



RAILWAY SECTOR ASSESSMENT FOR TAJIKISTAN

MARCH 2021

RAILWAY SECTOR ASSESSMENT FOR TAJIKISTAN

MARCH 2021



The boundaries, colors, denominations, and any other information shown on the maps do not imply, on the part of ADB, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries, colors, denominations, or information.

Note:

In this publication, “\$” refers to United States dollars.

Cover design by Edith Creus.

Cover photos (left to right): Locomotive train, railway at Khulbuk tunnel, and inside Dushanbe central (photos by SUE Rohi Ohani Tojikiston).

CONTENTS

TABLES AND FIGURES	iv
ACKNOWLEDGMENTS	v
ABBREVIATIONS	vi
CURRENCY EQUIVALENTS	vi
1 INTRODUCTION AND BACKGROUND	1
A. Introduction	1
B. Background	1
C. The railway network	2
D. Institutional responsibilities for railways	4
E. Cross-border and transit traffic routes	5
F. Relevant CAREC corridors	9
2 TRENDS IN RAILWAY TRAFFIC	13
A. Introduction	13
B. Analysis of traffic	13
C. Traffic growth scenario	16
3 MARKET COMPETITIVENESS	18
A. Introduction	18
B. Market feedback	19
C. Problems affecting rail competitiveness	21
4 RAILWAY OPERATING AND FINANCIAL PERFORMANCE	24
A. Introduction	24
B. Commercial orientation	24
C. Financial performance	24
D. Operational benchmarking	25
5 PROPOSALS FOR INVESTMENT, COMMERCIALIZATION, AND REFORM	29
A. Introduction	29
B. Policy setting	29
C. Commercialization and reform	30
D. Proposals for support from CAREC Railway Sector Development TA	30
1. Prefeasibility studies	30
2. Knowledge products and events	33
E. Main opportunities for support under CAREC Railway Sector Development TA	33
APPENDIX: CAREC DESIGNATED RAIL CORRIDORS	34
REFERENCES	36



TABLES AND FIGURES

TABLES

1.1	Tajikistan's Population by Region, 2014–2018	1
2.1	Trends in Railway Freight and Passenger Traffic, 2014–2018	13
2.2	Freight Volume and Turnover by Mode, Tajikistan	14
2.3	International and Domestic Freight Volume by Mode, Tajikistan	14
2.4	Value of Tajikistan Exports and Imports	15
2.5	Cross-border Railway Freight Volume, 2014–2018	15
2.6	Origins and Destinations of Tajikistan Imports and Exports by Value, 2017	17
2.7	Trends in Rail Container Traffic, 2014–2018	17
2.8	Base Case Traffic Scenario, 2019–2022	17
3.1	Typical Road Transport Rates for Export to Frequent Destinations	18
3.2	Market Feedback on ROT Competitiveness for Different Traffic Types	20
3.3	Transport Service Quality Rated by Local Logistics Professionals	21
4.1	Tajikistan Railway's Revenue and Expense Trend, 2014–2018	25
5.1	More Promising Opportunities for Tajikistan for Possible Support Under CAREC Railway Sector Development TA	33

FIGURES

1.1	Tajikistan Railway Network and Cross-border Road Corridors	3
1.2	Administrative Structure of Rohi Ohani Tojikiston	4
1.3	Regional Rail Links and Ports Serving Cross-border and Transit Traffic	6
1.4	Sections of CAREC Corridor 2 Relevant for the Tajikistan	9
1.5	Sections of CAREC Corridor 5 Relevant for the Tajikistan	10
1.6	Sections of CAREC Corridor 6 Relevant for Tajikistan	11
4.1	Comparison of Railway Length and Staff Size in Tajikistan, other CAREC Member Countries and other Leading Railway Countries	26
4.2	Comparison of Railway Rolling Stock Fleet in Tajikistan, other CAREC Member Countries and other Leading Railway Countries	26
4.3	Comparison of Annual Railway Freight and Passenger Traffic Levels in Tajikistan, other CAREC Member Countries and other Leading Railway Countries	27
4.4	Comparison of Railway Track and Staff Productivity in Tajikistan, other CAREC Member Countries and other Leading Railway Countries	28
4.5	Comparison of Locomotive and Wagon Productivity in Tajikistan, other CAREC Member Countries and other Leading Railway Countries	28
5.1	Proposed Jaloliddini Balkhi–Jayhun–Nizhny Pyanj Railway	32



ACKNOWLEDGMENTS

This country railway sector assessment is part of an Asian Development Bank (ADB) technical assistance (TA) project on *Railway Sector Development in Central Asia Regional Economic Cooperation (CAREC) Countries*. The project has been assisting CAREC member countries to identify promising opportunities for investment in cross-border railways and develop railway commercialization and reform measures to strengthen railway performance in accordance with the *CAREC Railway Strategy* approved by CAREC ministers in 2017.

Preparation and supervision of the project was led by Jurgen Sluijter, Senior Transport Specialist, and overseen by Dong-Soo Pyo, Director, Transport and Communication Division, Central and West Asia Department. Administrative support was provided by Krisanta Carissa Vila, Associate Project Analyst.

Project activities were guided by the members of the CAREC Railway Working Group, CAREC Railway Focal Points, and national TA coordinators.

The Tajikistan railway sector assessment was prepared by a team of TA consultants. Country-level consultations and research were carried out by Andy Sze, Railway Market and Logistics Specialist and Farida Yoqubzoda, Transport Specialist. Report preparation was led by Tyrrell Duncan, Team Leader/Railway Specialist.

Valuable insights and information were provided by Tajikistan Railway, other government departments, international development partners and representatives of the private sector. Useful comments were also provided by ADB staff.



ABBREVIATIONS

ADB	Asian Development Bank
BCP	border crossing point
BTK	Baku–Tbilisi–Kars
CAREC	Central Asia Regional Economic Cooperation
CIS	Commonwealth of Independent States
CRC	China Rail Corporation
EBRD	European Bank for Reconstruction and Development
EEU	Eurasian Economic Union
FSU	former Soviet Union
ICT	information and communication technology
ITF	International Transport Forum
KTZ	Kazakhstan Temir Zholy (Kazakh Railways)
MC	Member Country
MOT	Ministry of Transport
PRC	People’s Republic of China
ROT	Tajikistan Railway
RZD	Russian Railway
SOE	state-owned enterprise
TA	technical assistance
TALCO	Tajikistan Aluminium Company
TDA	Turkmen Demir Yollari (Turkmenistan Railway)
TITR	Trans-Caspian International Transport Route
UIC	International Union of Railways
UTY	O‘zbekiston Temir Yo‘llari (Uzbekistan Railway)

CURRENCY EQUIVALENTS

(as of 1 July 2020)

Currency unit	–	Somoni (TJS)
TJS1.00	=	\$0.0972
\$1.00	=	TJS10.29

INTRODUCTION AND BACKGROUND

A. Introduction

1. In 2017, the eleven Member Countries (MCs) of the Central Asia Regional Economic Cooperation (CAREC) program approved the CAREC Railway Strategy with a view to expanding the role of railway transport in the region.¹ The strategy aims to accelerate the identification, preparation, and financing of feasible railway investment projects and, at the same time, advance the commercialization and reform of railways to improve their performance (ADB 2017).
2. In 2018, the Asian Development Bank (ADB) approved a \$2 million regional technical assistance (TA) project for CAREC Railway Sector Development to assist MCs in implementation of the CAREC Railway Strategy (ADB 2018).² The TA is intended to accelerate the sound development of the railway sector in CAREC countries by providing support for railway transport market research, project identification and preparation, knowledge sharing, and preparation of practical actions for commercialization and reform in MCs.
3. During the first part of TA implementation, the TA consultants conducted assessments of the railway sector in each MC. The purpose of these assessments was to examine the setting, characteristics, performance and prospects

of railways, and identify promising investment opportunities, and commercialization and reform actions, that could be considered for support through the TA. This short report summarizes the findings of the railway sector assessment for Tajikistan, based on a country visit during 1–8 August 2019.

