of 2018.

[14] For example, in containers.

Tashkent, Samarkand, Bukhara, and Karshi, and more such services are planned. Passenger service needs to be subsidized as its business is continuously losing money.

In the medium to long term, the GoU and UTY should seek to: (a) restructure UTY's operations and management structures, after having taken into consideration which activities could be financially sustainable and do not require long-term financial support or could be sustainable independently (such as freight and infrastructure); (b) establish separate railway freight, infrastructure, and passenger business units or companies, independent of each other; (c) ensure independence of infrastructure business unit or company, even if under an integrated holding structure, to give confidence to potential third-party operators in its ability to provide fair and reasonable access; (d) establish policies on indicative infrastructure access charges for freight and passenger businesses as well as third party operators; and (e) support passenger rail service through the development of policies to remove reliance on cross-subsidization within UTY and establish consistent and predictable source(s) of funding or other forms of financial support.

The freight business's management should be responsible for its commercial activities and results under the guidance of a supervisory board. As a priority, the freight business should prepare a 3- to 5-year business plan, including forecasts of traffic volumes, revenues, and operating costs that will allow timely investment as required.

The infrastructure business may cover different activities in different railways. In its simplest form, it maintains infrastructure and supervises new construction. But where third parties are allowed access to the system, the infrastructure business normally also includes infrastructure operation—train control and signaling. In some countries, the infrastructure business also includes enroute marshaling and shunting, but such activities are not common.

If passenger business continues losing money and needs ongoing financial support, the best course is for the government to fund it directly; however, this decision is a matter of sector policy. Direct government support for the passenger business can be administered either service by service or as a lump sum to cover the difference between revenue and the operating cost (generally excluding depreciation). One option is for the government to assume ownership of the relevant rolling stock and lease it to the passenger company, implying that the government will be responsible for rolling stock investment. Relying on an internal cross-subsidy merely diverts funds that should be used to modernize the freight business, especially its business processes and systems, and thus improve customer service.

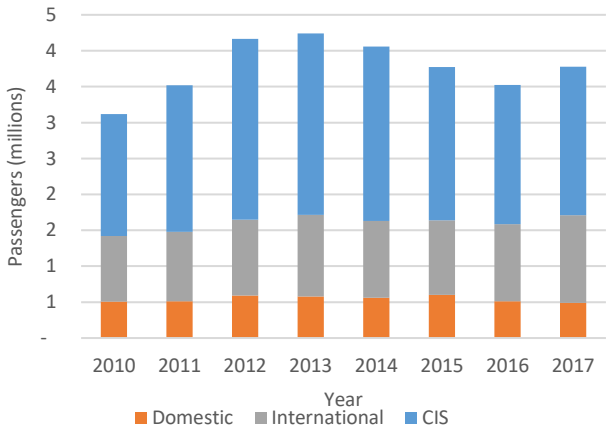
The restructuring of UTY based should be implemented in phases and gradually. Successful reorganization not only moves business units from one line of reporting to another but also affects staff culture. Shifting to a structure that delegates initiative and responsibility to staff and emphasizes commercial results as much as operational performance will require a change in culture and attitude, which takes time.

7. The aviation sector

Uzbekistan's international air transport had one of the slowest growth rates in Central Asia over 2010–17 (4.7 percent), compared to the neighboring Kyrgyz Republic (12 percent) and Kazakhstan (9 percent). But in 2018, the Uzbekistan market experienced solid growth fueled by government reforms unbundling the aviation sector and relaxing visa requirements. International traffic has been strong (with 4.91 million seats a year) compared with a small domestic market. Based on GDP projections of origin and destination country, the World Bank team estimates air passenger traffic growing at an average annual geometric rate of 3.9 percent over 2018–40.

Uzbekistan's domestic air transport market is a relatively small portion of the overall market (figure 3). It was fairly flat over 2010–17, with a compound annual growth rate of 0.7 percent. Uzbekistan's largest markets, accounting for most of the variation in the sector, are the neighboring CIS countries.

Figure 3. Uzbekistan air passengers by market, 2010–17



Source: World Bank, based on NAK data.

Most of Uzbekistan's bilateral air services agreements (BASAs) with other countries are either restrictive or partially open, hence, liberalization would produce substantial welfare gains (figure 5.5). Despite recent traffic growth, the number of airlines to and from Uzbekistan declined from 28 in 2011 to 14 by 2017. Meaningful competition between airlines is present for only about 11 percent of Uzbekistan's international city pairs—one of the cities usually being Moscow—while a single airline serves 68 percent of international city pairs.

NAK has held a monopolistic position and controlled the degree of liberalization. It provides 62 percent of the international seats and has been the only airline with domestic service, providing all 990,000 domestic seats. Uzbekistan Airways and third-party airlines are charged differently, giving the national carrier an advantage in landing fees, passenger facility charges, and boarding fees.

The reforms of the aviation industry initiated by the government align NAK with international best practices, separating airline and airport operations into different corporations independent of each other.[15] The government also intends to attract private sector participation in airports and gradually liberalize the market.

Uzbekistan would further benefit from air traffic liberalization. The potential impacts would include:[16] (a) at least a 20 percent reduction in fares, leading to a consumer surplus of almost US$24.5 million, reflecting not only fare savings for existing passengers but also benefits to new travellers; (b) increased connectivity as a result of boosting the number of new country pair routes from Uzbekistan by 27 percent; (c) increased traffic to and from Uzbekistan by 15 percent due to fare reductions and increased likelihood of new market entrants; and (d) increased GDP by more than US$51 million, capturing the wider economic

[15] Set forth in the Presidential Decree No. 5584 (November 2018).
[16] Impacts are based on the analysis conducted by the Bank team in 2019 through econometric modeling of traffic forecast to and from Uzbekistan.

benefits of liberalization on tourism, trade, and investment spurred by lower fares and better air connectivity.[17]

At the same time, liberalization generally may threaten the profitability of an existing airline since it might lose market share as new competitors enter the market,[18] despite the potential increase of the airline traffic. Hence, a gradual approach shall be considered to liberalizing the air transport market. Efficient and competitive airlines may enhance their profitability by expanding into new markets, accessing a wider pool of investment, and cooperating and consolidating. Whether incumbent airlines suffer or flourish under liberalization depends greatly on how they choose to respond and the quality of their management.[19]

To capitalize on growth opportunities, Uzbekistan Airways requires adopting a strategically differentiating business model to make it viable through the transformation process and as the market is liberalized. A solid business model would restructure the airline's fleet from the existing mixture of many aircraft types to a simple two or three that would cover the needs of domestic, regional, and international routes. The airline's new business model should be based on the commercial profitability principles aimed at becoming a regional market leader. The new mofel would entail discontinuing unsuccessful medium- and long-haul routes to European and Asian destinations, which will accumulate annual losses of more than US$100 million that cannot be covered by revenue from other, more profitable routes such as those to Turkey and the United Arab Emirates. The new Uzbekistan Airways business model and its future growth strategy should use its natural commercial and structural advantages to become the leading carrier of Uzbekistan and a trusted regional partner for global airlines.

Uzbekistan has 11 airports, of which Tashkent International Airport, with 3.7 million international passengers in 2018, is the largest international airport in the country and the third busiest airport in Central Asia. Uzbekistan airports need more than US$800 million in investment to improve compliance with international standards and to accommodate traffic growth (table 1). The projection assumes that about 73 percent of capital expenditure works must be undertaken in the initial 4–5 years. The investment program can be financed by leveraging private finance, public finance, cross-subsidization, or a mix.

Table 1. Estimated investments (capital expenditures) for 10 airports (U.S. dollars, thousands)

Airport	Phase 1 (first 4–5 years)				Phase 2 (years 7+)				Total capital expense
	Compliance	Improvement	Expansion	Total	Compliance	Improvement	Expansion	Total	
Tashkent	163,000	105,000	140,000	408,000	34,000	9,500	17,000	60,500	468,500
Samarkand	49,500	9,100	—	58,600	10,600	6,100	—	16,700	75,300
Termez	26,750	1,000	12,500	40,250	5,350	—	—	5,350	45,600
Bukhara	47,800	9,100	—	56,900	10,100	6,100	—	16,200	73,100
Andijan	3,600	1,000	—	4,600	31,390	—	—	31,390	35,990

[17] Based on estimates that each 10 percent increase in international air services leads to a 0.07 percent increase in GDP, which can add up to millions (or even billions) of dollars. *Source:* InterVISTAS Consulting, Inc. 2006. "The Economic Impact of Air Service Liberalization."

[18] There is a high concentration of passengers on specific routes, which are essential for Uzbekistan Airways' passenger volumes, particularly to Istanbul, Moscow, Seoul, and, at a secondary level, Dubai and cities in China.

[19] InterVISTAS Consulting, Inc. 2015. "The Economic Impact of Air Service Liberalization: Updating the Landmark 2006 Study to Reflect the New Realities of Commercial Passenger Aviation." June 15, http://www.intervistas.com/wp-content/uploads/2015/07/The_Economic_Impacts_of_Air_Liberalization_2015.pdf

Ferghana	4,300	—	—	4,300	—	3,200	—	3,200	7,500
Namangan	—	7,000	—	7,000	14,600	—	12,500	27,100	34,100
Nukus	2,000	3,500	—	5,500	65,450	700	—	66,150	71,650
Navoi	—	—	—	—	—	—	—	—	—
Urgench	42,175	2,500	—	44,675	6,500	4,000	—	10,500	55,175
Total	339,125	138,200	152,500	629,825	177,990	29,600	29,500	237,090	866,915

Source: World Bank.

In short to medium term, the GoU should take the following actions in the aviation sector: (a) adopt a new commercially oriented business model for Uzbekistan Airways Joint Stock Company (JSC) to make it viable through the transformation process and as the market is liberalized; (b) develop and implement a business plan for restructuring Uzbekistan Airways based on the new business model; (c) create a financial support mechanism for the airline during the transition from the current network and fleet to the future model; (d) follow a gradual approach to liberalizing the air transport market while carefully considering the dilution risk to the national airline; (e) establish policies for market access (including liberalization, deregulation, and foreign ownership), safety regulation, and provision of air navigation services; and (f) set up uniform airport service tariffs and fees to foster competition and private sector participation.

8. Logistics

The Development Strategy of Uzbekistan 2017–21 prioritizes "liberalization and facilitation of export activities, diversification of the export structure and geography, and the expansion and mobilization of the export potential of economic sectors and territories." It seeks to lower barriers to foreign direct investment, expand the domestic private sector, and develop strategic growth sectors.

Uzbekistan's main export partner countries are Switzerland (accounting for 40 percent), China (22 percent), the Russian Federation (11 percent), and Turkey (9.8 percent). Import partners are more diverse, including Russia (22 percent), China (22 percent), Kazakhstan (10 percent), the Republic of Korea (10 percent), Germany (5 percent), and Turkey (5.8 percent). Uzbekistan has established markets in the Republic of Korea, Russia, and Turkey for high-value fruit exports such as nuts, cherries, dried fruits, and apricots. Although these goods are high value, Uzbekistan gets only a small share of the total value added since most processing occurs elsewhere (for example, nuts and dried apricots are processed in Turkey).

Uzbekistan is served by a network of international corridors for transporting import, export, and transit cargo. They have been developing, and the government is exploring new options and directions in the Central Asia Regional Economic Cooperation Program, Transport Corridor Europe-Caucasus-Asia, the BRI, and others. Over the past decade, the government has made substantial progress in improving international corridors. It has also identified the following priorities for investment up to 2030:

- Reconstructing and constructing another 8,000 km of internationally important public roads, including those forming part of international corridors.
- Developing new international corridors: (a) north and northwest to access Russia, Ukraine, and European countries; (b) west and southwest direction to access the Caucasus, Iran, Turkey, and European countries; (c) south to access Afghanistan, Iran with its seaports at Chabahar and Bandar Abbas, and Pakistan with its seaports at Karachi, Qasim, and Gwadar; and (d) east to enhance access to Chinese markets.

Uzbek transit goes mainly through Kazakhstan and Russia. One main road corridor, A-40, crosses the region from east to west connecting Tashkent and Almaty, with branches to China and Turkmenistan, and one railway corridor connects to China through the Kazakh-Chinese border at Dostyk. An additional

railway link has been proposed from the Ferghana Valley (Andijan) through the Kyrgyz Republic (Osh) to China. The proposed link is the shortest route connecting Uzbekistan and China, and east-west volume may increase when the link through Kyrgyz territory is constructed.[20] Uzbekistan also provides an important rail connection between Central Asia and Afghanistan, but traffic south to the Iranian port of Bandar Abbas has been hindered as of late 2019 by difficulties in negotiating rail transit through Turkmenistan and the sanctions against Iran.

To facilitate international trade and cooperation between the Middle East and Central Asia, a new Uzbekistan-Turkmenistan-Iran-Oman-Qatar corridor was established through an intergovernmental agreement signed in April 2011 in Ashkhabad. This corridor will connect Uzbekistan through Farab in Turkmenistan and Serakhs in Iran to the Persian Gulf ports of Oman and Qatar. An agreement signed in March 2011 between Pakistan and Uzbekistan opened opportunities to explore alternative routes through Afghanistan, including the construction of a Trans-Afghan railway corridor connecting to Iranian or Pakistani ports.

Developing transport and logistics networks is central to boosting national competitiveness and improving exports. Uzbekistan's logistics services are constrained by its landlocked position and high costs for road transport, warehousing, carrying inventory, and management and administration. 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. Farmers and SMEs face transport costs of up to 200 percent of production costs. Freight to and from the Ferghana Valley crosses inadequate transport links that often require several transshipments, entailing significantly increased selling costs during weather-related road closures. In the 2018 International Logistics Performance Index (LPI), Uzbekistan ranked 99th of 160 countries, up from 118th in 2016. Uzbekistan's score of 2.58 was on par with the lower-middle-income country average of 2.57.

The Uzbek trucking industry is not competitive in the international market due to limited and aging fleet. Uzbek operators have been losing their market share to operators from Iran, Kazakhstan, Russia, and Turkey. About 82 percent of goods imported/exported to/from Uzbekistan are carried by foreign road carriers; Uzbek road transport's market share, regional and international, is below 20 percent. Uzbekistan operators are unable to access financing to replace commercial vehicles due to high interest rates and low profitability of their activity. So, the fleet ages, reducing the quality of services and the profitability of the transport companies.

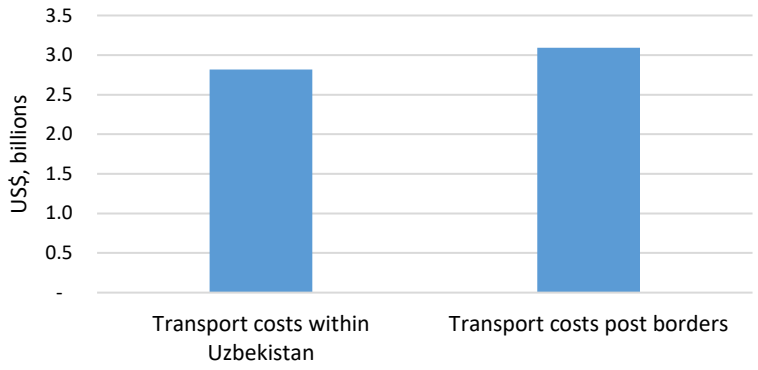
Freight demand within the borders of Uzbekistan is estimated at 194.6 million tonnes and 77.6 billion tonne-kilometers. These include all domestic freight flows, flows toward border posts for exports, and flows from border posts for imports by land transport and pipeline. About 52 percent of freight 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.

Logistics costs include transport, warehousing, carrying inventory, and management and administration. Total transport costs for Uzbekistan are around US$2.8 billion (figure 4), most of which are road transport

[20] A tripartite agreement on this international corridor was signed between China, the Kyrgyz Republic, and Uzbekistan in February 1998.

costs.[21] 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. Transport costs inside and outside Uzbekistan



Source: World Bank, based on Uzbekistan Freight Flow Model (UFFM).

Uzbekistan has created 22 free economic zones (FEZs), including 10 for industrial production, 8 for pharmaceutical production, and 1 for the fisheries industry. Logistics and infrastructure facilities are provided through the FEZs 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. To succeed, the FEZs and SIZs need sustainable and reliable connections with local producers. For example, Uzbekistan 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.

In the short term, logistics and international road freight services must be improved to facilitate regional connectivity and integrate Uzbekistan into global value chains, by: (a) building the capacity of the MoT and its Center for Investigation of Logistics Problems to develop strategic solutions; (b) establishing a system of reliable and useful statistics that would support national policy development and decision making; (c) integrating rail links with domestic and regional supply chains; and (d) involving all stakeholders in developing a strategy and making decisions on logistics based on analyzed statistics.

Most logistics reforms involve more than one agency and many stakeholders, slowing or even reversing implementation. Instituting a logistics council or similar platform would improve interagency coordination and public-private dialogue.

The existing legal framework should shape the strategic directions for developing road transport and logistics services. It is governed by the president's 2017 resolution on improving transport infrastructure and diversifying foreign cargo transportation routes[22] and the 2016 presidential decree on improving

[21] Data based on the Uzbekistan Freight Flow Model (UFFM) developed by the World Bank team to estimate domestic flows in Uzbekistan and freight flows beyond its borders.

[22] Resolution of the President of the Republic of Uzbekistan No. 3422 on measures for improving the transport infrastructure and diversification of the foreign trade cargo transportation routes for 2018–2022, signed on December 2, 2017.

cargo and passenger transport.[23] These documents provide a high-level vision for addressing some of the difficulties and challenges.

Countries bordering Uzbekistan intend to upgrade international corridors that form part of their road networks, and the GoU 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/or 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 the GoU'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. Studies are needed to identify missing rail and road links and potential upgrading of existing corridors, including the environmental and social sustainability of the proposed investments.

9. Opportunities for innovation in financing infrastructure

Uzbekistan needs to identify and manage financing mechanisms and streams for covering costs for investments in transport. Sources include the private sector, which should be engaged in a prioritized program of brownfield and greenfield investments based on risk sharing and the optimal use of resources that provides the government with the best value. Bringing more private sector investment into infrastructure can be fiscally beneficial and increase the efficiency and effectiveness of investments as private investors bring new technologies, new sources of financing, operational and managerial expertise, and improvements in project technical design. The private sector can help deliver infrastructure at better value for money than traditional government procurement.

While private financing is a potential source of additional capital for transport infrastructure, it can also make these investments more efficient and effective. The private sector can help deliver infrastructure services at better value for money than traditional government procurement. Private finance for transport infrastructure in Uzbekistan has been limited to date but has major potential. The few local private investors are supported by shallow local financial markets with limited experience in infrastructure investment. Innovative financing for infrastructure will provide local investors with new opportunities while fostering economic growth and job creation. Foreign investors are cautiously optimistic about Uzbekistan. Their excitement is real, but they will pay much attention to the quality of the first opportunities for private transport infrastructure investment and whether the proposals address the most critical risks and issues.

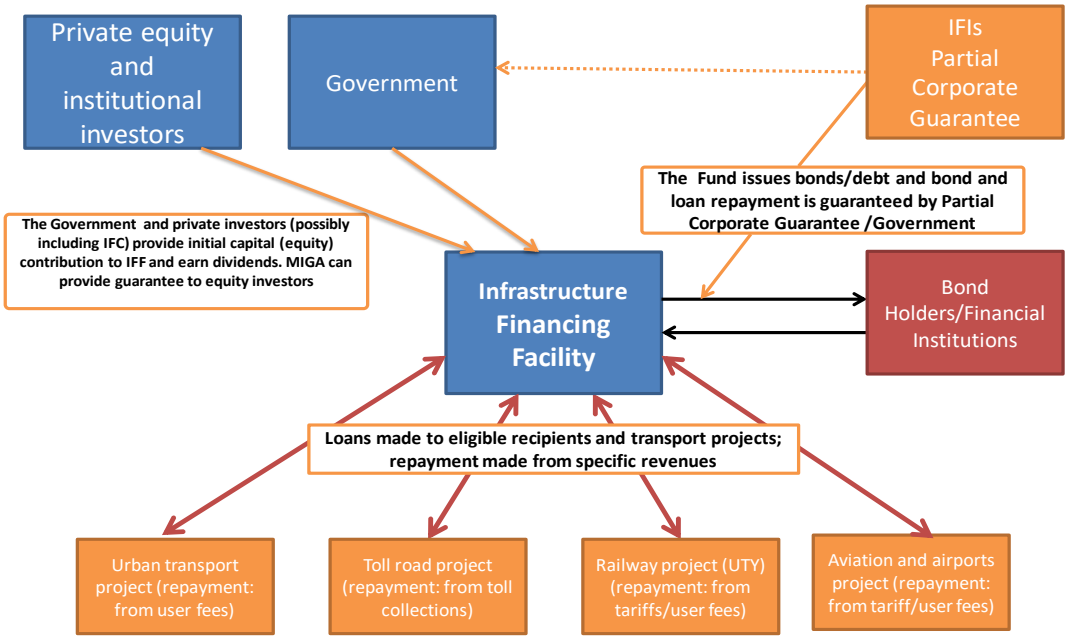
Identifying the revenue to repay financing to allow investors to earn a return on their investment is just as important as finding and mobilizing the private financing itself. Financing will be available to the extent that projects demonstrate future revenues enough to cover debt service (principal plus interest) and returns on equity. Revenues come from two sources: the government budget (taxes) and commercial revenues from the project's services.

[23] Presidential decree on measures to radically improve the cargo and passenger transportation system, signed on March 6, 2019.

To mobilize innovative financing for transport investments, there are different private financing sources and financial instruments options to choose from, supported by different financing structures and mechanisms. GoU's selections shall take into consideration the country's needs and capabilities (for example, enabling environment and repayment capabilities). General financing sources' options include equity investments, bank loans, bond financing, sharia-compliant financing, and the creation of an Infrastructure Fund.[24] Private financing options for infrastructure investments include PPPs and asset recycling. Instruments to support infrastructure financing include capital grants and availability payments. To increase private sector appetite for a project, the government can use its credit position to guarantee against certain risks and reduce the cost of investing through Guarantees.

International experience shows that infrastructure financing intermediary facilities such as Infrastructure Fund can facilitate local government financing transformation to bond issuance and PPPs. Infrastructure fund is a financing intermediary facility that could serve as the main financing mechanism through which the government could issue long-term bonds and loans and finance most of the country's transport infrastructure investments. The GoU will need to carefully consider its requirements, its legal framework, the makeup of its financial sector, and the kind of infrastructure to be financed before creating such an intermediary. The fund would provide technical assistance and capacity building to recipient government entities and monitor the implementation of large infrastructure projects. Successful examples of such funds exist in China, India, and Egypt.

Figure 5. Possible mechanism design for infrastructure financing intermediary



Source: World Bank.

[24] An Infrastructure Fund could provide long-term loans to subnational governments and to infrastructure and utility companies, including transport SOEs, that have revenue-generating capability.

Financing for transportation infrastructure, whether public or private, ultimately must be repaid. Potential sources for covering the cost of financing include: (a) user payments, under the basic premise that the end users of an infrastructure service receive a direct benefit from that use and so should help pay for the cost of building, maintaining, and operating the infrastructure; (b) land value capture and transit-oriented development, based on the premise that the person who benefits from an infrastructure project, as a result of the value increase of contiguous land should be expected to bear a portion of its cost; and (c) commercial payments, based on the premise that commercial activities around transportation infrastructure investments can generate considerable private sector profits, a portion of which can be captured to cover the costs of the investments.

In the medium to long term, the government could explore options for private sector participation and identify a pipeline of brownfield and greenfield projects that could be supported under PPPs. The GoU should prioritize the creation of an enabling environment for private sector investments in transport by pursuing the following actions:

- Performing a legal, regulatory, and institutional assessment of the climate for private infrastructure investment in Uzbekistan;
- Reviewing the government's transport infrastructure portfolio and investment requirements to discover the projects most likely to attract private investment, particularly asset recycling and PPPs;
- Proposing a program of transport investments and name the sources of private financing available to help deliver the program efficiently,
- Improving the MoF PPP agency's capacity to identify, prepare, and implement private investments;
- Improving capacity in the contracting authority PPP teams (including SOEs), in particular the MoT PPP team, to identify, prepare, and implement private investments in the transport sector;
- Setting aside resources sufficient for the government to fund the first set of priority projects to be delivered by the PPP agency and the MoT PPP team;
- Identifying the financial instruments needed to help the government implement private investment in infrastructure at different stages over the next 10 years and begin to design and develop those instruments as needed; and
- Setting up an infrastructure financing facility/intermediary in the form of infrastructure or transport fund but carefully assessing the required legal framework, the makeup of the financial sector, and the kind of infrastructure to be financed before creating such an intermediary.

1. Introduction

Country background

1. **Uzbekistan is landlocked within other landlocked countries characterized by vast desert and mountainous terrain.** The country borders Kazakhstan to the north, the Kyrgyz Republic to the east, Tajikistan and Afghanistan to the south, and Turkmenistan to the southwest. Its 447,000 km^2 area is approximately the size of France (1,425 km from east to west and 930 km from north to south). Less than 10 percent of its territory is an intensively cultivated and irrigated land in river valleys and oases. The rest is vast desert and mountains. The flat Qizilqum (Turkic for 'red sand') Desert dominates the northern lowland region, comprising about 80 percent of Uzbekistan's territory. None of Uzbekistan's rivers, lying in a series of endorheic basins, leads to the sea. The most fertile area, the Ferghana Valley, covering about 21,440 km^2, lies directly east of the Qizilqum and meets mountain ranges to the north, south, and east. The two largest rivers that form the two main river basins of Central Asia are the Amudarya originating in the mountains of Tajikistan and the Syrdarya originating in the mountains of the Kyrgyz Republic.

2. **It is Central Asia's most populous country, its 34 million citizens representing nearly half the region's population.** The country is divided into 12 provinces (viloyat), 1 autonomous republic (Karakalpakstan Autonomous Republic), and 1 independent city (shahar)—the national capital, Tashkent. The provinces are further divided into districts (rayon/tuman). Cities account for a little more than 50 percent of Uzbekistan's population, and the Ferghana Valley accounts for about 30 percent.

3. **With an annual per capita income of US$1,238 (2018), Uzbekistan is classified as a lower-middle-income country.** Economic production is concentrated in commodities. Uzbekistan ranks as the world's seventh-largest producer and fifth-largest exporter of cotton and the seventh-largest producer of gold. It is also a regionally significant producer of oil, coal, copper, silver, natural gas, and uranium.

4. **While growth over the past decade has been broadly inclusive, considerable geographic disparities remain.** The poorest viloyats are Karakalpakstan, Namangan, Surkhandarya, Samarkand, and Sirdaryo, with poverty rates of 15–17 percent[25] (2018) compared to 7–8 percent in Tashkent, Ferghana, and Bukhara regions.[26] The poorest viloyats are mostly concentrated in the western part of the country with large rural populations, low population densities, and isolated towns and villages. Female poverty tends to be higher, particularly in rural areas, where access to formal employment remains limited.[27]

5. **The government has been taking major steps to transform the country from a centrally planned to a competitive market-oriented economy.** Uzbekistan's 2017–21 Development Strategy stipulates reforms to improve the investment climate, the efficiency of public sector investments, and service delivery mechanisms in various sectors of the economy. The government also plans to develop innovative financing to improve the country's infrastructure. It has announced an ambitious agenda to attract public-private partnerships (PPPs) in key infrastructure sectors. A PPP Development Agency was created under the Ministry of Finance (MoF) in October 2018, and a PPP law was approved in May 2019. On January 8,

[25] Poverty rate estimates measured at US$3.2 per day.
[26] Seitz, W. 2019. "Where They Live: District-Level Measures of Poverty, Average Consumption, and the Middle Class in Central Asia." World Bank Policy Research Working Paper No. 8940, July.
[27] World Bank. 2016. *Uzbekistan - Country Partnership Framework for the Period FY16-20 (English)*. Washington, DC: World Bank Group. Figure 3, pp. 7–8.

2019, the government officially adopted a 2019–21 Reform Roadmap providing the main directions for structural reforms for accelerating the transition of Uzbekistan to a competitive market economy.[28]

Transport sector background

6. **Uzbekistan's geography has influenced the development of transport, with a long spinal corridor connecting the country internally and extending to its neighbors.** Being double-landlocked poses formidable constraints to Uzbekistan's development, increasing logistics and transport costs considerably. To unlock Uzbekistan, an integrated multimodal transport system offers an economically attractive option to restore Tashkent's pre-independence status as the preeminent transport hub of Central Asia. The system should give equal priority to traditional north-south corridors connecting Uzbekistan with its Commonwealth of Independent States (CIS) neighbors (and extending to Afghanistan, Pakistan, and Iran for alternative maritime access) and east-west corridors connecting China with the Middle East and Europe via Uzbekistan.

7. **Historically, rail has served as the backbone of international and regional trade, but for the foreseeable future, long-haul road transport and civil aviation are emerging as strong competitors for high-value, time-sensitive merchandise, especially containerized freight.** Roads are also essential for interprovincial and local connectivity. Domestically, development programs and investments have prioritized interprovincial and urban roads, given the higher traffic they carry. But underinvestment in regional and local roads, with lower traffic, raises transport costs and travel times while resulting in less reliable road conditions and safety risks for the rural population.

8. **Internationally, long distances, high transportation costs, and low regional integration limit Uzbekistan's access to economic centers in China and Western Europe.** Limited connectivity with neighboring countries and international economic growth poles hampers job creation and commercial growth in vital sectors such as tourism, mining, handicrafts, horticulture, and agro-processing.

9. **To address these shortcomings, Uzbekistan has fostered greater cooperation within Central Asia by opening several previously closed border posts, relaxing visa requirements, and revitalizing land transport connections, for example by reopening a rail link to Tajikistan and international bus routes**. Uzbekistan is investigating various initiatives for enhancing regional integration, connectivity, and trade. For example, the government has renewed its focus on increasing trade and diversifying trade routes in the context of China's Belt and Road Initiative (BRI) and is exploring maritime access options, including the proposed Trans-Afghan railway corridor and the Kyrgyz greenfield rail link to China.

10. **The Government of Uzbekistan (GoU) has also taken significant steps toward modernization of the transport sector institutions.** It embarked on an ambitious set of reforms to rectify institutional fragmentation, institute independent policy making and regulation, foster competition, and improve cost recovery and financing mechanisms. The government is making changes to institutional arrangements, including the roles and responsibilities of key entities, to align management of the sector with international best practices. These changes include unbundling the aviation sector, establishing the Ministry of Transport (MoT) and granting it oversight of all transport modes and logistics, creating a PPP Unit, and reorganizing the Agency for Management of State Assets (AMSA).[29]

[28] The Reform Roadmap was prepared by the GoU in close partnership with the World Bank.

[29] Annex 2 provides a list of laws, decrees, resolutions, and technical documents pertaining to the GoU's transport sector reform agenda.

11. **The GoU is finalizing a national transport sector strategy[30] to develop an integrated multimodal transport system, which aims, among other things, to**

- Position the country to capitalize on international and regional trade;
- Optimize logistics and land transport connections with the hinterland and provide small farmers, local industry, and small and medium enterprises (SMEs) with more reliable and cost-effective access to domestic and export markets;
- Institute policies to help foster and strengthen competition in and for the transport market;
- Establish governance structures and systems to properly plan, manage, and maintain transport assets, supported by independent policy making and sector regulation;
- Plan for prioritizing investments and financing them, including through adequate cost recovery and an accelerated transition to market-based financing and management mechanisms such as PPPs; and
- Enhance and encourage the role of the private sector in service delivery combined with unbundling of vertically integrated state-owned enterprises (SOEs).

Objective of the Policy Paper

12. This document has been produced by the World Bank to underpin the Republic of Uzbekistan's "Strategy for the Development of the Transport System until 2035" as it continues structural reforms and transitions the country to a competitive market-oriented economy. The policy paper aims to provide a vision to policy makers and practitioners for improving transport and logistics connectivity and service delivery and to define the building blocks of a comprehensive strategy by (a) laying out the higher-level objectives and priority directions for developing the sector, (b) defining the key aspects of advancing the institutional reforms, (c) identifying main transport and logistics gaps and barriers, and (d) presenting opportunities for introducing innovative financing mechanisms and PPPs in transport and logistics. At the same time, the paper points out areas needing further diagnostics and data gathering to better determine deficiencies, calculate transport and logistics costs, and identify further areas for improvement.

Structure and methodology of the report

13. This policy paper covers the key challenges, areas for improvement, resources, and possible directions for Uzbekistan's transport sector. It examines the following:

- The institutional and policy framework for transport (chapter 2)
- The road sector (chapter 3)
- The railway sector (chapter 4)
- The aviation sector (chapter 5)
- Logistics (chapter 6)
- Innovative financing for transport investments (chapter 7)

[30] Ministry of Transport. 2019. "Strategy for the Development of the Transport System of the Republic of Uzbekistan until 2035." Draft.

14. The methodology for analyzing the logistics costs and developing a freight flow model for Uzbekistan in chapter 6 is based on a gravity model. The gravity model is based on supply and demand within the economy, where supply comprises local production and imports and demand incorporates intermediate demand, consumption, and exports. Due to the vast differences in the limited data available, the analysis attempted to align all the data to the commodities in the customs data (see annex 1 for a detailed description of the gravity modeling methodology).

15. Chapter 8 summarizes the key recommendations and policies in a matrix of actions.

2. The Institutional and Policy Framework for Transport

16. **Establishing a new MoT was a considerable step forward to improve transport sector governance and move from fragmented unimodal planning to integrated multimodal planning**.[31] Previously, separate sectoral state entities and SOEs that were almost self-regulating handled transport policy making, planning, and operations: the State Committee for Automobile Roads (SCAR), Uzbekistan Railways (*Uzbekistan Temir Yo'llari*, UTY), and National Air Company Uzbekistan Airways (NAK). That structure presented a conflict of interest between policy and operations and threatened inefficiency and duplication in service. The new MoT has taken over developing transport policies and regulating the sector. The ministry was formed based on Uzbek Agency for Road Transport,[32] which was the agency responsible for licensing transport operators (trucks, cars, and boats) in Uzbekistan and represented the country in international transport negotiations and in the application of international treaties.

17. **The reforms in the aviation industry[33] have been enacted through a Presidential Decree No. 5584 issued on November 27, 2018.** This resulted in the unbundling of the previously vertically integrated monopoly National Air Company Uzbekistan Airways (NAK) in line with international practices by splitting policy making, airline, and airport operations. The decree also announced the government's intention to attract private sector participation in airports and gradually liberalize the air transport market. Ultimately, the reform is expected to prepare the sector to meet growing tourism demand, yield economic benefits, improve the efficiency of SOEs, stimulate increased competition, and enhance the quality of service, while maintaining high safety standards.

18. **However, institutions governing other transport and logistics subsectors are lagging in the government's program to reform the economy and open the country.** Strengthening the institutional and governance framework and creating an enabling policy environment to facilitate logistics and connectivity are key challenges that remain to be addressed as the institutional reforms in the sector continue. On a strategic level, the focus is currently on physical planning of transport infrastructure assets without explicitly considering the demand for freight and passengers and intermodal competition. Lack of integrated statistics for transport further undermines transport planning process as data are not collected or published properly.

The Ministry of Transport (MoT)

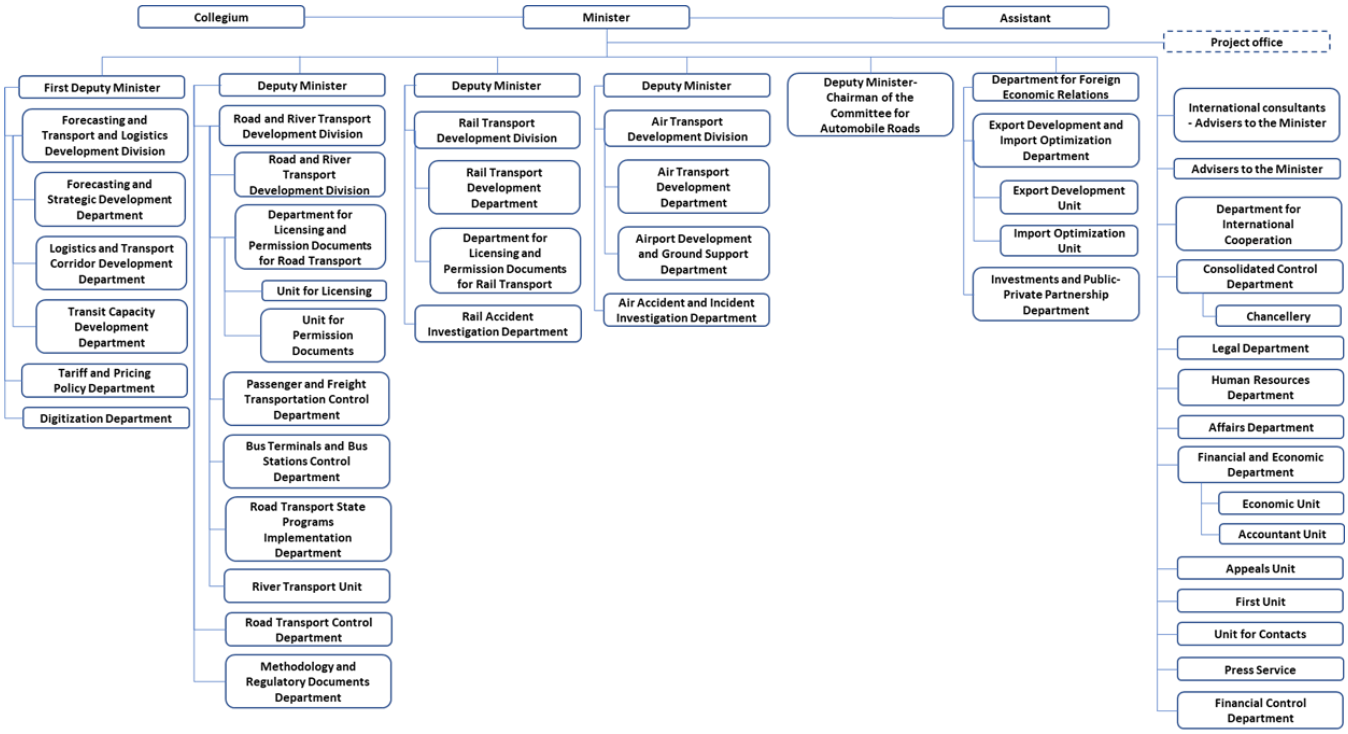
19. **The first objective of any transport sector restructuring should be to separate policy making and regulation from operations.** The new MoT should develop policies to address performance issues, enhance domestic and international connectivity, and accelerate the transition from publicly driven mechanisms to market-based solutions for financing and managing transport sector services. Transport sector institutions must be reformed and modernized for better service delivery so that Uzbekistan can leverage opportunities for connectivity created by the opening of the country and initiatives in the Central Asian region.