B. Background

4. Tajikistan is a double-landlocked, mountainous³ lower-middle income country, situated in the southern part of Central Asia, with a land area of 141,400 square km. It has borders with the Kyrgyz Republic, Uzbekistan, Afghanistan, and the People's Republic of China (PRC). As Table 1.1 indicates, the country has a population of about 9 million (ADB 2019).

Table 1.1: Tajikistan's Population by Region, 2014–2018 (thousand persons)

Location	2014	2018
Gorno-Badakhshan Autonomous Region	214	224
Sugd region	2,456	2,627
Khatlon region	2,972	3,202
Dushanbe	789	859
Others	1,922	2,072
Tajikistan	8,352	8,984

Source: Statistics Committee.

¹ The eleven CAREC member countries are Afghanistan, Azerbaijan, the People's Republic of China (specifically the Xinjiang Uygur Autonomous Region and the Inner Mongolia Autonomous Region), Georgia, Kazakhstan, the Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan.

² The TA is cofinanced by the People's Republic of China (PRC) Poverty Reduction and Regional Cooperation Fund and the United Kingdom Fund for Asia Regional Trade and Connectivity (under the Regional Cooperation and Integration Financing Partnership Facility).

³ Some 93% of the land area is mountainous, including some of the highest mountain ranges in Central Asia.

Most of the population lives in the Sugd, Khatlon, and Dushanbe regions in the western part of the country. Much of central and eastern Tajikistan is mountainous and relatively sparsely populated.

5. The economy has been growing at 6%–7% in recent years. In 2017, the country had a GDP of TJS61,094 million and a per capita gross national income (Atlas method) of \$990 (ADB 2019). The leading economic activities are mineral extraction, metals processing and agriculture. Cotton is the main cash crop and export commodity. The rivers from Tajikistan’s mountains provide abundant water supply supporting hydroelectric power generation and irrigated agriculture.

C. The railway network

6. The railway network consists of 682 km of broad gauge (1,520 mm) non-electrified single-track, with a semi-automatic block signaling system. It is confined to the western part of the country. There are three separate sections, each connecting with the Uzbekistan railway network. The northern section serves Sugd province (Khujand). The central section serves Dushanbe, the Tajikistan Aluminium Company (TALCO) located at Tursunzoda, and nearby urban centers. The southern section serves Khatlon province which is a major agricultural producer.

7. The network was built during the Soviet era as part of an integrated railway system connecting the Soviet Republics. Its three sections were branch lines of the Central Asia Railway headquartered in Tashkent, Uzbekistan. Since they were designed to provide and receive freight to and from the Central Asian Railway, there was no reason to connect the three sections with one another.

8. When the former Soviet Union (FSU) collapsed in 1991, Uzbekistan took over the Central Asian Railway within its territory and established O‘zbekiston Temir Yo‘llari (UTY) to manage, operate, and maintain the railway. In 1994, Tajikistan established Tajikistan Railways—Rohi Ohani Tojikiston (ROT)—to operate the railway sections within its territory. ROT also took over a fleet of freight wagons, passenger coaches, locomotives, and assorted equipment. It was also responsible for a variety of other enterprises, including schools, hospitals, and shops.

9. While the Tajikistan railway sections had previously been part of an integrated long-distance network, they were now separate branch lines that could only be connected by making a circuitous transit through Uzbekistan. In 2016, ROT completed the Vakhdat–Yovon line to connect the central and southern sections.⁴ However, connections between the northern section and the central and southern sections are still only possible via Uzbekistan, and all international connections have to pass through Uzbekistan. Periodically, Tajikistan rail movements have been blocked by other countries (e.g., Uzbekistan, Turkmenistan). Uzbekistan ended its closure of the southern section in 2018 but Turkmenistan continues to embargo onward Tajikistan railway and road traffic.

10. The 41 km Vakhdat–Yovon line, which was opened in 2016, completed the 119 km link between Dushanbe and the southern city of Kurgonteppa. It connects ROT’s central and southern rail lines which were previously only linked via a circuitous 432 km route through Uzbekistan.⁵ Construction, which began in 2009, was financed by loans from the PRC and work was undertaken by Chinese contractors.

⁴ Aside from the construction of Vakhdat–Yovon Line, there have been no significant changes in the railway network since the Soviet era.

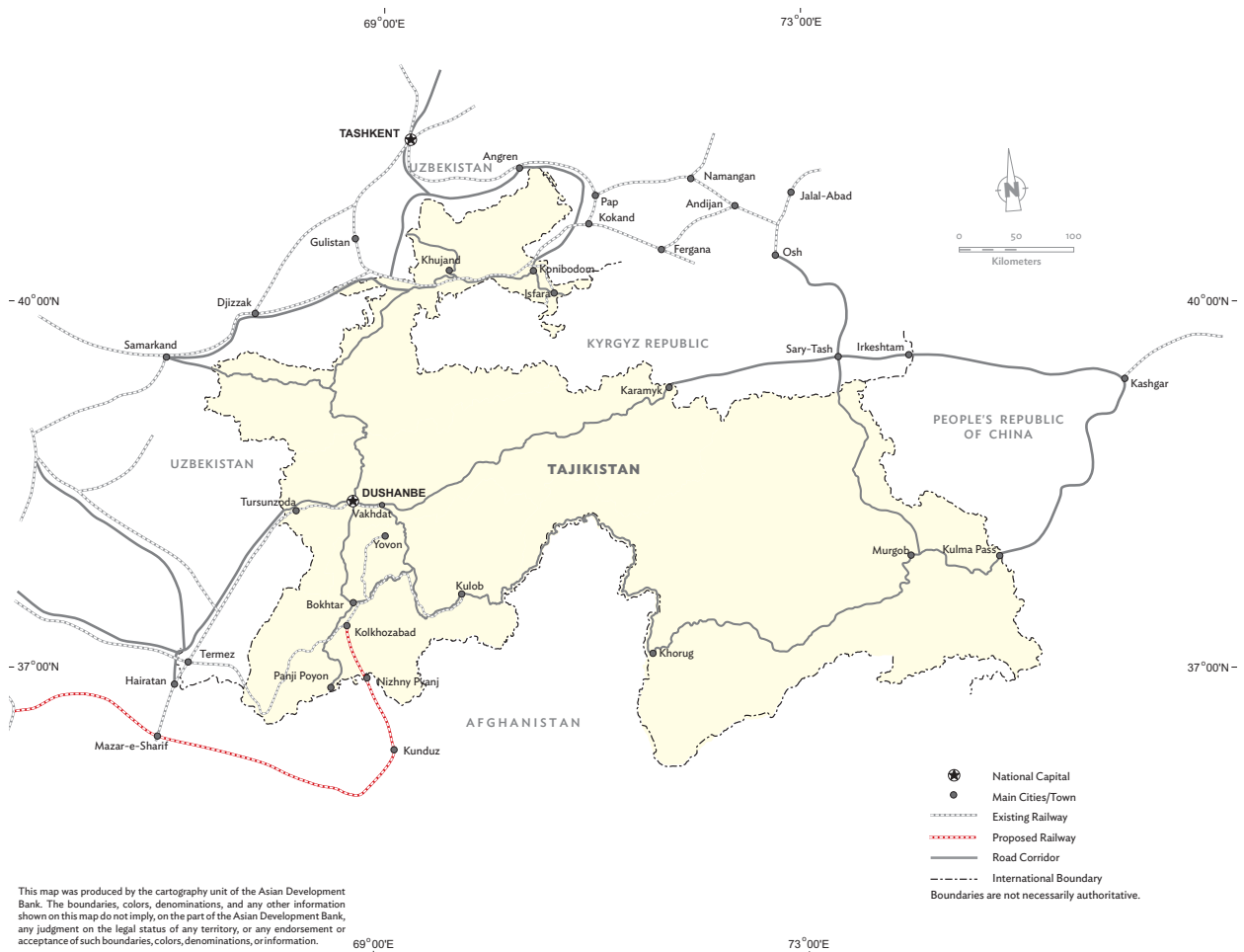
⁵ There continues to be no direct connection between the northern section and the central and southern sections.

11. In the Soviet era, ROT’s northern section served traffic between Djizzak and the Fergana Valley, both in present-day Uzbekistan. After the collapse of the FSU, this Uzbek traffic had to pass through Tajikistan which required two border crossings and payment of a high transit tariff to ROT, so Uzbekistan gave priority to building an alternative route within its territory. This was achieved by building the Angren–Pap Railway. When it was completed in 2016, UTY stopped using ROT’s northern section.⁶

12. Railway freight traffic fell sharply after the collapse of the FSU. Many of the FSU’s centrally planned industries were unable to survive in the new market economy. Tajik producers that supplied inputs to these industries also collapsed. Many of the rail sidings built to serve factories became idle.⁷

13. ROT’s rolling stock is quite old. Its 42 locomotives were acquired during 1970–1989, with 26 used for linehaul and 16 for shunting.

Figure 1.1: Tajikistan Railway Network and Cross-border Road Corridors



Source: TA consultants.

⁶ The diversion of Uzbek traffic onto the Angren–Pap Railway resulted in ROT losing transit fees that were reportedly in the region of \$25 million per annum.

⁷ Products made in these factories during the FSU included tractor parts, industrial valve components, and textiles.

In early 2019, the average age of freight wagons was 37 years and most of the passenger wagons were 45 years old. Freight train length ranges from 1,200 meters to 1,800 meters, and freight train weight is between 2,500–3,000 tons. The average speed of ROT trains is 38 km per hour for freight and 36 km per hour for passenger services.

14. The level of rail containerization is low. Most commodities that use rail are shipped in railway wagons. This includes alumina, coal, crude oil, fertilizers, construction materials, and grain. Containers are used mainly for imports and a small number are used for exports of products such as sportswear transported from Khujand to Moscow.

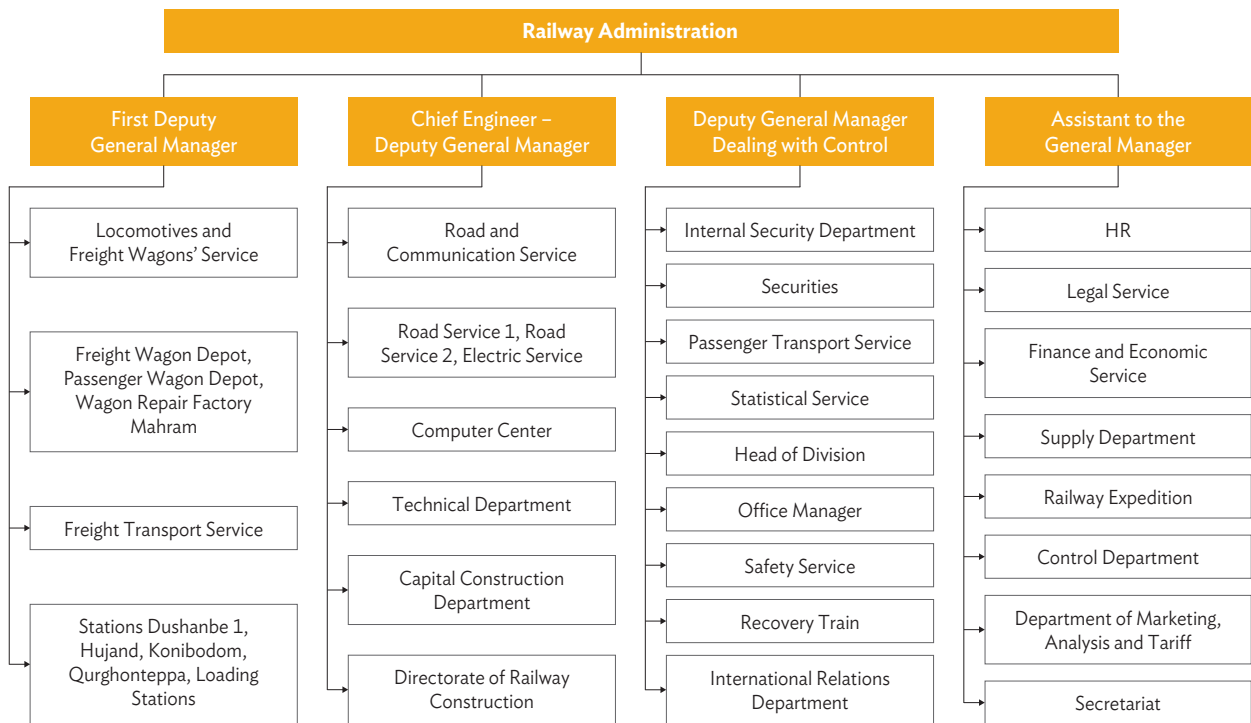
15. ADB is currently assessing the potential for developing a trans-national economic corridor to serve Kazakhstan, Uzbekistan, and Tajikistan.

This would focus on Shymkent city and Turkestan Oblast in Kazakhstan, Tashkent city and Tashkent Oblast in Uzbekistan, and Sugd Oblast (including Khujand city) in Tajikistan. It could potentially include proposals for improving cross-border railway links between Sugd Oblast and the other parts of the economic corridor.

D. Institutional responsibilities for railways

16. The management and operation of railways in Tajikistan is the responsibility of ROT which is a state-owned enterprise (SOE). ROT owns and maintains the railway infrastructure and rolling stock, and operates the trains. It has 5,400 employees.

Figure 1.2: Administrative Structure of Rohi Ohani Tojikiston



Source: MOT.

The Ministry of Transport (MOT) is responsible for policy and oversight. ROT's organization structure is shown in Figure 1.2.

17. ROT is primarily a freight railway, with freight comprising 95% of its traffic. The government expects it to operate on a self-financing basis without state subsidies. However, its revenues have steadily declined, leading to a situation where it lacks the financial resources needed for renewal of its infrastructure and rolling stock. Poor track condition has led to low train speeds and more frequent derailments.

18. ROT management stated that changes in ROT's tariffs are subject to review by the Anti-monopoly Commission. The tariff filing is done once a year and subject to 30-day review period. This makes it more difficult for ROT to compete with road transport which is not subject to tariff regulation.