[31] The MoT was created by Presidential Decree No. 5647 "On measures to fundamentally improve the public administration system in the field of transport" (February 1, 2019) and Resolution of the President No. 4143 "On the organization of the activities of the Ministry of Transport of the Republic Uzbekistan" (February 1, 2019).
[32] Formerly the Uzbek Agency for Road and River Transport.
[33] Presidential Decree No. 5584, dated November 27, 2018, with support of the technical assistance from the World Bank Group under the Reimbursable Advisory Services.

20. **In MoT's new organization, this will need to be augmented by transport demand modeling, transport economics, and environmental assessment.** Sector priorities can be established at two levels. At the intermodal level, priorities must consider whether planned investments are in sync with transport demand and reflect modal complementarity in service provision. At the modal level, priorities must address, first, whether investments achieve a rational balance between operation and maintenance of existing assets and provision of new capacity (especially through high visibility megaprojects such as high-speed access-controlled expressways and railway systems) and, second, whether planned investments achieve an optimal balance between transport modes and among the regions of the country.

21. **Despite attained progress, specific tasks and responsibilities of the MoT and its subordinated agencies will still need to be refined within its organizational structure** (figure 3.1). The creation of the MoT benefits the overall transport sector governance structure for the following reasons: (a) a principal entity is responsible for formulating policy and strategic development in the transport sector, which is an important step in separating these functions from operations; (b) a chief body oversees the sector, bringing clarity in the roles and positions of the various transport sector institutions, eliminating current overlap and/or conflict in responsibilities, and increasing regulatory compliance; (c) a single entity assumes the role of "owner" of transport sector assets, including roads, and becomes responsible for establishing standards; and (d) private involvement in the sector can be better facilitated as a result of transport assets being under the ownership of a single entity.

Figure 3.1. Current organigram of the Ministry of Transport's Central Office



Source: MoT official website, April 2020 (unofficial translation from Uzbek).

Institutional structure and governance in the road sector

22. **The current approach to managing the road sector in Uzbekistan is highly centralized and fully integrated (vertically and horizontally) leading to poor sector governance, including conflict of interest,**

lack of accountability and transparency, and inefficient use of public resources. A single entity—Committee for Automobile Roads (CAR)—is responsible for policy, planning, operations, and maintenance of the road sector.[34] The public road network is functionally classified in three broad categories—international, national, and regional roads—under the ownership of CAR. The majority of CAR's 30,000 strong workforce is employed through 13 regional (viloyat level) and 157 district (tuman level) road maintenance and construction enterprises owned and managed by CAR. The regional offices are managed directly from CAR headquarters and have little delegated power and little interaction with the local and provincial governments that they are supposed to support. In addition, CAR owns and operates multiple other commercial companies—for example, for production of road building materials (quarries, asphalt plants, road furniture, and so on) and for rendering social and economic services to its employees. The 13 regional 'enterprises' are entrusted mostly with construction works, while maintenance work on all common use roads in a district (tuman) is carried out by the district 'enterprises', using in-house CAR labor.

23. **The road construction industry lacks competition and efficiency, with state-funded SOEs performing most of the road-related works.** Although the use of international firms and local private firms under competitively tendered contracts is growing for construction and rehabilitation works, CAR-owned enterprises predominate in receiving directly awarded and publicly tendered contracts.[35] The regional enterprises can compete among themselves and with private companies for publicly tendered construction contracts funded by the government; however, most maintenance contracts executed by district enterprises and some construction contracts are awarded directly or with limited competition. As a result, about 90 percent of maintenance and 70 percent of capital works are awarded to CAR-owned companies through administrative fiat rather than competitive process. This structure leads to a lack of accountability for efficiency of road expenditures and even less for effectiveness (value for money). As a result, there is a wide discrepancy between the 'actual' condition of the road network and that reported by the district enterprises.

24. **This monopolistic behaviour in the road sector is based on the Road Law, which specifies CAR as the owner of the road network and obligates it to maintain public roads.** The decree and resolution establishing the MoT[36] assign the formulation of policies for all transport sectors, including roads, to the ministry, but do not mention the ownership of road assets. Roads are currently CAR assets, and CAR and its subsidiaries are still considered to be the road owners. The decree and the resolution also do not address the transfer of responsibility to approve road sector plans, programs, and budgets from CAR to the MoT. The subsequent Resolution of the Cabinet of Ministers No. 336 of April 19, 2019,[37] that defines the functions and responsibilities of the MoT, does not clarify the ownership of roads either.

25. **The recently issued Presidential Decree No. 5980 and Resolution No. 4545 announce separating CAR's commercial activities from its service delivery mandate but do not fully address the conflict of**

[34] Initially, State Committee for Automobile Roads (SCAR), formed in February 2017 through Presidential Decree No. 4954, was the successor to the state joint stock company for the construction and operation of highways Uzavtoyul. With integration into the new Ministry of Transport in February 2019, SCAR became the Committee for Automobile Roads (CAR).

[35] International firms sometimes perform works funded by international financial institutions (IFIs) and local private firms perform works funded by the government.

[36] Presidential Decree No. 5647 and Resolution of the President No. 4143 of February 1, 2019.

[37] Resolution of the Cabinet of Ministers No. 336 "The Provision on the Ministry of Transport of the Republic of Uzbekistan," dated April 19, 2019.

interest and accountability in the sector.[38] CAR-owned SOEs (including construction and maintenance enterprises) will be spun off to AMSA, which will open the way to restructure road construction and maintenance SOEs along commercial lines and establish performance contracts for service delivery. However, under the current MoT organization structure, CAR remains responsible for preparing investment programs and ensuring that it is fair and objective while retaining responsibility and oversight of its road construction and maintenance subsidiaries. As such, it is not certain that it can develop a fair and objective program without protecting its subsidiaries. Hence, this arrangement poses a fundamental conflict of interest and does not appear to reflect the provisions of the presidential resolution to transfer CAR's construction and maintenance SOEs to AMSA.

26. **Within CAR's structure are also the Republican Road Fund (RRF) and the Design Institute (Uzyulloyiha).** The RRF until recently was under the Cabinet of Ministers and provided financing for road maintenance and construction activities for the common use roads. Sources of financing included corporate taxes, fees to register vehicles, and loans and grants from IFIs. With the abolition of the corporate tax in 2018, the RRF lost its main earmarked income and was integrated within CAR in December 2018. The Uzyulloyiha is responsible for the preparation of feasibility studies, cost estimates, and designs for reconstruction and construction of public road sector assets.[39]

27. **The quality and standards in the road construction of industry are within the responsibility of the Inspectorate for Monitoring the Quality of Road Construction Works under the MoT.** The inspectorate was created during the 2017 reform for setting road construction standards, certifying the road construction industry, and regulating the production of road construction materials.

Unbundling the road sector

28. **CAR's organizational structure, staffing, and operations must be reformed to clearly separate the client and supplier functions, improve the efficiency and effectiveness (value for money) of road expenditures, and enhance service delivery to road users.** A key reform objective should be the unbundling and rationalization of its vast agglomeration of SOEs and ancillary businesses. Moreover, strategic planning and regulatory functions currently under CAR's purview should transfer to the MoT's central roads directorate, including responsibility for (a) strategic direction, policy, and planning for all roads in Uzbekistan; (b) financing options and modalities to meet sector needs; (c) design, construction, operational, and safety standards; and (d) mechanisms to ensure that public expenditures on roads yield value for money.

29. **The first order of business should be a clear and unambiguous definition of the administrative and reporting relationships between the MoT and CAR.** The functions and accountabilities between both institutions need to be clearly distinguished, including designating the ownership of road assets, separating the client from the supplier function, clarifying the roles and positions of the various road sector institutions, eliminating current overlap and/or conflict in responsibilities, and increasing regulatory compliance.

30. **Though reforming CAR's regional construction companies and its district road maintenance enterprises is an urgent priority, the transition should be carefully planned and transparent and should enable an environment in which SOEs are progressively exposed to greater competition.** In the initial

[38] Presidential Decree No. 5890 "On measures to deeply reform the road management system of the Republic of Uzbekistan" (December 9, 2019) and Resolution of the President No. 4545 "On measures to further improve the road management system" (December 9, 2019).

[39] This is a typical example of conflict of interests between the policy / strategic and operational levels.

stages, SOEs should be encouraged to act like commercial entities by introducing appropriate private sector practices, imposing budget constraints, and requiring accountability for performance. Inventories of assets would need to be developed with ownership of plant and equipment transferred to respective SOEs. It is important to distinguish between the larger construction enterprises at the provincial level (which could evolve into commercially run, autonomous public enterprises and eventually be privatized) and the smaller maintenance enterprises at the district level (these alternatively could be restructured as district road maintenance management units with some capacity for service delivery, such as winter and emergency maintenance). Commercially run entities, however, should be adequately capitalized, asked to prepare annual budgets, and be held responsible for results, all of which will require managerial and financial autonomy. With time, the practice of preferential contracts would be eliminated, and the SOEs would be exposed to competition directly with private sector companies. Throughout this process, transparency and ongoing capacity development would be essential. Ultimately, the SOEs would be fully corporatized or privatized. Given the limited number of private Uzbek contractors able to carry out complex works, the reform process should also be accompanied by the strengthening of the local road construction industry.

31. **Most road organizations worldwide operate as government departments, although there is a growing trend toward establishing semiautonomous road authorities (agencies), with varying degrees of functional and financial autonomy.** Meanwhile, high-capacity strategic and arterial roads (both intercity and urban expressways), with high traffic volumes and the potential of toll revenues, are increasingly being managed by fully autonomous and commercialized corporate entities such as highway corporations, turnpike/expressway authorities, and PPP concessions.

32. **Although the legal ownership of all public roads in Uzbekistan is vested in the state, the functions of CAR could be split conveniently into client and supplier**:

- **Client function.** Activities related to the planning and management of road operations—the client role is concerned with specifying the activities to be carried out, determining appropriate standards, commissioning works, supervising implementation, controlling works, and monitoring.
- **Supplier function.** Activities related to the execution of works—the supplier role is concerned with delivering the defined road works to an agreed quality standard, on time, and within budget.

33. **Separating these functions clarifies roles and increases the focus and specificity of the management and service delivery functions.** Arrangements between the client and the supplier are normally defined in some form of contract. Significant benefits in effectiveness and efficiency have been achieved as a result of such separation irrespective of the organizational structure and hierarchical dependencies. Globally, many countries have achieved a complete separation between the client and supplier functions in the construction and maintenance of road infrastructure; many (for example, Japan, Pakistan, Malaysia, South Africa, Brazil, the United Kingdom, Australia, New Zealand, Sweden, Netherlands, Finland, and Georgia) have no in-house (force account) capacity for this purpose.

34. **Given their geographical spread, roads can be administered through a geographically deconcentrated organization with varying levels of functional decentralization and devolution of authority.** The norm is for policy, planning, asset management, budget and finance, and human resources functions to be retained at the center, with construction and maintenance implemented through regional and local offices. In a few instances, the regional administrations operate as fully autonomous units responsible for all road management functions (except strategic planning, financial management, and monitoring and evaluation responsibilities) under performance management contracts with the central administration. Over time, road organizations worldwide have become slimmer with the number of staff

declining from tens of thousands of personnel to a few thousand and in some instances just a few hundred. This has been achieved mostly by replacing public force account construction and maintenance units with competitively selected private contractors and outsourcing some traditional client functions—such as surveys, design, works supervision, quality assurance, and asset management—to private consulting firms. Organizational efficiency and network performance tend to be inversely correlated with the size of the establishment.

35. **Pursuing the reform will require a restructuring of CAR's organization, staffing, and operations**. A tentative reform agenda could include the following proposed actions:

- Rationalize CAR headquarters and territorial establishments (provincial and district offices), with substantial deconcentration of functions and responsibilities and eventual consolidation of the provincial offices into 3–4 regional offices with fully devolved management and administrative authority.
- Establish a policy and planning department at CAR headquarters responsible for physical, economic, and environmental planning; strategic road asset management; and programming and budgeting.
- Undertake a comprehensive process of reengineering CAR's administrative and operational systems and procedures.
- Adopt information technology-based administration and record-keeping systems, including e-procurement, e-payments, and e-human resources management.
- Implement asset management systems for pavements, bridges, road furniture,[40] traffic control, and maintenance.
- Establish an office for development and management of planned access-controlled expressways, including PPP arrangements with its eventual evolution into a separate corporate entity responsible for strategic road infrastructure (expressways, major international transit corridors).
- Establish a human resources department with responsibilities for staff recruitment, training, and career development.

36. **To prepare for competitive road construction and maintenance markets open to commercially run enterprises, Uzbekistan must also enact a new road law.** The law shall formally separate road sector policy, planning, and oversight from road sector operations, including construction and maintenance works. The law, among other things, would define a new functional road classification and route numbering system, clearly distinguishing administrative and jurisdictional responsibilities for different road classes as well as their funding modalities.

37. **A sustainable stream of financing is key to address recurrent road sector needs**. Notwithstanding the existence of RRF and significant achievements in road network quality, funds have not been sufficient for the GoU to meet critical requirements, particularly pertaining to maintenance, road safety, and climate change resilience. Box 2.1 presents examples of effective strategies implemented by some other countries to finance recurring sector needs.

[40] This includes safety-related infrastructure such as guard rails, median barriers, channelization, traffic signals, road signs and markings, road lighting, and bus bays/shelters.

Box 2.1. Examples of strategies for the sustainable stream of finance in the road sector

Finland. Apart from municipal and private roads, funding for public roads comes from the state budget and for the Trans-European Transport Network highway from the European Union (EU). Ministry of Finance allocates funds based on budget proposals; the Parliament decides on large investments separately in connection with the budget process and approves annual state budget and budget adjustments during the year to align allocations to available funding and changed funding needs. The budget funds for all roads as well as funding for public transport, traffic management, small-scale investments, railways, and waterways are channelled to the Finnish Transport Agency (FTA) through the Ministry of Transport and Communications. The PPP model has so far been used on 4 highway projects in Finland to provide additional funding for expensive new highway projects. Road maintenance is supported through performance-based maintenance contracts in compliance with service levels specified by the FTA. These contracts are tendered competitively among local contractors and have 5 to 7-year duration, covering a range of 600-1,500 km each.

Morocco. There are two sources of finance for road infrastructure: (a) the Special Road Fund (FSR) and (b) the general budget. The FSR, set up in 1989, is a special treasury earmarked account managed by the ministry in charge of public works. It is funded by road levies (fuel taxes, additional motor vehicle registration tax) and axle load charges on trucks and heavy vehicles. The instrument governing the FSR has been amended several times since its inception, essentially to broaden its revenue base. Part of the surcharge on fuel is also dedicated to the financing of national rural road programs. Funding for construction and operation, including maintenance, of new public roads comes from two sources: the *Caisse pour le Financement Routier* (CFR) and the general budget. The CFR is a special purpose vehicle set up in 2004 by Law No. 57-03 to reduce dependence on tax-based revenues and to mobilize additional financing (with sovereign guarantees) through borrowing from donors and capital markets and through the issuance of project bonds. These additional financial resources are made available to the Directorate of Roads (DR) for construction, improvement, maintenance, and operation of the road network, expressways and rural roads. Additional sources of road funding include highway tolls transferred to the *Société Nationale des Autoroutes du Maroc* and local government contributions for rural road investments.

South Africa. The National Treasury allocates funding for national, provincial, and municipal road authorities. As of April 1, 2013, the Treasury allocations to South African National Roads Agency Limited (SANRAL), provinces, and metros are based on identification of needs as part of asset management systems. Revenue sources include fuel levies (however, these are not earmarked for the roads sector, except for a dedicated allocation for the Road Accident Fund), vehicle license fees (collected primarily by the provinces), and tolls (which accrue to SANRAL). The budgetary funding for SANRAL's non-toll roads and special grants for provincial and municipal roads are channelled through the Department of Transport. Provincial and municipal roads are funded entirely from their respective budgets under the Government approved three-year medium-term expenditure framework. For national roads, SANRAL has two primary sources of funding: allocations for non-toll roads are made by the National Treasury, while toll roads are funded from borrowings in the capital and money markets (bonds issued on the Bond Exchange of South Africa in the name of the SANRAL) or concessions to private sector consortia.

South Korea. The Transport Tax Act (1993) and the Transport Facility Special Account Act (1994) formed the legal basis for establishing the Transport Facility Special Account (TFSA), a special transport infrastructure fund with earmarked sources of revenue. The collected funds are used for: (a) road construction, management, operation, survey and research, and technology development; (b) investment and equity participation in the Korea Expressway Corporation and PPP projects with private companies; and (c) debt service on local and foreign loans acquired for road projects. The Transport Tax revenues are split across various transport modes with 65.5 percent earmarked for roads, 18.2 percent for railways, 4.3 percent for airport, 2 percent for metropolitan transport, and 10 percent as a remainder. The TFSA's main sources of revenue comprise transport and other taxes, non-tax revenues (facility use charges), and transfers from general accounts. 85.8 percent of the collected transport tax, which includes levies on gasoline and diesel, is received by the TFSA. This portion represents about 70 percent of TFSA's total revenue. In addition to transport tax, the TFSA receives revenues from special passenger car taxes, automobile import duties, financial investment and special loan accounts, airport service charges, and transfers from general accounts.

Institutional structure and governance in the railway sector

38. **UTY was created by a presidential decree in November 1994.** Several restructuring proposals were made around 2000, but little eventuated other than the company being incorporated in 2001 as an open joint stock company. Its activities include not only rail operations but also construction and manufacturing and interests in several subsidiaries with little direct connection to the rail sector. Some noncore activities have been divested or transferred, but UTY's internal structure and operations have changed little in nearly 30 years. The company thus has many of the strengths and weaknesses of the old Russian Railways as a strongly managed organization with 'military-like' discipline that appears inflexible and secretive, at least to an outsider. It shows little interest in customer service or in developing new traffic, especially passenger traffic, or in engaging the private sector in a meaningful way.

39. **Until recently, UTY was the policy maker, regulator, and operator of all railway services on Uzbekistan's main line network.** However, the government decided in early 2019, pursuing a May 2018 presidential resolution (box 2.2), to transfer the policy and regulatory responsibilities for the railways from UTY to the newly created MoT. At the same time, the previous UTY supervisory board, consisting of ministers or ministerial representatives and chaired by the Prime Minister, is planned to be replaced by an independent board.

Box 2.2. Why transform state enterprises and other entities with majority state ownership?

Problems highlighted by the Presidential Resolution No. 3720 'On measures for improving the management of state assets', dated May 12, 2018, include the following:

- Participation of government officials in SOE management bodies and resulting conflicts of interest.
- Lack of a well-functioning system for managing SOE investment.
- Nontransparency of SOE governance and lack of regular analysis of SOE performance.
- Limited education of the staff and management of SOEs, particularly regarding corporate governance.

40. **The sector operates under the 1999 Railway Law, to be superseded by a 2019 Transport Law that is being prepared.** Under the new arrangements, the MoT prepares regulations implementing the law, plans investments, establishes tariffs (approved jointly with the MoF), licenses companies and key staff working in the sector, sets safety standards, and investigates accidents.

41. **The efficiency and sustainability of UTY's rail operations are hampered by noncore activities.** The current internal structure of UTY is too complicated to operate effectively in a liberalized market and to adapt quickly to changing transport patterns. It includes six regional railway companies, together with specialized companies responsible for various aspects of rail operations (passengers, refrigerated transport, interface with customers, and so on). In such a complicated structure, regional railways are likely to have great influence on rail transport operations, an arrangement that can work well when transport tasks are clearly defined and the company faces little competition. But many countries, both in the CIS and elsewhere, have found that the structure is ill-equipped for a liberalized market in which transport patterns change much more rapidly than before.

Unbundling the railway sector

42. **UTY must adapt to improve its competitiveness and respond to the country's accelerated transition and the liberalization of the economy.** It must change from a centrally planned operation to a market- and client-oriented one. Like the airline, it must adopt a strategy to focus on the core railway operations business and spin off its various noncore businesses while absorbing the subsidiaries that are effectively internal to its operations. The MoT will have to fully absorb policy and regulatory functions for

railway sector governance formerly handled by UTY. Railway tariff policies should be reviewed to ensure that traffic covers incremental costs.

43. **While Uzbekistan has already initiated restructuring of the rail sector by establishing the MoT and installing an independent supervisory board in UTY, there is a need to develop a railway sector policy.** Policy and regulatory matters in the rail sector have been transferred to the ministry. In a standard governance model, the MoT would be responsible for sector policies that protect and promote the public and national interest in rail transport in Uzbekistan. In this regard, UTY and the government must agree on policies in areas that affect others, such as allowing third-party access to infrastructure and determining the extent to which the private sector should provide rolling stock. This implies that the MoT would have the following functions at arm's length from the entity providing railway services:

- Create and maintain a high-level national railway strategy for Uzbekistan, formulate the railway transport policies and regulations to underpin its implementation, and monitor the performance of the sector in meeting the public interest objectives.
- Set strategic objectives (economic, financial, environmental, and social) for the railway sector
- Determine strategies and policies for meeting those objectives, covering the regulatory and competition framework (including an access price regime), the respective roles of the private and public sector, and coordination with other ministries and neighboring countries on rail transport policies and programs.
- Determine the sector's financial framework, including the allocation of public resources for investment, treatment of historic debt, operating support, and purchase of services within public budgeting constraints.
- Decide the social obligations and subsidies for freight and passenger transport and arrange for their funding.

44. **Countries that have a major railway system, such as Uzbekistan, normally create within the government a safety authority independent of the railway.** Uzbekistan already has this and needs to further consider safety requirements for any third-party operators and independent contractors working on the system. Modern practice increasingly adopts safety management systems instead of the rules-based systems traditionally used by integrated railways. Every organization working on the railway is then required to have its own safety management system geared specifically to its activities.

45. **If the government policy is to encourage private sector participation in the railway, whether indirectly through investment or directly by operating services, an economic regulator will also need to be established.** This could be solely for rail, for the transport sector as a whole, or for the entire economy—examples of all three exist in different countries. Activities the regulator could cover include third-party access to a network (conditions and prices) and disputes between the government and operators over payment or compensation for passenger services.

46. **For UTY to remain competitive in a reorganized structure, a commercially oriented corporate policy is needed.** Formulating policy for railway operations[41] would normally be in the hands of an enterprise's corporate management under the guidance of a supervisory board. That policy would include

[41] 'Operations' is shorthand for a mix of network operations, train operations and, most importantly, commercial operations.

the delegation of commercial responsibilities to subsidiaries or divisions. A commercially oriented supervisory board would empower and incentivize the railway.

47. **If the railway remains integrated, a rational structure would entail establishment of the main businesses (passenger, freight, and infrastructure) either as divisions of the corporation or statutory authority or as subsidiaries of the holding company.** The divisions or subsidiaries should be independently viable business units with their own balance sheets, profit and loss accounting, and financial and performance targets. The supervisory board and corporate management would be responsible for enterprise or corporate policies for network investment and management, train service management, commercial management, and intercompany coordination. If UTY is split into three (or more) independent companies, each company would have its own supervisory board responsible for formulating policy.

48. **To ensure that the board and management are not distracted by activities that are not essential to their main task of ensuring a competitive, efficient, and sustainable rail system, all noncore activities should be devolved.** They can be divested in parallel but in different ways:

- The first step should be to find homes for subsidiary companies that are not essential parts of the railway, such as the Tashkent metro, the nature reserve, and the coal mines. (As the economy's liberalization proceeds, they will surely not be the only state-owned companies to go bankrupt.) The government should find a more sustainable solution than amalgamating them into a stronger SOE to support them financially, since the SOE's support can only come at the expense of its own main activity.
- The second step is to transfer all social activities (33 of them, according to the 2018 business plan) to other government bodies, such as education and health ministries. The only exception might be retaining facilities for training technical staff and apprentices and for testing the health and eyesight of key operating staff.
- The third step is to establish various railway industries as independent organizations, whether freestanding or as joint ventures with private sector investors. Some companies, such as the passenger company (Uztemiryulovchi) and the company running the Afghanistan operations (Sogdian), are an integral part of railway operations and should be kept in the reorganized main activity. Others (such as Yulreftrans, which offers refrigerator car services) may become unnecessary because of changes in technology. Companies that do a significant volume of work for third parties (for example, the construction unit building the Tashkent metro) or could do so should be considered for devolution so they can, in time, perform general engineering and construction throughout the economy. UTY can ease their transition by providing a proportion of their work, declining from, say, 100 percent in year 1 to 20 percent in year 5. After that, the devolved company would have to bid for any UTY work in competition with other companies.

49. **Most countries have reorganized their railways into a line-of-business structure by creating a freight business, a passenger business, and an infrastructure business.** But there are many options for combining these businesses. In some cases, they became fully independent companies. In others, they became three subsidiaries of an overall holding company, or just one of them (for example, the passenger business) was separated and the other two were combined. However, transition from the current situation to the new one will not be easy if UTY is to remain competitive. Substantial reorganization of the current structure will be needed, particularly if third-party operators are allowed to enter the market. Hence, the government should undertake a detailed review of UTY to determine which activities could be

financially viable and would not require long-term financial support. Practice has shown that almost certainly these would be freight and infrastructure.

Policy framework for road freight and logistics services

Policy and legal frameworks for road transport and transit operations

50. **Uzbekistan is signatory to a number of international conventions on transport facilitation.** In line with the United Nations Economic and Social Commission for Asia and the Pacific resolution 48/11 dated April 23, 1992, Uzbekistan ratified the following recommended United Nations (UN) conventions on international transport facilitation:

- The Convention on Road Traffic, November 8, 1968, and the Convention on Road Signs and Signals, November 8, 1968, were ratified by Uzbekistan on January 17, 1995.
- The Convention on the Contract for the International Carriage of Goods by Road, May 19, 1956, was ratified by Uzbekistan on September 28, 1995, and its additional Protocol of July 1978 was ratified by Uzbekistan on November 27, 1996.
- The Customs Convention on the International Transport of Goods under Cover of TIR[42] Carnets (TIR Convention), November 14, 1975, was ratified by Uzbekistan on September 28, 1995.
- The Customs Convention on the Temporary Importation of Commercial Road Vehicles, May 18, 1956, was ratified by Uzbekistan on January 11, 1999.
- The Customs Convention on Containers, December 2, 1972, was ratified by Uzbekistan on November 27, 1996.
- The International Convention on the Harmonization of Frontier Controls of Goods, October 21, 1982, was ratified by Uzbekistan on November 27, 1996.

51. **Uzbekistan went further by joining other five UN conventions and agreements and one World Customs Organization convention:**

- The Agreement concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts which can be fitted and/or be used on Wheeled Vehicles, June 25, 1998, was ratified by Uzbekistan on May 4, 2018.
- The European Agreement concerning the Work of Crews of Vehicles engaged in International Road Transport, July 1, 1970, was ratified by Uzbekistan on October 22, 1998.
- The Convention on the Taxation of Road Vehicles engaged in International Goods Transport, December 14, 1956, was ratified by Uzbekistan on October 22, 1998.
- The Convention on Customs Treatment of Pool Containers Used in International Transport, January 21, 1994, was ratified by Uzbekistan on November 27, 1996.
- The Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for Such Carriage, September 1, 1970, was ratified by Uzbekistan on January 11, 1999.

[42] TIR stands for 'Transports Internationaux Routiers' or 'International Road Transport'.

- The World Customs Organization International Convention on the Harmonized System adopted in Brussels, June 14, 1983, and amended by the Protocol of Amendment to the International Convention on the Harmonized Commodity Description and Coding System of June 24, 1986, was ratified by Uzbekistan.

52. **However, despite ratification by Uzbekistan, some of these key international conventions have been completely ignored.** These are the International Convention on the Harmonization of Frontier Controls of Goods, October 21, 1982, and the Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage, September 1, 1970. Enforcing them has high potential to contribute to trade, border crossing, and transport facilitation.

53. **Difficulties have been reported in implementation of bilateral transport agreements between Uzbekistan and several partner countries.** Uzbekistan has bilateral road transport agreements with 30 countries to complement and sometimes facilitate the implementation of the international conventions on road transport. But difficulties in their execution with several commercial/transport partner countries are reported:

- **Kazakhstan.** Generally insufficient three days are allocated to cross Kazakhstan to the Russian Federation. As a result, Uzbek carriers receive quasi-systematic penalties for violating the transit time. This, of course, reduces the commercial viability of Uzbek road carriers in transporting goods to Russia. Kazakhstan has adopted a regulation limiting the load to 10 tonnes per moving axle, while in all CIS countries the axle load limit is 11.5 tonnes. Kazakhstan's unusual limitation hinders trade and transport, particularly since it appears that its implementation often discriminates against non-Kazakh operators. Kazakh authorities mainly target the controls on foreign operators, resulting in heavy fines amounting up to US$5,000. The practice indirectly favors Kazakh operators, who are less subject to financial sanctions and thus more competitive because of actual unequal load capacity and better profitability given the reduced or absent financial sanctions.

- **Russia.** The Russian ban on certain EU goods in retaliation for EU sanctions originally targeted only EU goods imported to Russia, but the regulation, which forbids entry of certain EU goods into Russia, is now interpreted to apply to EU goods transiting through Russian territory and destined for foreign countries. So, for Uzbekistan, imported goods from the EU must be transported through the southern corridor, a longer and more expensive shipment.

- **Iran.** Bilateral transport with Iran has been abandoned by Uzbek carriers due to various accumulating measures that have affected the attractiveness of these routes. It is reported that a high road charge of US$400 is imposed on non-Iranian operators and that foreign operators are charged more for fuel than Iranian carriers. In addition, despite the use of TIR carnets for international movement, Iran is imposing Iranian customs brokers and intermediaries to handle the procedures at the border and the destination, which is costly and affects the commercial viability of the operations. As a result, Uzbek operators have abandoned the Uzbek transport market with Iran to Iranian operators.

- **Turkmenistan.** Obtaining a visa for professional drivers takes so long that it appears almost impossible to Uzbeks. Visa processing takes over 21 working days, during which drivers are deprived of their passports, which remain with the visa application. A visa can only be issued for a single trip, so transport to Turkmenistan by an Uzbek driver must be planned at least a month in advance, which is unrealistic.

- **China.** Uzbek carriers are only allowed to have 1,500 authorizations a year to enter China (while the Kyrgyz Republic benefits from a bilateral quota of 24,000 authorizations). China's system

allows foreign operators to penetrate only 80 km into Chinese territory, forcing them to unload in the Urumqi region, even if the final destination is inland.

Legal and professional requirements for road transport and logistics professions

54. **The definition of 'logistics' and its actors in Uzbekistan is vague.** Review of documents and interviews with key stakeholders reveal that while almost all actors claim to be a critical component of the logistics chain, no one can provide a single and precise definition of 'logistics'. Legislation, regulations, and resolutions refer to logistics in general terms without giving a clear and simple definition.

55. **Lack of generalized conditions for accessing road transport and logistics professions weakens the overall performance of transportation and logistics services.** Uzbek legislation clearly sets rules for entering the road transport profession as a company manager or professional driver. But no legislation or regulation controls entry to the intermediary transport occupation of 'forwarding', which encompasses various activities. Currently, no professional competence requirement exists for operating as a transport intermediary. Transport intermediaries—forwarders and freight brokers—are key players in the transport services market, serving both the road carrier and the freight owner or holder. Key logistics players such as renters of heavy vehicles for goods and passenger transport, and warehouse operators are also unregulated. A regulation adopted in June 2018 abolished a previous professional competence requirement for becoming a customs broker. Although customs brokerage does not fall under transport regulation but under customs law, it deals with the international movement of goods and its performance directly affects the movement and delivery of goods and thus overall logistics performance.

56. **The current road transport rules do not distinguish clearly between access to the profession and access to the market.** The same term, 'license', is used for authorizing a legal or natural person as a road carrier and for the transport document allowing each vehicle to operate on the transport market. This creates confusion between the profession rules governing the conditions and requirements to be met to qualify as a road carrier, irrespective of the transport operations carried out and the market rules subsequently imposed to operate in the transport market. For example, in the current legal framework, a road carrier is licensed to provide domestic or international transport services; however, a carrier with an international license can also provide domestic transport services. The lack of professional regulation of most road transport activities and professions leads to the emergence of informal activity, which in turn creates unfair competition for legal businesses and harms their profitability.

Recommendations for improving policy framework of freight transport and logistics services

57. **To facilitate Uzbek operators' access to the regional and international road transport markets, Uzbekistan must revise the legal regimes for international transit from both transport and customs perspectives.** It should join the recommended international instruments and initiate the accession procedures. Existing bilateral transport agreements should be evaluated and improved to enhance Uzbekistan's regional and international transport market share. This entails tackling obstacles to the provisions of signed bilateral agreements and the provisions contradicting the principles set in the 1982 UN Convention on the Law of the Sea. Based on this evaluation, priority strategic markets should be defined and respective revisions should be proposed to bilateral agreements with partner countries.

58. **The legal framework should shape the strategic directions for developing transport and logistics services.** It is currently governed by the president's 2017 resolution on improving transport infrastructure

and diversifying foreign cargo transportation routes[43] and the 2016 presidential decree on improving cargo and passenger transport.[44] These documents provide a high-level vision for addressing some of the challenges. To complement this vision, the government should clearly identify all actors in logistics and precisely define their respective roles and their interaction with other parties. The future legal framework must define 'logistics' clearly and position each actor within the transport and logistics chain and, more globally, in the value chain. Stakeholders should be consulted in this process and the defined roles should be validated.

59. **To enhance logistics and transport services through increased professional competence, a consolidated regulation should be developed on entering the various road transport and logistics professions based on international best practices and consultation with stakeholders.** Future transport law may also regulate access to professions such as professional renters of commercial vehicles and transport intermediaries. The proposed actions are as follows:

- Implementing a regulation on access to road transport and logistics professions and defining transitional measures and a transitional period
    - Considering customs brokers as part of the chain and subjecting them to the same professional competence conditions as before the June 2018 regulation
- Establishing a central register of all Uzbek operators with authorized access to the road transport professions to support sector governance
- Raising skills and competences in the logistics sector. This entails the following:
    - Evaluating the training market for road transport and logistics professionals
    - Creating a financing mechanism for professional training
    - Defining required skills and competences for each regulated profession and defining training programs and curricula
    - Establishing certification procedures for training institutes
    - Certifying training institutes

Institutional structure and governance in the aviation sector

Unbundling the aviation sector

60. **In the aviation sector, the GoU has been implementing the reforms to reorganize the previously vertically integrated NAK by separating the airline from airports and other former NAK entities.** An independent management would administer the airline on a commercial basis, maximizing return on assets, subject to the government's overarching policy goals. Shareholding responsibility for the unbundled entities will be borne by AMSA; each company's supervisory boards will consist of independent, professional members, and in the future, line ministries will no longer be allowed to appoint the members of supervisory boards of state-owned joint stock companies.

[43] Resolution of the President of the Republic of Uzbekistan No. 3422 on measures for improving the transport infrastructure and diversification of the foreign trade cargo transportation routes for 2018–2022, signed on December 2, 2017.
[44] Presidential decree on measures to radically improve the cargo and passenger transportation system, signed on March 6, 2019.

61. **The MoT as a policy-making body will participate only in setting strategic directives for the air transport sector.** The reform is a major shift from the previous structure, where NAK was the policy maker and there was no supervisory board. Stakeholder consultations indicate that the main aviation sector actors are not fully aware of how the new model will work in practice, especially how responsibilities and functions will be divided among policy maker (MoT), shareholder (AMSA), company management (Uzbekistan Airports Joint-Stock Company and Uzbekistan Airways Joint-Stock Company) and their respective supervisory boards, and other important stakeholders (MoF). These issues should be carefully addressed during the unbundling and incorporation of the companies and the enactment of the legislative basis for the sector.

62. **Policy formulation is a critical component of the sector reform and development.** The following steps need to be taken in the process of policy formulation (some of these are detailed in chapter 5):

- Define the government's role toward the airline, airports, and air navigation services.
- Determine a clear strategy for the future development of Uzbekistan Airways.
- Determine the policy for providing other carriers with access to the market—domestic and international.
- Plan the liberalization of services at the airports.
- Gradually liberalize air transport on both domestic and international routes by renegotiating or renewing air services agreements defining market access conditions for foreign carriers.
- Determine the priorities and objectives for airport system development, and define a clear strategy for airport development, including PPP options and risk and mitigation measures.
- Develop and define the approach to aeronautical fees and charges.
- Establish a mechanism for financing public subsidies of domestic air service.
- Introduce new licensing procedures for additional slots and airlines.
- Develop a strategy for human resources and deployment of expert resources.
- Determine the strategy for cross-border investments in services and infrastructure.
- Measure the sector's environmental and social impacts and determine policy for managing them.

Gaps in the institutional and governance framework

63. **Gaps in the governance framework remain, affecting the independence from the policy maker (MoT) of the accident investigation body and the technical regulator**.

- **Accident investigation.** In the reforms, accident investigation was removed from the safety regulator, the Civil Aviation Agency of Uzbekistan (CAAU). A separate Accident Investigation Department was created within the MoT, apparently without legal, administrative, or budgetary independence from the ministry. But fostering a culture of incident reporting requires a complete separation of the investigative function from other functions in the sector to reduce investigative professionals' fear of retaliation. For the new investigative body's independence to be secure, it must have complete administrative and financial autonomy from both the policy-making and technical regulating authorities. One possible governance model would be a fully independent accident investigation body for all transportation modes, dependent, for instance, on the Cabinet

of Ministers. This model is similar to the National Transportation Safety Board in the United States.

- **Technical regulation.** Before the reforms, the safety oversight inspectorate Gosavianadzor's budget was fully funded by the NAK under a nonsystematic financial transfer mechanism. The reform changed the inspectorate into CAAU, with a budget provided entirely by the state.[45] According to Presidential Decree No. 5647, CAAU also depends on the MoT, "while maintaining the current procedure for financing activities." The minister of transport can recommend the appointment and dismissal of the director of CAAU, to be approved by the Cabinet of Ministers.[46] Although the change reduces potential conflicts of interest with the airline, CAAU may not have enough separation from the ministry. The government could ringfence the administrative autonomy of CAAU to strengthen its financial independence and create mechanisms and firewalls to separate policy making and technical regulation effectively.