E. Cross-border and transit traffic routes

19. Tajikistan's trade and cross-border transport faces multiple constraints. These include mountainous terrain, double-landlocked location, narrow economic base, asymmetric trade flows, border closures and passage restrictions by neighboring countries,⁸ limited investment financing capacity and high financing costs (interest rates for national currency loans are often around 25% per annum), lack of economies of scale in transport organizations, and inefficient border clearance processes. As a result, Tajikistan's transport routes to support trade and transit traffic are relatively underdeveloped.

Transport costs for Tajikistan's exports and imports are among the highest in the world.⁹

20. As shown in Figure 1.3, the central and southern railway sections connect with the Uzbek railway network near Tursunzoda to the west of Dushanbe, and in the southwest extremity of the country near to Termez (Uzbekistan). To reach the main border with Afghanistan at Nizhny Pyani, railway traffic must transfer to road transport in the vicinity of Kolkhozabad. The northern railway section extends westwards to meet the Uzbek railway network near Bekabad (Uzbekistan) with onward connections east to Samarkand and north to Tashkent, and extends eastwards to connect with Uzbekistan's Fergana Valley.

21. ROT competes with road transport for cross-border traffic. There are three main cross-border road corridors (Figure 1.3). On the western side of the country, the north-south road corridor extends from the Afghan border at Nizhny Pyani via Tashkent to Khujand in the north with onward connections north to Tashkent and west to Samarkand (both Uzbekistan). This competes with the railway, offering more direct routes to Uzbekistan, Turkmenistan and beyond, and also for traffic to and from Afghanistan. There are two main east-west road corridors within Tajikistan. These pass through very difficult mountainous terrain but have the advantage of offering relatively direct routes to the PRC and the Kyrgyz Republic compared with the circuitous railway routes via Uzbekistan. Both east-west road corridors extend from the Uzbekistan border near Tursunzoda border via Dushanbe to connect with Kashgar (PRC). Beyond Dushanbe, the more northerly of these corridors proceeds northeast to the Kyrgyz Republic border near Karamyk, connecting onwards via

⁸ For example, Uzbekistan closed most of its border crossings with Tajikistan until 2018, Tajik cargo has been subject to periodic embargo by Turkmenistan, and the Kyrgyz Republic restricted use of the Karamyk border crossing to bilateral traffic which prevented Tajikistan from accessing an efficient route to the PRC.

⁹ A trade diagnostic study estimated that Tajikistan's logistics costs were 27% of GDP (Ojala et al., 2004). This compares with less than 15% in the PRC and about 8% in developed countries such as the US, Japan, and Germany.

Figure 1.3: Regional Rail Links and Ports Serving Cross-border and Transit Traffic



Notes: (1) Within the PRC, the map covers principal railway trunk routes used for trade between the PRC and CAREC member countries and regional railway links relevant for Inner Mongolia and Xinjiang, the two PRC regions that participate in CAREC; (2) the boundaries, colors, denominations, and any other information shown on this map do not imply, on the part of ADB, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries, colors, denominations, or information.

Source: TA consultants.

Sary-Tash (Kyrgyz Republic) and Irkeshtam on the Kyrgyz Republic–PRC border. The more southerly corridor (Pamir Highway) proceeds via Khorog and Murgob entering the PRC at Kulma Pass before turning north to Kashgar. From Murgob there is also a road proceeding north to Sary-Tash offering onward connections to Kashgar and Osh (Kyrgyz Republic).

22. The main origins and destinations of Tajikistan’s imports and exports are the PRC, the Russian Federation, Kazakhstan; followed by Turkey, Switzerland, and Algeria. Other relevant origin and destination countries are the Republic of Korea, Ukraine, Belarus, Lithuania, Germany,

and Italy (Table 2.6). Taking this into account, the segments of the international freight market relevant for ROT over the medium and long term are shown in Figure 1.3 and summarized below:

- (i) **To and from the PRC and East Asia.**
The PRC is Tajikistan’s leading source of imports and could become a more important export destination in future. Imports are mainly consumer goods and other manufactured goods. For traffic from eastern PRC—especially higher volume, lower value PRC exports and metal ore imports—the preferable option

would use ocean shipping between PRC ports and Bandar Abbas (Iran) and then rail to Tajikistan via Mary (Turkmenistan) and Bukhara (Uzbekistan). An alternative would be to use the Pakistan ports of Karachi or Gwadar if necessary rail links are developed in Afghanistan and Pakistan. Since Iran's railway is standard gauge (1,435 mm) while Tajikistan and other members of the Commonwealth of Independent States (CIS) use Russian broad gauge, a gauge change is required. In view of Turkmenistan border closures, an alternative rail route proceeds from Bandar Abbas to Baku (Azerbaijan) and then joins the Trans-Caspian International Transport Route (TITR) by ferry to Aktau and by rail to Tajikistan via Shalkar and Arys (all Kazakhstan) and Tashkent.¹⁰ Due to Iran economic sanctions, a further alternative is to ship to the Black Sea and join the TITR at the port of Poti or Batumi (Georgia). These alternatives require multiple border crossings and mode changes that lead to long journey duration and high costs. For higher value goods, and origins or destinations in central and western PRC, land transport may be used for the entire journey to and from Tajikistan. This is mainly by rail using the eastern part of the TITR via Urumqi (PRC), Almaty (Kazakhstan), and Tashkent (Uzbekistan). Containerized traffic generally crosses the PRC–Kazakhstan border at either Khorgos/Altyntkol or Alashankou/Dostyk, with the amount of traffic using the Khorgos/Altyntkol gateway increasing at a faster pace. A change from standard gauge to broad gauge takes place at the border.

There is also competition from road transport, particularly for origins and destinations in western parts of the PRC's Xinjiang Uygur Autonomous Region and freight transported by rail to Kashgar and transferred to road to enter Tajikistan directly at Kulma Pass or at Isfara via Irkeshtam and the Kyrgyz Republic's Batken border crossing.¹¹ These roads pass through remote mountainous terrain, driving conditions on some sections are poor, and winter road closures are common. Several new rail links have been proposed that would provide Tajikistan with a more direct railway route west of Kashgar. These include (a) the PRC–Kyrgyz Republic–Uzbekistan railway via Torugart and Osh (both Kyrgyz Republic) to Uzbekistan's Fergana Valley, and (b) from Kashgar to Dushanbe via Sary-Tash (Kyrgyz Republic) and Karamyk (Tajikistan). Both options traverse mountainous terrain so the investment cost would be very high. There has been continuing dialogue among concerned countries regarding option (a) but prospects for investment remain uncertain pending further studies of traffic, feasibility and financial structuring. There has been less dialogue on option (b).

(ii) **To and from the Russian Federation and Kazakhstan.** The Russian Federation and Kazakhstan are Tajikistan's second and third largest sources of imports (including petroleum products, petroleum gas, wheat, and aluminum oxide) and among its main export destinations (including metal ores, raw cotton, cotton yarn). Since these products are mainly bulk commodities, they are generally carried for rail. The primary route is via Tashkent,

¹⁰ The members of the Middle Corridor Association comprise Azerbaijan Caspian Shipping, ADY, Aktau Port, Baku Port, GR, Kazakh Railways, Turkish Railways, and Ukraine Railways. Associate members include the Polish Broad-Gauge Railway, Batumi Port, Kaskor-Transservice (Kazakhstan), Port Kuryk (Kazakhstan), Anaklia Development Consortium, Lianyungang Port Holdings Group (PRC), Grampet Group (Romania), Astyk Trans (Kazakhstan), Kazakh National Maritime Shipping Company, and Eastcomtrans (Kazakhstan).

¹¹ Until the Kyrgyz Republic restricted use of the Karamyk border crossing to bilateral traffic, the Dushanbe–Karamyk–Sary Tash–Irkeshtam route was a fast, efficient route between Tajikistan and the PRC.

Arys, Shalkar, and Aktobe (all Kazakhstan) to Moscow.¹² For bulk traffic to and from northern Russian Federation, a less costly route is by rail to Bandar Abbas (Iran) and by ocean shipping to Baltic ports. As explained under item (i), this route is currently not available due to Iran economic sanctions and Turkmenistan border closures but over the medium-to-longer term it should re-emerge as an important route for Tajikistan. For short distance traffic to Kazakhstan and high value non-bulk shipments there is also competition from road transport.

(iii) **To and from Turkey and southern Europe.**

Turkey is also a leading trade partner for both exports and imports. Turkey imports much of TALCO's aluminum production and is a major supplier of consumer goods and other manufactured goods. There is strong competition between modes. One option using the TITR is by rail using the newly built Baku–Tbilisi–Kars (BTK) railway from Turkey via Georgia to Baku (Azerbaijan), then crossing the Caspian Sea by ferry to Aktau and proceeding by rail via Shalkar, Arys (both Kazakhstan) and Tashkent to Tajikistan. A change from standard gauge to broad gauge is required at the Turkey–Georgia border. Variations of this route, especially for large shipments, include crossing the Black Sea by ship to Poti or Batumi and then proceeding via the TITR or crossing by ship through the Black Sea, Volgodon Canal, and Caspian Sea to join the TITR at Aktau,¹³ or crossing the Black Sea to Russian Federation ports and then proceeding by rail through the Russian Federation to join the TITR in Kazakhstan.

When Iran economic sanctions are eventually lifted and Turkmenistan is open for Tajikistan traffic, another option would be rail-only from Turkey to Tajikistan via northern Iran, Mary (Turkmenistan), and Bukhara (Uzbekistan). This would require a change from standard gauge to broad gauge at the Iran–Turkmenistan border. A further alternate is by road-only. There is also strong competition from Turkish road transport firms.

(iv) **To and from Uzbekistan and Turkmenistan.**

Following recent reforms, Uzbekistan is pursuing a more open, liberal economic model and its economy and trade are expected to grow rapidly in the coming years. Tajikistan's railway is already well-connected with that of Uzbekistan (para. 20). When Turkmenistan opens its borders to Tajikistan, there will also be potential for increased trade between the two countries using railway via Bukhara (Uzbekistan) and Mary (Turkmenistan). For traffic to and from Uzbekistan and Turkmenistan, railway will also face strong competition from road transport, especially for shorter distance movements.¹⁴

(v) **To and from Afghanistan.** There is potential for expansion of Tajikistan exports to Afghanistan, particularly following recent increases in cement production capacity, including at plants connected to ROT's central and southern railway sections. The main routes are by railway to Termez (Uzbekistan) to enter Afghanistan at Hairatan, and via railway and road to the Afghan border at Nizhny Pyanj. For some years, Tajikistan and Afghanistan have been discussing the

¹² Kazakhstan's extensive railway network also offers additional routings to serving origins and destinations further to the east of Kazakhstan or the Russian Federation.

¹³ The Volgodon Canal is closed during winter.

¹⁴ If Turkmenistan and Uzbekistan encourage transit traffic to the Caspian Sea port of Turkmenbashi via Bukhara and Mary, and steps are taken to establish scheduled shipping services between Turkmenbashi and Baku, this route could offer Tajikistan a shorter route across the Caspian Sea that would compete with the TITR crossing via Aktau.

possibility of Tajikistan extending its railway south to Nizhny Pyanj and Afghanistan building new rail links between Nizhny Pyanj, Kunduz, and Mazar-e-Sharif.¹⁵

F. Relevant CAREC corridors

23. The CAREC Corridors relevant for rail development in Tajikistan are CAREC Corridor 2 and CAREC Corridor 5.

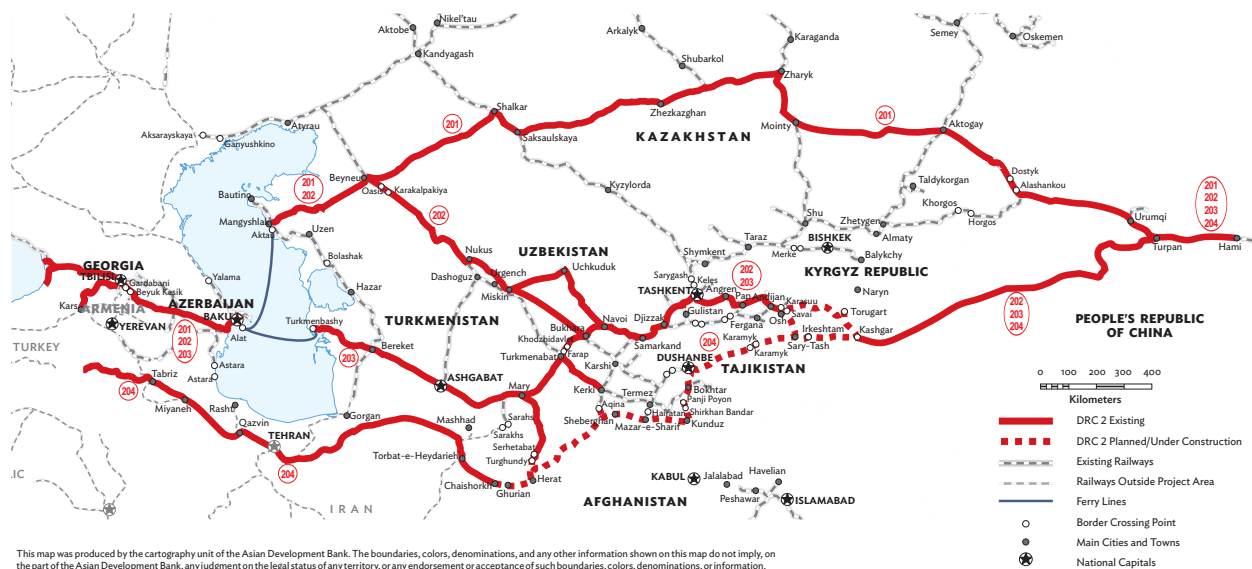
24. CAREC Corridor 2: East Asia–Mediterranean.

CAREC Corridor 2 is a comprehensive corridor in the east–west direction that connects East Asia, Central Asia, the Caucasus, and the Mediterranean. Extending from the PRC in the east to Georgia in the west, the corridor passes through nine Central Asian CAREC member countries (all member countries except Mongolia and Pakistan).

25. There are four subcorridors.

Subcorridors 201, 202, and 203 are to the north of Tajikistan. Corridor 201 is the same as the TITR. Subcorridors 202 and 203 cover east–west routes from Kashgar via the Kyrgyz Republic and Uzbekistan to meet the TITR at Beyneu (Kazakhstan). Subcorridor 204 follows a southerly route from Kashgar to northwest Afghanistan and Turkmenistan via Irkeshtam, Sary-Tash, Karamyk, Dushanbe, Kunduz, Mazar-e-Sharif, and Herat. If one of these two routes using Subcorridors 202 and 203 and Subcorridor 204 [para. 22(i)] is built, it would improve rail connectivity with the PRC but the majority of subcorridor sections have yet to be built and there is currently no rail traffic. Since much of the terrain is mountainous, construction of these sections would be very high and would take many years.