64. **The national air carrier's participation in approving flight schedules for all other airlines limits access to the air transport market.** Although the MoT is the state body authorized to negotiate air service agreements with other sovereign countries, the use of negotiated traffic rights by foreign airlines still requires the consent of the NAK. (The administrative process for Form R—flight schedule approval—requires the signature of NAK's head office.) This requirement detracts from the policy maker's attributions and competencies and constitutes an inherently anticompetitive practice as viewed by modern antitrust legislation around the world. The government could modify Form R to eliminate the need for NAK's head office to explicitly consent to flight schedules for other airlines operating regular air service in Uzbekistan. Consent should come exclusively from the airport operator (to determine, for instance, slot availability), not the airline.

[45] Regulation of the Cabinet of Ministers No. 692.
[46] Presidential Resolution No. 4143.

3. The Road Sector

Sector overview

65. **Uzbekistan has the highest road density in Central Asia, with 41 km of roads per 100 km^2 area.** The total size of the road network is about 185,000 km, of which 42,695 km constitute a public road network, or 'roads of common use', 75,000 km are agricultural tracks, and 68,000 km are municipal roads and streets. Common use roads are functionally classified into international (3,981 km), national (14,100 km), and regional roads (24,614 km), and are owned and managed by CAR. Municipal roads are owned by municipalities, but their maintenance is under the responsibility of local branches of CAR. Road coverage and connectivity in the Ferghana Valley and Tashkent are comparable to those in Western European countries in terms of coverage, although service levels are lower. For the most part, Uzbekistan has achieved basic road connectivity, and only a few remote regions lack all-weather road access. The public road network is arguably one of the largest public sector assets of Uzbekistan, with a conservatively estimated replacement value (net of land, major bridges, and tunnels) of US$45–US$55 billion.[47]

66. **At the end of 2017, nearly two-thirds of the common use public roads were assessed as being in good or excellent condition** (table 3.1).[48] This assessment is based on biannual visual inspections, which are highly subjective and may not be based on a consistently applied metric. About 95 percent of common use roads is paved[49] and less than 5 percent is gravel and earth surfaced. The use of cement concrete pavements is increasing rapidly. Casual, albeit informed, observations of road condition suggest that only about half of the international/national roads may be in fair condition, reflecting a large backlog of periodic maintenance (requiring functional or structural overlays). Similarly, a third of the regional roads may need rehabilitation or reconstruction. City roads and streets for the most part appear to be in better condition than interurban roads. Fortunately, the road network has ample capacity and traffic congestion remains manageable.

Table 3.1. Condition of common use public road network, 2017

Condition	International (km)	National (km)	Regional (km)	Sub-Total (km)	Percentage of total (%)
Excellent	3,304	5,668	5,245	14,217	33
Good	318	6,640	6,907	13,865	33
Fair	272	1,669	12,161	14,102	33
Poor	87	123	301	511	1
Total	**3,981**	**14,100**	**24,614**	**42,695**	**100**

Source: SCAR, July 2018.

67. **Much of the road deterioration is due to aging infrastructure, which needs both structural and safety upgrades.** The upkeep of main roads reflects an intensive routine maintenance effort, as indicated by heavily patched roads and a low incidence of potholes. However, paved roads in Uzbekistan are fairly rough, even newly resurfaced roads, pointing to the need for improved design, better construction quality control, and tighter compliance with standards and specifications.

[47] Estimated by the World Bank team based on the average replacement value of road asset classes.
[48] CAR. 2018.
[49] Paved with asphalt concrete (54.4 percent), bituminous surface treated/stabilized (41.93 percent), and cement concrete (0.73 percent or 312 km).

68. **Roads remain the prevailing inland transport mode.** Over the past decade, traffic volume has grown 2–4 percent a year. Average annual daily traffic (AADT) on international roads ranges from 10,000 to 15,000 vehicles, with substantially higher volumes in the vicinity of Tashkent and other major urban centers and lower volumes in the western provinces. On national roads, the typical AADT ranges from about 3,000 to 10,000 vehicles, while on regional roads it is about 500 to 3,000 vehicles. The sustained traffic increase comes partly from Uzbekistan's continued economic expansion, which has seen a gross domestic product (GDP) growth of more than 5 percent a year since 2016.

Public expenditure on roads

69. **Expenditures in the road sector in 2016 and 2017 averaged about 1.8 percent of GDP.** This compares favorably with a typical annual outlay of 1–2 percent of GDP to maintain and construct roads in Organisation for Economic Co-operation and Development (OECD) countries. The erstwhile Republican Road Fund (RRF)[50] provided the lion's share of spending on roads. From 2012 to 2018, 60– 65 percent of RRF expenditures were for road reconstruction and rehabilitation and 35–40 percent for routine maintenance and small repairs. About 3 percent of RRF's annual budget went to finance road maintenance equipment. Over the past 10 years, the GoU has made an effort to eliminate the major maintenance backlog in the core network with sufficient funding allocated to maintain and rehabilitate international and national roads. This significant achievement, however, has come at the expense of regional and local roads, which have not received adequate maintenance funding.

70. **Uzbekistan lacks revenue-generating financing mechanisms to ensure sustainability of the road network and adequate service quality.** While current operations and maintenance funding may appear sufficient to keep the common use road system serviceable, it is insufficient to meet the critical needs such as safety improvements, rectification of traffic bottlenecks, pavement and bridge strengthening to accommodate the increased standard axle load limit from 11.5 to 13 tonnes, and enhancement of the road network's climate resilience. Public expenditures are mostly directed to improve and maintain international and national (state) roads. The public expenditure share of regional and local (intra-provincial and district) roads needs to be significantly boosted to develop a balanced system that supports tourism growth, improves access to markets, serves the rural population, and allows for diversification of rural production.

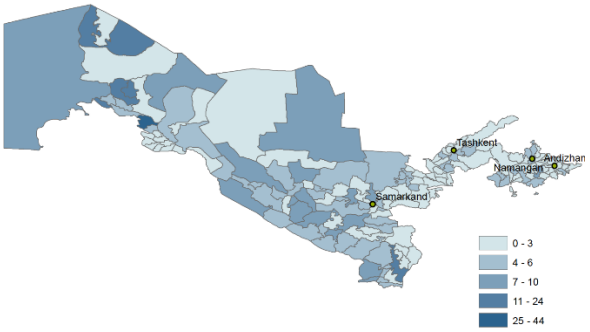
71. **The 2030 Road Development Plan envisages improvement of some 28,000 km of regional roads (estimated cost: US$19.6 billion) and construction/reconstruction of 8,000 km of a national highway system** (estimated cost: US$6.4 billion). Fully implementing the proposed program by 2030 would require some US$2 billion a year. This compares with about US$500– US$700 million actual expenditure per year (over the last five years), of which about one-half was for current (maintenance) expenditures, leaving an annual funding gap of about US$1.5 billion. With the ongoing expansion of the road network, the maintenance budget is going to come under increasing pressure. Spending priorities must ensure a proper balance between preservation of existing road assets (especially periodic maintenance) and provision of new capacity (especially high-speed access-controlled expressways).

[50] The Presidential Decree No. 5647 "On measures to fundamentally improve the public administration system in the field of transport" abolished the RRF. However, it continues to function as an entity within CAR, presumably to complete its pending/outstanding responsibilities, such as implementation of donor-funded projects. Sources of financing included corporate taxes, fees to register vehicles, and loans and grants from IFIs. With the abolition of the corporate tax in 2018, the RRF lost its main earmarked income and was integrated within CAR in December 2018.

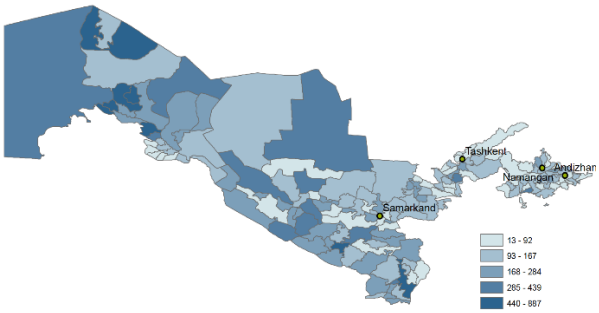
72. **Limited access to good roads in remote areas restricts access to markets, economic opportunities, and basic services for the rural population.** While the more densely populated regions of Uzbekistan have well-developed road networks, many remote areas have limited or inadequate roads, inhibiting in turn the provision of public transport services. Disparities across regions in terms of access to roads and large cities remain prevalent. Basic infrastructure to ensure reliable access to socioeconomic opportunities is missing in many locations (figure 3.2). Small farmers and other vulnerable groups rely on rural (provincial and local) roads to access markets, economic opportunities, and social services, including schools and health care facilities. Because most of the country's poor live in rural areas, improving local roads can make a big dent in alleviating rural poverty (box 3.1). Lack of reliable access imposes costs that go beyond discomfort or annoyance. Roads in poor condition require longer travel time, and vehicles that ply on poor roads require much more maintenance—increasing transportation costs, slowing economic development, and isolating rural populations.[51]

Figure 3.2. Uneven access to economic opportunities and urban markets

Average distance to roads (in kilometers)



Average travel time to reach a large city (in minutes)



Source: AidData.
Note: Large city is the nearest city of 50,000 or more people.

73. **Over the past decade, maintenance and rehabilitation of regional and local roads have not been a priority, increasing a maintenance backlog.** Regional and local roads constitute 75 percent of the country's road network and serve 90 percent of Uzbekistan's citizens. Deferring maintenance accelerates deterioration, reduces road quality, and hastens the need for reconstruction. As a rule, investing US$1 in road maintenance can save US$4–US$8 in future rehabilitation costs, and in some instances more. Poor road conditions increase transport costs by 20–30 percent. Much of the rural road network has structurally degraded to a point where maintenance is no longer cost-effective. Moreover, rural roads have poor operational and safety features. They are in urgent need of rehabilitation and upgrading and clearly should rank high in GoU spending priorities in the transport sector.

[51] Faiz, A. 2012. *Promise of Rural Roads*. Report E-C167, Transportation Research Board, Washington DC. http://onlinepubs.trb.org/onlinepubs/circulars/ec167.pdf (accessed December 13, 2019).

Box 3.1. Evidence of positive link between rural road investments and well-being of the poor

There is existing analytical evidence from several countries showing that public spending on rural roads (especially in economically lagging areas) contributes significantly to lifting rural people out of poverty.

- **India.** Public expenditure on roads has been found to have the largest impact on poverty reduction and a significant impact on productivity growth. Investments in roads have contributed importantly to growth in total factor productivity in agriculture, thus generating an economic surplus for expenditure in other sectors—and, therefore, helping in all-round socioeconomic development. Of the total productivity effect on poverty, 75 percent arises from the direct impact of roads on increasing incomes while 15 percent is from lower agricultural prices and 10 percent from increased wages.[a]
- **Bangladesh.** It was noted that short-term effects of rural roads on incomes, prices, schooling, and other social indicators attenuate over time. But these declining returns are offset by a sustained increase in rural nonfarm employment and diversification away from core agricultural activities to off-farm activities. These results are heavily influenced by the baseline conditions pertaining to household and community characteristics as well as initial road quality.[b]

Source: Faiz, A. 2012. *Promise of Rural Roads*. Report E-C167, Transportation Research Board, Washington, DC. http://onlinepubs.trb.org/onlinepubs/circulars/ec167.pdf (accessed December 13, 2019).
Note:
a. NRRDA. 2007. "Rural Roads Development Plan: Vision 2025." National Rural Roads Development Agency, Ministry of Rural Development, Government of India, New Delhi.
b. Diao, X., S. Fan, D. Headey, M. Johnson, A. N. Pratt, and B. Yu. 2009. "Accelerating Africa's Food Production in Response to Rising Food Prices: Impacts and Requisite Actions." IFPRI Discussion Paper 00825. Development Strategy and Governance Division, International Food Policy Research Institute, Washington, DC.

Road safety

74. **The country's motor vehicle fleet has grown by about 5 percent a year since 2012, to an estimated 2.27 million in 2017.** Uzbekistan's motorization rate, about 70 vehicles per 1,000 population, is the second lowest among CIS countries and less than a third that of Kazakhstan and the Kyrgyz Republic. Passenger cars constitute 93 percent of this fleet. The commercial fleet has fewer than 20,000 buses and only about 116,000 trucks. With a growth elasticity relative to national income of about 1.0, the vehicle fleet is projected to grow by around 5 percent a year for the foreseeable future.

75. **Most road infrastructure falls shy of international safety standards, and many heavily traveled roads could be characterized as 'killer' roads.** The sole saving grace of rough roads is that they reduce vehicular speed: smoother and faster roads would significantly increase the incidence of road accident injury and fatality. In 2016, 2,496 road traffic fatalities were reported, for a road crash mortality rate of 11.6 per 100,000 population. This is an increase since 2010, when 2,166 fatalities were reported. Almost 50 percent of road crashes, injuries, and fatalities between 2010 and 2013 involved pedestrians. While road crash injuries and fatalities are a growing public health concern, Uzbekistan has the second lowest road accident mortality rate (after Azerbaijan) among CIS countries and about half the rate per 100,000 population of its neighboring countries. However, if the metric of road fatalities per 100,000 vehicles is applied, Uzbekistan has the second highest fatality rate among CIS countries (after Tajikistan) of 164. This rate is about eight times higher than Europe's average of 19. The road safety problem is likely to worsen with increasing motorization and road improvements that allow increased vehicle speeds.

76. **In a recent independent assessment of safety regulations and enforcement, Uzbekistan obtained high marks on enforcement in general—a rating of 8 on a scale of 1–10 on enforcing speed**

limits (but only a rating of 5 on enforcing seat belt regulations).[52] Weak areas are postcrash care, safer vehicles, and safer roads (especially for pedestrians). The country's data collection and statistics on road safety are acceptable, but more work is needed to integrate the use of statistics in making policy decisions.

77. **Countries that have made the most progress in reducing road traffic accidents and fatalities have separate enforcement and regulatory functions.** The police role is mostly limited to enforcing traffic and safety regulations. Separate regulatory entities (such as a department of motor vehicles and a land transport regulatory authority) carry out vehicle and driver licensing, vehicle safety and emission inspections, and prepare and report road safety statistics. Similarly, traffic engineering departments within road agencies are best suited to installing and operating traffic signals and other traffic control devices. The safety audit of road projects is an engineering function that best resides in a roads department.

78. **Institutional capacity to manage road safety should be strengthened to improve interagency coordination and adopt a 'system' approach to road safety.** Some or most of the regulatory functions currently performed by Uzbekistan's State Service on Traffic Safety (police) within the Ministry of Interior would come under the purview of a professional land transport regulatory entity (either a department within the MoT or an autonomous authority) if enforcement and regulation were separated. The National Road Safety and Traffic Commission—the champion and promoter of the country's road safety strategy—is weak and lacks the capacity to perform its intended role. It needs to be completely reorganized with an autonomous identity and requisite human and financial resources.

79. **The most urgent road safety challenge in Uzbekistan is protecting pedestrians, who make up about 50 percent of road crash fatalities.** The response to this challenge should be based on the Safe System approach, which aims for a more forgiving road system that takes human fallibility and vulnerability into account. Under a Safe System (safe roads and roadsides, safe vehicles, safe road users, safe speeds, and effective post-crash care), all the system elements are designed and managed to protect people from death and serious injuries. It is an inclusive approach that caters for all groups using the road system, including drivers, motorcyclists, passengers, pedestrians, cyclists, and commercial and heavy vehicle drivers.

Mainstreaming road asset management practices

80. **Globally, road agencies maintain an inventory of their road infrastructure assets and regularly collect information and data on road conditions and traffic to monitor and measure road system performance.** Road asset management system (RAMS) provides a systematic and objective approach to determine road sections needing maintenance or operational intervention and the types and timing of improvements to be made. RAMS enables a more effective allocation of scarce financial resources by identifying the assets with the greatest economic impact. An objective network-based approach to road asset management would also strengthen regional and local connectivity by addressing the needs of the entire road system. CAR has a functional RAMS but does not use it, relying instead on biannual visual inspections as defined in the prevailing regulations and decrees.

81. **Although visual inspections should remain a part of the diagnostic assessment, full use of the RAMS would improve efficiency in prioritizing and spending on road works while bolstering objective planning, programming, and budgeting.** Currently, the most pressing problem in road asset management is the lack of objective information on network condition and use. Introducing modern survey equipment

[52] WHO. 2018. *Global Status Report on Road Safety*. https://www.who.int/violence_injury_prevention/road_safety_status/2018/en/.

and automatic traffic counts would be the first step to objectively analyze the needs and prioritize the demands on available resources.

82. **Uzbekistan currently has no structured controls to monitor and control the prescribed vehicle and axle load limits.** Vehicle overloading is a serious issue, reducing the durability of pavement and damaging roads. While CAR has a department for axle load control, it is understaffed and lacks basic equipment to carry out its responsibilities, including weighing stations and mobile pads. In recent years, neighboring countries have developed strategies to control overloading and are gradually moving toward either semiautomatic or fully automatic control to allow for error-free enforcement of load limits. If Uzbekistan is to ensure road sustainability, enforcement of load limits will be essential. It must emphasize changing driver compliance under prevailing legislation, particularly for operators of heavy vehicles.

Mobilizing funding for maintenance and preservation of road assets

83. **Additional dedicated and predictable funding sources for road maintenance need to be identified, particularly if regional and local roads are to be preserved.** With economic activity increasing and rates of vehicle ownership surging, road maintenance will take on ever greater importance. Many transport ministries have adopted or are moving toward a 'user-pays' approach to help fund road development and maintenance.

84. **There is a strong case (based on 'user-pays' principle) to apply structured user charges to cover the full cost of road maintenance and rehabilitation, traffic management, and road safety enhancements** (for example, a special tax on vehicle ownership or a direct charge on vehicle use). Road funds, like the RRF, have relied on fuel taxes as their primary source of revenue. Even previously, the main virtue of fuel taxes was simplicity of administration, but revenue base was easily eroded by economic slowdown, inflation, shift to cleaner fuels, and increased fuel efficiency of conventional vehicles. There has been a strong trend in OECD countries to shift from fuel taxation to direct road user charges. Distance-based charging for road use is not new. New Zealand introduced a system of distance-based road user charges in 1978 for all vehicles over 3.5 tonnes on all public roads and all diesel vehicles (including cars, vans, and other light vehicles). Similar distance-based charges have been introduced in most European countries on vehicles over 3.5 tonnes and trucks. Some countries have introduced time-based charging of their entire motorway network, notably Austria and Switzerland.[53]

85. **For low-volume rural access and municipal roads, cost recovery could include contributions from the beneficiaries through some form of land/property tax.** In addition, a range of value capture mechanisms could be deployed to finance road infrastructure from the potential increase in land and property values due to improved connectivity with enhanced access and/or mobility. The potential of toll financing (including congestion tolls), dedicated revenue bonds, and PPP arrangements as a complement to public spending on roads is reexamined in chapter 7, especially for building, operating, and maintaining high-capacity urban and intercity expressways.

86. **With the restoration of a Transport/Road Fund under the MoT, cost recovery from road users could include the following potential sources of funding:**

- **Taxes on motor vehicle fuel.** The most widely used source, these are relatively inexpensive to collect, easy to administer, and equitable, since they are proportionate to road use. Their main disadvantage is that they do not reflect the much higher damage done to roads by heavy vehicles.

[53] A comprehensive coverage of international practice in road pricing and road user charges is provided by Scott Wilson at http://roadpricing.blogspot.com/ (accessed December 14, 2019).

- **Vehicle licensing fees.** Easy to collect, these differentiate between vehicle types and reflect the costs that each imposes on roads. Their main drawback is that they are fixed charges unrelated to distance traveled.
- **Tolling.** Paid by drivers for distances traveled on the network by type of vehicle. Though they are equitable, collecting them is expensive (10–20 percent of the tolls collected) and requires several thousand vehicles a day to be worthwhile.
- **Electronic road pricing.** A suite of technological applications that provide a more refined way of levying charges based on specific road wear and inconvenience to others. They are charged by category of user. Focusing on continuing to expand the road network may limit resources for maintenance.
- **Vignettes.** Charged for time, rather than for distance, in contrast to tolls. They typically cover the use of an entire class of roads, such as motorways. Collection costs range from 5 percent to 20 percent.
- **Congestion pricing.** A particular application of vignette systems for urban roads. Vehicles pay for traveling within a certain area (usually a city center) during specific times of the day. The system is enforced using a windshield sticker or automatic license plate recognition and verification against electronic payment records.
- **Charges for overweight and nonstandard vehicles.** Levied to compensate for the extra damage caused to roads by such vehicles. Application of these charges in Central Asia is complicated by nonuniform standards for the weights and dimensions of vehicles.
- **Charges on the purchase or import of new vehicles.** Applied when a vehicle changes owner. Like annual vehicle registration fees, they are different for different kinds of vehicles. They are relatively easy to collect but are not related to subsequent vehicle use.

87. Transit fees may also be considered within the framework of bilateral/multilateral agreements to charge for incremental road wear.

Developing domestic road construction and consulting capacity

88. **Most private road contractors in Uzbekistan can only carry out small-scale activities, the industry's total capacity is limited, and the road consulting profession is nascent.** Domestic contractors lack technical skills, have limited financial resources, and lack opportunities to compete for large-scale and complex road construction works. Although many are used as subcontractors for specialized work, only a few can undertake the full range of road construction tasks. CAR subsidiaries currently have distinct advantages over private entities: they own enough plant and equipment to carry out extensive works and employ a high number of qualified personnel.

89. **Given the large number of road construction SOEs, the government should progressively open the market for road maintenance and construction to the private sector, phasing in private sector participation to coincide with the pace of institutional reform in the road sector.** This will require establishing a level playing field for private sector participation by (a) making the large construction SOEs financially and administratively independent, (b) eliminating the direct contracting method in tendering for works, and (c) reforming the unit cost system used in bidding documents. This is in line with the government's economic development strategy to reduce barriers to foreign direct investment, expand the domestic private sector, and develop strategic growth sectors. The GoU could also consider supporting

training and certification programs for domestic contractors and providing opportunities for joint ventures with foreign firms.

90. **Output and performance-based road contracts (OPBRCs) provide a novel contracting method to ensure the quality of construction, the completion of construction at agreed prices, and the proper maintenance of assets once completed.** They differ from standard contracts, which base compensation on an estimated bill of quantities and unit rates. OPBRCs compensate contractors for maintaining roads to preagreed service levels over a specified period following construction/rehabilitation. If a road falls below the contractually specified service level, the contractor's monthly lump-sum payment is reduced until the road is brought back to the agreed service levels. These contracts have been piloted in the neighboring countries (Kazakhstan, Tajikistan, and Afghanistan) with favorable outcomes. They are also used extensively in Georgia for the maintenance of secondary and rural roads. The scope and scale of OPBRCs can be tailored to the technical and financial capacity of domestic contractors. In their simplest form, they can be used for labor-based routine maintenance activities as in Nepal and Tonga. These contracts can also be designed to allow subcontracting opportunities for small contractors and community-based organizations.

91. **The government should consider piloting a program of OPBRCs for maintaining its international road corridors to test the concept and demonstrate its benefits to the road contracting industry.** The pilot should be implemented with the support of qualified specialists and should be designed to generate demonstrable results. Uzbekistan might need to modify public procurement law and regulations to allow performance-based lump-sum payments (not linked to the measurement of quantities) and multiyear contractual period (typically 5- to 8-year duration)—the key features of an OPBRC.

Enhancing road engineering standards and specifications

92. **Road construction and maintenance standards (GOST) and regulations (SNiP) are based on Soviet practices and should be amended in line with global best practice.** As these standards are gradually updated, their rigid application and the lengthy formalities required to introduce change hamper the introduction of new technologies and methods that could reduce costs. The current system of using official unit rates based on standardized inputs of equipment, materials, and labor established by the Ministry of Construction limits private road contractor development. Potential contractors may not use alternative types of equipment to the ones prescribed nor may they obtain materials from different sources. Also, contractors participating in tenders may not bid above ceilings determined during the design phase. Other CIS and Eastern European countries that have traditionally used GOST and SNiP standards and regulations have gradually amended them. It is recommended that Uzbekistan do the same.

4. The Railway Sector

Sector overview

93. **The rail infrastructure is in reasonable condition overall, with only 21 km under temporary speed restrictions.**[54] Uzbekistan's rail network is 4,669 km long, of which some 2,350 km are electrified. A historical legacy from Soviet times was railway lines that crossed borders without restriction. Over the past three decades, UTY has progressively invested in new lines to physically connect its entire network inside the country's borders—adding a direct link between the Ferghana Valley and the rest of Uzbekistan and removing some short sections that made incursions into the Kyrgyz Republic and Kazakhstan. UTY is also constructing a new link to connect Bukhara with Urgench along the northern bank of the Amu Darya (Oxus), paralleling a route in Turkmenistan on the southern bank of the river. UTY has electrified several main lines to improve hauling capacity, cut operating cost, and improve environmental performance. Major periodic repairs of the rail infrastructure are undertaken regularly.

94. **UTY predominantly carries freight, which represents about 85 percent of traffic units**.[55] The volume of freight transported by rail has grown steadily over the past 10 years, from 66 million tonnes in 2009 to 86 million in 2017, then jumping to 95 million in 2018. Most growth has been in domestic traffic, with imports and exports stable and transit traffic decreasing (figure 4.1). The average haul is about 220 km and domestic traffic represents about 60 percent of the total.

Figure 4.1. UTY freight traffic, 2013–18

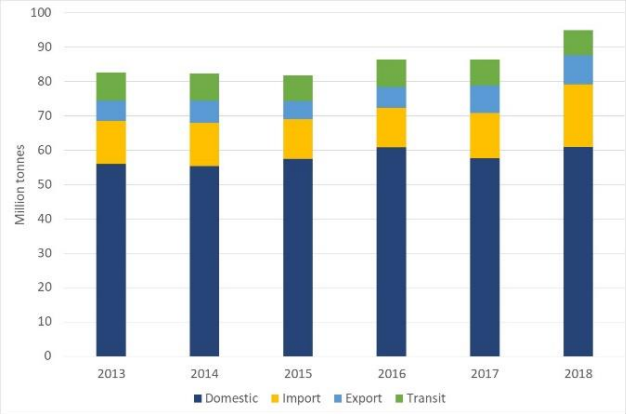
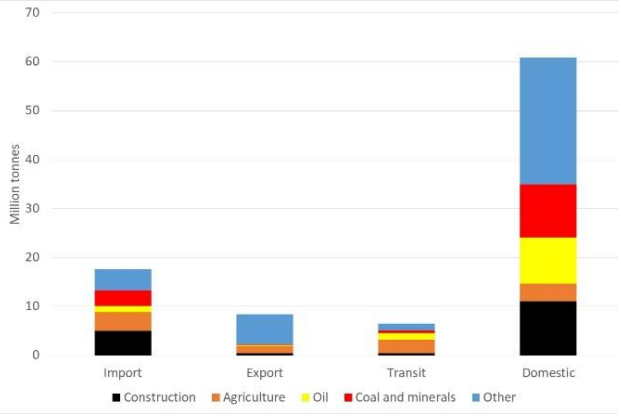


Figure 4.2. Freight composition 2018



Source: UTY.

95. **The largest category of freight UTY carries is 'other' traffic, which comprises freight that is not in the tariff book, such as consolidated freight consisting of different commodities** (figure 4.2). After that, domestic traffic is dominated by construction materials (including cement), coal and minerals, and oil and oil products. Agricultural traffic is relatively small, although it represents a larger share of imports, transit (mostly grain and grain products), and exports (primarily cotton). Average revenue (including ancillary charges) is about UZS 275 (about US¢3.5) per net tonne-kilometers. While the tariff is

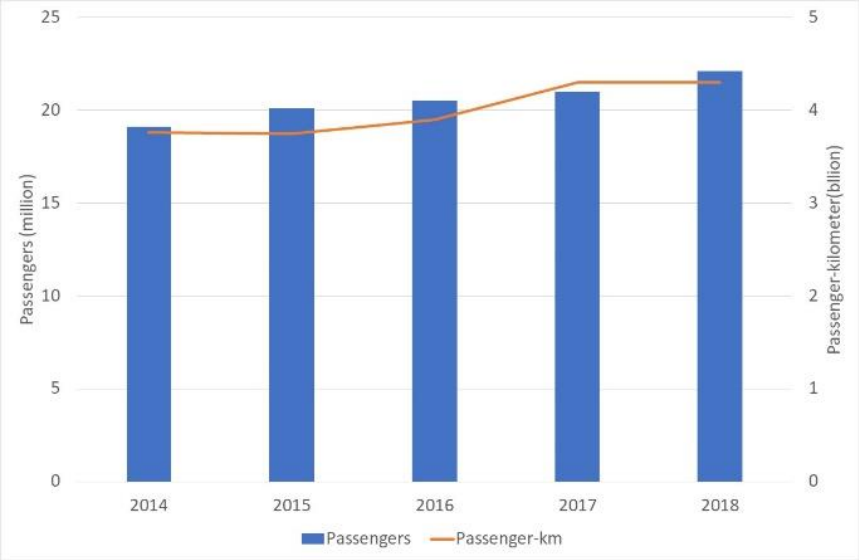
[54] Condition at the end of 2018.

[55] Traffic units are defined as the sum of freight net tonne-kilometers and passenger-kilometers. It is an imperfect but commonly used indicator of the total activity of a railway.

comparatively high, the average haul is relatively short, especially for import-export traffic to and from Tashkent via Kazakhstan.

96. **Passenger traffic of UTY has increased by about 15 percent over the past 10 years to about 22 million passengers and 4.3 billion passenger-kilometers a year** (figure 4.3). About 80 percent of UTY's passengers ride local services, but two-thirds of passenger-kilometers are on regional intercity trains, which connect Tashkent and all major centers within Uzbekistan. High-speed services use trains made by the Spanish company Talgo between Tashkent, Samarkand, Bukhara, and Karshi, and more such services are planned.

Figure 4.3. UTY passenger travel, 2014–18

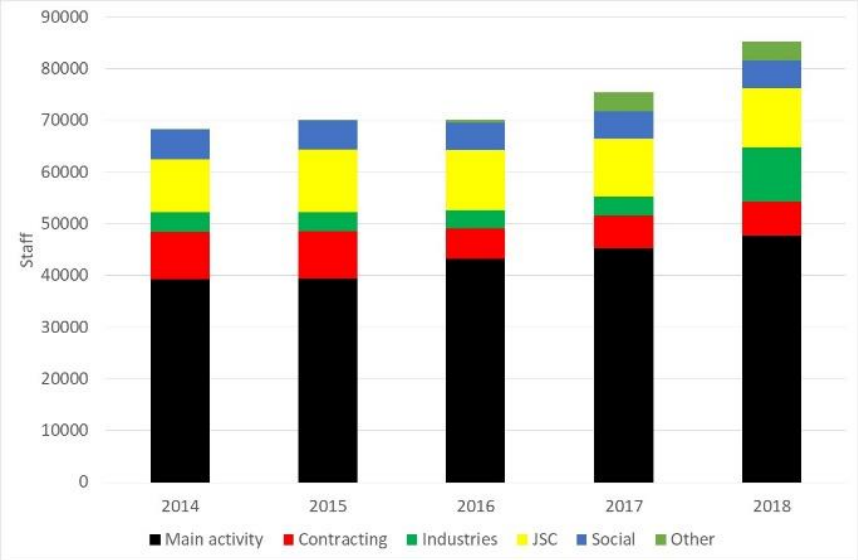


Source: UTY.

97. **UTY has limited contact with its customers; instead it contracts 'code agents' who interact with customers and make physical transport arrangements for a commission.** A typical customer first deals with a freight forwarder, who in turn deals with code agents. This practice represents outsourcing of what is normally the freight railroad's marketing function. It is not unique to UTY, but it should be reviewed, since the value added by the agents is unclear and, in many cases, seems very small. The agents provide few further services—for example, for consignment tracking customers must contact UTY itself (which, inevitably, works only standard business hours).

98. **The number of staff in rail operations of UTY is nearly 50,000; additional 40,000 are employed in other non-operational business units** (figure 4.4). UTY's labor productivity of 500,000 traffic units per operating employee is comparatively low for a freight-dominated railway—some 20 percent lower than in neighboring Turkmenistan and a fraction of the 3 million in Kazakhstan. The operating staff is about the same size as 20 years ago (when it was 52,000), and productivity is about the same as in 1999. Of the 40,000 non-operations staff, about 6,000 are in UTY's construction units and more than 10,000 in rail-related industries such as workshops. About 5,000 staff support social and medical facilities and the remaining 15,000 are in companies in which UTY is a majority shareholder. Historically, UTY has had a high share of skilled technical and administrative staff. But in certain areas UTY has lost much of its in-house expertise. One such area is information technology, a prerequisite for transitioning to a more efficient and higher quality railway.

Figure 4.4. UTY staff 2014–18



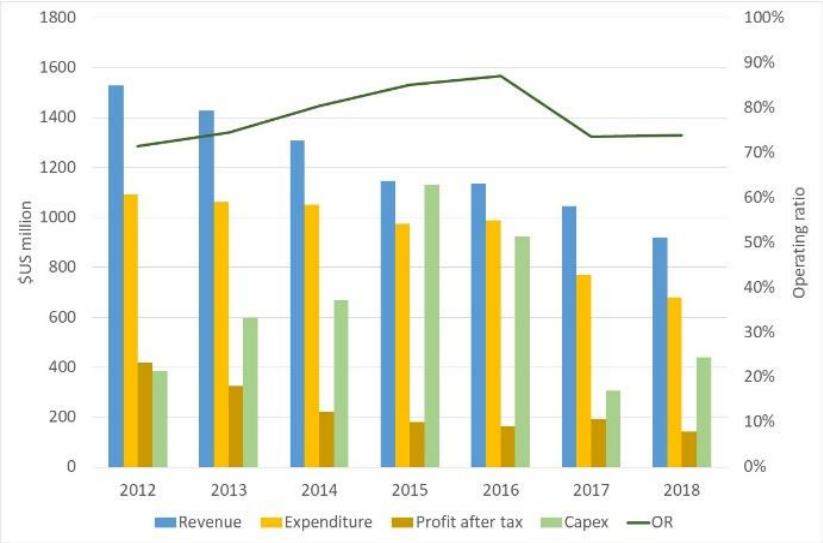
Source: UTY.

99. **The condition of rolling stock is adequate.** UTY has 105 electric locomotives (many with more than one section) and 341 operational diesel locomotives, over half of which are shunting locomotives. It also has 21 electric multiple units, including 4 Talgo high-speed locomotive sets, used between Tashkent and Bukhara. The electric locomotives have a high availability of 95 percent, while the much older diesel fleet still achieves 75 percent. UTY operates 23,500 freight wagons and 549 passenger carriages.

Financial performance of UTY

100. **UTY rail operations are profitable, and the company does not receive operating subsidies from the state**. Its operating ratio of expenses to revenue has increased steadily until 2016 but since then has decreased, nearly reaching its historical range of 70–75 percent. Historically, the company generally financed investments needed in infrastructure and rolling stock from depreciation and retained earnings. But for major infrastructure projects, such as the Angren-Pap railway line, it could not, so debt finance has become increasingly important. Figure 4.5 summarizes the financial performance of UTY from 2012 to 2018.

Figure 4.5. UTY financial results, 2012–18



Source: UTY.
Note: During this period, the official exchange rate steadily declined, culminating in a large devaluation in mid-2017. The finances have been converted from Uzbekistan soum to U.S. dollars using the official exchange rate, but because most revenues and expenditures were in local currency, the decline in terms of the dollar is not critical.

101. **While passenger traffic has doubled (in passenger-kilometers) over the past 20 years, freight has increased by about 30 percent (in net tonne-kilometers).** Main operating staff decreased by only about 10 percent, and thus labor productivity has increased only from 350,000 to 500,000 traffic units per staff. The generally solid financial results have ensured the technical condition of the network and rolling stock has been maintained at a good level, as shown by the low proportion of temporary speed restrictions and the good availability of locomotives.

Opportunities for restructuring UTY

102. **As the country's general economy is changing, UTY must also adapt.** UTY appears to have maintained its infrastructure and rolling stock in good condition and can thus move bulk commodities efficiently. But the liberalization of the economy presents many challenges to the rail sector and UTY. The volume of traffic from SOEs now effectively captive to rail will steadily fall. UTY will have to compete against other transport modes on cost and service quality but will be poorly equipped to do so, unless it is fundamentally reorganized. As discussed in chapter 2, sector policy needs to be established and UTY needs to be separated from its various noncore businesses while absorbing the subsidiaries that are effectively internal to its operations. UTY and the government must agree on policies in areas that affect others, such as allowing third-party access to infrastructure and determining the extent to which the private sector should provide rolling stock.

103. **The government and UTY should establish which activities could be financially sustainable and would not require long-term financial support or could be sustainable given the changes in operations and management structures.** Those activities almost certainly will be freight and infrastructure. Many existing freight-related subsidiary companies can either be absorbed into the relevant line of business or converted into independent companies that would compete with other suppliers for UTY contracts. If separate companies are created, any debt associated with them (for example, with the passenger

business) should either be transferred to them or assumed by the government. It should not be left for the remaining businesses to service.

104. **Some railways have also established separate traction and rolling stock units or companies.** This structure is unlikely to help the freight and passenger businesses develop. Their managers should control the assets they use but may find that hard to do if a separate traction unit supplies the assets. Such an internal monopoly insulates the traction unit from the pressure experienced by market-facing businesses to become more efficient and customer focused. Supporters of separate traction businesses claim that splitting the locomotives between passenger and freight companies will reduce use and hence increase costs. Experience shows that such claims are generally exaggerated because the passenger and freight services use different types of locomotives and because the two businesses could cross-hire locomotives when it was mutually beneficial. A separate locomotive business is therefore not recommended, but instead the locomotives should be distributed to the passenger and freight businesses and placed under the control of the passenger and freight business managers.[56]

105. **The structure the government decides for UTY should be implemented in phases.** Successful reorganization does not just move business units from one line of reporting to another but affects staff culture as well. Most UTY employees have ever known only one style of working. Changing to a structure that delegates initiative and responsibility to staff and emphasizes commercial results as much as operational performance will require a new culture and attitude, which are unlikely to be achieved overnight. Many railways have found it best to begin with a holding structure, so that it can be tested, and problems can be resolved before the final structure is chosen. The intermediate structure also provides an opportunity to review the appropriate staffing levels for each new business.

Establishing an independent rail freight business unit or company

106. **Freight should be established as a business independent of both the passenger and infrastructure businesses, whether a separate company is established.** The freight business's management should be responsible for its commercial activities and results under the guidance of a supervisory board. It should be an independently viable business unit with its own balance sheet, profit and loss accounting, and financial and performance targets.

107. **Almost every freight business in restructured railways has as a 'line-of-business' structure.** Accordingly, UTY needs, at the least, to have separate business units for bulk and nonbulk freight, each with subunits for the major types of freight traffic. Unit managers should be responsible for liaising with customers, planning the services to be offered, organizing with the operating departments on how to perform the services, and implementing them. They should ultimately also be responsible for the revenues and costs of the operations they are accountable for.[57] The freight business needs an operating department for locomotive operations and maintenance and wagon maintenance responsive to the line-of-business managers' requirements. Achieving this is normally a significant cultural change requiring firm leadership.

[56] This structure does not stop the freight business manager from leasing locomotives to the passenger business as required if that is judged the most effective way of providing traction. But it is up to the government and the boards to make that option available.

[57] Initial costing could rely on combining the information collected in Form 10 (internal management accounts) with routinely collected operating data. In the longer term, a more comprehensive traffic costing system could be established.

108. **The new freight business should include not only the current freight business but also that of specialized companies performing freight rail operations** (refrigerated transport, code agents, and so on). The new freight business should maximize its own direct contact with clients, whether shippers or forwarders. The line-of-business structure will allow ending the current policy of using external code agents. This work could be better handled by the freight marketing departments themselves, which will link the customer and the train operator much more directly.[58]

109. **As a priority, the freight business should prepare a 3- to 5-year business plan, including forecasts of traffic volumes, revenues, and operating costs that will allow timely investment as required.** The plan will depend on how much the freight business is required to contribute to funding the infrastructure business. This reinforces the need discussed earlier for an initial review of UTY.

Replacing locomotives and wagons

110. **Major investments in replacing locomotives will be required over the next decade**. The electric locomotives are about 20 years old on average, the mainline diesels are about 28 years, and the shunting locomotives are about 34 years old. The wagon fleet also includes many old and obsolete types that should be scrapped, renewed, or replaced by the private sector, as in other CIS countries. The fleets will not need locomotives and wagons replaced one for one but must reflect changes in demand and operating methods. Maintaining the fleet will cost a lot of money, which the freight business will have to find. The business plan needs to account for such changes.

Establishing a separate independent railway infrastructure business

111. **The rail infrastructure business should operate independently of the passenger and freight businesses, even if in a holding structure, to give potential third-party operators confidence in its ability to provide fair and reasonable access.** An infrastructure business maintains infrastructure and supervises new construction. The infrastructure business may cover different activities in different railways. In its simplest form, it maintains infrastructure and supervises new construction. But where third parties are allowed access to the system, the infrastructure business also normally includes infrastructure operation—train control and signaling. In some countries, the infrastructure business also includes enroute marshaling and shunting, but such activities are not common.

112. **Infrastructure businesses charge users on the basis of gross tonnes, train kilometers, train characteristics, and line type (such as main line or secondary line).** Some charging systems are simple; others are complex with many types of trains and lines. Some with a limited number of major customers do not use common prices but instead operate on a 'negotiate and arbitrate' basis, tailoring prices to the precise requirements of the shippers. Whatever the basis is, charges are normally regulated by an independent body. In Europe, prices are published through a 'network statement' and are generally the same for all users with similar types of trains.[59]

113. **If Uzbekistan expects to allow third party access to rail infrastructure or expects UTY to claim the costs of passenger services from the government, indicative charges applying to the freight and**

[58] This will require changes to the Civil Code (chapter 40, 'Transport forwarding') and other regulatory documents to ensure all forwarders equal access for signing direct contracts with the freight business.

[59] Outside Europe, common pricing is not always the case. In Australia, two of the larger access providers have a 'negotiate and arbitrate' regime in which users, which are almost invariably major shippers, negotiate a rate between a lower and an upper price set by the regulator. This tunes arrangements more finely to the particular circumstances of each user.

passenger businesses as well as any third parties need to be established. These charges would aim to recover infrastructure-related operating costs plus enough funds to finance capital works and possibly to generate a return on investment, depending on the sector policy.

Supporting passenger rail service

114. **Passenger service requires a consistent and predictable source of funding.** That may eventually entail contracting specific segments, such as the 'prigorodny' (suburban train making local stops) services or the high-speed services, to third parties.

115. **If passenger business continues losing money and needs ongoing financial support, the best course is for the government to fund it directly; however, this decision is a matter of sector policy.** Experience has shown direct funding is preferable to including passenger service under a holding structure and requiring the freight business to cross-subsidize it. Such a cross-subsidy merely diverts funds that should be used to modernize the freight business, especially its business processes and systems, and thus improve customer service.

116. **Direct government support for the passenger business can be administered either service by service or as a lump sum to cover the difference between revenue and the operating cost (generally excluding depreciation).** This is also a matter for sector policy to decide. One option is for the government to assume ownership of the relevant rolling stock and lease it to the passenger company, implying that the government will be responsible for rolling stock investment. This structure simplifies support payments, since they do not have to cover depreciation, and makes it easier if in the future the government decides to tender some or all of the passenger operations for contract operation by third parties.

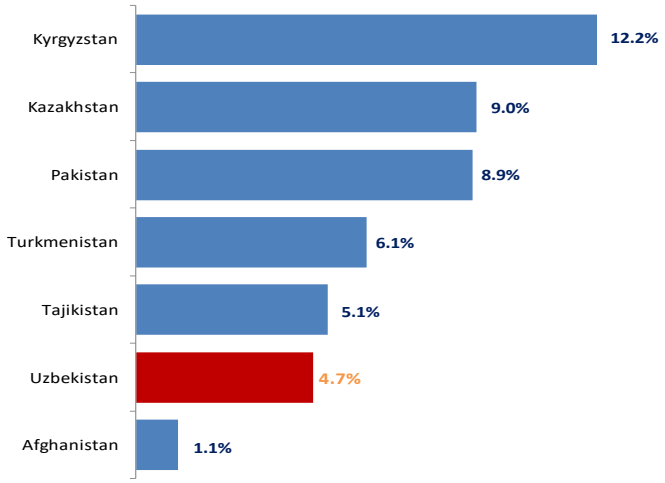
5. The Aviation Sector

Sector overview

117. **Air accessibility in Uzbekistan has been lagging in recent years compared with its regional peers, though 2018 registered an increase in the volume of seats.** Over 2010–17, Uzbekistan's international air transport had one of the slowest growth rates in Central Asia (4.7 percent), compared with the neighboring Kyrgyz Republic (12 percent) and Kazakhstan (9 percent) (figure 5.1). But in 2018, the Uzbekistan market experienced solid growth, fueled by government reforms unbundling the aviation sector and relaxing visa requirements. International traffic has been relatively strong, in nominal terms, with international seats totaling 4.91 million. In 2018, in line with the stated intent of gradually opening up toward the international market, the Uzbek market registered over a 20 percent increase in the scheduled seats reaching 3.44 million departure seats.

118. **Despite this, mobility by air is low relative to the country's area, population, and per capita income.** Only 215 airline seats per 1,000 inhabitants were available for travelers in Uzbekistan in 2018, which was one-third of about 700 seats per 1,000 inhabitants offered in neighboring countries, even though Uzbekistan had the population three times larger than the average Central Asian country and the highest population density. Globally, countries with income levels comparable to that of Uzbekistan have three times more available seats per inhabitant.

Figure 5.1. International air traffic capacity growth in Uzbekistan and neighboring countries, compound annual growth rate (CAGR), 2010–17

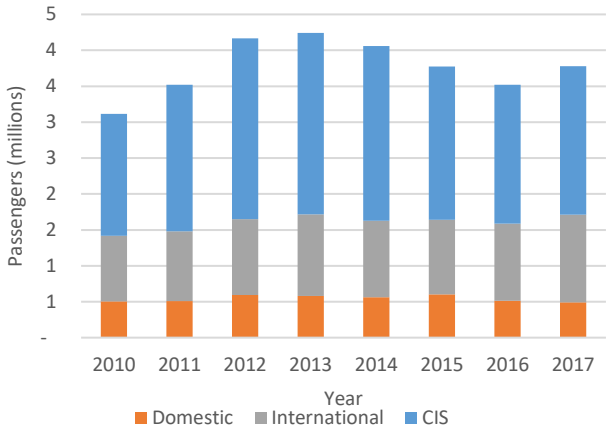


Source: World Bank, based on Official Aviation Guide (OAG) data.

119. **Domestic air transport market constitutes a relatively small portion of the overall air transport market** (figure 5.2). It remained flat over 2010–17, with a compound annual growth rate (CAGR) of 0.7 percent. Uzbekistan's largest markets, accounting for most of the variation in the sector, are the neighboring CIS countries.

120. **The country's air transport market is characterized by low competition.** To date, Uzbekistan Airways, the national air carrier, has held a monopolistic position and controlled the degree of liberalization. In 2017, Uzbekistan provided a total of 4.73 million air transport seats—17 percent domestic and 83 percent international. Uzbekistan Airways provided 62 percent of the international seats and, as the only airline with domestic service, 100 percent of 990,000 domestic seats.

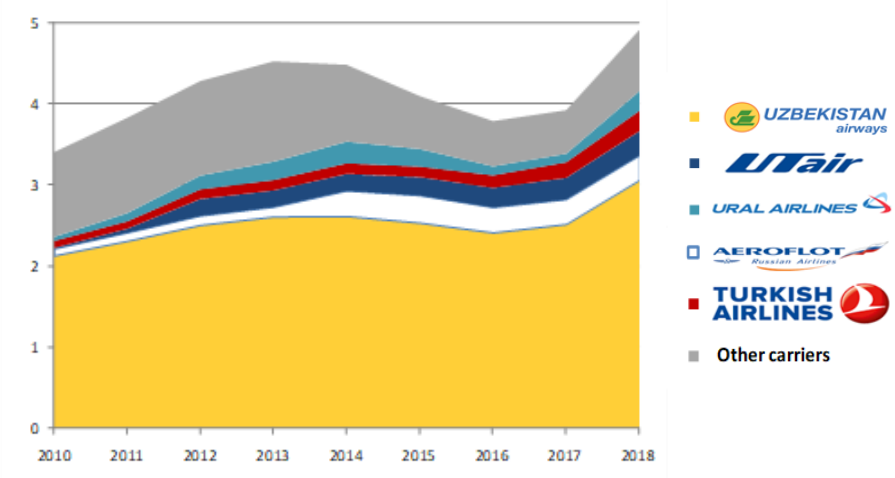
Figure 5.2. Uzbekistan air passengers by market, 2010–17



Source: World Bank, based on NAK data.

121. **The growth of air transport market is limited by 25 active air service agreements and a production-based tariff system instead of a market-driven pricing approach**. Although there was a significant increase in the volume of seats during 2018, the market remained stagnant. At the end of 2018, only 16 international airlines were present (14 operating to Tashkent directly) offering 170 direct airport pairs, a figure that increased slightly over the past three years (figure 5.3).

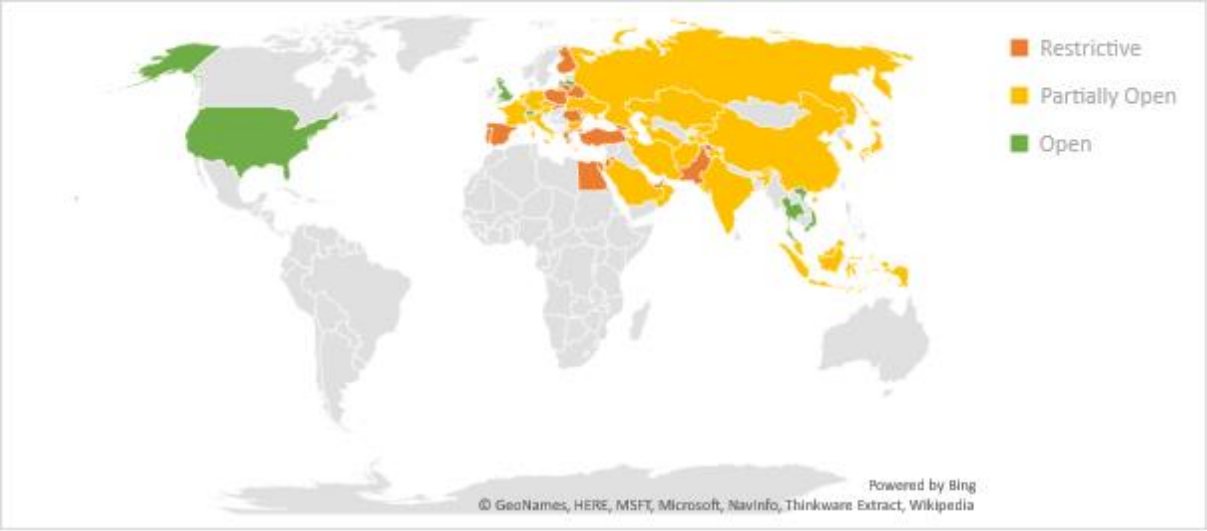
Figure 5.3. International seats by airline, all Uzbekistan airports, 2010–18 (millions of seats)



Source: World Bank, based on OAG data.

122. **Most of Uzbekistan's bilateral air services agreements (BASAs) with other countries are either restrictive or partially open** (figure 5.4). Despite recent traffic growth, the number of airlines to and from Uzbekistan declined from 28 in 2011 to 14 by 2017. Meaningful competition between airlines is present for only about 11 percent of Uzbekistan's international city pairs—one of the cities usually being Moscow—while a single airline serves 68 percent of international city pairs (see annex 5 on potential benefits of market liberalization).

Figure 5.4. Liberalization status of Uzbekistan's BASAs



Source: World Bank, based on data provided by CAAU (February 2019).

123. **Uzbekistan Airways and third-party airlines are charged differently by the airport.** Uzbekistan Airways is charged a fee per landing that depends on the type of aircraft. All other airlines are charged US$20.1 a tonne. (In the CIS region, the average landing fee is US$7 a tonne.) The passenger facility charge for foreign carriers is US$43 a passenger, which is 27 times higher than the charge for Uzbekistan Airways. (The CIS average passenger facility charge is US$13 a passenger.) Similarly, boarding fees are 30 percent higher for international carriers than for Uzbekistan Airways. The terminal use fee and security fee, though small, should be harmonized with CIS averages.

124. **Nevertheless, the country is showing a slight liberalization trend, as the foreign operators increased their volume of flights by 9 percent over 2018, reaching almost 11,000 flights**. Ural Air (130 percent annual growth) and Air Astana (52 percent annual growth) lead the most significant growth of capacity among foreign air operators. In 2019, additional foreign capacity was being deployed by Air Astana's increase in frequencies to Almaty and Nur-Sultan and by the new market entrant flyDubai, continuing the healthy growth trend during the first half of 2019.

Airline

125. **In the past eight years, Uzbekistan Airways maintained its capacity share in the market, which grew by over 45 percent.** In 2018, Uzbekistan Airways capacity grew strongly (figure 5.2). Yet its performance between 2015 and 2018 was stagnant, with production output, measured as available seat kilometers, increasing by approximately 3 percent, flight hours by 1.5 percent, and the average annual number of passengers by 3.6 percent.

126. **Uzbekistan Airways' current operation has weak connectivity, a weak domestic network, and services on international routes with low passenger demand imposed by government's tourism priorities.** The existing fleet has too much capacity, with average load factors below 60 percent. For example, deploying Airbus A320 aircraft on low-demand domestic routes has prevented the creation of a solid domestic network through higher-frequency service, endangering the airline's market position if a competing local carrier started operations. Domestic markets are the base of growth and sustainability of any national airline. For example, Kazakhstan's Air Astana has 51 percent of the domestic passenger market, compared with Uzbekistan Airways' 21 percent.

127. **Revenue from air cargo is insufficient to cover the structure and cost of freight operations.** Air cargo demand generated within Uzbekistan is only 10 percent. The cargo operations of Uzbekistan Airways use two 22-year old B767-Freighter aircraft. Their average commercial load factor is 50 percent, and they have flown a total of 4,000 hours. The cargo business was highly dependent on a single contract with Korean Air, which transloaded goods at Navoi Airport. But that contract was cancelled, leaving the airline without a revenue stream.

Airports

128. **Uzbekistan has 11 airports.** With 3.7 million international passengers in 2018, Tashkent International Airport is the largest international airport in the country and the third busiest airport in Central Asia, after Almaty International Airport (5.6 million passengers in 2017) and Astana International Airport (4.3 million passengers in 2017). Tashkent Airport provides 74 percent of Uzbekistan's international capacity. In 2018, the country's international capacity increased greatly—by 25 percent on average for all airports except Andijan (table 5.1).

Table 5.2. International seats by departing/arriving airport, 2018

No.	Airport	International seats	Growth 2010–18 (%)	Growth 2017–18 (%)
1	Tashkent	3.7 million	4.2	+22
2	Samarkand	376,000	7.0	+50
3	Urgench	173,000	15.7	+35
4	Namangan	167,000	6.9	+54
5	Ferghana	162,000	12.1	+28
6	Bukhara	160,000	4.9	+25
7	Termez	50,000	4.8	+16
8	Andijan	47,000	−5.1	−22

Source: World Bank, based on OAG data.
Note: Navoi, Nukus, and Qarshi airports have a combined international capacity of 2 percent.

129. **Just 10 domestic routes to and from Tashkent airport constitute 94 percent of the country's domestic traffic.** This constitutes 33 percent between Tashkent and Bukhara, 24 percent between Tashkent and Urgench, 18 percent between Tashkent and Nukus, and 11 percent between Tashkent and Samarkand. Routes that bypass Tashkent are Urgench-Bukhara with 3 percent of domestic traffic, Nukus–-Samarkand with 1 percent, Urgench-Nukus with 1 percent, and Bukhara-Ferghana with 0.5 percent.

Reforming the air transport sector

130. **The government has begun reforming the aviation industry to align it with international best practices.** Airline and airport operations have been separated into different corporations independent of each other.[60] The government also intends to attract private sector participation in airports and gradually liberalize the market. But challenges to the reforms remain.

131. **International air transport has seen a growing trend toward liberalization, though BASAs remain the main treaties structuring the market.** Countries worldwide have recognized the benefits of allowing market forces to shape air service development as competition delivers direct and indirect gains. Such

[60] Set forth in the Presidential Decree No. 5584 (November 2018).

gains in reduced airfares and improved service quality have been well documented in the mature aviation markets of Australia, Europe, North America, and, to some extent, Southeast Asia. Recent studies in less mature (thin) airline markets in Africa have also confirmed the potential benefits of liberalization. All in all, the evidence is compelling that removing regulation and promoting airline competition have led to substantial welfare improvements (annex 5).

132. **Uzbekistan is expected to benefit from air traffic liberalization.** The impacts of liberalizing Uzbekistan's international air transport market have been analyzed through econometric models forecasting traffic to and from Uzbekistan. The models are based on partner countries' trade levels, economic characteristics, and geographic relationship and BASA with Uzbekistan. By using hypothetical changes to the existing BASAs, the models were used to estimate the impacts of liberalization (table 5.2).

Table 5.2. Projected economic effects of liberalizing Uzbekistan's international air transport market

Fare reductions	• At least 20% reduction in fares, implying a total savings of US$81.54 million for international air travelers to and from Uzbekistan (by 2017 numbers) • Consumer surplus of US$24.5 million from lower fares, reflecting not only fare savings for existing passengers but also benefits to new travelers accessing air services
More connectivity	• Boost the number of new country pair routes from Uzbekistan by 27%. • With route entry and capacity regulations removed, airlines can optimize their network configuration and serve more new destinations.
Traffic increase	• Traffic to and from Uzbekistan ultimately boosted by 15% due to fare reductions and increased likelihood of market entry resulting from liberalization.
Wider benefits	• Uzbekistan GDP increased by more than US$51 million due to liberalization (this captures the wider economic benefits of liberalization on tourism, trade, and investment spurred by lower fares and improved air connectivity).[a]

Note: a. A review of several studies by InterVISTAS (2006) estimates that each 10 percent increase in international air services leads to a 0.07 percent increase in GDP, which can add up to millions (or even billions) of dollars.[61]

133. **However, liberalization generally threatens profitability of an existing airline, since it might lose market share as new competitors enter the market.** Given that there is a high concentration of passengers on specific routes, which are important for Uzbekistan Airways' passenger volumes, particularly to Istanbul, Moscow, Seoul, and, at a secondary level, Dubai and cities in China, liberalization requires careful planning. During 2017, Uzbekistan Airways' top 10 destinations brought 37 percent of its passenger volume and 45 percent of its passenger revenue. Therefore, market liberalization may reduce the national airline's revenues by 20–30 percent, threatening its financial sustainability. A gradual approach shall be considered to the liberalization of the air transport market to minimize the risk to the national airline.

Restructuring Uzbekistan Airways in a more competitive market

134. **The stimulation due to liberalization can increase existing airlines' traffic despite its loss of market share.** Efficient and competitive airlines may enhance their profitability by expanding into new markets, accessing a wider pool of investment, and cooperating and consolidating. Whether incumbent

[61] InterVISTAS Consulting, Inc. 2006. "The Economic Impact of Air Service Liberalization." http://www.intervistas.com/downloads/Economic_Impact_of_Air_Service_Liberalization_Final_Report.pdf

airlines suffer or flourish under liberalization depends greatly on how they choose to respond and the quality of their management.[62]

135. **To capitalize on growth opportunities, Uzbekistan Airways requires developing a strategically differentiating business model to make it viable through the transformation process and as the market is liberalized.** A solid business model would restructure the airline's fleet from the existing mixture of many aircraft types to a simple two or three that would cover the needs of domestic, regional, and international routes. Accordingly, the World Bank has recommended canceling the two newly ordered commercial Boeing 787-800 aircraft to limit the airline's debt.[63] Debt is advised to be restructured by renegotiating existing commitments with the National Fund of Development of Uzbekistan to lower annual payments and increase duration.

136. **The airline's new business model should be based on the objective of becoming a regional market leader.** The new model would entail discontinuing unsuccessful medium- and long-haul routes to European and Asian destinations, which will accumulate annual losses of more than US$100 million that cannot be covered by revenue from other, more profitable routes such as those to Turkey and the United Arab Emirates. The new Uzbekistan Airways business model and its future growth strategy should use its natural commercial and structural advantages to become the leading carrier of Uzbekistan and a trusted regional partner for global airlines.

137. **To become the leading carrier of Uzbekistan and a trusted regional partner for global airlines, the new Uzbekistan Airways could consider the following actions**:

- Capitalize on the large national market size, with a population that so far has had little inclination to fly.
- Develop a strong domestic network and increase connectivity for domestic-domestic and domestic-international traffic, generating economies of density at its Tashkent hub.
- Develop a strong regional presence for Central Asian traffic and become a catalyst of regional growth.
- Develop a regional presence through code-share partnerships and interline agreements with Aeroflot in Moscow, China Eastern and China Airlines in Urumqi and Beijing, Korean Air in Seoul, and other Sky Team members in Dubai, Frankfurt, Istanbul, and London to minimize the competitive power of Air Astana and Star Alliance members in the region.
- Invest in a strong digital platform offering a direct interface with customers and facilitating commercial agreements with network airlines.
- Offer seamless travel to partners' passengers and its own, along with efficient international-domestic connectivity.

[62] InterVISTAS Consulting, Inc. 2015. "The Economic Impact of Air Service Liberalization: Updating the Landmark 2006 Study to Reflect the New Realities of Commercial Passenger Aviation." http://www.intervistas.com/wp-content/uploads/2015/07/The_Economic_Impacts_of_Air_Liberalization_2015.pdf

[63] The airline purchased long-haul Boeing B787-800 Dreamliner aircraft and agreed to buy more. Together with existing financial obligations for previously purchased aircraft, that would bring the airline's debt to US$1.2 billion, to be repaid during 2019–30. The annual payment will slightly decrease from US$150 million to US$121 million between 2019 and 2025. This is unsustainable.

- Align services to international standards by obtaining international quality and safety certifications (the International Air Transport Association's Standard Safety Assessment and Safety Audit for Ground Operations, Skytrax) to allow for simplified contractual agreements with partners and to gain the trust of foreign travelers.
- Develop a lean and simplified company structure to keep costs at a minimum and, with no handling or heavy maintenance activities in its own operations, increase its bargaining power.
- The government must choose a model for restructuring Uzbekistan Airways. The faster the decision is taken, the lower the risks and the better the chance of adapting the airline's business to a gradually liberalizing market. Three possible models for the airline operations:
    - **Continue as is.** Continue with a global network strategy, including low-frequency service to low-demand markets. Such an unsustainable network will face accumulated losses of more than US$1.5 billion in five years.
    - **Limit the damage.** Limit the fleet to four long-haul aircraft and profitable long-haul operation, introduce smaller aircraft for regional service, grow a strong domestic network, and cease the cargo/freight operation. This option requires financial support of more than US$200 million over the next five years.
    - **Become self-sustaining.** Operate only narrow body aircraft (A320 family), pursue regional operations—to be refined during a detailed performance analysis—strive for competitiveness and profitability, and consider privatization.
- Create a financial support mechanism for the airline during the transition from its current network and fleet to the future model.
- Develop a business plan for the new airline business strategy (a minimum time frame of 150 days).

138. **Inappropriate liberalization and the sudden entrance of foreign competitors would cause Uzbekistan Airways tremendous losses and make it unable to cope with the new market conditions.** But gradual liberalization of essential routes (domestic, China, CIS, Kazakhstan, the Republic of Korea, Turkey, United Arab Emirates) could compensate for reduced yield by introducing compensatory commercial practices used by hybrid airlines (variations applied to the hybrid airline model under various liberalization scenarios presented in table 5.3).

Table 5.3. Airline growth under various liberalization scenarios

Scenarios	Variations applied to the business model under market liberalization
Season 2020	5% annual growth in passengers, the same average net fare as in 2017, no liberalization, no direct sales, a 3% commission paid to sales agents
Season 2020 E175	Same as above, but ATR[64] regional turboprop aircrafts are replaced with Embraer E175 regional jet aircraft
Season 2020	5% annual growth in passengers, full liberalization over international routes, a 30% discount from the 2017 average net fare on international routes, a 10% discount on Russian routes as

[64] ATR is Aerei da Trasporto Regionale or Avions de transport regional, a turboprop, short-haul regional aircraft developed and produced in France and Italy by aircraft manufacturer ATR.

Scenarios	Variations applied to the business model under market liberalization
Discounted fares impact	protected by a partnership with a Russian airline, 20% direct sales, a 3% commission paid to sales agents
Season 2021	5% annual growth in passengers, a 20% discount from the 2017 average net fare on international routes, a 30% drop in passengers to Dubai due to entrance of FlyDubai, a 10% discount on Russian routes as protected by a partnership with a Russian airline, gradual liberalization, 20% direct sales, a 3% commission paid to sales agents
Season 2022 Low ancillary revenues impact	10% annual growth in passengers, 10% discount from the 2021 average net fare on international routes, 30% drop in passengers to Dubai due to FlyDubai, a 20% discount on Russian routes as protected by a partnership with a Russian airline but with further competition from a new low-cost carrier, gradual liberalization, 20% direct sales, a 3% commission paid to sales agents, 10% in ancillary revenues (over passenger revenues)
Season 2022 Ancillary revenues impact	10% annual growth in passengers, a 10% discount from the 2021 average net fare on international routes, a 30% drop in passengers to Dubai due to FlyDubai, a 20% discount on Russian routes as protected by partnership with Aeroflot but with further competition from a new entrant low-cost carrier, gradual liberalization, 20% direct sales, a 3% commission paid to sales agents, 20% in ancillary revenues (over passenger revenues)

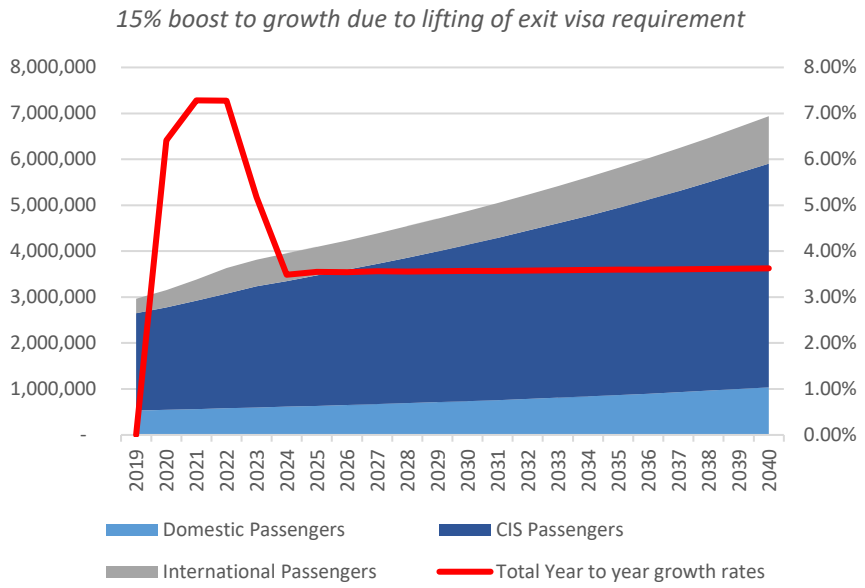
Source: World Bank analysis.

Investing in airports

139. **Uzbekistan airports require significant investments to accommodate traffic growth and improve compliance with international standards.** By using the origin and destination GDP growths, the World Bank Group team projected Uzbekistan air passenger traffic as growing at an average annual geometric rate of 3.9 percent over 2018–40 (figure 5.5). Figure 5.6 presents the traffic projections for Uzbekistan's airports, prepared using a compound annual growth rate of 3.9 percent across all airports over 60 years.[65] The projections use the national average for all airports.

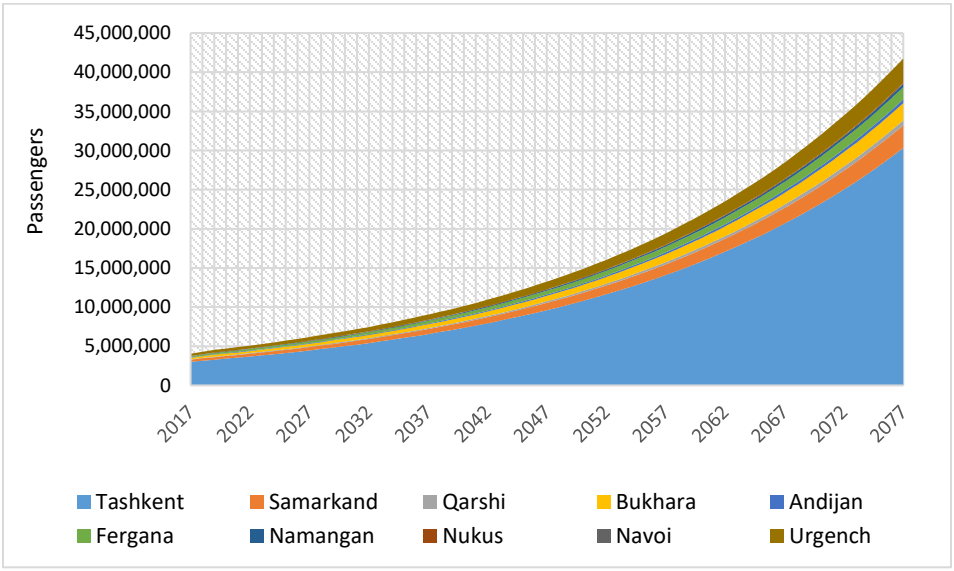
[65] The use of this steady rate of traffic growth is conservative and within historical data and global forecasts. World traffic grew on average 5.2 percent a year for the past 17 years. International Civil Aviation Organization long-term traffic forecasts of annual growth (2016) are: global 2032, 4.6 percent; global 2042, 4.5 percent; Western Europe, 4.7 percent; Middle East, 8.2 percent; Pacific South East Asia, 7.4 percent; Central Asia, 7.6 percent.

Figure 5.5. Uzbekistan air passenger growth projection for domestic, international, and CIS markets, 2019–40



Source: World Bank, based on NAK data.

Figure 5.6. Uzbekistan airport passenger traffic projections, 2017–77



Source: World Bank, based on NAK data.

140. **The investment program for Uzbekistan's 11 airports is estimated at US$866.9 million over 35 years**. This estimate includes US$167.80 million for improvements, US$182 million for expansion, and US$517.12 million for International Civil Aviation Organization standards compliance (table 5.4; see annex 6 for a detailed breakdown by airport). The projection assumes that about 73 percent of capital expenditure works must be undertaken in the initial 4–5 years. The investment program can be financed by leveraging private finance, public finance, cross-subsidization, or a mix.

Table 5.4. Estimated investments (capital expenditures) for 10 airports (US$, thousands)

Airport	Phase 1 (first 4–5 years)				Phase 2 (years 7+)				Total capital expense
	Compliance	Improvement	Expansion	Total	Compliance	Improvement	Expansion	Total	
Tashkent	163,000	105,000	140,000	408,000	34,000	9,500	17,000	60,500	468,500
Samarkand	49,500	9,100	—	58,600	10,600	6,100	—	16,700	75,300
Termez	26,750	1,000	12,500	40,250	5,350	—	—	5,350	45,600
Bukhara	47,800	9,100	—	56,900	10,100	6,100	—	16,200	73,100
Andijan	3,600	1,000	—	4,600	31,390	—	—	31,390	35,990
Ferghana	4,300	—	—	4,300	—	3,200	—	3,200	7,500
Namangan	—	7,000	—	7,000	14,600	—	12,500	27,100	34,100
Nukus	2,000	3,500	—	5,500	65,450	700	—	66,150	71,650
Navoi	—	—	—	—	—	—	—	—	—
Urgench	42,175	2,500	—	44,675	6,500	4,000	—	10,500	55,175
Total	339,125	138,200	152,500	629,825	177,990	29,600	29,500	237,090	866,915

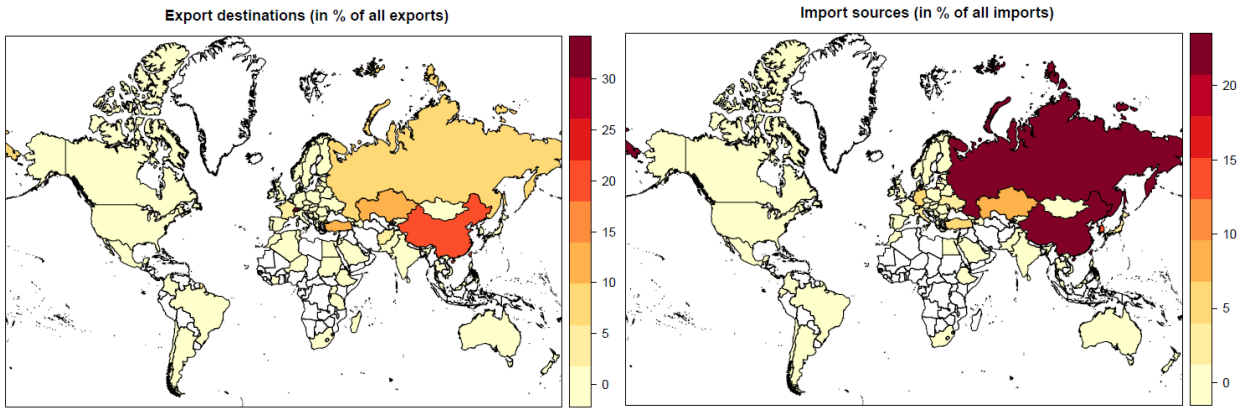
Source: World Bank.

6. Logistics

141. **The Development Strategy of Uzbekistan 2017–21 prioritizes "liberalization and facilitation of export activities, diversification of the export structure and geography, and the expansion and mobilization of the export potential of economic sectors and territories."** It seeks to lower barriers to foreign direct investment, expand the domestic private sector, and develop strategic growth sectors. Global competitiveness can depend on transport costs, services, and reliability for nontraditional exports, such as horticultural goods and products in cotton/textile value chains. So, developing transport and logistics networks is central to boosting national competitiveness and improving exports.

142. **Uzbekistan's main export partner countries are Switzerland (accounting for 40 percent), China (22 percent), Russia (11 percent), and Turkey (9.8 percent).** Import partners are more diverse, including Russia (22 percent), China (22 percent), Kazakhstan (10 percent), the Republic of Korea (10 percent), Germany (5 percent), and Turkey (5.8 percent). Uzbekistan has established markets in the Republic of Korea, Russia, and Turkey for high-value fruit exports such as nuts, cherries, dried fruits, and apricots. Although these goods are high value, Uzbekistan gets only a small share of the total value added since most processing occurs elsewhere (for example, nuts and dried apricots are processed in Turkey) (figure 6.1).

Figure 6.1. Main export and import destinations for Uzbekistan



Source: World Bank, based on data from State Customs Committee of Uzbekistan.

International transport corridors

143. **Uzbekistan is served by a network of international corridors for transporting import, export, and transit cargo.** They have been developing, and the government is exploring new options and directions in the Central Asia Regional Economic Cooperation Program, Transport Corridor Europe-Caucasus-Asia, the BRI, and others (table 6.1, see also annex 7). Over the past decade, the government has made substantial progress in improving international corridors. It has also identified the following priorities for investment up to 2030:

- Reconstructing and constructing another 8,000 km of internationally important public roads, including those forming part of international corridors.
- Developing new international corridors: (a) north and northwest to access Russia, Ukraine, and European countries; (b) west and southwest direction to access the Caucasus, Iran, Turkey, and European countries; (c) south to access Afghanistan, Iran with its seaports at Chabahar and Bandar

Abbas, and Pakistan with its seaports at Karachi, Qasim, and Gwadar; and (d) east to enhance access to Chinese markets.