Figure 1.4: Sections of CAREC Corridor 2 Relevant for the Tajikistan



Source: CAREC Secretariat.

¹⁵ Tajikistan, Afghanistan, and Turkmenistan originally have also considered the possibility of such a new railway continuing west of Mazar-e-Sharif to connect with the Turkmenistan railway. This was partly intended as a means of bypassing Uzbekistan due to frequent closures of its border. Following recent reforms and policy changes in Uzbekistan, the border has reopened and Uzbekistan is giving priority to expanding trade with its neighbors and facilitating transit traffic.

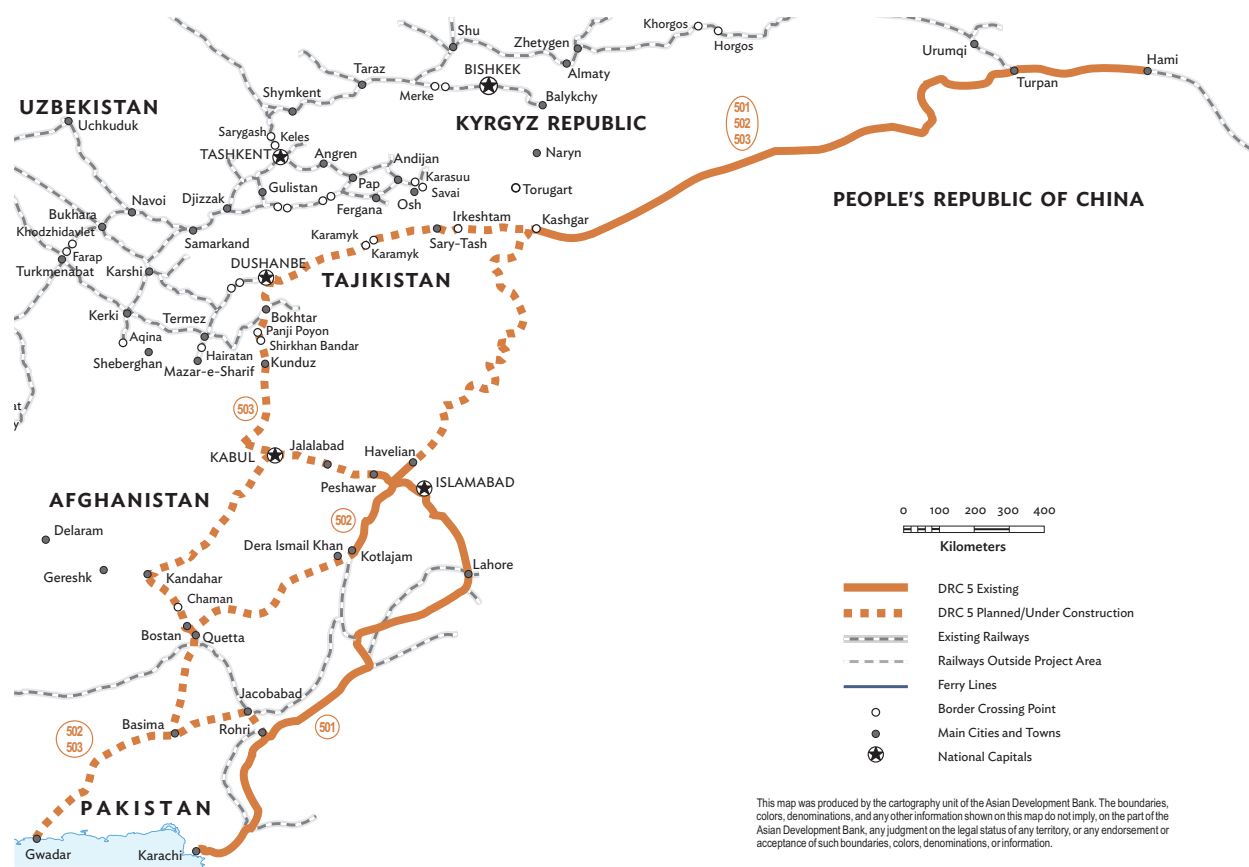
26. Use of Subcorridor 204 as a multimodal road-rail corridor is also constrained as use of the Irkeshtam–Karamyk–Dushanbe road is restricted to only bilateral traffic between Tajikistan and the Kyrgyz Republic. To cross from Kashgar to Dushanbe, a carrier must use the Irkeshtam–Osh–Gulistan–Isfara route, which is 800 km longer. This has led to PRC–Tajikistan traffic on Subcorridor 2 increasingly using the Kulma Pass and the Pamir Highway even though driving conditions on this route are often poor.

27. In considering the rail potential of CAREC Corridor 2, it is also necessary to consider competition from CAREC Corridor 1 which extends east–west

between the PRC and Europe via Kazakhstan and the Russian Federation. Corridor 1 was established as a major route during the Soviet era. Its more northerly alignment avoids the need to cross the Caspian and Black Seas and has fewer border crossings. Railway traffic on Corridor 1 is already high, including regular container block train services.¹⁶

28. **CAREC Corridor 5: East Asia–Middle East and South Asia.** CAREC Corridor 5 extends southwest from the PRC to eventually reach the Pakistan ports of Karachi and Gwadar. Beyond the PRC, Subcorridors 501 and 502 are located in Pakistan and Afghanistan without entering Tajikistan.

Figure 1.5: Sections of CAREC Corridor 5 Relevant for the Tajikistan



Source: CAREC Secretariat.

¹⁶ A recent study by the International Transport Forum (2019) confirmed that existing road and rail traffic levels on CAREC Corridor 1 are higher than on CAREC Corridor 2.

Subcorridor 503 connects the PRC, the Kyrgyz Republic, Tajikistan, Afghanistan, and Pakistan. The segment of this subcorridor within Tajikistan is the same as Subcorridor 204. In the PRC, the existing railway on this subcorridor terminates at Kashgar. All sections of the subcorridor to the south and east of Kashgar have yet to be built. Construction costs would be very high due to mountainous terrain. Some of the sections pass through some politically unstable areas. Future development of the subcorridor would be very costly and depend upon the development of trade flows along this route.¹⁷

29. CAREC Corridor 6: Europe–Middle East and South Asia. This corridor provides a further option for Tajikistan to gain railway access to the deep-sea ports of Bandar Abbas in Iran (and potentially Chabahar),¹⁸ and Karachi and Gwadar in Pakistan, thereby improving economic security and competitiveness. Tajikistan traffic would connect with Subcorridor 605 via either Bukhara (Uzbekistan) or Turkmenabat (Turkmenistan) and then via Mary or Ashgabat (both Turkmenistan) and proceed in an anticlockwise route to Bandar Abbas via Subcorridor 603 with possible onward connection to the Pakistan ports on Subcorridor 604.

Figure 1.6: Sections of CAREC Corridor 6 Relevant for Tajikistan



Source: CAREC Secretariat.

¹⁷ The attractiveness of the subcorridor will increase when the missing rail link to Gwadar Port is completed.

¹⁸ India is currently assisting Iran to upgrade Chabahar port (Hindu Business Line 2019).