Table 6.1. International transport corridors

Existing road transport corridors	• Tashkent–Kizil–Orda–Aralsk–Aktyubinsk–Baltic ports • Tashkent–Shymkent–Balkhash–Astana–Petukhovo–Chelyabinsk-Moscow • Tashkent–Chardzhou–Nukus–Guryev–Astrakhan–Black Seaports • Tashkent–Shymkent–Almaty–Semipalatinsk–Far Eastern ports
Road transport corridors under development	• Tashkent–Almaty–Friendship–Urumqi–Liaongan port (China)–port of Pusan (Korea) • Tashkent–Bukhara–Chardzhou–port of Bender-Abbas (Iran) • Tashkent–the port of Turkmenbashi–Baku–port of Poti (Georgia) • Tashkent–Chardzhou–Tehran–Mersin port (Turkey) • Tashkent–Kungrad–Beineu–Astrakhan–Russia–Europe
Prospective new road transport corridors	• Tashkent–port of Aktau–Baku–port of Poti (Georgia) • Tashkent–port of Aktau–Volga–Volga-Don Canal–Black Sea • Tashkent–port of Turkmenbashi–Astrakhan–Russia–Europe • Tashkent–Kungrad–Astrakhan–port of Novorossiysk • Tashkent–Andijan–Osh–Sarytash–Irkeshtam–Kashgar (China) • Tashkent–Termez–Mazar-i-Sharif–Shebergan–Herat–Dogarun–port of Bandar Abbas (or Tehran–Ankara) • Tashkent–Termez–Mazar-i-Sharif–Shebergan–Herat–Dilorom–Milak–port Chabahar
Central Asia Regional Economic Cooperation Program corridors transiting Uzbekistan	• Corridor 2a: Astrakhan–Beineu–Bukhara–Tashkent–Andijan–Osh–Irkeshtam • Corridor 2b: Baku–Turkmenbashi–Bukhara–Tashkent–Andijan–Osh–Irkeshtam • Corridor 3a: Rubtsovsk–Almaty–Shymkent–Tashkent–Bukhara–Serakhs–Bandar Abbas • Corridor 3b: Rubtsovsk–Almaty–Bishkek–Osh–Karamik–Jirgatal–Darband–Dushanbe–Saryasiya–Termez • Corridor 6a: Astrakhan (Russia)–Beineu (Uzbekistan)–Bukhara–Guzar– Hairaton border customs post–Termez–Mazar-e-Sharif • Corridor 6b: Orenburg (Russia)–Kyzylorda–Shymkent–Tashkent–Samarkand–Termez (Uzbekistan) • Corridor 6s: Orenburg (Russia)–Kyzylorda–Shymkent–Tashkent–Khavast (Uzbekistan)–Ura-Tube–Aini–Dushanbe–Kurgan-Tube–Nizhniy Pyanj (Tajikistan)–Shirkhan Bandar–Kunduz–Kabul (Afghanistan)

New corridors	• Trans-Afghan International Rail Corridor:
	  ○ Termez–Mazar-i-Sharif–Herat–port of Bandar Abbas and port Chabahar
	  ○ Termez–Mazar-i-Sharif–Peshawar–Karachi port
	• Andijan–Osh–Sarytash–Irkeshtam–Kashgar
	• Uzbekistan–Turkmenistan–Iran–ports of Oman and Qatar

Source: Compilation by World Bank team.

144. **Uzbek transit goes mainly through Kazakhstan and Russia.** One main road corridor, A-40, crosses the region from east to west connecting Tashkent and Almaty, with branches to China and Turkmenistan, and one railway corridor connects to China through the Kazakh-Chinese border at Dostyk.

145. **An additional railway link has been proposed from the Ferghana Valley (Andijan) through the Kyrgyz Republic (Osh) to China.** The proposed line is the shortest route connecting Uzbekistan and China, and east-west volume may increase when the link through Kyrgyz territory is constructed.[66] Uzbekistan also provides an important rail connection between Central Asia and Afghanistan, but traffic south to the Iranian port of Bandar Abbas has been hindered as of late 2019 by difficulties in negotiating rail transit through Turkmenistan and the sanctions against Iran.

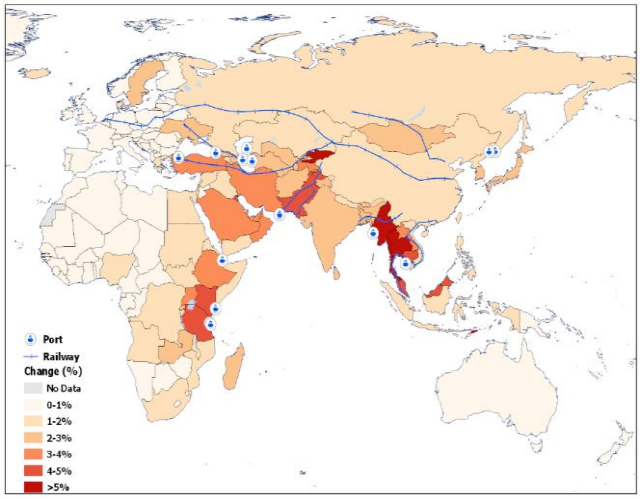
146. **To facilitate international trade and cooperation between the Middle East and Central Asia, a new Uzbekistan-Turkmenistan-Iran-Oman-Qatar corridor was established through an intergovernmental agreement signed in April 2011 in Ashkhabad.** This corridor will connect Uzbekistan through Farab in Turkmenistan and Serakhs in Iran to the Persian Gulf ports of Oman and Qatar. An agreement signed in March 2011 between Pakistan and Uzbekistan opened opportunities to explore alternative routes through Afghanistan, including the construction of a Trans-Afghan railway corridor connecting to Iranian or Pakistani ports.

147. **Uzbekistan's transport strategy should incorporate BRI corridor projects.** BRI projects, locking in resources, will have long-term consequences for the countries the corridor links (table 6.2). Uzbekistan should try to attract transit flows and at the same time increase its own centrality and necessity in the whole transport network. The World Bank BRI study estimates that the BRI will reduce Uzbekistan trade costs by about 3 percent (figure 6.2).

Table 6.2. BRI corridor projects that directly or indirectly benefit Uzbekistan

Corridor	Project	Countries
NEW EURASIAN LAND BRIDGE (NELB)	Khorgos-Aktau Railway	China, Kazakhstan
	Moscow-Kazan HSR	Russia
	Urumqi-Khorgos rail	China, Kazakhstan
	Urumqi-Khorgos road	China, Kazakhstan
	Khorgos-Almaty road	China, Kazakhstan
CHINA-CENTRAL ASIA-WEST ASIA ECONOMIC CORRIDOR (CCWAEC)	Kashgar-Tashkent rail	China, Kyrgyzstan, Uzbekistan
	Samarkand-Mashhad rail	Uzbekistan, Turkmen., Iran
CHINA-INDIAN OCEAN-AFRICA-MEDITERRANEAN SEA (CIAM) BLUE ECONOMIC PASSAGE	Gwadar Port	Pakistan

Figure 6.2. Reductions in trade costs BRI (weighted by import weights)



Source: World Bank BRI study.

International logistics centers

148. **Uzbekistan has five main international logistics centers:**

- **Navoi International Intermodal Logistics Center—the hub.** The center includes Navoi international airport and cargo terminal. To date, over 200 million tonnes of cargo have been

[66] A tripartite agreement on this international corridor was signed between China, the Kyrgyz Republic, and Uzbekistan in February 1998.

delivered from the center to various destination points, mostly by land transport. Large capital investments by the government modernized the airport, where an airport multimodal logistics terminal was built. Assets were upgraded to accommodate all aircraft types. In 2008, a management contract was signed with Korean Airlines for refueling stops at discounted jet fuel prices and for transshipments between Uzbekistan Airways and Korean Air freighters. The volumes reached 33,000 tonnes of cargo in Navoi, which is about half of the volume handled in Almaty, Kazakhstan. Most transshipments in Navoi were between Korean Air freighters, whereas local export and import cargo was negligible. The agreement with Korean Air was not renewed in 2018. Overall, Navoi multimodal terminal has limited opportunities to generate meaningful cargo activity under 'market' conditions.

- **Angren International Logistics Center.** The center has a transit cargo terminal area of 89.6 ha with an annual shipment capacity of 4 million tonnes of cargo. This dry port provides a full spectrum of processing, storage, customs clearance, and cargo transportation services, including door-to-door transportation. It operates storage facilities, approach routes, reversing areas, expert and financial organizations, hotels, and security-related structures. The center is in the Tashkent region and links the Ferghana Valley and the rest of Uzbekistan.
- **Tashkent International Logistics Center.** The center is a dry port with a total area of 184 km^2. It provides a full spectrum of processing, storage, customs clearance, and cargo services, including door-to-door transportation. Multipurpose storage facilities include a sheltered storehouse with refrigerating and freezing chambers, a storehouse with a 10,800 m^2 shed and with three electric cranes, an 11,200 m^2 container yard, a 10,800 m^2 container yard, railway lines, and approach roads for heavy vehicles.
- **Termez International Logistics Sector.** The sector is located in the Surkhandarya region. Its terminal covers 4 ha. The sector has open and sheltered multipurpose storage facilities able to store cargo of different customs regimes. It has container yards, an approach road, a rail spur, and other infrastructure in the terminal. A storehouse has been constructed with a 1,000 m^2 shed, a 2,000 m^2 sheltered storehouse, a 2,600 m^2 container yard, and a 2,000 m^2 automotive shop.
- **Pap International Logistics Center.** The center includes container and special open areas, sheltered storehouses, a 25 km rail approach road connecting to Pap station, and other objects of engineering and communication infrastructure. The logistics center provides interconnected transfer between transport modes for cargo going over the Kamchik mountain pass.

149. **Uzbekistan's Development Strategy for 2017–21 sets several priorities, including creating new free economic zones (FEZs) and advancing existing FEZs and small industrial zones (SIZs) and increasing their efficiency**.[67] As of December 2018, the GoU had announced 12 new FEZs and confirmed that 80 established SIZs were in place.[68] Some FEZs target general industry, manufacturing, and agriculture, and others focus specifically on the pharmaceutical industry, fishing, tourism, and so on. Without published economic and financial data, it is hard to judge their economic viability. The choice of location for the FEZs

[67] Decree of the President of the Republic of Uzbekistan No. UP-4947 of February 7, 2017, On the Strategy of Actions for the Further Development of the Republic of Uzbekistan.

[68] The law on FEZs has been in effect since 1996. For the SIZs, the Regulation on the Procedure for Creation and Organization of Activities was approved in 2014. Additionally, Presidential and Cabinet of Ministers resolutions regulate both the FEZs and SIZs. Institutional arrangements for regulating them cover a wide set of institutions, with the interagency administrative councils acting as zone managers and a republican council as zone regulator.

prioritizes political economy over demand assessments that would evaluate the attractiveness of zones from an economic perspective. SIZ locations are in existing buildings and support infrastructures that were previously state-owned closed operations.

Challenges in connectivity

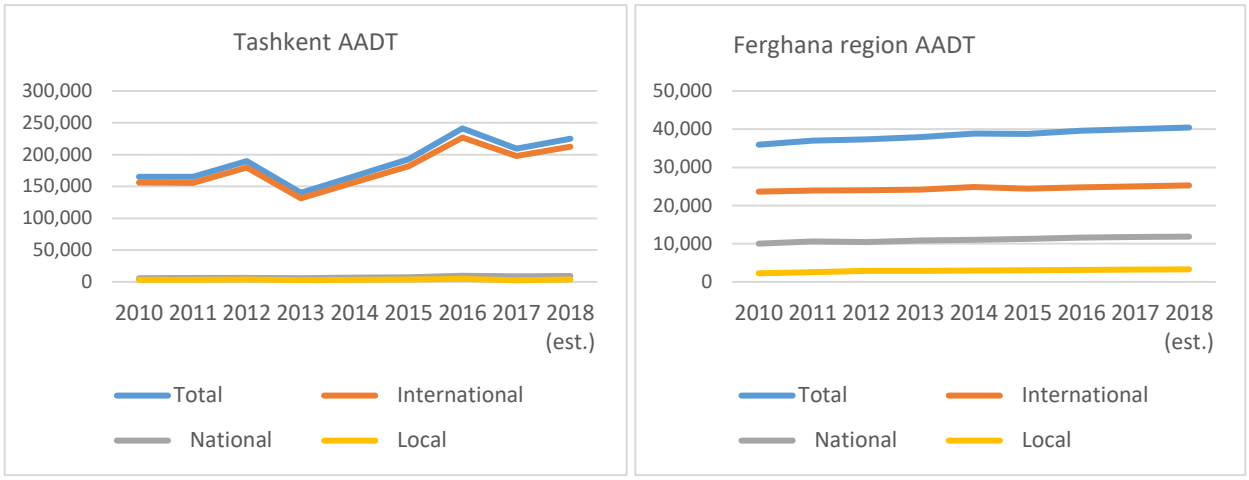
150. **Uzbekistan's double-landlocked position and its economic and political history create challenges on both the demand and supply side of logistics services.** Limited data and weak development of the national transport and logistics industry prevent disaggregating commodity, geographic, and logistics factors enough for data-driven policy development and infrastructure investment.

151. **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 SMEs face transport costs of up to 200 percent of production costs.[69] 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.[70] 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

152. **Connectivity between Uzbekistan's regions is still largely determined by Soviet-era transport networks and by border crossing inefficiency.** The Soviet railways and roads were driven by a Moscow-centered economy unconcerned with internal boundaries. Since the 1990s, national boundaries have created new barriers to trade flows and market access. Many new border crossings where railways and roads crossed into neighboring countries before crossing back into Uzbekistan worsened connectivity between one part of Uzbekistan and another. Following independence, the country invested in parallel routes wholly within its sovereign borders. But disparities in access to domestic economic markets across Uzbek regions (viloyats) remain. Some locations are more integrated along international corridors than others. Tashkent is highly and increasingly integrated with the rest of the world, but traffic in the Ferghana region is more national and local (figure 6.3).

[69] World Bank. 2016. *Systematic Country Diagnostic for Uzbekistan*. Report No. 106454.
[70] World Bank. 2016.
[71] Briceno-Garmendia, C., and M. Lebrand, 2019. "Transport connectivity in Europe, Central Asia, and China." Draft.

Figure 6.3. Average annual daily local, national, and international traffic (vehicles), Tashkent and Ferghana region



Source: World Bank, based on data from Briceno-Garmendia, C., M. Lebrand, and M. Abate. 2018. "Infrastructure Linkages: Cost, Time, and Networks." Chapter 5 of Gould, D.M. 2018. "Critical Connections: Promoting Economic Growth and Resilience in Europe and Central Asia."

153. **Uzbekistan's statistics on logistics and trade are poor in many ways.** Data are not correctly captured, collated, or published; they are often quoted without interpretation or context; and obvious mistakes cannot be explained or are left unquestioned. There are no aligned, generally accepted data and tools to enable the decision-making process for planning and investing in logistics. Under the revised legislation, sectoral statistics are to be compiled and updated by the MoT and made available to all stakeholders through the ministry's website.

Freight transport services

154. **Freight volumes in Uzbekistan are dominated by road transport accounting for as much as 90 percent of domestic freight volumes in Uzbekistan and 10 percent of transit volume**. Over the past decade, traffic volume has grown 2–4 percent a year. AADT on international roads ranges from 10,000 to 15,000 vehicles, with substantially higher volumes in the vicinity of Tashkent and other major urban centers, and lower volumes in the western provinces.

155. **As of January 1, 2019, 6,264 road carriers were registered for domestic and international transport based on MoT figures**. Of these, 3,894 transported passengers and 3,824 transported goods (some transported both). The total fleet for both domestic and international transport comprises 129,278 vehicles—88,083 for passengers and 41,195 for goods. Most trucks are privately owned.[72] However, the statistics on exact number of road transport operators in domestic and international transport vary. The Association of International Road Carriers of Uzbekistan (AIRCUZ) as of January 1, 2019, had 385 members, all operating under the Convention on International Transport of Goods under Cover of TIR Carnets (see annex 4).[73] The Forwarders Association claims that there are 622 operators, not all being members of the association. Statistics on commercial vehicles for transport of goods or passengers do not match exactly,

[72] Transport and Logistics Information Portal, Business Logistics Development Association. http://logistika.uz/en/info/articles/4752).

[73] TIR stands for 'Transports Internationaux Routiers' or 'International Road Transports'.

either, as both AIRCUZ and the Forwarders Association report 7,000 vehicles engaged in international transport of goods, but the MoT reports only 6,559 trucks licensed. In the domestic transport of goods, there are about 3,130 road carriers[74] operating about 34,636 heavy vehicles.[75] Also, since there is no regulation covering transport intermediaries and the requirements to become a customs broker have been lifted, the number of forwarders and customs brokers is unknown even to professional associations.

156. **Uzbek trucking industry is not competitive in the international market due to limited and aging fleet.** Uzbek operators have been losing their market share to operators from Iran, Kazakhstan, Russia, and Turkey. About 82 percent of goods imported/exported to/from Uzbekistan are carried by foreign road carriers; Uzbek road transport's market share, regional and international, is below 20 percent. Uzbek vehicle fleet's average age is 12 years and 60 percent of the fleet is more than 15 years old. Most of the vehicles do not meet the Euro-4 international standards for emissions or permissible axle load and are therefore not able to work in Europe. They are mainly used for transporting goods within the country (for example, cotton, consumer goods, construction materials, and agricultural products) or to Russia and other CIS countries. The number of heavy vehicles in Uzbekistan is about 7,000, which is also rather limited in comparison to 18,000 vehicle fleet in the Kyrgyz Republic, 32,000 in Iran, and over 100,000 in Turkey.

157. **Operators in Uzbekistan are unable to access financing to replace commercial vehicles due to high interest rates and low profitability of their activity**. So, the fleet ages, reducing the quality of services and the profitability of the transport companies. The older a vehicle is, the higher its operating costs due to increased breakdowns, fuel and lubricant consumption, and maintenance and repair costs—all reducing the availability of the fleet. Interest rates range from 16 percent for preferential treatment to 22 percent under normal circumstances. In addition, banks require a 140 percent collateral guarantee for loans, with the financed vehicle usually accounting for 60 percent and the road operator providing the missing 80 percent, often from personal assets. Leasing commercial vehicles, which in many countries is a cost-effective option for modernizing and expanding the fleet, is not an option in Uzbekistan: leasing costs are about 26 to 28 percent per year, much higher than bank loans. Efforts have been made to reduce the price of imported or locally produced vehicles through tax waivers, as reflected in the presidential resolution on measures for improving transport infrastructure and diversifying foreign trade cargo transportation routes for 2018–22. But despite this important step, access to credit remains in practice a challenge for most road transport companies.

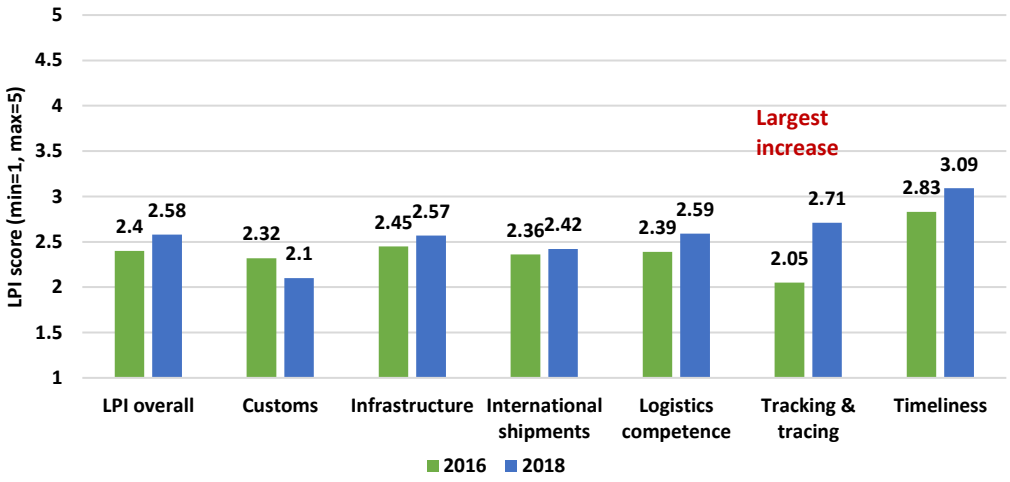
LPI performance

158. **In the recently released 2018 international LPI, Uzbekistan's position improved, with its overall ranking rising to 99 of 160 countries from 118 in 2016.** Uzbekistan's overall score of 2.58 fares on par with the lower-middle-income country average of 2.57. Uzbekistan's score increased on all but one LPI indicator between 2016 and 2018. The greatest improvements were in timeliness and in the ability to track and trace consignments—both supply chain outcomes rather than areas for policy regulation. The only drop in the score occurred on the efficiency of customs and border management clearance (figures 6.4 and 6.5). In 2018, the government took steps to reform these areas, including customs and to open several border posts. The changes and impacts of these reforms will be captured in the next 2020 LPI results.

[74] 3,824 road carriers in total minus 694 carriers operating at the international level.

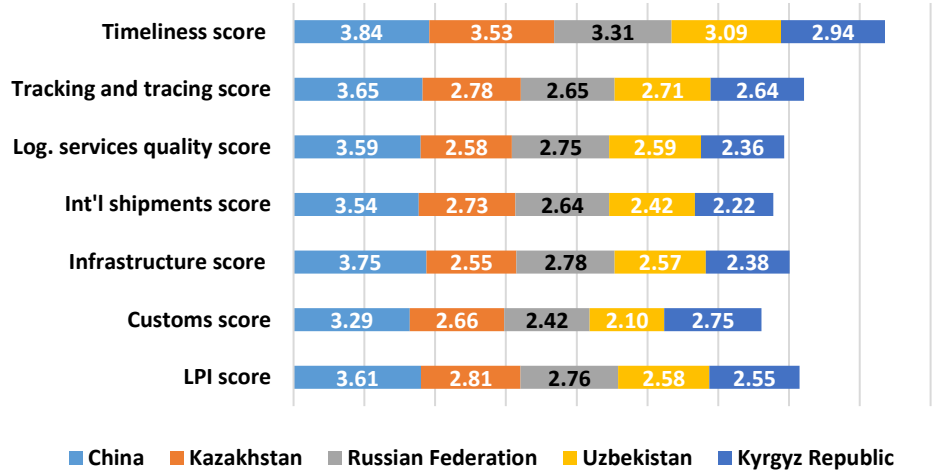
[75] 41,195 heavy vehicles minus 6,559 heavy vehicles engaged in international transport of goods.

Figure 6.4. Uzbekistan LPI components, 2016 and 2018



Source: LPI 2018 report.

Figure 6.5. Uzbekistan and comparators by LPI component, 2018

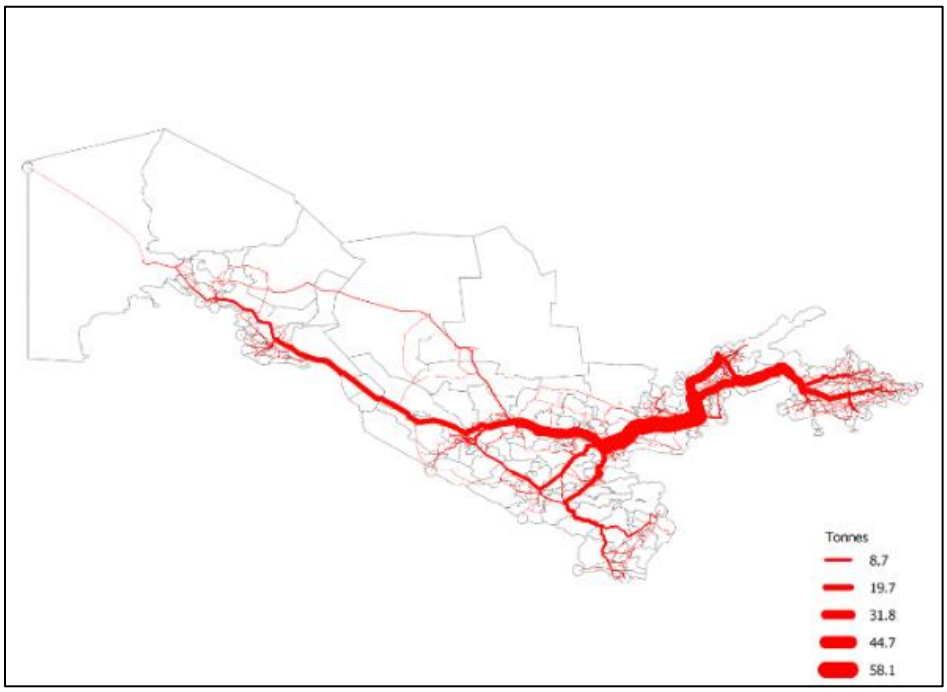


Source: LPI 2018 report.

Flows and costs on the main logistics corridors

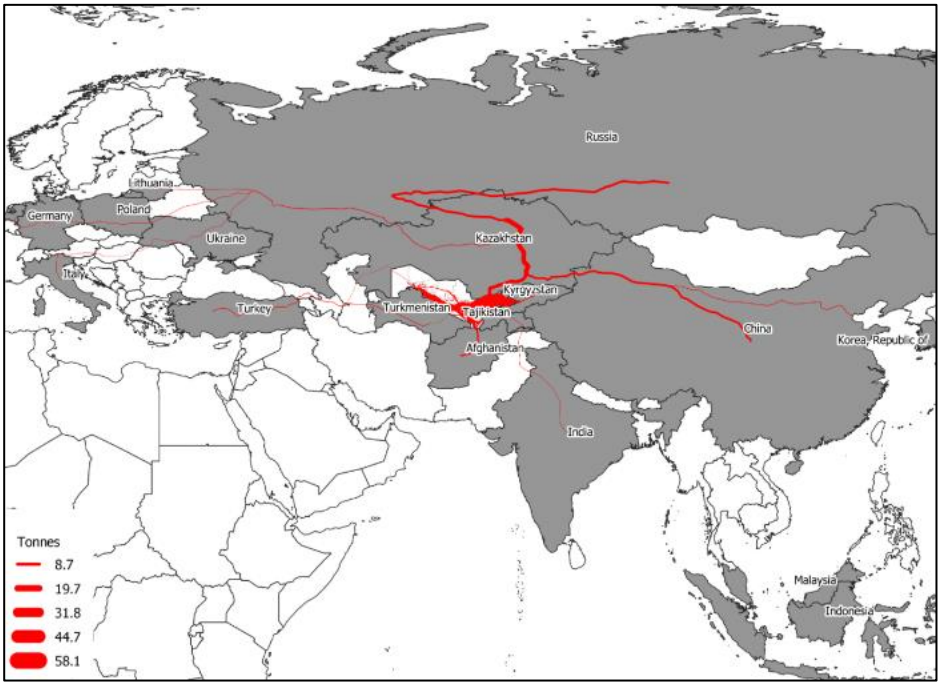
159. **A concept freight flow model—the Uzbekistan Freight Flow Model (UFFM)—was developed to estimate domestic flows in Uzbekistan and freight flows beyond its borders** (figures 6.6 and 6.7). Data used for building the model are not complete, specifically on railway operations, but the model can still 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 (see annex 3 comparing data estimated by UFFM and the available data on freight flows).

Figure 6.6. Freight flows within Uzbekistan



Source: World Bank, based on UFFM.

Figure 6.7. Uzbekistan freight outside Uzbekistan



Source: World Bank, based on UFFM.

160. **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.

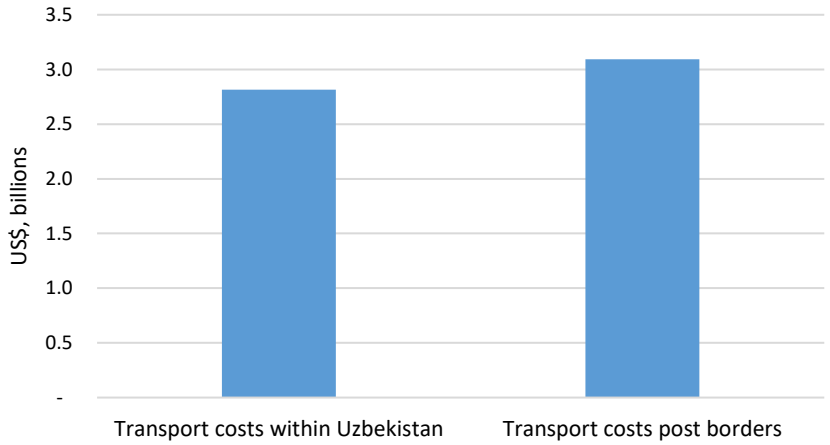
161. **Uzbekistan's freight flow emerging from UFFM raises questions about the development potential of the western part of the country as well as the inordinately long distances of cross-border flows.** A logistics action plan should consider development objectives in the western part of the country and strategies to streamline border crossings and reduce exposure to freight risks beyond the borders.

162. **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 SEZs 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).

163. **About 52 percent of freight transport costs are incurred outside the country** (figure 6.8). Controlling them requires an increased focus on improving regional efficiency, which depends on local freight consolidation centers, regional network planning, and regional cooperation.

Figure 6.8. Transport costs inside and outside Uzbekistan



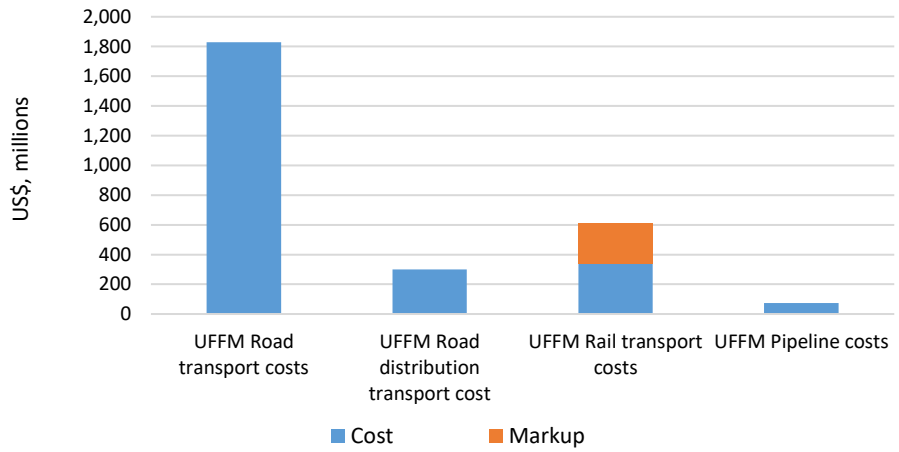
Source: World Bank, based on UFFM.

Main contributors to high logistics costs

164. **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 6.9), most of which are road transport costs. Warehousing, carrying inventory, and management

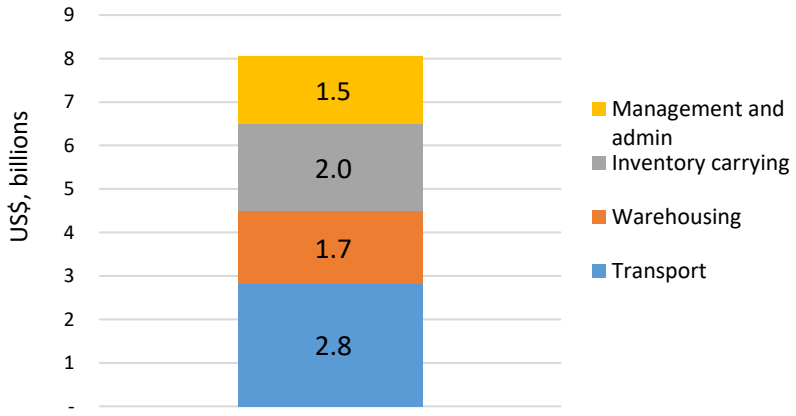
and administration add another US$5.2 billion, for a total logistics costs estimate of US$8 billion (figure 6.10).

Figure 6.9. National transport costs by mode



Source: World Bank, based on UFFM.

Figure 6.10. National logistics costs for Uzbekistan



Source: World Bank, based on UFFM.

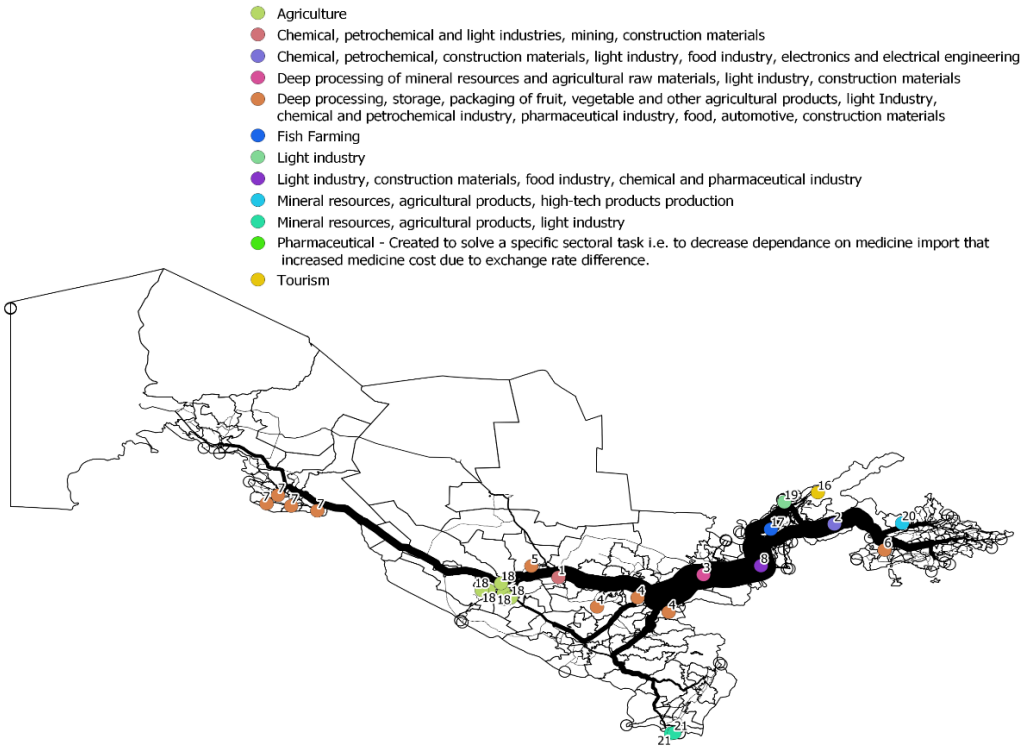
FEZs failing to help transport

165. **While industrialists, manufacturers, and producers enjoy fiscal privileges and various financial incentives from the FEZs, the road transport and logistics operators have not benefited from them.** Uzbekistan has created 22 FEZs, of which 10 are specialized for industrial production, 8 for pharmaceutical production, and 1 for the fisheries industry. Logistics and infrastructure facilities are provided through the FEZs 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.

166. **To succeed, the FEZs and SIZs need sustainable and reliable connections with local producers.** For example, Uzbekistan 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.

Figure 6.11. Map of FEZ investments relative to freight flow activity



Source: World Bank, based on UFFM.

Managing transport and logistics as a strategic commodity

167. **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 MoT organizational structure to the requirements of seamless intermodal transport and logistics. A new policy and legal framework 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 (see chapter 2). In this process, the following actions are proposed at the institutional level:

- Building the capacity of the MoT 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.

168. **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. 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.

169. **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 FEZs.
- Setting up a modern Fleet Renewal Program for road transport.

Consolidating local- and region-critical logistics centers

170. **Little evidence supports the current positioning and design of FEZs and SIZs. 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.

Creating links and upgrading existing international road corridors

171. **Countries bordering Uzbekistan intend to upgrade international corridors that form part of their own road networks, and the GoU 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/or 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.

172. 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.

173. **Corridor planning for freight transport in Uzbekistan should consider the GoU'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.

174. **Studies are needed to identify missing rail and road links and potential upgrading of existing corridors, including the environmental and social sustainability of the proposed investments.** Basic improvements, such as pavement widening and strengthening and/or rehabilitating bridges and border crossings, are in line with the government's 2019–30 program. Rail links need to be better integrated with domestic and regional supply chains. This requires identifying needed rail links with SEZs and designing the SEZs to operationalize these intermodal links.

7. Opportunities for Innovation in Financing Infrastructure

175. **Uzbekistan needs to identify and manage financing mechanisms and streams for covering costs for investments in transport.** Sources include the private sector, which should be engaged in a prioritized program of brownfield and greenfield investments based on risk sharing and the optimal use of resources that provides the government with the best value. In the short term, the government should explore options for private sector participation and identify a pipeline of projects that could be supported under PPPs. Bringing more private sector investment into infrastructure can be fiscally beneficial and increase the efficiency and effectiveness of investments as private investors bring new technologies, new sources of financing, operational and managerial expertise, and improvements in project technical design. The private sector can help deliver infrastructure at better value for money than traditional government procurement.

176. **Private finance for transport infrastructure in Uzbekistan has been limited to date but has major potential.** The few local private investors are supported by shallow local financial markets with limited experience in infrastructure investment. Innovative financing for infrastructure will provide local investors with new opportunities while fostering economic growth and job creation. Foreign investors are cautiously optimistic about Uzbekistan. Their excitement is real, but they will pay much attention to the quality of the first opportunities for private transport infrastructure investment and whether the proposals address the most important risks and issues.

177. **Identifying the revenue to repay financing to allow investors to earn a return on their investment is just as important as finding and mobilizing the private financing itself.** Financing will be available to the extent that projects demonstrate future revenues enough to cover debt service (principal plus interest) and returns on equity. Revenues come from two sources: the government budget (taxes) and commercial revenues from the project's services.

178. This chapter discusses sources of financing and structures used to mobilize financing, identifies financial instruments that Uzbekistan may want to use to mobilize innovative financing, including setting up an infrastructure financing intermediary, and describes streams of funds that can cover the cost of financing and operating transport.

Potential financing options

179. **Infrastructure financing entails a large up-front investment in a project that must be repaid, plus some additional rate of return, over the project's operation period.** Privately financed infrastructure projects are generally financed through a mixture of equity and debt, provided on a nonrecourse or limited recourse basis (also known as 'project financing'), where debt repayment comes from project assets and revenues (rather than government assets and revenues as would be the case for government debt). The financing is repaid from the cash flows of the project during operation. Accordingly, the accessibility and cost of financing are determined by the strength of the project's forecast revenues, rather than the balance sheets of the project's sponsors. Because infrastructure projects typically take several years to implement and begin generating steady revenues, financing is usually sought on a long-term basis commensurate with the project's long-term life cycle—7 to 10 years for repayment. Since lenders only get repaid if the project succeeds, heightened lenders' scrutiny of project viability and structuring improves the likelihood of project success. Uzbekistan may consider the following private financing mechanisms for infrastructure: equity, bank loans, bonds, and sharia-compliant financing.

Equity

180. **Equity is a capital contribution to a company that is committed indefinitely and rewarded depending on the company's profitability.** Equity investment can refer to the purchase of shares of stock in a company, whether that sale is open to the public with shares listed on a public stock exchange or the sale is negotiated privately between the company and a strategic partner. In these cases, an equity investor's return depends on the company's overall success, based on the full portfolio of that company's activities. Alternatively, equity can be invested in a specific project through the creation and sale of shares in a special purpose vehicle (SPV) created to implement the project—this is common in infrastructure PPPs and joint ventures, discussed below. A more general opportunity would be the sale of equity in SOEs in the transport infrastructure sector. This additional equity can be used to bring strategic investment from investors expert in transport infrastructure into design, implementation, and maintenance capacity to benefit the SOE.

181. **Access to domestic equity for infrastructure in Uzbekistan is likely to be limited in the medium term due to the nascent local capital market.** Nonetheless, the size of the domestic capital market and current investment practices should be assessed, focusing on large institutional investors, such as pension or retirement funds, social security funds, and insurers. These investors may represent sizable financing for infrastructure.

182. **The availability of domestic capital for infrastructure investment depends on whether the investors' rules and incentives align with the relatively long tenor of infrastructure, which typically takes many years to realize a return.** Rules, regulations, and investment strategies that prioritize short-term returns, limit investment types (for example, by restricting or disincentivizing purchasing shares in SPVs), or require fund liquidity (such as pension funds that do not penalize early withdrawals) can constrain the ability to invest in infrastructure. Fund managers, before pursuing infrastructure investments, must have the knowledge and capacity to perform due diligence on prospective investments or have access to competent, outside technical assistance.

183. **Equity can also be raised internationally.** The government has announced its intent to do so by selling stock in select SOEs to foreign investors. Efforts to access foreign equity for infrastructure face several possible constraints. These include the following:

- **Investors' perception of country risk.** As a relative newcomer to international investment, Uzbekistan has little performance history for foreign investors to use in appraising the risk of investing there. In a positive development, the government recently obtained a sovereign credit rating from two of the three main credit rating agencies, S&P and Fitch, but the BB rating it received may make foreign investors cautious about investing in Uzbekistan.
- **Foreign exchange risk.** Concerns over foreign exchange risk are often acute for infrastructure projects, which usually generate revenue in local currency. The absence of a market for risk mitigation mechanisms such as currency hedging instruments can limit foreign investors' appetite.
- **Ownership restrictions.** Many countries restrict foreign ownership in particular sectors for various strategic purposes. Yet, foreign firms that invest equity in a project will want enough control over the project—generally requiring at least majority ownership—to protect their investment.
- **Repatriation of profits.** Foreign firms investing in infrastructure need to be confident in their ability to repatriate profits to their home countries after satisfying local tax obligations.

184. **The government should review the likely effect of such constraints on foreign investment and design mechanisms to mitigate them.** The government can bear some of these risks through guarantees, including IFI guarantees. The following key points should be kept in mind when considering equity investment:

- Uzbekistan's access to domestic equity for infrastructure is likely to be limited in the near term, and the depth, common practices, and legal and regulatory framework of the domestic capital market require further assessment.
- Uzbekistan should pursue access to foreign equity to supplement the shallow domestic capital market, but should also consider primary risks that may deter investors, with a view to designing and implementing mitigating mechanisms.

Bank loans

185. **Banks may provide loans to finance an infrastructure project either directly to the entity responsible for implementing the project or to an SPV created to implement the project**. In case of direct lending, the borrower is fully liable for repaying the debt. In case of lending to the SPV, the borrower likely has no assets or income outside the project, so repayment depends entirely on cash flows from the project. Because the infrastructure is a public asset, the borrower usually cannot pledge it as collateral, so the bank can, at best, receive a step-in right to secure repayment: if the borrower defaults, the bank may appoint a third party to step in and operate the asset for a defined term and collect the revenues from this operation to pay the outstanding loan amounts.

186. **In domestic lending, local banking market capacity and practices are unlikely to encourage infrastructure financing.** Most banking assets are in state-owned banks, which are more accustomed to shorter-term lending (3–5 years) on a corporate, on-balance sheet basis. Limited familiarity with and capacity for longer-term, nonrecourse financing may constrain lending for infrastructure. The prevalence of lending based on relationships, where the name and reputation of the borrower or project sponsor may have considerable importance, also needs to be assessed. Such a practice can obstruct entry for newer, private sector players in infrastructure and hinder the introduction of new project structures.

187. **Foreign banks may provide loans for transport infrastructure in foreign currency.** They face many of the same constraints as those on providing foreign equity with equal or greater force, including perceived country risk and foreign exchange risk. Whereas equity investors, who may benefit from a considerable upside if a project succeeds, may be less risk-averse, lenders, who earn only the agreed interest and therefore do not see any great potential upside, may be more risk-averse. At present, it should be expected that international lending will be conditioned on the use of PPP structures or the provision of a guarantee by the government or by IFIs (such as the World Bank).

Bonds

188. **Bond financing allows the borrower to access debt directly from individuals and institutions, rather than using commercial lenders as intermediaries.** The bond issuer (the borrower) sells the bonds to the investors. A lead manager helps the issuer to market the bonds. A trustee holds rights and acts on behalf of the investors, stopping any investor from independently declaring a default. Bond financing generally provides lower borrowing costs and longer tenors (duration), if the credit position of the bond is strong enough. Rating agencies will assess the riskiness of the project and assign a credit rating to the bonds that will signal to bond purchasers the attractiveness of the investment and the price they should pay. Bonds can be issued by many different entities, domestically or internationally, and in many different

forms, such as general obligation instruments or project bonds linked to specific projects, as a source of financing for infrastructure.

Sharia-compliant financing

189. **Uzbekistan might consider using sharia-compliant financing mechanisms for infrastructure development.** The recent success of issuances of sukuk (sharia-compliant bonds) in Indonesia demonstrates the potential for popular support for such non-interest-bearing products. Islamic project financing may take the form of istiṣnā', which involves a sale where the transaction is executed before an asset exists. In an istiṣnā', the purchaser orders a manufacturer or an engineering, procurement, and construction contractor to make a specific asset according to the purchaser's specifications and deliver it at a preagreed delivery date for a preagreed price, which is payable either in a lump sum or installments. Istiṣnā' is used on a medium- to long-term basis. Offering sharia-compliant products may also create opportunities for financing through the Islamic Development Bank and development banks in the Middle East.

Proposed actions for leveraging private sector investments

Opportunity for attracting private investments

190. **While private financing is a potential source of additional capital for transport infrastructure, it can also make these investments more efficient and effective.** The private sector can help deliver infrastructure services at better value for money than traditional government procurement. In Australia and other OECD countries, infrastructure projects involving PPPs are more likely to conclude on budget and on time.[76] Studies from developing countries also show that private sector participation in telecommunications, electricity, and water distribution tends to elevate labor productivity and operational efficiency.[77] In considering private financing options for infrastructure, the government should evaluate both the commercial viability of a project and the opportunities it presents to leverage private sector efficiencies through operational and managerial expertise, new technologies, and technical design improvements.

Public-private partnerships

191. **A PPP may be broadly defined as a long-term contract between a private party and a government entity for providing a public asset or service, in which the private party bears significant risk and management responsibility.** Public and private sector entities have different skills and capacities. A PPP can bring these two disparate entities together to deliver infrastructure.

192. **PPPs may be structured in a variety of ways, involving the private sector at different levels and allocating risk differently to the public and private partners.** Every project must be structured to fit its context and characteristics, including commercial aspects (investment cost, operation and maintenance

[76] See, for example: Allen Consulting Group and the University of Melbourne. 2007. *Performance of PPPs and Traditional Procurement in Australia.* Report to Infrastructure Partnerships Australia. The Allen Consulting Group, Melbourne; and Burger, P., and I. Hawkesworth. 2011. "How to Attain Value for Money: Comparing PPP and Traditional Infrastructure Public Procurement." *OECD Journal on Budgeting* 11 (1): 91.

[77] Andres, L., V. Foster, and J. L. Guasch. 2006. "The Impact of Privatization on the Performance of the Infrastructure Sector: The Case of Electricity Distribution in Latin American Countries." Policy Research Working Paper 3936, World Bank Group, Washington, DC; Gassner, K., A. Popov, and N. Pushak. 2008. "An Assessment of Private Sector Participation in Electricity and Water and Sanitation Services in Developing and Transition Countries." Policy Research Working Paper, World Bank, Washington DC.

cost, and revenue sources), technical aspects (engineering design, output specifications or minimum service requirements, and environmental risks and mitigation), and legal requirements (the legal basis for the project, approvals, and permits and licenses). Properly prepared and executed, PPPs can leverage private sector financing and operational efficiency gains to deliver substantial value for money compared with public procurement.

193. **The GoU has announced an ambitious agenda to attract PPPs in transport.** A PPP agency has been created under the MoF, a PPP law has been approved and signed, and work is ongoing to identify a pipeline of bankable PPP projects. The PPP agency must be given enough human resources and funding to oversee project screening, preparation, procurement, and delivery. This entails hiring both internal staff and outside technical advisers who can help complete feasibility studies, advise on project structuring, facilitate procurement, draft PPP agreements, and assist with contract negotiations. Insufficient investment in project preparation may reduce the number and quality of interested bidders, increase the cost of financing, and lead to project failure.

194. **Having a central PPP agency is an important first step to support the contracting agencies in developing their projects.** In addition, the contracting agencies need their own capacity to develop projects. To this end, the government has created a PPP team in the MoT with a mandate that includes identifying, screening, preparing, procuring, and monitoring PPP projects in the transport sector. Like the MoF PPP agency, the MoT PPP team needs support from the government for training, internal staffing, obtaining external expert consultants, and funding the preparation of projects (see annex 8 for international examples of PPPs in transport, roads, and airports).

195. **The government must consider a full spectrum of potential support mechanisms, discussed below, with careful attention to their fiscal costs.** The mechanisms should be coordinated to use the least government support to achieve the greatest impact. Government support must be used judiciously to ensure that the government achieves value for money and to mitigate and manage the fiscal risks often created by PPPs.

196. **The following are key steps in setting up a favorable environment and developing a PPP program:**

- Establish a robust legal, financial, and institutional framework that will attract investors and support government agencies.
- Allocate sufficient funding for project preparation.
- Enable the PPP development agency under the MoF and the sectoral PPP unit in the MoT.
- Select projects for PPP with the right economic, commercial, and financial characteristics.
- Prepare projects well, investing time and money to complete due diligence and to structure projects to meet market needs.
- Use open, competitive bidding to get the best investors and terms.

Asset recycling

197. **Brownfield infrastructure assets can be leveraged to raise more private financing and capitalize on private sector efficiencies through asset recycling**. These infrastructure assets should be operational, revenue generating, and held and operated by the government or SOEs. Asset recycling options are as follows:

- Issuing bonds at the SOE or project level using the assets and their revenue streams as collateral.

- Selling partial or full equity stakes in SOEs or asset vehicles to private investors, including strategic investors such as operators that can improve governance and efficiency.
- Issuing public equity in SOEs or asset vehicles on the capital markets to boost discipline and transparency as well as capital.
- Forming joint ventures between SOEs and private investors, including strategic investors such as operators that can improve governance and efficiency.
- Offering limited concession schemes, where contracting authorities issue PPP projects for the refurbishment, expansion, or operation of existing assets.
- Developing infrastructure funds to invest in existing assets and diversifying assets across sectors and locations to reduce aggregate risk. These funds are often credit enhanced, for instance with patient equity or government guarantees, to mobilize capital from more risk-averse investors such as institutional investors.
- Securitizing future revenues from existing assets—issuing debt that is secured at the project level by repayment from future revenues.

198. **Brownfield assets tend to appeal to private investors since they have a proven demand profile and revenue stream and therefore appear less risky.** Operational assets can benefit quickly from private sector efficiency gains. Furthermore, by leveraging private capital for needed expansions or improvements of existing assets, asset recycling can support other investments by freeing funding from governments and SOEs and leveraging it for further financing.

199. **The government should generally take a gradual approach.** For example, rather than divesting 100 percent of a poorly performing asset, which would not generate much value, an SOE might first bring in a private partner to rehabilitate and improve the asset's operation under an operation and maintenance arrangement. That would increase the value before the asset is divested. This approach works where the net present value of the rehabilitated asset less the cost of rehabilitation is greater than the current value of the asset. The private investment market can only absorb a specific amount of investment in a given period, so the government should spread such investments out to allow the market to absorb each and not overwhelm available investment capital.

200. **Each asset recycling option has different advantages and disadvantages, will attract a different investor profile, and therefore may serve a different type of project.** The best option for each asset or operator can only be determined case by case. Key considerations may include the following:

- The current management of the asset and the extent to which it has room to improve efficiency
- The capacity of the government entity or SOE to manage the asset going forward, given expansion targets
- The debt needs and capacity of the government entity or SOE (see note)

201. Ultimately, asset recycling aims not just to raise funds but to create value. So, the approach and structure of asset recycling need to be coordinated to create a market and manage the process well.

Note: A revenue stream used to mobilize additional capital can no longer be used for its previous purposes. This especially affects sectors such as airports where the large ones cross-subsidize the smaller ones. If the revenue streams from large airports are used to mobilize investment finance, a new revenue source to support the smaller airports may be needed. PPPs and asset recycling should be managed on a programmatic basis to optimize the benefit within the sector.

Instruments to support infrastructure financing

202. **Various government support instruments to access private financing for infrastructure can be considered if local experience is limited.** Each instrument discussed in this section poses different risks and constraints related to privately financed infrastructure. Each has its advantages and disadvantages and a different cost profile seen from the perspectives of government, SOE, and private sector. Where possible, these instruments should be used together in an optimal combination to efficiently achieve the desired result in a specific project.

203. The government should consider placing the application and approval support instruments in a single entity able to design the most efficient package for any particular project. At present, this would likely be the MoF PPP agency, which would need more staffing and resources to meet the responsibility.

Capital grants

204. **A capital grant is a government contribution to a project designed to reduce the project cost to be borne by the private developer.** It is sometimes known as viability gap funding or a government subsidy. It may be a direct cash injection (such as payment of a portion of the project's capital expenditure), the in-kind contribution of land or another existing asset, or the construction of an asset or facility. Cash contributions should be payable only against construction milestones to incentivize the private entity to complete construction on time. Where the government contributes land or other assets, it should avoid delaying the project: governments around the world have failed to deliver land or assets for a project only to find themselves liable for the damages suffered by the investor, which can be major. Land and other government-contributed assets should be provided before the private developer begins to work (ideally even before bids are received) to reduce the cost of the project, accelerate infrastructure delivery, and reduce the risk of project delays to the government and the private developer.

205. **A capital grant may be appropriate where a tariff affordable to end users would not generate enough revenue to recoup the cost of the project, but a privately financed modality, given the grant, can deliver the project at a lower cost than publicly procuring it.** A government capital contribution aims at (a) increasing commercial feasibility by lowering the project cost, (b) increasing the interest and participation of the private sector, (c) attracting more quality bidders and reducing the cost of private financing, (d) increasing the likelihood of successful procurement within the planned timeline, and (e) delivering public services at a cost affordable to the community.

Availability payments

206. **An availability payment is a periodic payment by a public entity to a private entity for providing infrastructure services that conform to the quality and criteria specified by contract.** The payments are made during the project's operational life and therefore create a long-term obligation for the public entity, in contrast to the capital grant just discussed. If users pay for service, the government retains the right and responsibility to collect and retain user payments but is obligated to pay the private entity periodically, assuming all performance parameters are met, regardless of the amount of revenue actually received from users (box 7.1). Availability payments are designed to (a) give the government greater influence over the project by tying payments to performance; (b) provide the project company and

lenders with greater certainty of payment; (c) protect the private investor from demand risk, collection risk, and user fee risk; and (d) allow the government to benefit from revenues that are higher than expected if, for instance, demand is higher than expected.

Box 7.1. Availability payments in road PPPs

A road PPP investor will rely either on users for payment (for example, through tolls) or the government (through availability payments).

An investor relying on user payments will be concerned with traffic risk. The PPP agreement will have to address influences on traffic, including setting tolls, locating interchanges, and developing competing transportation modes (such as other roads, tunnels, and rail). The investor will require a traffic guarantee from the government for protection if the traffic levels do not meet expectations. The government is therefore limited in its management of the sector and will be at risk for any traffic shortfall.

An investor relying on government availability payments will focus on satisfying the performance criteria set by the PPP agreement to receive the payments. If the government modifies tolls, reconfigures interchanges, or installs competing transport systems, the investor will not be concerned since it will receive payment from availability payments. If traffic eventually exceeds expectations, the government receives the surplus revenues. Availability payments create a long-term liability for government but provide flexibility and potentially a more balanced risk allocation.

Government investment and financial intermediary mechanisms

207. **To reduce the risk for financiers and provide additional liquidity to nascent infrastructure financing markets, the government may wish to provide debt or equity investments to PPP projects.** However, government provision of debt should be approached with caution, as it may

- Be subject to legal restrictions, since the government plans to lend money to a private entity;
- Be subject to approval, control, governance, auditing, and other oversight that may complicate the project structure;
- Require, when the government first investigates making the loan, project assessment skills or capacity that government personnel typically do not have;
- Reduce opportunities for ('crowd out') private lenders and therefore create political backlash; and
- Require the government to play the due diligence, monitoring, and oversight role of a lead commercial bank, for which the government may be ill-equipped.

208. **Some countries have stimulated private investment in infrastructure by using public funds to cofinance infrastructure projects alongside private investment.** By offering an additional and cheaper source of long-term financing through a vehicle with access to infrastructure finance expertise, these lending facilities can increase projects' commercial viability and attract greater private sector participation (box 7.2).

Box 7.2. Examples of financial intermediary mechanisms

Examples of financial intermediary mechanisms include Fondo Nacional de Infrastructura (Fonadin) in Mexico, Financiera de Desarollo Nacional (FDN) in Colombia, Brazilian Development Bank in Brazil, and the Korean Infrastructure Credit Guarantee Fund. In Mexico, Fonadin is funded through capital set aside by the government and revenues from existing public toll roads. Fonadin's role is to finance infrastructure. It offers a variety of instruments including grants, subsidies, guarantees (for stock, credit, damage, and political risk), subordinated lines of credit, and grants for technical assistance. It provided over US$1 billion worth of government grants to PPP projects during 2008–09 alone.[a]

Source: www.fonadin.gob.mx.
Note: a. World Bank. 2012. "Best Practices in Public-Private Partnership Financing in Latin America: The Role of Subsidy Mechanisms."

209. **The intermediary institutions are specially equipped to provide advice, structure projects, and offer specialized financial instruments to help address the challenges faced by local financiers.** They can borrow from local markets and convert these liabilities into the kind of financial instruments sought by infrastructure projects or they can cofinance with local financial institutions and financiers on the lending products sought.

210. **Creating such intermediaries (whether from existing entities or as new ventures) can be costly and time-consuming.** There is no easy or standard approach. The government will need to carefully consider its requirements, legal framework, the makeup of its financial sector, and the kind of infrastructure that is to be financed before creating such an intermediary. Its concessional financing would be paired with private financing, such as commercial bank loans or private equity contributions, to increase the leveraging effect of the facility and help ensure that financing is provided only to projects with a high likelihood of success.

211. **Safeguarding and promoting the success of such an intermediary lending institution requires several steps.** First, it must develop, disseminate, and implement clear project selection criteria, considering both strategic investment priorities and project-specific characteristics. Second, it should include a project development facility as a separate component to help contracting authorities complete preparatory project work. Preparatory funds may be disbursed as grants but can be repayable at project award, contract signing, or financial closing to make the development facility more sustainable and to instill discipline on contracting authorities.

212. **Furthermore, such an intermediary lending institution needs independent, capable directors who can objectively assess project financing proposals.** It faces several risks. Providing cofinancing to projects that do not need it, such as projects that commercial lenders would have entirely financed, would be an inefficient use of public funds, contrary to the institution's main purpose. Providing cofinancing to poorly performing projects could quickly exhaust the institution while showing limited practical gains in infrastructure service delivery. But applying overly restrictive criteria or conditions on borrowing could result in financing only a few projects, leaving the institution's funds largely unused, suggesting they might have been better used elsewhere.

213. In summary, the government, in considering this type of central lending institution, should assess where the projects will come from to apply for financing, what quality of preparatory work can be expected, and where directors can be found with sufficient financial and technical expertise to professionally manage the institution.

Guarantees

214. **The government can use its credit position to guarantee against certain risks to increase private sector appetite for a project and reduce the cost of investing in it.** Government guarantees tend to be partial, since blanket guarantees are generally ineffective—they create perverse incentives for the beneficiary not to manage the risk well—and should be avoided in most cases. Government guarantees should aim to derisk critical aspects of a project and to use the government's resources as efficiently as possible. IFIs, such as the World Bank, can also provide such guarantees.

215. **Guarantees can address specific risks**, such as the following:

- Nonpayment by a contracting authority. To address the risk of nonpayment by a government agency or SOE with a weak credit position or a poor history of delivery on contractual obligations, the government may guarantee payment of amounts due by that contracting authority, in particular large payments such as termination compensation.
- Demand shortfalls, where demand does not meet forecasts (for example, during ramp-up) or traffic does not meet expectations.
- Exchange rate and other financial cost shifts that create a need for revenue support to meet debt service obligations.

216. **Chile has had great success in developing its PPP portfolio.** Since 1994, the government has established a solid institutional framework; well-developed procedures to identify, evaluate, and tender projects; and financial markets well placed to provide financing for PPP projects. But even such a successful program involved extensive government guarantees and protections for investors, especially in the early days, including guarantees from multilaterals and credit wraps from monoline insurers. The extent of such guarantees was reduced as the program matured until they became the exception. A similar dynamic can be seen in most developed PPP programs.

217. **Guarantees can also be sourced from development finance institutions and donors, for example through the contingent support mechanisms available from the World Bank, the Multilateral Investment Guarantee Agency (MIGA), and the International Finance Corporation (IFC).** These entities benefit from global credit ratings that may provide access to financing for infrastructure projects at far lower rates. In addition, some private sector providers of capital view bilateral or multilateral involvement as improving the likelihood of their interests receiving priority in the event of a restructuring by the host government. This is known in the market as the development finance institution 'umbrella' or 'halo'.

Proposed mechanism for Infrastructure Fund

218. **Infrastructure Fund could provide long-term loans to subnational governments and to infrastructure and utility companies, including transport SOEs, that have revenue-generating capability.** Infrastructure Fund is a financing intermediary facility that could serve as the main financing mechanism through which the GoU would issue long-term bonds and loans and finance most of the transport infrastructure investments in the country. The fund would provide technical assistance and capacity building to recipient government entities and monitor the implementation of large infrastructure projects. Key functions of the Infrastructure Fund would include (a) raising funds from the capital market, including issuing bonds and attracting social capital investment; (b) managing national government and sub-sovereign fiscal transfer for transportation; and (c) financing and funding transportation projects.

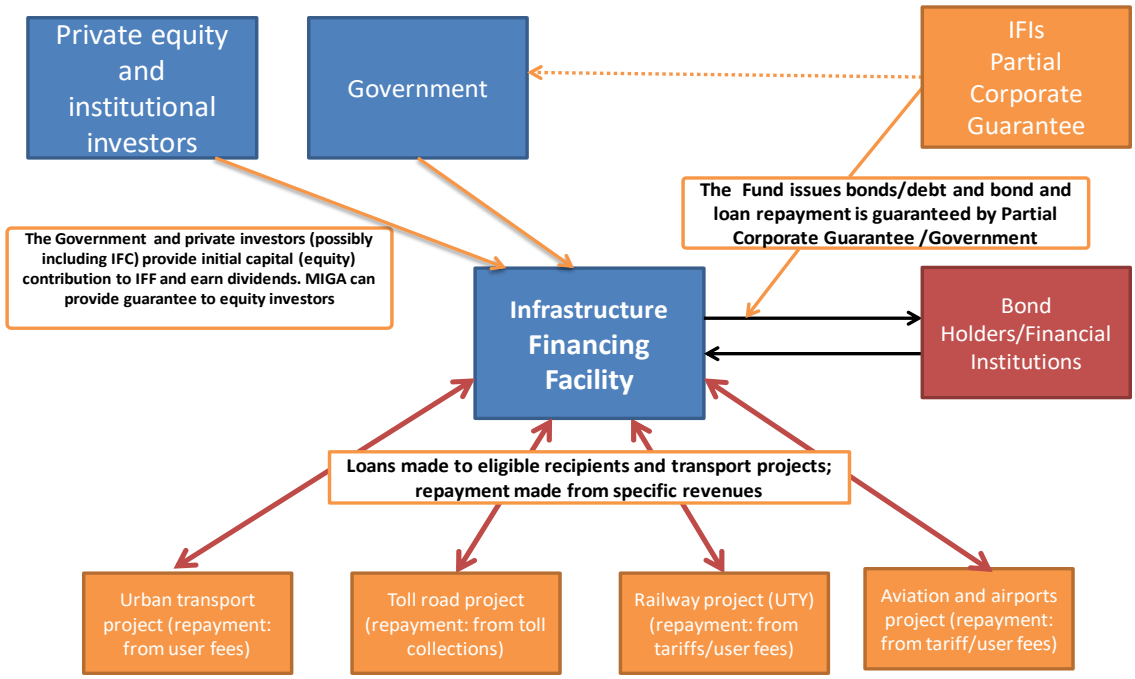
219. **International experience shows that infrastructure financing intermediary facilities such as Infrastructure Fund can facilitate local government financing transformation to bond issuance and PPPs.**

In India, there are several infrastructure financing companies, such as the Tamil Nadu Urban Development Fund, that provide lending for infrastructure. These financing facilities have also supported the development of PPPs in India. Many emerging economies have development banks supporting infrastructure projects. The more well-known ones are the Brazilian Development Bank, South African Development Bank, and Russian Development Bank. There is an active discussion on the need to establish an infrastructure bank in the United States to provide funding for (mostly) transportation projects in various states. Some U.S. states, such as California, North Carolina, and Ohio, already have state infrastructure banks that actively lend for local and state government projects. This is in addition to the large municipal bond program in the United States. The European Investment Bank provides long-term financing for infrastructure mostly for Europe.

220. **The Infrastructure Fund can provide sustainable financing to public sector companies that in turn finance transport infrastructure projects.** It can directly finance transport projects by contributing to equity, backing a government-issued guarantee, or lending capital to the SPV that undertakes a project procured under a PPP. The Infrastructure Fund borrowers would need to commit specific revenue streams or have adequate cash flows from the project to repay the loan. For example, revenues collected from a toll road project would be committed for repayment of the loan. The government would counter-guarantee the repayment of the loan to the fund. The fund would have eligibility and appraisal requirements for each specific investment that will be detailed in an Operational Manual. The lending decisions will be made solely on economic criteria. The project financed by the Infrastructure Fund will repay the loans issued by it. If the fund contributed equity, then the project will pay dividends on invested capital. Advisory services can be structured with success fee clauses that repay the amount invested in the transaction advisory.

221. **Key investors in the Infrastructure Fund could be IFIs and private sector investors.** The Infrastructure Fund could raise its funds by primarily issuing domestic and foreign bonds. It could also have access to a credit line from domestic banks and IFIs. Having private equity investors in the fund would enhance its credibility in the eyes of bondholders and credit rating agencies. The size of the fund could be determined by the initial capital base and the fund's ability to issue bonds and borrow in domestic and international markets. If the fund is well run, it can achieve solid financial performance that will allow it to attain creditworthiness and issue bonds that investors will purchase. To attain creditworthiness, the fund will need to have a sound governance structure and technical capacity to select and prepare solid projects that generate revenue. An example of such a financing mechanism design for infrastructure financing intermediary facility is presented in figure 7.1.

Figure 7.1. Possible mechanism design for infrastructure financing intermediary



Source: World Bank.
Note: IFF - Infrastructure Financing Facility.

Potential sources of covering the cost of financing

222. **Financing for transportation infrastructure, whether public or private, ultimately must be repaid.** Financing generally provides the initial influx of money to pay for the construction, expansion or improvement of an infrastructure asset on the condition that it will be repaid later, plus some amount of return on that initial investment. Paying the cost of an infrastructure project over the project's lifetime includes the cost of any financing (debt principal and interest and equity return) used to pay for the up-front investment in the project, on top of the cost of operating the project. Consequently, before considering options for mobilizing private financing for infrastructure, it is necessary to consider how any financing obtained will be repaid. The existence of a defined, reliable, and adequate funding mechanism is a prerequisite to accessing private financing for infrastructure, in addition to ensuring that the borrowing is fiscally responsible. The better the prospect of covering the cost of financing, the cheaper and easier it will be to secure.

223. **To this end, a selection of additional sources for covering costs is presented and discussed below.** (Other options not addressed here may be considered in time, as the GoU's institutional experience with and capacity for structuring and managing infrastructure projects increases.) The aim is to develop a plan to strategically mobilize funding from different sources to optimal effect, to maximize the value of each infrastructure investment.

User payments

224. **Conceptually, the user of a service should pay for that service.** This principle is broadly accepted for piped water and electrical power. The basic premise is that the end users of an infrastructure service

receive a direct benefit from that use and so should help pay for the cost of building, maintaining, and operating the infrastructure. The public budget should be used to subsidize such services only where there is some social or economic advantage and such subsidy should be the exception. The costs of the subsidy are effectively borne by all taxpayers, regardless of whether or how much they directly benefit from the particular infrastructure project.

225. **The 'user-pays' principle is implemented inconsistently across transportation.** In air transport, the principle is commonly accepted, with airside fees covering operating costs. Railways generally adopt the 'user-pays' principle but with generous public subsidies, given the economic advantages delivered by rail. Roads, however, are less likely to follow the 'user-pays' model, except for tolls charged on certain roads, tunnels, and bridges and a portion of road or fuel taxes.

226. **While the 'user-pays' rationale is straightforward, to effectively deploy and leverage it for covering infrastructure costs can present challenges.** Introducing a new or increased tariff can provoke a negative social reaction, particularly for a service previously offered without any direct tariff or at only a nominal, and therefore heavily subsidized, tariff. That history can create a cultural expectation that a service should be 'free'—even though no asset or service can be provided for free, because, as just mentioned, publicly funding a project simply disperses the cost across all taxpayers.

227. **The government should exercise caution in trying to shift the cost of transportation infrastructure to end users, to allow consultation on the need for and desirability of the transition.** For example, in the road sector, it may be appropriate to begin tolling at a few discrete locations, such as bridges and tunnels, rather than immediately attempting to toll a major highway. Tolls might also be imposed first on the trucking industry, which benefits greatly from the road network while causing significant damage to it due to the size and weight of loads. A nationwide tolling system for trucking could be designed after consulting with the industry and implemented fairly quickly.

228. **The government should also offer ways to mitigate the introduction or increase of a tariff.** For example, ensuring the availability of a free alternative to a toll road, even though economically inefficient, can mollify the social backlash to tolling. Another option is developing a single road with some lanes free and others tolled, so that users can choose to pay to use the less congested lanes. The government can focus the burden of road tolls on particular users, for example placing higher tolls on trucks than on cars. Vehicles using a road to cross through a region may be charged a higher toll than vehicles using the road for local trips. Widely publicizing tariff increases, phased in with close consultation with users, can also make them more acceptable.

229. **Covering infrastructure costs with payments from end users faces a common tendency toward overly optimistic demand and revenue forecasts.** Studies by Standard and Poor's and PricewaterhouseCoopers highlight a global optimism bias in traffic forecasts. But if the expected number of end users does not materialize or they are unwilling to pay the projected tariff, funds will be insufficient to repay the financing. Overestimation of traffic volumes is among the main reasons why privately financed road projects fail. The timing of demand growth is also critical. If demand fails to materialize in the short term, a private infrastructure project can become insolvent and fail even if demand ultimately reaches forecast levels, since private investment has a relatively short time horizon. Public financing is more appropriate for absorbing delayed traffic growth.

230. **Deciding the pricing scheme is another challenge, as is choosing the way user charges will be collected.** In general, tariffs should be based on the ability and willingness of end users to pay, with appropriate provision for ensuring equitable access to basic services for the poorest populations. In addition, pricing should reflect both the quality and the quantity of use. User types can cross-subsidize

each other so that the users most able and willing to pay can reduce the burden on others. Similarly, if end user fees are aggregated into a common fund, more profitable assets can cross-subsidize other necessary but less financially viable developments. Revenues from large, highly profitable airports, for example, can pay some of the costs of developing and operating smaller, regional airports that generate less revenue but are key to connectivity.

231. **Road tolls are often based on the distance traveled (amount of use), the type of vehicle (heavier vehicles, which inflict more damage on the road, assume a greater portion of the maintenance costs), and the location and time of travel (higher tariffs for more congested roads, particularly at peak hours).** These pricing regimes can be fairer and more efficient because they reflect users' actual use and impact. However, constructing and operating tolling equipment can be costly and complex, particularly where domestic road operators have little or no experience with it. A pricing regime relying on indirect charges, such as fuel excises and vehicle registration and licensing fees, can be easier to implement but may not account as effectively for differences in usage among drivers.

232. **In airport funding, the ticket price charged by the airline often includes passenger service charges and other fees.** This practice reduces the visibility of fees, thus minimizing passenger displeasure, in contrast to a more direct levy such as a departure tax collected at the gate. But it requires airlines to cooperate whenever charges must be increased. A sudden or seemingly arbitrary increase in passenger service charges, airplane landing or parking fees, jetway usage fees, or related charges is likely to create a backlash from airlines and their representative organizations. So, airports often have a narrow window of opportunity for increasing fees, typically tied to expanded or otherwise improved service quality. A departure tax collected directly from passengers at the terminal may be simpler to implement but requires staffing and space and risks criticism from passengers.

233. **User funding of infrastructure projects must also consider broader public policy goals and the legal and regulatory framework.** For instance, requiring land freight businesses to bear a greater portion of road costs, though reasonable because of their heavy use and damage of roads, could impede the public policy aim of reducing logistics costs.

234. **Where private financing is sought, investors need confidence that tariffs projected during project development can be realized over the project's life.** Pricing can and should be included in the project-level documents (such as the concession agreement). But the presence of a strong and independent tariff regulator and a stable regulatory framework for tariffs are more reassuring to private financing. If the tariff regime is unpredictable or other operators, including SOEs, appear to have undue influence over the tariff regulator or tariff policy, private companies will be less likely to invest. Where the government wishes to provide subsidies to specific users, they should be transparent and consistent.

235. **End user payments are not feasible sources for some transportation projects, even though viable in their economic and social costs and benefits.** Passenger rail projects, for instance light rail and mass rapid transit systems, require large up-front capital investments that often cannot be recovered through user fees alone, even with high demand and reasonable pricing. Additional revenue options may help fill the gap, such as land and commercial value capture, which are discussed below, as are other suitable instruments.

236. **In summary, a carefully designed tariff system must be based on robust studies of the quantity and type of end users, close consultation with users and the community, an adequate legal and regulatory framework, and support of the government's broader policy and development goals.** Governments considering tariffs should keep the following in mind:

- Requiring users of transport infrastructure to pay for it in accordance with the quantity and quality of their use can be equitable and efficient. But the transition to user funding should be incremental and well planned and involve close consultation with affected populations and stakeholders, to reduce the risk of opposition from civil society and industry associations.
- Tariff pricing and collection mechanisms must be carefully studied, assessed, and designed to ensure that a fair, efficient, and practical scheme is implemented. They should consider consultation with users and the community, the ability and willingness to pay, equitability provisions for poor users, operation and maintenance costs, investment needs and goals, the creation of incentives (to reduce congestion, for instance), broader public policy concerns and objectives, and the efficiency and feasibility of the proposed collection method.
- Inadequate or overly optimistic demand forecasts, for both user volume and willingness to pay, are a leading cause of project failure.
- A stable and predictable tariff regulatory regime overseen by a capable and independent tariff authority is more conducive to private investment in infrastructure than ad hoc or volatile tariff fixing mechanisms.

Land value capture and transit-oriented development

237. **Transportation infrastructure projects often increase the value of contiguous land that can be captured to help cover infrastructure investments.** For instance, the construction of a new bus terminal may create business opportunities and increase the desirability of residing in the surrounding area, resulting in increased property values. Land value capture, like the 'user-pays' model, is based on the premise that the person who benefits from an infrastructure project should be expected to bear a portion of its cost. A portion of the land value that accrues to property owners and developers in the vicinity of transport infrastructure projects may be recouped by imposing additional taxes and exactions, effectively requiring property owners to pay a share of the cost of projects that benefit them. A simple example is a property tax, which requires landowners to share a percentage of land value with the government. The amount of property tax paid increases as the value of the land increases, no matter the cause of the increased value.

238. **Other instruments for implementing land value capture include the following:**

- **Land as public contribution.** The government uses the value of its land as an equity contribution to a project. A public entity might enter a partnership with a private partner for constructing bus stops. The public partner may 'invest' the value of the land on which the bus stops will be built, while the private partner invests cash.
- **Developer exactions and impact fees.** A private developer contributes to public services as a precondition to developing a plot of land as compensation for the cost of additional public infrastructure and services. Examples may include:
    - **Construction of public improvements.** For example, the developer constructs a public road to connect the proposed development with the existing public road network.
    - **Funding.** For example, the developer provides a financial contribution toward the cost of a new bus stop or light rail transit station.
- **Betterment levies.** A tax or a fee is levied on land that has gained in value because of public infrastructure investments. Although betterment levies are considered one of the most direct forms of value capture, the cost of administering them parcel-by-parcel can be high in relation to

the collected revenue. It can be technically cumbersome to estimate appropriate costs for this mechanism. Any government discretion regarding assessment amounts can create perceptions of corruption. Unless the real estate market is robust, imposing an extra levy can discourage rather than incentivize private sector investment.

239. **In practice, land value capture demands management skills to deal with many complex factors and diverse stakeholders.** It requires political resolve among government leaders; a proper understanding of land market conditions; comprehensive property monitoring systems; and a fluid dialogue among fiscal, planning, and judicial entities. Additional conditions include a sufficient property market and legal framework that allows channeling collected monies back to the specific project that created the value or to infrastructure in general. Land value capture and transit-oriented development schemes can most easily be used in areas with robust public planning institutions and frameworks, competitive real estate markets, and formal property registration and taxation systems.

240. **Transit-oriented development—promoting urban development projects that are highly integrated with public transportation—offers another way of capturing land value.** By clustering jobs, housing, services, and amenities around public transport stations, this planning and design strategy encourages urban development that is compact, mixed use, pedestrian and bicycle friendly, and closely integrated with mass transit. Based on the premise that economic growth, urban transport, and land use can be managed more efficiently if planned together, it has been successfully applied at a city scale around the world.

241. **Governments can capture some of the value of these developments through property taxes and other mechanisms discussed above to finance additional transit projects.** The Hong Kong Mass Transit Railway Corporation (MTRC) offers an example: residential and commercial properties are built above and around the railway stations and depots, increasing convenience for passengers and increasing revenues for the MTRC and the Hong Kong Government.

Commercial revenues

242. **Commercial activities around transportation infrastructure investments can generate considerable private sector profits, a portion of which can be captured to cover the costs of the investments**. A transport project may create opportunities for new, expanded, or higher-value commercial activities. People's movement through mass transit systems, for example, provides an opportunity to advertise or deliver commercial services to them: where the government sees passengers, a private operator sees customers. Taxation can capture some of the revenue, and it can also be leveraged to directly fund infrastructure investments.