Alternatively, it could proceed clockwise through western Afghanistan on Subcorridors 605 and 604 to Gwadar and Karachi. A more direct rail connection within Iran to Bandar Abbas is also available via Sarahs and Mashhad.

30. The relevant sections of Subcorridors 601–604 are complete. Once the present Iran economic sanctions and Turkmenistan border closures come to an end, there should be prospects for Tajikistan to expand its use of Bandar Abbas.

The Iranian railway network is reported to have limited freight capacity so it may require further investment in order to carry large additional freight volumes.¹⁹ The sections of Subcorridor 605 in Afghanistan and Pakistan are still missing links. Since investment costs would be high, and neither country has yet prioritized these links for investment, the time frame for their development is likely to be longer term.

¹⁹ Iran's existing railway freight capacity is limited by relatively low axle loads and prioritization of passenger traffic. Its freight tariffs are among the highest in the region (Harral Winner Thompson Sharp Klein 2013).

TRENDS IN RAILWAY TRAFFIC

A. Introduction

31. Railway transport in Tajikistan is used mainly for freight. The volume of freight traffic declined sharply after the collapse of the FSU and has not recovered. Between 2014 and 2018 freight traffic continued to decline. In 2018, ROT carried 5.3 million tons which was 21% less than in 2014. There was a more pronounced decline in freight turnover. In 2018, freight turnover was 223 million ton-km which was 43% less than in 2014. The larger reduction in freight turnover indicates that much of decline was in long distance traffic.

32. Although relatively small and unprofitable, ROT's railway passenger operations have been attracting increasing numbers of passenger. In 2018, ROT carried 547,700 passengers which was 22% higher than in 2014. Passenger turnover of 33.2 million passenger-km in 2018 was 90% higher than in 2014, indicating not only rising passenger numbers but an increase in average trip distance. Trends in freight and passenger traffic are in Table 2.1.

B. Analysis of traffic

33. Road transport is the dominant mode for freight. In 2018, road transport carried a freight volume of 20.1 million tons compared with 5.3 million tons by railway, and had a freight turnover of 2.3 billion ton-km compared with 0.22 billion ton-km for railway. The railway share of freight transport has been steadily declining. Between 2014 and 2018, this fell from 32% to 21% of freight volume and from 15% to 9% of freight turnover. This is shown in Table 2.2.

34. Since the railway network only serves limited parts of the western side of the country, and was designed as short branch lines of the railway in Uzbekistan—rather than as an integrated national network—ROT is poorly placed to serve domestic or transit traffic and its freight operations are mainly confined to import and export traffic.

Table 2.1: Trends in Railway Freight and Passenger Traffic, 2014–2018

	2014	2015	2016	2017	2018
Railway freight traffic					
Volume of freight (ton '000)	6,809	6,126	5,454	4,647	5,348
Freight turnover (million ton-km)	391	317	228	165	223
Railway passenger traffic					
Volume of passengers (passenger '000)	450	425	452	531	547
Passenger turnover (million passenger-km)	18	16	18	28	33

km = kilometer.

Source: MOT.

Table 2.2: Freight Volume and Turnover by Mode, Tajikistan

	2014	2015	2016	2017	2018
Freight volume					
Rail (ton '000)	6,809	6,126	5,454	4,647	5,348
Road (ton '000)	14,377	15,280	16,019	18,062	20,144
Rail share (%)	32	29	25	20	21
Road share (%)	68	71	75	80	79
Freight turnover					
Rail (million ton-km)	391	317	228	165	223
Road (million ton-km)	2,232	2,175	1,817	2,188	2,372
Rail share (%)	15	13	11	7	9
Road share (%)	85	87	89	93	91

km = kilometer.

Source: MOT.

35. As Table 2.3 indicates, nearly all railway freight is imports and exports (98%), with very little domestic traffic (2%). Shortly after Uzbekistan Railway completed its Pap–Angren Line in mid-2016, ROT lost all its transit traffic. Railway retains a dominant share of import and export freight volume compared with road transport, but this declined from 83% in 2014 to 77% in 2018. Road retains the dominant share of domestic traffic (99%).

36. A recent analysis by ITF (2019) indicates that, in turnover terms, ROT's share of the total Tajik freight market is only 6%, compared with 19% in western Europe, 21% in eastern Europe, 40% in the Kyrgyz Republic and Uzbekistan, 59% in Mongolia, and 60% in Kazakhstan.

37. Analysis of the value of exports and imports in Table 2.4 indicates that during 2012–2017 the value of Tajikistan's annual imports was at least three times that of its exports in most years, and export and import value followed a declining trend.²⁰

Table 2.3: International and Domestic Freight Volume by Mode, Tajikistan (ton '000)

	2014	2015	2016	2017	2018
Import and exports					
Rail (ton '000)	6,702	5,936	5,349	4,526	5,250
Road (ton '000)	1,353	1,126	941	1,350	1,571
Rail share (%)	83	84	85	77	77
Road share (%)	17	16	15	23	23
Domestic					
Rail (ton '000)	105	190	105	120	98
Road (ton '000)	13,024	14,154	15,078	16,712	18,573
Rail share (%)	1	1	1	1	1
Road share (%)	99	99	99	99	99

Source: MOT.

²⁰ Completion of the Vakhdat–Yovon Railway in 2016 does not seem to have attracted the additional traffic expected.

Table 2.4: Value of Tajikistan Exports and Imports (\$ million, 2017 prices)

	2012	2013	2014	2015	2016	2017
Exports	1,360	943	977	891	899	1,198
Imports	3,778	4,045	4,297	3,436	3,031	2,775
Total	5,138	4,988	5,274	4,327	3,930	3,973

Source: Statistical Office.

As Table 2.3 indicates, this led to corresponding declines in railway export and import tonnages—from 6.7 million tons in 2014 to 4.5 million tons in 2017 before improving to 5.2 million tons in 2018.

38. Analysis of the commodity composition of railway export and import traffic in Table 2.5 shows that the leading import commodities are grain (from Kazakhstan), oil products and wood materials (mainly from the Russian Federation), ferrous metals (mainly from the PRC, Kazakhstan, and the Russian Federation),

Table 2.5: Cross-border Railway Freight Volume, 2014–2018

Commodity Type	Annual Traffic (ton '000)					Annual Traffic Growth (%)				
	2014	2015	2016	2017	2018	2014–2015	2015–2016	2016–2017	2017–2018	2014–2018 average
Imports										
Oil products	903	909	782	621	701	1	-14	-21	13	-6
Alumina	246	251	254	208	191	2	1	-18	-8	-6
Ferrous metals	163	267	165	138	239	64	-38	-16	73	10
Building materials	272	226	323	212	198	-17	42	-34	-7	-8
Wood materials	671	483	298	342	415	-28	-38	15	21	-11
Other grocery goods	142	135	113	135	131	-5	-16	19	-3	-2
Grain	789	689	802	814	958	-13	16	1	18	5
Flour	203	159	108	89	86	-22	-32	-18	-3	-19
Others	659	680	754	718	460	3	11	-5	-36	-9
Subtotal	4,050	3,800	3,345	3,068	3,189	-6	-5	-9	3	-4
Exports										
Nonferrous metals	170	157	-	319	318	-8	-	-	0	17
Cement	-	-	43	187	689	-	-	335	268	n/a
Raw materials (lead, copper)	114	98	34	3	1	-14	-65	-91	-67	-69
Cotton	3	6	6	1	6	100	0	-83	500	19
Aluminum products	126	131	130	101	95	4	-1	-22	-6	-7
Others	670	105	382	49	95	57	264	-87	94	9
Subtotal	479	497	595	661	1,203	4	20	11	82	26

^a The combined totals of railway import and export freight shown in this table are not consistent with those shown in Table 2.3.