243. **Bus systems, for instance, may increase commercial revenues for businesses near access points, such as bus stations.** The operator of a bus terminal, to increase project funding, could be permitted to develop space in, around, and above stations for retail leasing, office space, advertising, or other commercial activities. By providing commercial services, the project mobilizes new revenues and improves the passengers' experience by allowing them to meet their retail needs during their commute.

244. **Like land value capture, leveraging this type of funding requires formal and well-developed property markets and regulatory framework.** This entails proper land regulation, property registration and monitoring systems, and careful coordination between government, private developers, and other stakeholders.

Recommendations

245. The following steps are recommended to the GoU:

- Perform a legal, regulatory, and institutional assessment of the climate for private infrastructure investment in Uzbekistan. The review would identify constraints, gaps, complications, and challenges facing private investors wishing to support infrastructure and would propose solutions, reforms, and best practices. It would look at the PPP framework and other types of private investment such as asset recycling. The recent PPP Act and forthcoming PPP decrees will address many of these issues, but a more general assessment may be needed to ensure that all gaps and challenges have been found.
- Review the government's transport infrastructure portfolio and investment requirements to discover the projects most likely to attract private investment while providing value for money, in particular asset recycling and PPPs. The review will propose a program of transport investments and name sources of private financing available to help deliver the program efficiently.
- Improve the MoF PPP agency's capacity to identify, prepare, and implement private investments. The agency needs to focus particularly on developing and managing government support instruments to deliver the best value for money and managing and monitoring the fiscal risks created by PPPs and asset recycling. External experts should be brought in to help the team deliver. The agency will prepare guidelines for PPPs and asset recycling, sponsor training, and arrange country visits to coordinate with successful programs and study model processes and standard documents to facilitate government support and fiscal risk management.
- Improve capacity among the contracting authority PPP teams (including SOEs), particularly the MoT PPP team, to identify, prepare, and implement private investments in the transport sector. The MoF PPP agency will be available to support PPPs as an instrument, provide government support, and manage fiscal risk. But the contracting agencies must be the core drivers of sectoral PPP projects.
- Set aside enough resources to fund a first set of priority projects to be delivered by the PPP agency and the MoT PPP team. The government may provide funding directly from the budget or create a multiyear project development fund.
- Identify the financial instruments needed to help the government implement private investment in infrastructure at different stages over the next 10 years and begin to design and develop those instruments as needed.
- Consider setting up an infrastructure financing facility/intermediary in the form of infrastructure or transport financing mechanism. The government will need to carefully consider its requirements, legal framework, the makeup of its financial sector, and the kind of infrastructure that is to be financed before creating such an intermediary.

8. Matrix of Recommended Priority Actions

	Priority Direction	Actions	Timing
		INSTITUTIONAL AND POLICY REFORMS	
1	Facilitate regional connectivity and integrate Uzbekistan into global value chains by improving logistics and international road freight services	(a) Adopt or adapt the MoT's organizational diagram for road transport and logistics. (b) Develop a policy and legal framework to facilitate a competitive market for transit management and domestic and international road freight transport. (c) Revise legal regimes for international transit to improve both transport and customs. (d) Sign key international conventions to facilitate trade and transit.	Short term
2	Continue air transport reforms, encourage private sector investments in the sector, and promote tourism	(a) Complete the unbundling of NAK and the creation and full corporatization of the airline, airports, and other former NAK entities. (b) Develop and adopt the national aviation sector policy. (c) Adopt policies for market access (including liberalization, deregulation, and foreign ownership), safety regulation, and provision of air navigation services. (d) Define clearly the division of responsibilities and functions among main stakeholders in the sector (MoT, AMSA, airports and airline JSCs, MoF, and other stakeholders).	Short term
3	Restructure UTY from a centrally planned to a market- and client-oriented railway operation to improve its competitiveness and respond to the country's accelerated transition	(a) Separate railway sector governance from UTY corporate governance by splitting policy and regulatory functions from railway operations and transferring them fully to the MoT. (b) Realign UTY to be more commercially minded. (c) Develop and adopt a new strategy for railways to refocus on the core railway operations business, spinning off ancillary/noncore businesses. (d) Review railway tariff policies to ensure that traffic covers incremental costs.	Medium term
4	Restructure CAR's organizational structure, staffing, and operations, clearly dividing the client and supplier functions, to improve the efficiency and effectiveness (value for money) of road expenditures and enhance service delivery to road users	(a) Separate management and oversight from service delivery (maintenance and construction), consolidating or rationalizing 157 SOEs into larger independent enterprises (one or two per province) operating under performance-based contracts with CAR. (b) Rationalize CAR headquarters and territorial establishments, consolidating 11 provincial offices into 3–4 regional offices with substantial delegated authority. (c) Establish a policy and planning department at CAR headquarters responsible for physical, economic, and environmental planning; strategic road asset management; and programming and budgeting. (d) Adopt information technology-based administration and record-keeping systems, including e-procurement, e-payments, and e-human resources management.	Medium term

	Priority Direction	Actions	Timing
		(e) Implement asset management systems for pavements, bridges, road furniture, traffic control, and maintenance. (f) Establish an office for the development and management of planned access-controlled expressways, including PPP arrangements.	
5	Enable commercial operations in the railway subsector	(a) Develop and adopt a railway sector strategy to encourage more market-oriented rail operations. (b) Complete separation of noncore business units from core railway business. (c) Pending the creation of separate passenger, freight, and infrastructure business units and companies, identify clearly and transparently the costs and revenues of passenger services as a basis for direct government financial support. (d) Establish policies on passenger service contracts for rail transport by UTY or by third parties.	Long term
6	Create conditions for competitive road construction and maintenance markets occupied by commercial enterprises	(a) Enact a new road law formally separating road sector policy, planning, and oversight from road maintenance, construction, and improvement; introduce a road classification clearly distinguishing administrative and jurisdictional responsibilities for different road classes. (b) Provide a broader and enhanced framework for road financing, including road user charges and tolls, and use of PPPs. (c) Gradually restructure road construction and maintenance SOEs to be financially and administratively autonomous. (d) Privatize SOEs. (e) Establish sustainable revenues to finance public road expenditure (particularly maintenance) through 'user-pays' based approaches such as fuel levies, licensing fees, and tolls.	Long term
7	Liberalize the air transport market	(a) Privatize segments of the sector, including air transport services. (b) Introduce new licensing procedures for additional slots and airlines. (c) Gradually liberalize air transport on both domestic and international routes by renegotiating or renewing air services agreements defining market access conditions for foreign carriers. (d) Establish a financing mechanism for public service obligations to subsidize domestic air service.	Long term

	Priority Direction	Actions	Timing
REDUCING TRANSPORT AND LOGISTICS COSTS			
8	Institute a logistics council or similar platform for interagency coordination and public-private dialogue	(a) Establish a coalition where key government agencies for trade, customs, industry, and transportation work together on physical, institutional, regulatory, and operational bottlenecks. (b) Develop a system to monitor the supply chain and logistics service delivery from the perspective of logistics users (not just providers). (c) Engage the private sector. (d) Engage both logistics users and logistics providers. (e) Institute a logistics council or similar platform to support policy making in cooperation with the private sector.	Short term
9	Improve the performance of freight transport services (trucking)	(a) Clearly identify all actors in logistics and precisely define their respective roles and their interaction with other parties in logistics, transport, and value chains. Stakeholders should be consulted, and the defined roles should be validated. (b) Develop a consolidated regulation on entering the various road transport and logistics professions based on international best practices and consultation with stakeholders. (c) Raise skills and competencies in the logistics sector. (d) Enable improved operating conditions while safeguarding environmental protection, including through improved and comprehensive fleet renewal. (e) Facilitate Uzbek access to the regional and international road transport market by joining the recommended international instruments and initiating the accession procedures. (f) Evaluate and improve road bilateral transport agreements to enhance Uzbekistan's regional and international transport market share.	Medium term
10	Eliminate gaps in connectivity by developing missing links or upgrading existing sections of international corridors	(a) Develop a logistics action plan encompassing development objectives in western Uzbekistan and streamlining border crossings and minimizing exposure to freight risks beyond the borders. (b) Conduct prefeasibility studies for constructing missing rail and road links and upgrading existing corridors. (c) Implement basic improvements, such as strengthening pavement and widening or rehabilitating bridges and border crossing facilities in line with the government's 2019–30 program.	Long term

	Priority Direction	Actions	Timing
		(d) Improve the transport and trade infrastructure, including creating modern facilities, with a focus on agricultural products, for storing, processing, and distributing internal cargoes, export and import cargoes, and cargoes passing through Uzbekistan. (e) Identify potential financing to include private sector participation. (f) Ensure the environmental and social sustainability of logistics.	
11	Manage transport and logistics as a strategic commodity	(a) Build the capacity of the MoT and its Center for Investigation of Logistics Problems to develop strategic solutions. (b) Establish a system of reliable and useful statistics that would support national policy development and decision making. (c) Integrate rail links with domestic and regional supply chains. This concerns rail links with SEZs, the design of the SEZs, rail's role in regional intermodal transport, and the efficiency of the railway itself. (d) Involve all stakeholders in developing a strategy and making decisions on logistics based on analyzed statistics.	Short term
		ENHANCING INFRASTRUCTURE AND SERVICE DELIVERY	
12	Road sector	(a) Reform CAR's road construction companies and regional and district road maintenance SOEs. (b) Mainstream road asset management. (c) Increase funding for road maintenance. (d) Pilot output and performance-based road maintenance. (e) Develop the domestic road contracting and consulting industry. (f) Update road engineering standards and specifications. (g) Enforce vehicle load limits and overloading control. (h) Implement measures to strengthen road safety.	Medium to long term
13	Railway sector	(a) Establish independent rail freight business unit and company. (b) Reorganize the rail freight business to a sustainable line-of-business structure. (c) Place the function of rail code agents within the marketing arm of the UTY rail freight business. (d) Establish a separate independent railway infrastructure business. (e) Develop a support mechanism for the passenger business.	Medium term

	Priority Direction	Actions	Timing
14	Aviation sector	(a) Adopt the new business model for Uzbekistan Airways based on commercial profitability principles and aimed at becoming a regional market leader. (b) Develop and implement a business plan for restructuring the national airline Uzbekistan Airways to ensure its financial sustainability in a liberalized and competitive environment. (c) Issue a resolution or binding document to be acted upon by the airline management. (d) Create a mechanism of financial support for the airline during the transition from its current network/fleet to the future model. (e) Gradually liberalize the air transport market. (f) Set up uniform airport service tariffs and fees to foster competition and private sector participation.	Short to medium term
	ATTRACTING PRIVATE SECTOR INVESTMENTS AND FINANCING		
15	Create an enabling environment for private sector investments in transport	(a) Perform a legal, regulatory, and institutional assessment of the climate for private infrastructure investment in Uzbekistan. (b) Review the government's transport infrastructure portfolio and investment requirements to discover the projects most likely to attract private investment, in particular asset recycling and PPPs. (c) Propose a program of transport investments and name the sources of private financing available to help deliver the program efficiently. (d) Improve the MoF PPP agency's capacity to identify, prepare, and implement private investments. (e) Improve capacity in the contracting authority PPP teams (including SOEs), in particular the MoT PPP team, to identify, prepare, and implement private investments in the transport sector. (f) Set aside resources sufficient for the government to fund a first set of priority projects to be delivered by the PPP agency and the MoT PPP team. (g) Identify the financial instruments needed to help the government implement private investment in infrastructure at different stages over the next 10 years and begin to design and develop those instruments as needed. (h) Set up an infrastructure financing facility/intermediary in the form of infrastructure or transport fund, but carefully assessing required legal framework, the makeup of the financial sector, and the kind of infrastructure that is to be financed before creating such an intermediary.	Medium to long term

Annex 1. UFFM Methodology

Uzbekistan Freight Flow Model (UFFM) is a gravity model based on supply and demand within the economy.[78] 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, as in table A1.1.

Table A1.1. List of commodities used for UFFM (based on customs data)

Agricultural products
Alcohol and tobacco products
Ceramic products (fireproof brick, tile, sink, and dishes)
Chemical industry products
Cotton fiber
Cotton yarn
Electronic equipment and parts
Equipment and parts
Finished products used in household
Food
Fruits and vegetables
Furniture and its parts
Glass and glassware (sheets, bottles, and dishes)
Hygiene products
Live animals, birds, and their parts
Metals and products made of them
Mineral fertilizers
Musical instruments
Natural gas
Natural resources
Oil and petroleum products
Paper, cardboard, and products made of them
Pet food
Pharmaceutical products
Plastics and articles thereof and film
Products made of stone, gypsum, cement, and so on
Pumps
Rubber and products made of them (hoses, cameras, and gloves)
Shoes and their details
Textile products
Timber and products made of them

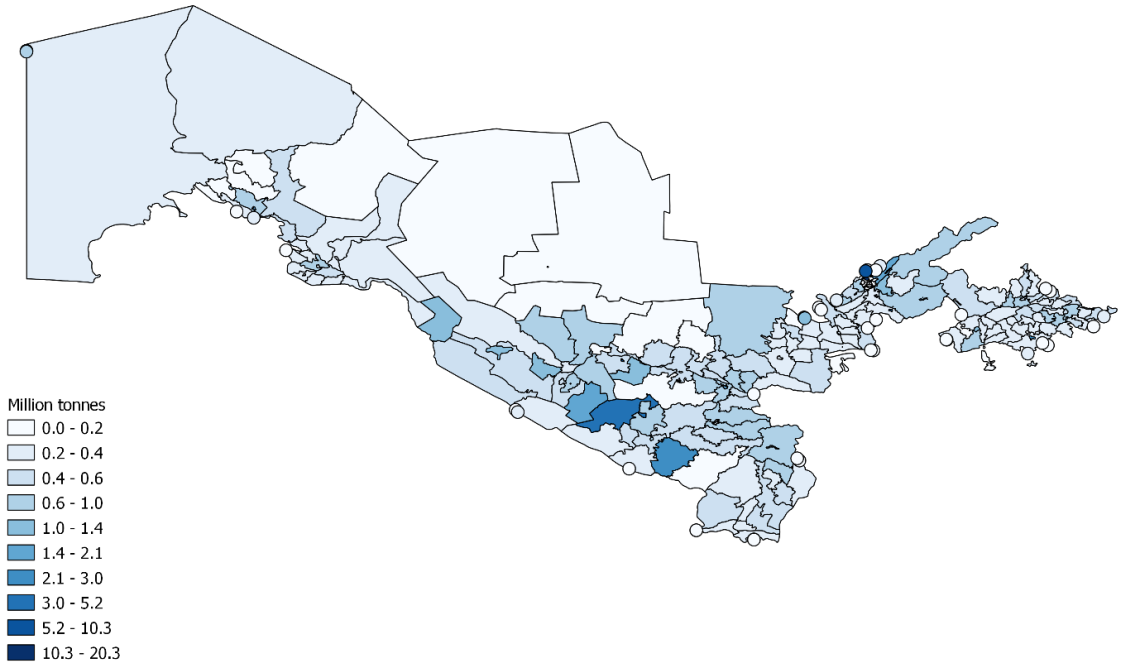
[78] A gravity model assumes that trade flows are directly proportional to the volumes of supply and demand of the districts under consideration and inversely proportional to a measure of transport resistance. Distance is a common measure of transport resistance as it is an objective, readily available variable, also used in UFFM.

Toys
Trees and plants
Vehicles and their accessories
Weapons and ammunition and military equipment
Wool, fur, skins, leather, and products made of them

Source: Based on customs data.

Total supply and demand per commodity were derived for each district (figure A1.1).

Figure A1.1. Total supply per district in Uzbekistan



Sources:

1. Statistics Committee - Appendix 1 - Agriculture.
2. Statistics Committee - Appendix 4 - 2017 Livestock.
3. Statistics Committee - Appendix 5 - Industry.
4. Statistics Committee - Appendix 8 - Labor and Demography.
5. 2017 road and rail data from customs.
6. 2017 UN Comtrade.
7. Uzbekistan administrative areas shapefile - Humdata.
8. OpenStreetMap spatial data.

Data sources 1–4 are reported by the Uzbekistan Statistics Committee on a district level. It provides the production (supply) of agriculture, livestock, mining, and manufacturing, as well as the population and employment statistics.

Data source 5, the road and rail data from customs, gives a breakdown of the tonnes of imports and exports of Uzbekistan for a list of 37 commodities (electrical power is, however, ignored). The source also provides the volume in tonnes of import and export freight that crossed at each road and rail border post. A distinction is made between import, export, and transit freight entering or leaving the country.

For simplicity, the data sources 1–4 were aligned to the customs data, providing a production estimate for the 36 commodities per district.

The breakdown by border post for road and rail does not specify which of the 36 commodity categories were imported or exported. UN Comtrade does not have any data reported by Uzbekistan itself. So, the 2017 UN Comtrade data from each country reporting trade with Uzbekistan in 2017 were used. The reporting countries were grouped according to which border country (Afghanistan, Turkmenistan, Kazakhstan, the Kyrgyz Republic, or Tajikistan) their freight would most likely be entering Uzbekistan through.

Table A1.2 shows the distribution of freight entering Uzbekistan through each bordering country. The country allocations were done by an all-or-nothing approach that assumed that imports and exports from and to each respective country would pass through the same border post.

Table A1.2. Bordering country distribution for imports—comparing data sources

Border country	Import distribution - customs (%)	Import distribution - UN Comtrade (%)
Kazakhstan	89	88
Kyrgyz Republic	5	6
Turkmenistan	4	4
Tajikistan	2	0
Afghanistan	0	2

Table A1.3 shows the border country distribution for exports. It should be noted that the large differences are explained by the absence of the 2017 UN Comtrade data for Afghanistan, Tajikistan, and Turkmenistan, skewing the distribution toward Kazakhstan.

Table A1.3. Border country distribution for exports—comparing data sources

Border country	Export distribution - customs (%)	Export distribution - UN Comtrade (%)
Kazakhstan	51	85
Afghanistan	20	7
Turkmenistan	19	3
Kyrgyz Republic	5	4
Tajikistan	5	0

After classifying the UN Comtrade HS4 commodity codes to the list of 36 commodities from data source 5 (customs data), a commodity distribution was calculated for each border post. This distribution was assigned to each border post of the neighboring country. Therefore, for border post i with a freight volume of t_i, the freight for each commodity j is calculated from UN Comtrade freight volumes of each trading partner l, t_{ljk} that imports or exports freight through the bordering country k, t_{ijk} as follows:

$$t_{ijk} = t_i \frac{t_{ljk}}{\sum_l \sum_j t_{ljk}}$$

t_{ijk} is then normalized to the commodity import and export totals for Uzbekistan to give the final volume T_{ijk} per border post for road and rail border posts, given the total import (or export) of commodity j reported by customs I_j:

$$T_{ijk} = I_j \frac{\frac{t_{ljk}}{\sum_k t_{ljk}}}{\sum_j I_j}$$

This provides supply (imports) and demand (exports) totals for the border posts. Transit freight per border post was estimated on the same principles as for imports and exports, using the transit freight per border post from the Uzbekistan customs data but excluding the final normalization step. Trade between the countries in table A1.4 (and their reverse flows) were used to split the transit tonnes per border post into the 36 customs commodities.

Table A1.4. Countries identified to produce the commodity splits for transit freight passing through Uzbekistan

Origin country	Border entry country	Border exit country	Destination country
Russian Federation	Kazakhstan	Turkmenistan	Turkmenistan
Kazakhstan	Kazakhstan	Turkmenistan	Turkmenistan
China	Kazakhstan	Turkmenistan	Turkmenistan
Mongolia	Kazakhstan	Turkmenistan	Turkmenistan
Russian Federation	Kazakhstan	Afghanistan	Afghanistan
Kazakhstan	Kazakhstan	Afghanistan	Afghanistan
China	Kazakhstan	Afghanistan	Afghanistan
Mongolia	Kazakhstan	Afghanistan	Afghanistan
Kazakhstan	Kazakhstan	Turkmenistan	Iran, Islamic Rep.
Russian Federation	Kazakhstan	Tajikistan	Tajikistan
Kazakhstan	Kazakhstan	Tajikistan	Tajikistan
China	Kazakhstan	Tajikistan	Tajikistan
Mongolia	Kazakhstan	Tajikistan	Tajikistan
Russian Federation	Kazakhstan	Afghanistan	Pakistan
Kazakhstan	Kazakhstan	Afghanistan	Pakistan
Poland	Kazakhstan	Afghanistan	Afghanistan
Slovak Republic	Kazakhstan	Afghanistan	Afghanistan
Belarus	Kazakhstan	Afghanistan	Afghanistan
Latvia	Kazakhstan	Afghanistan	Afghanistan
Estonia	Kazakhstan	Afghanistan	Afghanistan
Finland	Kazakhstan	Afghanistan	Afghanistan
Poland	Kazakhstan	Tajikistan	Tajikistan
Slovak Republic	Kazakhstan	Tajikistan	Tajikistan
Belarus	Kazakhstan	Tajikistan	Tajikistan
Latvia	Kazakhstan	Tajikistan	Tajikistan
Estonia	Kazakhstan	Tajikistan	Tajikistan
Finland	Kazakhstan	Tajikistan	Tajikistan
Belarus	Turkmenistan	Kyrgyz Republic	Kyrgyz Republic
Georgia	Turkmenistan	Kyrgyz Republic	Kyrgyz Republic
India	Turkmenistan	Kyrgyz Republic	Kyrgyz Republic

Source: World Bank, based on data from State Customs Committee of Uzbekistan.

The transit splits per bordering country derived from the identified countries in table A1.4 produced the splits shown in table A1.5 and table A1.6.

The entry freight is skewed toward Kazakhstan because of the all-or-nothing assignment. This could potentially be refined further to give a vector of distributions between each transit country pair and the bordering countries. The exit freight is skewed toward Turkmenistan and away from Tajikistan for the same reason, as well as the mirror of flows, for the sake of simplicity.

Table A1.5. Transit border entry country freight splits derived from UN Comtrade trade data

Border post	Entry transit distribution - customs (%)	Entry transit distribution - UN Comtrade (%)
Kazakhstan	82	91
Turkmenistan	9	4
Tajikistan	8	3
Kyrgyz Republic	1	1
Afghanistan	0	1

Source: Based on UN Comtrade trade data.

Table A1.6. Transit border exit country freight splits derived from UN Comtrade data

Border post	Exit transit distribution - customs (%)	Exit transit distribution - UN Comtrade (%)
Kazakhstan	8	8
Turkmenistan	8	29
Tajikistan	49	28
Kyrgyz Republic	2	0
Afghanistan	33	34

Source: Based on UN Comtrade trade data.

The supply is directly provided by data sources 1–4 per district. The demand per commodity is determined through disaggregating the supply totals based on the domestic demand. The domestic demand is determined as 'supply + imports – exports'. The local supply of commodities with a negative domestic demand was inflated to increase the local supply.

Most commodities were disaggregated by population per district, except the commodities in table A1.7.

Table A1.7. Commodities for which demand was not disaggregated by population

Commodity	Disaggregation of demand
Live animals, birds, and their parts	Demand for live animals weighted between supply of food (50%) and wool, leather, and skins (50%)
Mineral fertilizers	Demand at the supply of agricultural products, supply inflated to account for exports and local demand
Agricultural products	Demand disaggregated by industrial employment
Chemical industry products	Demand disaggregated by industrial employment
Cotton fiber	Demand disaggregated by industrial employment
Cotton yarn	Demand disaggregated by industrial employment
Electronic equipment and parts	Demand disaggregated by industrial employment

Source: Based on Uzbekistan Statistics Committee data.

OpenStreetMap spatial data were processed to produce a road network and to obtain a rail network. The rail network was used to determine which districts are accessible by rail on the principle that rail imports and modal shift can only be facilitated in the districts with rail connectivity.

The supply and demand tables were processed into origin-destination (OD) flows using a gravity model using the network distance derived from the OpenStreetMap spatial data as impedance input.

Assumed rail volumes were derived from OD pairs with both origin and destination districts with rail connectivity, and rail suitability per commodity. High percentages per commodity were applied to get within the range of rail volumes, but ton-kilometers did not match as well. Receiving rail OD commodity data would have negated these assumptions.

Transport costs were derived from published rail costs and tariffs of the Uzbekistan railway, while road rates were obtained from published rates of transporters. For logistics costs, a logistics-to-transport ratio similar to other comparative countries was used, using transport costs as the proxy for other components.

Annex 2. Decrees and Resolutions Related to Reform in Transport and Logistics

Law, Decree, or Resolution	Brief Description
Presidential Decree No. UP-5584, November 27, 2018, On Measures to Fundamentally Improve Civil Aviation of the Republic of Uzbekistan	• National Air Company Uzbekistan Airways (NAK) unbundling • Funding arrangements for Gosavianadzor • Transitory arrangements for policy makers • Pledge to formulate gradual liberalization policy
Action plan on reorganization of Uzbekistan Havo Yullari NAK and state-owned enterprises that are part of it, December 2018	• NAK reorganization (inventory, financial, and economic activity assessment, authorized capital formation, charters and organizational structures development, loans transfer, and sovereign guarantee reissuing procedures), defined unified air navigation and airport service tariffs and charges for Uzbek Airways, creation of Development Fund of State Inspectorate for Flight Safety Oversight initiated, and others
Presidential Decree No. UP-5647, February 1, 2019, On Measures to Fundamentally Improve the System of Public Administration in the Field of Transport	• Creation of the Ministry of Transport (MoT) of Uzbekistan • Establishment of Center for the Study of Transport Development and Logistics Problems under the MoT • Setting up of Transport Development and Logistics Fund • Transformation of Gosavianadzor into Civil Aviation Agency of Uzbekistan (CAAU) • Transfer of CAAU to the MoT, financially independent • Transfer of Air Navigation Services Provider (ANSP) to the MoT, financially independent
Presidential Resolution No. PP-4143, February 1, 2019, On Organization of Activities of the Ministry of Transport of the Republic of Uzbekistan	• Approval of organizational structure of the MoT • Creation of accident investigation unit under the MoT, without budgetary independence
Cabinet of Ministers' Resolution No. 305, April 12, 2019, On Measures to Arrange Activities of the Center for the Study of Transport and Logistics Development Problems under the Ministry of Transport of the Republic of Uzbekistan	• Defines main tasks, functions, rights, responsibilities, structure, charter, and funding sources for the Center
Cabinet of Ministers' Resolution No. 336, April 19, 2019, On Approving Provisions about Ministry of Transport of the Republic of Uzbekistan	• Defines status, main tasks, functions, rights, responsibilities, procedures for activities and reporting of the MoT, and functions and responsibilities of the MoT management

Law, Decree, or Resolution	Brief Description
Cabinet of Ministers' Resolution No. 429, May 24, 2019, On Approval of Provisions on the Transport Development and Logistics Fund under the Ministry of Transport of the Republic of Uzbekistan, and Provisions on Procedures of Additional Financial Incentives for Employees of the Ministry of Transport and Its Subordinate Organizations through the Transport Development and Logistics Fund	• Financials budgeting, management, and usage procedures for the Transport Development and Logistics Fund under the MoT, without the fund's budgetary independence • Material incentives for labor and social protection of workers of the MoT and its subordinate organizations
Presidential Resolution No. PP-4112, January 14, 2019, On the Organization of Activities of the Agency for Management of State Assets of the Republic of Uzbekistan	• Creation of the Agency for Management of State Assets functioning as a successor agency exercising the shareholding rights of state-owned enterprises (SOEs) • Governance rules
Law, May 10, 2019, On Public–Private Partnership	• Among others, creation of a well-structured framework for airport and toll road PPP pilot projects, to reassure potential bidders on the integrity of the procedure and enforceability of the PPP contract

Presidential Resolution No. PP-4300, April 29, 2019, On Measures to Further Improve Mechanisms for Attracting Direct Foreign Investments into the Economy of the Republic of Uzbekistan	• Sale of state-owned shares in the authorized capital of the chemical, oil and gas, and mechanical engineering industries' economic entities as well as banking and insurance organizations
	• Identification of investment proposals to be offered to foreign investors
	• Forecast of the country's wider participation in investment and business forums (with a list of forums to be attended by country representatives), presentations (Road Show), and marketing campaigns
	• Hosting of the Tashkent International Investment Forum in fall 2019
	• Definition of PPP projects to be developed in 2019 that include, inter alia, the following:
	  ○ Modernization of the Tashkent International Airport, with a planned date of March 2020 for signing a PPP
	  ○ Modernization of the Uzbekistan regional airports, with a planned date of May 2021 for signing a PPP
	  ○ Tashkent–Andijan toll road construction, with a planned date of December 2020 for signing a PPP
	  ○ Tashkent–Samarkand toll road construction jointly with a consortium of companies Cengiz Enerji Sanayii ve Ticaret A.S., Kalen, Kolin (Turkey), with a planned date of July 2019 for signing a PPP

Draft Presidential Resolution, On Measures to Introduce a Risk	• Implementation of antitrust compliance policies in SOEs • Approval of internal systems for compliance with competition law

Law, Decree, or Resolution	Brief Description
Management System and Prejudice Violation of the Law on Competition	• Mandate to change market structure with monopolistic conditions in case of anticompetitive behavior by SOEs
Presidential Resolution No. PP-3422, December 2, 2017, On Measures for Improving the Transport Infrastructure and Diversification of Foreign Trade Cargo Transportation Routes for 2018–2022	• Among other steps, a tax release for Uzbek transport and logistics companies and Uzbek road transportation companies performing international transportation until January 1, 2022 • A grace period for bank loans and favorable interest rates for leasing-related activities
Presidential Resolution No. PP-4353 of June 7, 2019, On Additional Measures for Further Development of International Freight Transportation by Road	• State support to national carriers in procuring heavy vehicles, trailers, and semitrailers for international freight transportation by road in 2019–21 • Compensation to national carriers of bank loan-related interest expenses and loan guarantees (by the State Fund for Supporting Business Development) and others • Reduced fees for a foreign or multilateral permit
Presidential Resolution No. PP-4230 of March 6, 2019, On Measures to Radically Improve the Cargo and Passenger Transportation System	• Cancellation of license-related state duty payment for specific vehicle types, and different requirements and certifications on road transportation-related activities (as of July 1, 2019) • Creation of an interactive united interagency information system, 'UzTrans', for obtaining transportation-related licenses and authorizations, with direct online access for carriers • Limit to the application processing time for international road transportation foreign and multilateral permits (within one working day from the date of receipt of application) • Enhancement of sanctions for offenses related to passenger and freight transportation by road • Integration of transport-related information systems (vehicle registration, technical inspection, and UzTrans) • Introduction of a procedure for stationary and mobile weight control stations on roads, equipped with automated measuring tools for determining vehicle weight and dimensions, including that on a PPP basis (as of September 1, 2019) • Initiation of the following activities, among others, by the Roadmap for Further Development of Passenger and Freight Traffic: ○ Development of a draft Central Asian Hub Concept aimed at step-by-step creation of a center for transfer flows between Southeast Asia, South Asia, the Commonwealth of Independent States, and Europe ○ Introduction of a course on logistics and supply chain management at two national state higher educational institutions ○ Resumed tuition of aviation specialists at national higher education institutions

Law, Decree, or Resolution	Brief Description
	○ Development of measures to increase nonaviation revenues of airports and the admission of the private sector to service provision at airports ○ Involvement of business entities and foreign companies in aviation fuel import and sale in Uzbekistan, including at airport areas to ensure uninterrupted aircraft maintenance ○ Elaboration of a road map on PPP-based construction and creation of roadside infrastructure facilities along transit corridors ○ Under PPPs, involvement of business entities in construction, reconstruction, and management of bus terminals, bus stations, and bus stops ○ Optimization of tariffs for transport of exported products, to provide competitive prices in the context of countries and products • Action plan on negotiations with other countries on cooperation in the transport and logistics sector • Customs duties release, except for customs clearance fees, for aviation fuel (with an exception for imported aviation fuel, subject to value added tax payment) and for vehicles designed for air, rail, and road transportation (as of January 1, 2022)
Presidential Decree No. UP-5635 of January 17, 2019, On the State Program to Implement the Action Strategy for Development of Five Priority Directions of the Republic of Uzbekistan during 2017–2021 in the Year of Active Investments and Social Development	• Adoption of the state program for 2017 that provides for the following changes, among others, by adopting laws and regulations, action plans and programs, and road maps: ○ Creation of a state body to pursue a unified state policy in the transport sector, including rail, road, and air subsectors; the transfer of state authorities from the Uzbekistan Temir Yollari and NAK Uzbekistan Havo Yuollari to the new state body; and the introduction of PPPs in the transport sector (draft presidential decree be issued February 20, 2019) ○ Improvement of Uzbekistan's position in all areas of the World Bank's Ease of Doing Business Rating 2020 (the action program is to be issued May 1, 2019) ○ Improvement of passenger and freight systems in road transport (draft regulatory document to be issued March 1, 2019) ○ Drastic simplification of license requirements for passenger and freight traffic • Introduction of international financial reporting and auditing standards at large SOEs (action program to be issued May 1, 2019) • Confirmation of Uzbek participation in the global competitiveness index (action program to be issued February 1, 2019) • Further improvement of free economic zones (FEZs) (draft regulatory document with the concept of FEZ development is to be issued April 1, 2019)

Law, Decree, or Resolution	Brief Description

	• Improvement of the regulatory framework for FEZs and small industrial zones (draft law on Special Economic Zones to be issued March 1, 2019)
	• Increased capacity of roads, railways, and air routes (action program to be issued during 2019), including increased exports by air and attraction of foreign airlines to this sector
	• Further development of transport and logistics infrastructure, construction and electrification of new railways, and improvement of service quality (action program to be issued during 2019), including the following:
	  ○ The acquisition of two new Boeing 787 Dreamliner aircraft and the construction of a modern airport in Tashkent-East
	  ○ Modernization of the Andijan–Sawai–Khanabad railway
	• Further improvement of the air transportation system to increase the number of tourists and ensure their free movement in the country (practical arrangements to be implemented during 2019), including the following:
	  ○ Creation of favorable conditions for low-cost airlines (airports) and companies offering commercial aviation services in the country's air transportation market
	  ○ Development of airport infrastructure and air navigation service
	  ○ Private sector participation in airport services, 'open sky' introduction
	  ○ Direct flights from countries with large tourist markets to Uzbekistan
	• Development of regional transport connectivity (drafts of regulatory documents and international treaties to be issued November 1, 2019), including inducement of low-cost airlines and increase of number of air flights and rail trips

Cabinet of Ministers' Resolution No. 814 of October 11, 2017, On Approval of Procedure for Applying a Dual-Channel System at Border-Crossing Points of the Republic of Uzbekistan	• Introduction of the Dual-Channel System at border-crossing points at the international airports as of January 1, 2018, and rail and road border-crossing points - as of January 1, 2021
Presidential Decree No. UP-5414 of April 12, 2018, On Measures to Radically Improve Activities of the State Customs Service Bodies of the Republic of Uzbekistan	• Among other steps, initiation of development and introduction of an automated risk management system for goods customs control on a selective basis • As of July 1, 2018, ○ Entitlement of foreign traders to fill in and submit cargo customs declarations online and individually, that is, without customs brokers' assistance

Law, Decree, or Resolution	Brief Description
	○ Introduction of advanced declarations for imported goods that can be submitted before goods arrive in Uzbekistan ○ Conduct of a regular study of the average time spent for customs clearance of goods, with further publication of the study results and steps to improve the related indicators • Prescription to develop a new revision of the draft Customs Code of Uzbekistan (by November 1, 2018), and others
Presidential Decree No. UP-5582 of November 24, 2018, On Additional Measures to Improve Customs Administration and Increase Efficiency of Activities of the State Customs Service of the Republic of Uzbekistan	• Introduction of an automated risk management system in practice by using four channels (yellow and red channels - as of December 1, 2018, green and blue - as of March 1, 2019) • Approved road map for improving customs administration • As of February 1, 2019, introduction of an institution of authorized economic operators that allows simplified customs procedures for fair and good foreign traders • Time for customs clearance of goods and vehicles defined as a key indicator of the customs officials' performance, with monthly publication of customs clearance time for each customs post • Cancellation of the requirement to register goods export contracts in the state customs service of the Republic of Uzbekistan, and others.
Presidential Resolution No. PP-4297 of April 23, 2019, On Measures for Further Improvement of Administrative Procedures in Performing Foreign Economic Activity	• By January 1, 2021, introduction of the Single Window Customs Information System compliant with the Recommendations and Guidelines for the establishment of a Single Window mechanism developed by the UN Center for Trade Facilitation and Electronic Business • Cancellation of a number of documents for traders and abolishment of duplicated functions of stated bodies • Introduction of an automated system to record the time of arrival and departure of each vehicle at customs, as well as an Electronic Queuing System, and others.
Cabinet of Ministers' Resolution No. 912 of November 18, 2019, About Regulation for Border, Customs, Sanitary-Quarantine, and Phytosanitary Control and Veterinary Supervision of People, Vehicles, and Goods at Border-Crossing Points of Uzbekistan	• Launch of Single Window Customs Information System that, among others, fixes the time of entry and exit of a vehicle and control procedures of each controlling body • Definition of the time limit for vehicles at checkpoints that should not exceed 15 minutes for passenger cars and 30 minutes for freight vehicles
Cabinet of Ministers' Resolution No. 1057 of December 31, 2019, On Improvement of Customs Procedures for Registration of Goods and Vehicles	• Reduced time of goods release for free circulation • Goods declared by carriers and other interested parties before goods arrival (that is, customs declaration is submitted to customs in advance) to be released for free circulation within three hours after the customs declaration is registered

Law, Decree, or Resolution	Brief Description
Imported to the Customs Territory of the Republic of Uzbekistan (date of entry into force - April 1, 2020)	• Online submission of the related information about goods, vehicles, passengers, and their luggage one hour before arrival to Uzbekistan for rail and road and two hours before arrival for air
Presidential Decree No. UP-5890 of December 9, 2019, On Measures for Deep Reforming of the Road Industry System of the Republic of Uzbekistan	• Unbundling of Committee of Automobile Roads (CAR) under the MoT • Separation from CAR of road construction enterprises with their transformation into limited liability companies, namely Yulkurilish JSC (Road Construction) and Kuprikkurilish JSC (Bridge Construction) • Introduction of tender for procuring works for design, construction, reconstruction, and overhaul/capital repair of automobile roads, as well as for technical supervision of road construction works • Allowance to independent organizations to perform consulting services (technical supervision) on road construction works based on outsourcing in accordance with international practice, including the provisions of International Federation of Consulting Engineers (FIDIC) (an international standards organization for Consulting Engineering and Construction) • Creation of a Specialized Fund for Automobile Roads Development (Fund) under the Ministry of Finance (MoF) and funding arrangements for the Fund • Road and bridge inventory and creation of an electronic database of roads • Creation of a geographic information system of the state cadastre of roads, including bridges, and others
Presidential Resolution No. PP-4545 of December 9, 2019, On Measures for Further Improvement of the Road Industry Management System	• Endorsement of new organizational structure of CAR under the MoT • Approval of a Roadmap to implement toll road projects based on PPP during 2020–22 • Requirement to the MoT to submit, to the Cabinet of Ministers, proposals on the practical relevance of joining the leading international organizations on roads (International Federation of Roads, International Road Association, and so on), as well as road international treaties (European Agreement on International Highways [Geneva, November 15, 1975], and so on), by January 1, 2020 • Transformation of the Republican Road Fund into the Autoyulinvest Agency (Road Invest Agency)
Presidential Resolution No. PP-4564 of January 10, 2020, On Joining International Treaties	• Uzbekistan signing the European Agreement concerning the International Carriage of Dangerous Goods by Road (Geneva, September 30, 1957) and Protocol amending article 1 (a), article 14 (1) and article 14 (3) (b) of the European Agreement of September 30, 1957, concerning the International Carriage of Dangerous Goods by Road (Geneva, October 28, 1993)
Law No. ZRU-598 of December 25, 2019, On Investments and Investment Activity (date of entry into force - January 26, 2020)	• Combination into a single law of several laws and a number of by-laws • Stipulation of state support measures for investments and investment activities, specification of investment aspects in FEZs, and regulation of the legal status of foreign investments in Uzbekistan and investment activities outside the country, and others

Law, Decree, or Resolution	Brief Description
Cabinet of Ministers' Resolution No. 885 of October 21, 2019, On Amendments and Supplements to Some Decisions of the Government of the Republic of Uzbekistan	• Increase in the number of countries whose citizens are entitled to a visa-free entry to Uzbekistan up to 86 countries
Presidential Resolution No. PP-3836 of July 4, 2018, On Further Measures Aimed at Optimizing an Order of Foreign Citizens' Entrance into the Republic of Uzbekistan	• Introduction of e-visa system for 51 countries, a transit visa-free procedure for 101 countries, a visa-free regime for foreign citizens under 16, and others
Presidential Resolution No. PP-4525 of November 20, 2019, On Measures Aimed at Further Improvement of the Business Environment and Entrepreneurship Support System in the Country	• Permits and certificates for export-import operations to be executed through the Single Window customs information system (as of February 1, 2020) • Endorsement of a road map on improving the score of Uzbekistan in Doing Business, a World Bank Group report, and others
Tax Code of Uzbekistan of December 30, 2019	• Simplification of tax legislation by excluding four special taxation schemes • Reduction of the number of tax inspections • Introduction of risk analysis into tax control • Use of e-invoices by economic entities for selling goods (services), and others

Annex 3. UFFM—a Comparison with Available Data on Freight Flows in Uzbekistan

Reports on Uzbekistan's freight logistics environment quote disparate and unverified data, pointing to the following challenges:

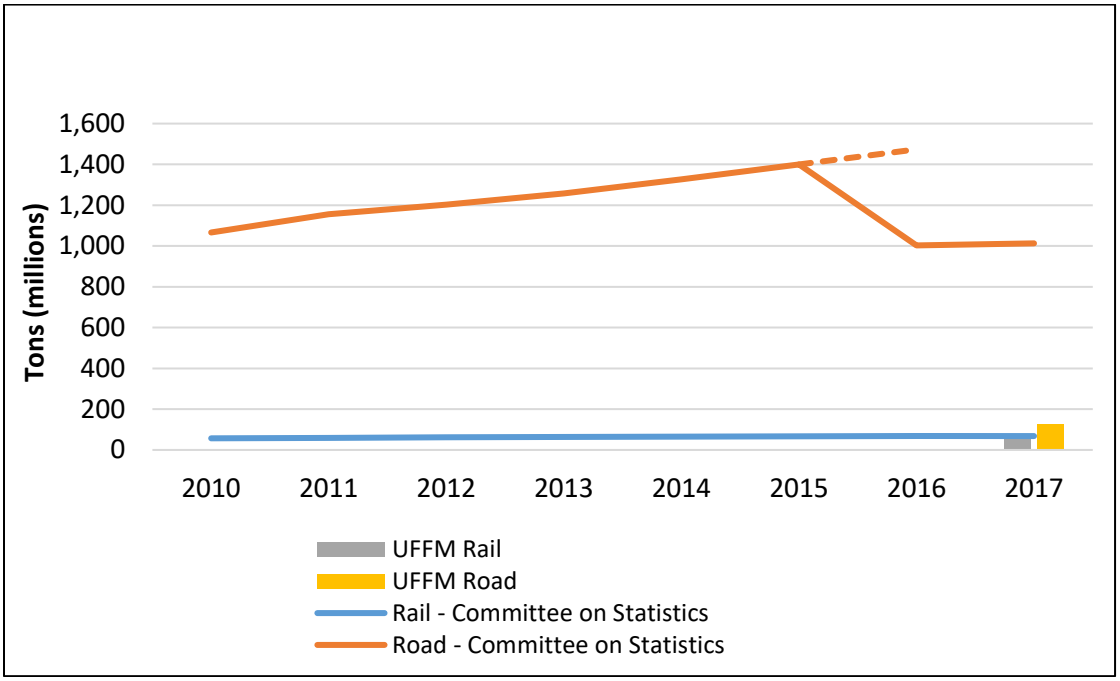
- Data sources differ, and sometimes even a single source provides dissimilar data.
- The data are quoted without context or verification.
- The data time series is illogical, and breaks in time series are not explained.
- Commentary on the importance of the observations is lacking.
- The link between observations and proposed strategies is not explained.

Although a large amount of input data exists in Uzbekistan, potentially offering a reasonably solid platform for creating a freight flow model, access to data was a challenge. The outputs of the best possible concept model that could be created are reflected above in annex 1, and illustrations of how to use the outputs in data-driven planning are provided.

Challenges due to available data

Available statistics calculate freight shipped by road as about 1.4 billion tonnes (although an alternative time series gives just over 1 billion), with 68 million tonnes on rail, compared with the Uzbekistan Freight Flow Model (UFFM) output of 195 million tonnes (figure A3.1). Besides the differences in statistics and the break in the time series, an analysis of Uzbekistan's economy indicates a GDP 'weight' of less than 200 million tonnes. The available statistics citing 1 billion or more would, therefore, imply that everything in the country, on average, is shipped 5 or 6 times, which is highly unlikely. Even at 200 million tonnes of freight, Uzbekistan's GDP is worth only US$150 per tonne, compared, for example, with US$410 for South Africa and US$559 for India. At 1 billion tonnes, that value falls to US$30 per tonne for Uzbekistan, which does not make economic sense.

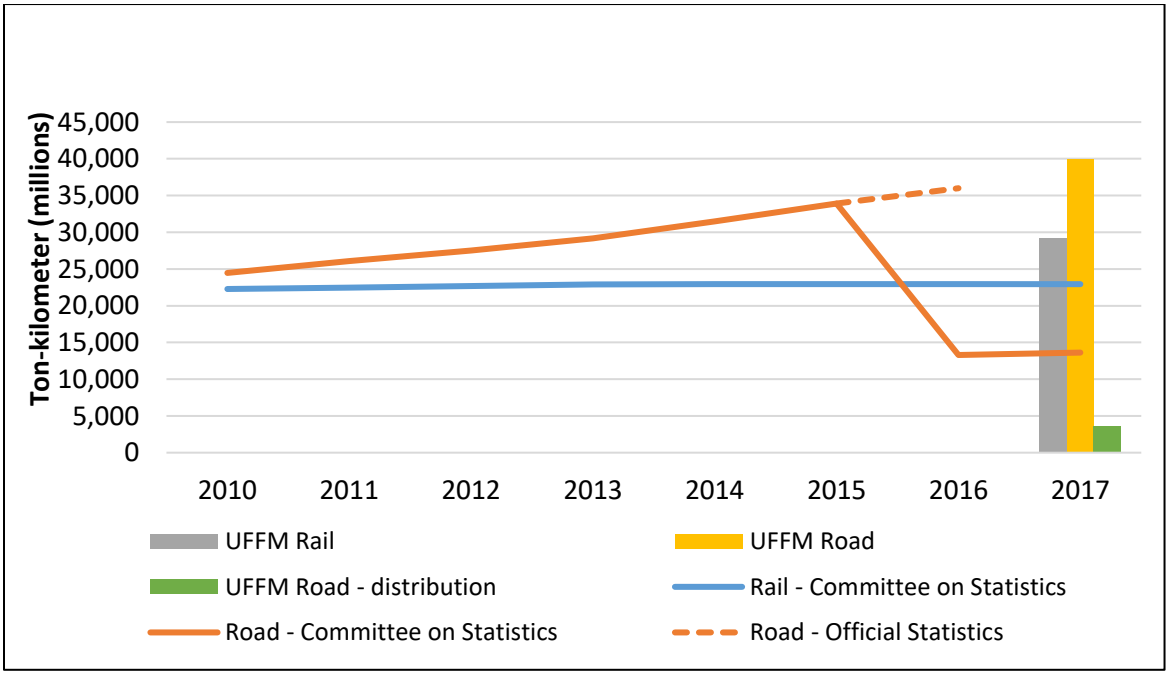
Figure A3.1. Tons shipped—comparison between available data and UFFM outputs



Source: World Bank, based on UFFM outputs.

A similar picture is evident for ton-kilometers (figure A3.2). One source estimates a drop in road transport ton-kilometers from 32 billion to 14 billion between 2015 and 2016, and another source reports 36 billion in 2016. The UFFM estimate is around 40 billion ton-kilometers on road transport.

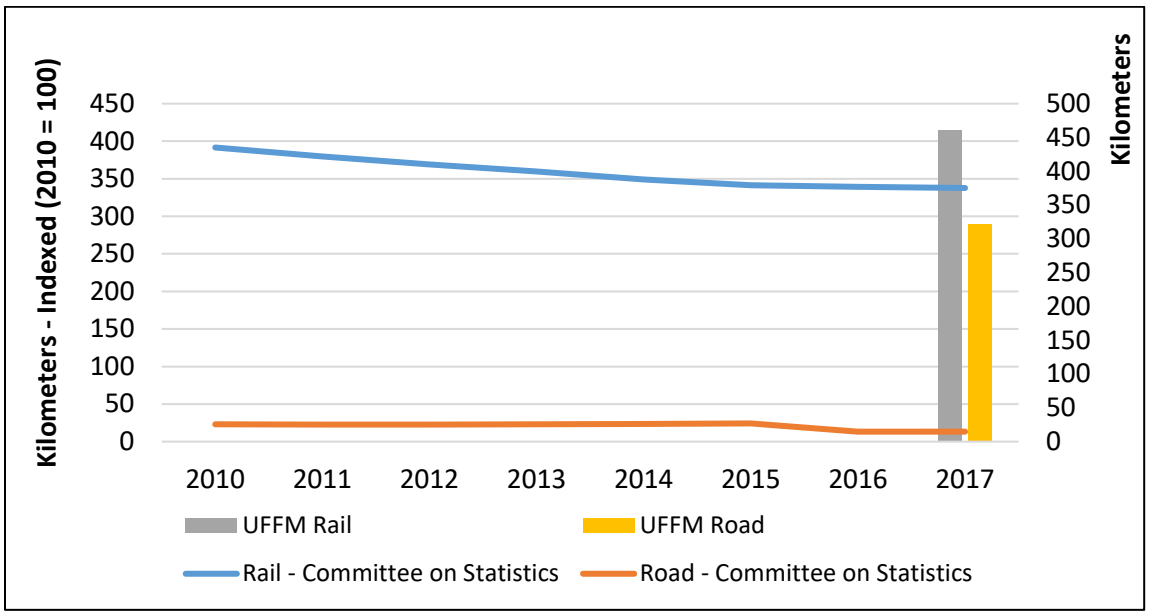
Figure A3.2. Ton-kilometers—comparison between available data and UFFM outputs



Source: World Bank, based on UFFM outputs.

According to available statistics, the drop in ton-kilometers is reflected in the drop in average transport distance (figure A3.3). A reduction of this magnitude in average transport distance for both rail and road is highly unlikely, if not impossible, and an average road transport distance of 13 km is just as unlikely. UFFM estimates an average road transport distance of around 320 km.

Figure A3.3. Average transport distance—comparison between available data and UFFM outputs



Source: World Bank, based on UFFM outputs.

Annex 4. Illustrative Use of TIR Carnets in Uzbekistan

TIR principles

The TIR convention, as reported earlier, was ratified by Uzbekistan in 1995 (TIR stands for '*Transports Internationaux Routiers*' or 'International Road Transports'). This convention establishes an international customs transit system based on five pillars:

- An international guarantee in which financial guarantees are provided to customs, allowing goods under the TIR procedures to move under suspension of payment of taxes and customs duties
- Authorized access to the TIR procedures for road carriers based on certain conditions
- Use of secure vehicles and containers to allow goods to be transported under customs control (customs seals)
- Use of a standard customs transit declaration, called the TIR carnet
- Mutual recognition of customs controls to facilitate and speed border crossings

TIR in Uzbekistan

In Uzbekistan, the association issuing and guaranteeing the TIR is the Association of International Road Carriers of Uzbekistan (AIRCUZ), which claimed 385 members as of January 1, 2019, all approved for TIR procedures and receiving TIR carnets (the TIR customs document) as TIR holders approved by Uzbek Customs Authorities. Customs Authorities counted 419 road transport companies approved as TIR carnets holders as of March 1, 2019. The number of TIR carnets issued by the International Road Transport Union (IRU) to the Uzbek issuing and guaranteeing association AIRCUZ for the past nine years is reported by the United Nations Economic Commission for Europe (UNECE) in table A4.1.

Table A4.1. TIR carnets issued to AIRCUZ, 2010–18

2010	2011	2012	2013	2014	2015	2016	2017	2018
9,000	14,100	17,500	7,500	9,000	9,000	27,000	14,000	32,400

Source: UNECE.

According to AIRCUZ, the association effectively issued 30,550 TIR carnets to Uzbek road carriers in 2018,[79] but not all were used the same year due to the varying validity period attached to each. According to Uzbek Customs Authorities, in 2018, Uzbek road carriers used 24,289 TIR carnets to transport goods under TIR procedures for Uzbekistan to foreign countries (exports), while they used only 2,003 TIR carnets to transport goods from abroad to Uzbekistan (imports). So, for 2018, Uzbek road carriers used a total of 26,292 TIR carnets.

[79] The number of TIR carnets issued during a given year by the IRU to a national guaranteeing association does not exactly correspond to the number of TIR carnets issued to road carriers by the association during the same year nor to the number of TIR effectively terminated during that year because of the varying period of validity of the TIR carnets.

The number of TIR carnets issued to Uzbek carriers can be compared with the number of TIR carnets used to deliver goods in Uzbekistan (as reported in the SafeTIR system). The number of TIR carnets used to transport goods from abroad to Uzbekistan, regardless of the carrier's nationality, is reported in table A4.2.

Table A4.2. TIR carnets used to transport goods to Uzbekistan by carriers of all nationalities

2010	2011	2012	2013	2014	2015	2016	2017	2018
11,410	20,816	27,132	21,677	16,883	15,797	15,734	20,590	28,261

Source: UNECE.

According to AIRCUZ data for 2018, 86 percent of the TIR carnets issued to Uzbek road carriers were used to export goods from Uzbekistan, while 14 percent were used to import goods from abroad to Uzbekistan. According to the information received from Customs Authorities, about 92 percent of TIR carnets issued to Uzbek carriers are used for exports, while about 8 percent are used to import goods to Uzbekistan.

Estimated Uzbek international transport under TIR market share

According to AIRCUZ statistics, the main international road transport market share of Uzbek carriers in 2018 can be presented as follows:

- Russia: 73 percent of the TIR issued to Uzbek carriers for both import and export
- Lithuania: 10 percent
- Kazakhstan: 4 percent
- Ukraine: 4 percent
- Azerbaijan: 2 percent
- Kyrgyz Republic: 2 percent
- Other TIR destinations: 5 percent

Uzbek carriers hold only a small portion of the TIR carnets used to transport goods from abroad to Uzbekistan (import) (table A4.3).

Table A4.3. TIR carnets of road carriers importing to Uzbekistan by nationality, 2018

Nationality of the road carrier	Number of TIR carnets
Turkey	14,250
Uzbekistan	2,003
Ukraine	1,541
Kazakhstan	1,141
Russian Federation	1,007
Lithuania	977
Belarus	939
Germany	422
Poland	349
Latvia	116
Slovak Republic	82

Nationality of the road carrier	Number of TIR carnets
Others	343
Total	23,180

Source: Uzbek Customs Authorities.

Uzbek traffic to the Iranian port of Bandar Abbas was important years ago but has been completely abandoned by Uzbek carriers. Uzbekistan's international road transport market share does not match the relatively balanced foreign trade in terms of import/export of goods. While the Russian market is prevailing in import and export volumes in general, Turkish road transport operators have the largest market share for imports to Uzbekistan by far.

Uzbek carriers have limited access to international markets and are poorly represented in the transport of goods to the Uzbek market (imports). In addition, Uzbek road transport operators are weak if not insignificant in the bilateral road transport market with Uzbekistan's immediate neighbors, which predominate heavily. This may result, at least partly, from the operational difficulties described in this report.

Annex 5. Benefits of Air Transport Market Liberalization

Region or country	Liberalization event	Main economic effects
United States	Since 1992, the United States has had reciprocal open skies air transport agreements with over 120 partners.	Bilateral Open Skies agreements have generated at least US$4 billion in annual gains to travelers, who would gain an additional US$4 billion if the United States negotiated agreements with other countries that have a lot of international passenger traffic.
European Union	In 1997, the Single European Air Transport Market completely liberalized intra-European Union markets.	Between 1992 and 2007, the number of routes served by at least two airlines increased by 385 percent and the number of cross-country routes increased by 220 percent. Increased competition led to reduced airfares, with traffic volume tripling between 1980 and 2000. In 2001–13, the low-cost market share grew from 3% to 27%.
Australia and New Zealand	In 2000, the Single Aviation Market (SAM) between Australia and New Zealand was initiated.	Within three years, passengers on the affected routes increased from 3.3 million to over 4.6 million. The liberalization provided good growth opportunities for low-cost carriers.
Africa	The liberalization of the intra-African air transport market between 12 countries is based on the Yamoussoukro Decision of 1999.	Liberalization is estimated to have generated 155,100 jobs in aviation, tourism, and the wider economy and to have contributed US$1.3 billion to annual GDP.
Georgia	In 2005, Georgia completely opened its air transportation market.	Passenger traffic at Tbilisi International Airport has increased 500 percent since 2005. The number of destinations available from Tbilisi has also doubled, as has the number of airlines serving the country in the past decade, including four low-cost-carriers.

Note: These findings are summarized from:

- for the European Union market from:
    - Schipper, Y., P. Rietveld, and P. Nijkamp. 2002. “European airline reform: an empirical welfare analysis.” *Journal of Transport Economics and Policy (JTEP)*, 36(2), pp.189-209; and
    - Burghouwt, G., P. Mendes De Leon, and J. De Wit. 2015. "EU Air Transport Liberalization Process, Impacts and Future Considerations." International Transport Forum Discussion Papers, No. 2015/04, OECD Publishing, Paris, https://doi.org/10.1787/5jrw13t57flq-en
- for the United States from: Winston, C., and J. Yan. 2015. “Open Skies: estimating travelers' benefits from free trade in airline services.” *American Economic Journal: Economic Policy*, 7(2), pp.370-414.
- for Australia and New Zealand from: Vowles, T.M., and S. Tierney. 2007. “The geographic impact of ‘open skies’ policies on Trans-Tasman air passenger service.” Asia Pacific Viewpoint, 48(3), pp.344-354.
- for Africa from: InterVISTAS Consulting, Inc. 2015. “The Economic Impact of Air Service Liberalization: Updating the Landmark 2006 Study to Reflect the New Realities of Commercial Passenger Aviation.” June 15, http://www.intervistas.com/wp-content/uploads/2015/07/The_Economic_Impacts_of_Air_Liberalization_2015.pdf
- for Georgia from: IFC. 2018.

Annex 6. Investment Needs of Airports in Uzbekistan

Airport	Airside	Landside
Tashkent	• Reconstruction of runways and taxiways to achieve compliance with International Civil Aviation Organization (ICAO) standards	• Development of central platform for commercial flights • Reconfiguration, decommissioning, and transfer of stands for parking planes • Improvement and preservation of southern area development and central platform
Samarkand	• Investment required in runways and runway shoulders • Reconstruction of drainage works, taxiway, and commercial stands to achieve compliance with ICAO standards • Fire and rescue equipment	• Passenger terminal expansion • Development of ancillary buildings (3,500 m^2)
Urgench	• Reconstruction of runways and taxiways to achieve compliance with ICAO standards • Construction of backup apron	• Commercial development • Terminal building reconstruction and expansion
Bukhara	• Investment required in runways and runway shoulders • Reconstruction of drainage works, taxiway, and commercial stands to achieve compliance with ICAO standards • Fire and rescue equipment	• Passenger terminal expansion • Development of ancillary buildings (3,000 m^2)
Ferghana	• Refurbishment of runways and taxiways • Minimal works to comply with ICAO standards	• Development in line with commercial demand • Potential synergies in military field
Namangan	• No compliance issues with runways and taxiways • Construction of asphalted airside roads • Additional equipment, firefighting vehicles, and structures • Construction of a parallel taxiway	• Car park development • Frontal area commercial development
Nukus	• No compliance issues identified • Air traffic control equipment and control tower investments required • Asphalted airside works	• Terminal building expansion
Navoi	• Compliance work necessary	• Refurbishment work
Termez	• Fire and rescue equipment • Major work necessary on runways and runway shoulders to comply with ICAO standards	• Expansion of passenger terminal (2,500 m^2)
Andijan	• None identified	• None identified
Qarshi	• Fire and rescue equipment • Drainage work • Construction of asphalted airside roads	• None identified

Source: IFC.
Note: The list of airports is ordered from larger to smaller.

Annex 7. Maps of International Corridors

Figure A7.1. Western transport corridors

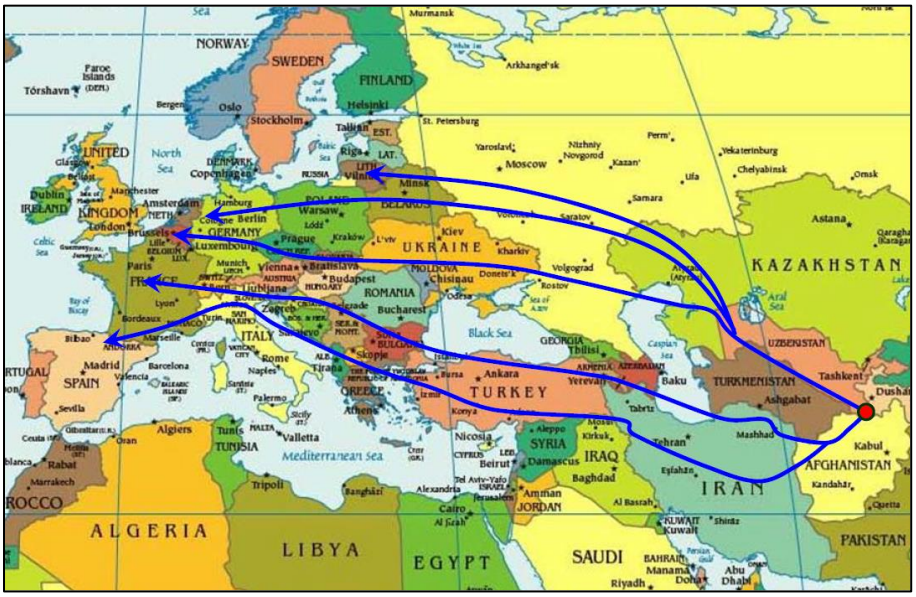


Figure A7.2. Southern transport corridors

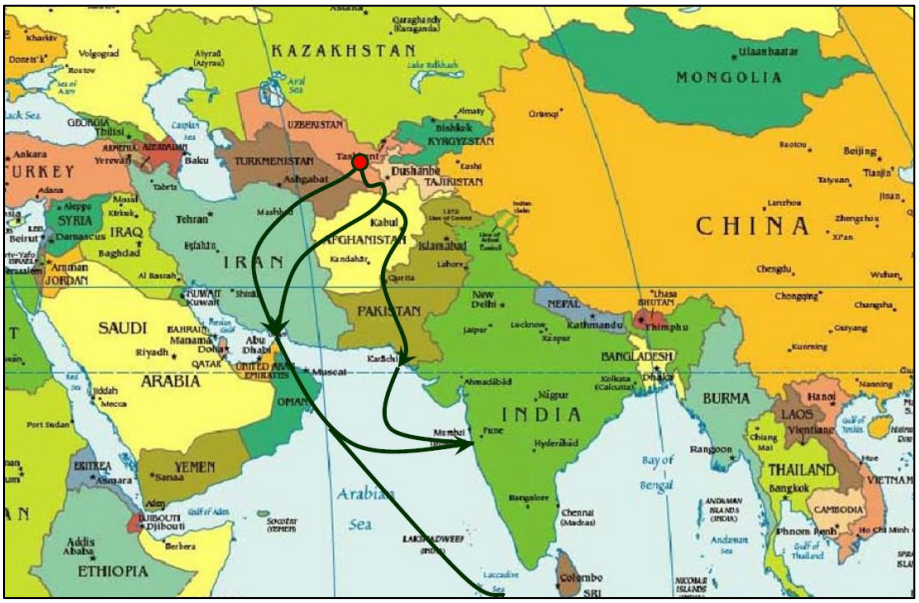


Figure A7.3. Eastern transport corridors

Annex 8. Examples of Public–Private Partnerships in Transport

Table A8.1. Roads using public–private partnerships (PPPs)

SÃO PAULO ROADS, BRAZIL	
Background	The state of São Paulo is responsible for almost one-third of Brazil's gross domestic product (GDP). Transport systems, particularly São Paulo's road system, are vital in economic production. In 2008, the Brazilian Development Bank, the Inter-American Development Bank, and International Finance Corporation (IFC) supported the development of the Private Sector Participation Program and the creation of an advisory team to help the government of São Paulo structure three large-scale road concession programs with expected private investments of up to US$5 billion. Most of the 1,500 km of highways involved serve as critical transport arteries connecting the state of São Paulo's industries with national and international markets.
Bidding	To date, three roads have been bid, with two reaching commercial close and one (São Paulo North Beltway) in the award stage: • **São Paulo Midwest Roads.** Awarded to Patria-Blackstone in March 2017 • **São Paulo Shoes Industry Road.** Awarded to Arteris, a joint venture between Abertis and Brookfield, in April 2017 • **São Paulo North Beltway.** Awarded to Ecorodovias, a subsidiary of the Italian Gávio Group
Investment mobilized	• **São Paulo Midwest Roads.** US$1.2 billion investment and US$410 million concession fee • **São Paulo Shoes Industry Road.** US$1.5 billion investment and US$450 million concession fee
Scope	The program entails 30-year toll road contracts to design, finance, expand, operate, and maintain three brownfield roads: • **São Paulo Midwest Roads**—570 km extension • **São Paulo Shoes Industry Road**—747 km extension • **São Paulo North Beltway**—177 km extension
Key outcomes	The transactions are expected to improve economic resilience and encourage broader development throughout the region, including expanded trade. In addition, they will improve safety and access to basic services, such as health care facilities and schools, for millions of Brazilians. *Source:* IFC.org/PPP, February 2019.
ALMATY RING ROAD, KAZAKHSTAN	
Background	In Almaty, Kazakhstan's largest city, 1 million vehicles use the city's streets daily. Traffic congestion is increasing and has been estimated to be responsible for 80 percent of the city's air pollution. Before the project, road infrastructure was not adequate to accommodate the 20 percent annual traffic growth that had been occurring. The government of Kazakhstan engaged IFC to structure a PPP to develop new road infrastructure and improve public services for local motorists.
Bidding	• A two-stage international competitive bidding approach was adopted.

	• Requests for prequalification were issued on January 14, 2015. • Bidders from China, France, Hungary, Italy, Kazakhstan, Republic of Korea, Spain, and Turkey submitted application packages. • Five bidders were prequalified for the second stage. • On November 25, 2015, three bids qualified. • On February 26, 2016, the Turkish–South Korean consortium (which included Turkey's Alsim Alarko Sanayi Tesisleri Ve Ticaret and Makyol Insaat Sanayi Turizm Ve Ticaret and Republic of Korea's SK Engineering & Construction and Korea Expressway Corporation) was announced as the winner and invited to negotiate with the government of Kazakhstan. • A concession was signed in late February 2016.
Investment mobilized	• US$740 million in construction and equipment for the new toll road • The government of Kazakhstan to provide annual availability payments set against strict performance criteria
Scope	A 20-year concession to design, finance, build, transfer, operate, and maintain the road was signed. The 66 km, 6/4-lane, category I-A bypass motorway will be equipped with modern traffic management and toll collection technology and designed to accommodate traffic from three districts bordering Almaty.
Key outcomes	• This is the first infrastructure PPP of its type in Central Asia. • The Almaty Ring Road, also known as BAKAD, is expected to improve services for 1.8 million people by reducing traffic congestion, improving the ecological situation, and leveraging new international investment. *Source:* IFC.org/PPP, 2016.
NAIA EXPRESSWAY PROJECT, PHILIPPINES	
Background	The Ninoy Aquino International Airport (NAIA) Expressway provides a high-quality direct link to the country's international airport and augments heavily congested major thoroughfares. With the fully elevated NAIA Expressway completed, average travel times along the route are expected to decrease by around 50 percent. IFC and Development Bank of the Philippines were contracted to advise the government's PPP program.
Bidding	• Seven international and local bidders responded to the invitation to prequalify, and four were ultimately prequalified. • Of the four bidders, two, Optimal Infrastructure Development, Inc. (OIDI) and Manila North Tollways Corporation, submitted bids and passed the technical criteria. • OIDI, a subsidiary of one of the Philippine's leading conglomerates, San Miguel Corporation, won the contract. • A concession was signed in July 2013.
Investment mobilized	US$250 million in private investment
Scope	A 30-year concession to design, finance, construct, and operate NAIA Expressway

Key outcomes	• In addition to the toll road to be built and subsequently transferred, the project provided US$250 million in income for the government in an up-front concession payment. • NAIA Expressway accommodates an estimated 100,000 passengers a day. • The improvements provided the government with a document PPP template setting out key policies. *Source:* IFC.org/PPP, August 2013.
RUTA DEL SOL, COLOMBIA	
Background	The 1,071 km Ruta Del Sol Highway connects the capital, Bogotá, with large urban areas in the country's interior and the Caribbean coast. Ruta del Sol has improved connectivity with key productive areas throughout Colombia and enhanced the competitiveness of these regions through improved road and travel conditions for passengers and goods.
Bidding	• Ruta del Sol was initially conceived by the government as a single project. It was later divided into three concessions to adapt to market conditions, ease its construction and financing, and mitigate the risk of relying on a single operator. IFC served as the transaction adviser to Colombia's National Concessions Institute for structuring the three concessions. • *Sector 1* was awarded to Consorcio Vial Helios, a consortium led by Colombia's Grupo Solarte and ConConcreto S.A. together with Argentina's Iecsa S.A. The government contribution requested was US$770 million, 20 percent less than the maximum approved bid value. • *Sector 2* was awarded to Concesionaria Ruta del Sol SAS, a consortium led by Brazil's Constructora Norberto Odebrecht and the Colombian financial group Corficolombiana. The government contribution requested was US$1.047 billion, 6.5 percent less than the maximum allowed bid value. • *Sector 3* was awarded to Yuma Concesionaria S.A. PSF, a consortium led by Italy's Impregilo, together with Colombia's Bancolombia and the pension fund Protección. The government contribution requested was US$1.039 billion, about 9.5 percent less than the maximum allowed bid value.
Investment mobilized	US$2.6 billion in total
Scope	The project was structured in three sectors: • *Sector 1* involves a new (greenfield) 78 km double-lane highway through mountainous terrain. Given its risk profile, Sector 1 was structured as a medium-term concession of seven years with availability payments—five years for construction and two years for operation. • *Sector 2* covers rehabilitation and expansion of 528 km of road on flat terrain with revenues generated through toll collection and availability payments from the government. This was structured as a variable-term concession, which will expire once the concessionaire's requested revenues are reached (the maximum term is 25 years). • *Sector 3* involves the rehabilitation and expansion of 465 km of road on semi-flat terrain with revenues generated through toll collection and availability payments from the government. This was also structured as variable-term concession limited to a maximum term of 25 years.

Key outcomes	• The project received Project Finance International's Transport Deal of the Year award for the Americas in 2011. • Ruta del Sol will reduce travel times, vehicle operating costs, and accidents along Colombia's main road, providing more reliable access and safer driving conditions for 10.5 million vehicles. It links agricultural, industrial, and urban centers with Caribbean ports. *Source:* IFC.org/PPP, January 2011.
DAKAR–DIAMNIADIO TOLL ROAD PPP, SENEGAL	
Background	With more than 100,000 vehicles traveling to and from Dakar daily using a single, double-lane road, severe traffic congestion was constraining the movement of goods and people. The government of Senegal partnered with IFC and the World Bank to create a PPP to build a landmark toll road connecting Dakar with other parts of the country.
Bidding	Eiffage S.A., France, won the contract.
Investment mobilized	• €230 million toll road project • €22.5 million provided by IFC as long-term debt facilities • €40 million provided by West African Development Bank, the African Development Bank, and West African Banking Company (CBAO), a leading Senegalese commercial bank, as long-term financing
Scope	A 30-year concession to build, finance, operate, and maintain a 25 km toll road from Dakar to Diamniadio
Key outcomes	• The Dakar–Diamniadio toll road has cut the average commute to and from Dakar from two hours to less than 30 minutes. • Reliable access to markets and social facilities (health care and schools) has improved. • The road has also upgraded Dakar's road infrastructure by creating a new and efficient gateway to the country's economic center, directly supporting Senegal's economic growth objectives. *Source:* IFC.org/PPP, November 2010.
BAHIA FEDERAL HIGHWAYS, BRAZIL	
Background	The federal government of Brazil sought to develop the first road concession for two major roads in the Northeast Region, the country's poorest area, to increase economic resilience and broader development. Both roads are heavily traveled, with an average of 20,000 vehicles a day using BR324 and 5,000 using BR116. In 2009, more than 100 people died in accidents on the roads. IFC and Brazil's National Bank for Economic and Social Development were hired as lead advisers in 2005.
Bidding	• Two bidders were prequalified. • Rodobahia consortium, a partnership of Spain's Isolux Corsan and Brazil's Engevix and Encalso, won the contract. • The concession, signed in October 2009, was structured as a performance-based contract.
Investment mobilized	US$615 million

Scope	A 25-year concession to expand, rehabilitate, operate, and maintain 667 km of federal roads (a 554 km section of BR116 and a 113 km section of BR324) in the state of Bahia in northeast Brazil
Key outcomes	• The auction model developed for these road concessions was used by the government to auction seven further federal road concessions. The model's bidding process promoted international participation in Brazilian road concessions, resulting in strong international interest. • The Rodobahia consortium requested a toll rate of US$1.24 for a two-axle vehicle, which was 21 percent lower than the maximum asking price of US$1.57. *Source:* IFC.org/PPP, January 2010.

Table A8.2. Airports using PPPs

Location	Features
North America	• Public operation of airports through municipal or state authorities is the most common practice. • Some small airports in the United States (such as Albany Airport, New York) are managed under contract. • In Canada, the state operates the country's largest airports.
Latin America and the Caribbean	• PPPs with long-term concession contracts (15–50 years) are the most common practice at Latin American and Caribbean airports, particularly the most important ones: ○ Aeropuertos del Sureste, Grupo Aeroportuario Centro Norte (OMA), and Grupo Aeroportuario del Pacífico in Mexico ○ Guarulhos and Viracopos in São Paulo, Galeao Rio de Janeiro, Confins Belo Horizonte, and Brasilia airports in Brazil ○ Quito and Guayaquil in Ecuador ○ Barranquilla, Bogotá, Cartagena, and Medellin in Colombia ○ Lima in Peru ○ Santiago in Chile ○ 33 airports under Aeropuertos Argentina 2000 in Argentina ○ Montego Bay and Kingston in Jamaica
Europe and Central Asia	• PPPs through equity shares are the most common practice at European airports, with some countries deciding to hold a majority of the equity. • Most large European airports follow this scheme: Aena in Spain, Aeroportos de Portugal, Amsterdam, Frankfurt, London (Heathrow), Manchester, Milan, Paris (Aéroports de Paris), Vienna, and Zurich.
Asia Pacific	• Combination of publicly owned airports, PPP concessions, and equity share sales: ○ Publicly owned: Japan and China airports ○ PPPs: India, Malaysia, Philippines, and the Russian Federation ○ Equity share sale: Australia
Africa and the Middle East	• Publicly owned and operated airports are the most common. • Several PPP developments are underway (some not implemented yet): Ivato and Nosy Be in Madagascar; Jordan; Nairobi in Kenya; and Zanzibar and Dar Es Salaam in Tanzania. • Some airports are operated with management contracts: Cairo; King Abdulaziz, Jeddah; King Khalid, Riyadh.

Source: IFC.

Table A8.3. Forms of PPP and private sector participation in airports

Management contracts	• Albany, New York: AvPorts, Go-Albany, Million • Cairo: Fraport • Indianapolis: BAA (1995–2007) • King Abdulaziz, Jeddah, and King Khalid, Riyadh: Fraport • Lynden Pindling Nassau: Vantage (YVR) • Maynard H. Jackson Jr. Concourses E and F, Atlanta: Abertis and Aena
Concession contracts	• Pulkovo St. Petersburg: Northern Capital Gateway and Fraport • Juan Santamaría San José: Aeris Holding Costa Rica S.A. (ADC and HAS) • Jorge Chavez, Lima: Fraport • Indira Gandhi, Delhi: GMR Group, Fraport, and Eraman Malaysia • Montego Bay, Jamaica: Vantage and Abertis • Quito Quiport: ADC and HAS

Shares sales (privatization)	• United Kingdom:
	  ○ Aberdeen, Edinburgh, Glasgow, Heathrow, Standsted, and Southampton airports: Heathrow Airports (formerly BAA)
	  ○ London Gatwick: London City and Edinburgh, owned by Global Infrastructure Partners
	• Australia:
	  ○ Sydney Kingsford Smith: Southern Cross Airports Corporation (Map Airports)
	  ○ Brisbane Airport: Brisbane Airport Corporation Proprietary Limited

Source: IFC.