The TA consultants will seek further information from the government to reconcile the two tables.

Source: MOT.

and various other consumer goods and manufactured products (mainly from the PRC and Turkey). In 2018, cement overtook aluminum and agricultural products as the main railway export commodity. This reflects the recent expansion of the cement industry²¹ which now serves neighboring countries including Uzbekistan and Afghanistan.²² The railway share of TALCO imports of raw materials and exports of aluminum has steadily declined. The volume of most other export types has also declined in recent years.

39. Uzbekistan's 2010–2011 blockade of rail interchange with Tajikistan forced a large amount of railway freight traffic to divert to road transport. After the blockade was removed in 2017, much of the diverted traffic did not revert to using railway because shippers and receivers had discovered the advantages of using trucks.

40. In addition to Uzbekistan's blockade, ROT's freight volume was also affected by Turkmenistan periodically closing its border for rail traffic to and from Tajikistan.²³ This made ROT less attractive to shippers even after the Uzbek blockade was lifted. For example, before embargo the cost of shipping a 60-ton rail wagon between Regar (Tajikistan), Sarahs (Turkmenistan), and the port of Bandar Abbas (Iran) was \$5,080. After Turkmenistan embargoed ROT's traffic, the new cost of shipping for a 60-ton rail wagon via Uzbekistan, Kazakhstan, the Caspian Sea, and Azerbaijan to Bandar Abbas jumped to \$9,780. This dramatic change in costs made shippers and receivers more cautious about the risks of using rail transport as part of their supply chains.

41. Table 2.6 provides a breakdown of Tajikistan's 2017 imports and exports by foreign origin or destination. This confirms that, based on the present structure of trade, the PRC, the Russian Federation, Kazakhstan, and Turkey account for the majority of imports while Kazakhstan, Turkey, Switzerland, Algeria, India, the PRC, the Russian Federation, and Italy account for the majority of exports.

42. The volume of containerized railway freight is very low and declining. The number of loaded containers transported by ROT fell steadily from 61,900 units in 2014 to 38,100 units in 2018, a drop of more than 38%. The decrease in loaded outbound containers was most pronounced, falling from 2,300 units in 2014 to 600 units in 2018, a decline of 74%. There have also been large imbalances between inbound and outbound container traffic. This necessitates the return of large numbers of empty containers and wagons to the interline railway, which increases ROT's cost of container transport substantially.²⁴ Trends in rail container traffic are shown in Table 2.7.

C. Traffic growth scenario

43. In the absence of a major upswing in investment and implementation of commercialization and reform measures to improve railway competitiveness, it is likely that ROT freight traffic will continue to decline in the future. On this basis, rough projections for 2019–2022 are shown in Table 2.8.

²¹ PRC companies invested heavily in cement plants at carefully chosen locations in Tajikistan. Due to the high quality of the raw ingredients, Tajik cement has quickly attracted customers in neighboring countries.

²² A cement factory to serve the Afghanistan market has been built in Balkh, 60 km from the Afghanistan border.

²³ Closures have taken place regularly and without explanation. For example, in February 2018, Turkmenistan closed its rail line for ROT traffic, then it reopened, then in October 2018 it was closed again and has not reopened since. Turkmenistan's blockade also extends to Tajik trucks.

²⁴ There is no revenue generation when empty containers and the wagons they are sitting on are returned to interline railways.

Table 2.6: Origins and Destinations of Tajikistan Imports and Exports by Value, 2017

Origin of Imports	Share (%)	Destination of Exports	Share (%)
People's Republic of China	42.7	Kazakhstan	32.0
Russian Federation	22.6	Turkey	20.7
Kazakhstan	15.1	Switzerland	16.9
Turkey	5.1	Algeria	8.8
Germany	1.9	India	5.0
Lithuania	1.3	People's Republic of China	4.9
Ukraine	1.1	Russian Federation	2.6
Belarus	1.1	Italy	2.5
Algeria	1.1	Kyrgyz Republic	1.6
Kuwait	0.8	Belgium/Luxembourg	1.5
India	0.8	Pakistan	0.9
Kyrgyz Republic	0.8	Republic of Korea	0.7
United States	0.6	Other	1.9
Italy	0.5		100.0
Republic of Korea	0.5		
Other	4.0		
	100.0		

Source: Observatory for Economic Complexity 2019.

Table 2.7: Trends in Rail Container Traffic, 2014–2018 ('000 ton)

Loaded Containers	Annual Traffic (ton '000)					Annual Traffic Growth (%)				
	2014	2015	2016	2017	2018	2014–2015	2015–2016	2016–2017	2017–2018	2014–2018 average
Inbound	59.6	30.5	26.2	22.1	37.5	-49	-14	-16	70	-10
Outbound	2.3	1.5	1.0	0.7	0.6	-35	-33	-30	-14	-29
Total	61.9	32.0	27.2	22.8	38.1	-48	-15	-16	67	-11

Source: ROT.

Table 2.8: Base Case Traffic Scenario, 2019–2022

Indicators	Assumed Growth Rate (%)	Projected Traffic			
		2019	2020	2021	2022
Freight transported (ton '000s)	-5	5,270	5,007	4,756	4,518
Rail freight turnover (million ton-km)	-7	201	187	174	162
Passengers transported (person '000)	5	575	604	634	666
Passenger turnover (million passenger-km)	12	37	41	46	52

km = kilometer.

Source: TA consultants.

MARKET COMPETITIVENESS

A. Introduction

44. As discussed in Chapter 2, ROT's traffic volume and turnover have been steadily diminishing. ROT has lost various freight market segments to road transport and its current share of the freight market is largely confined to bulk commodities that are difficult to transport by road.

45. The Tajikistan freight transport market is highly competitive. In the last two decades, road transport has become increasingly competitive compared with railway. The government made large investments in road infrastructure while much less was spent on railway infrastructure. This lowered the operating costs and increased the speeds and reliability of road transport compared with railways.

46. Tajik truck drivers are experienced in operating long-distance international routes. Intense competition has pressured trucking companies to reduce rates and improve service quality, making it difficult for ROT to compete. Table 3.1 shows typical truck rates and transit times to frequently shipped destinations. Since these truck rates are quite low on a ton-km basis, and service quality is better than on rail, they set an upper limit for railway rates.

47. Tajikistan's geographical remoteness, together with the Turkmenistan blockade, contribute to high logistics costs for imports and exports, especially when using railway. For example, alumina²⁵ imported by TALCO to its rail-served plant at Tursunzoda has to be transported a long distance from the Black Sea ports of Poti (Georgia) and Novorossiysk (Russian Federation), or from Riga (Latvia) on the Baltic Sea.

Table 3.1: Typical Road Transport Rates for Export to Frequent Destinations
(for cargo weight of 20–22 tons)

Route	Duration	Total Transport Cost	Type of Commodity
Dushanbe to Bandar Abbas via Uzbekistan–Kazakhstan–Russia–Georgia–Azerbaijan ^a	10 days	\$3,400–3,500 (\$170 per ton)	Agriculture goods, cotton, aluminum, and technical equipment
Dushanbe to Moscow via Uzbekistan and Kazakhstan	4 days	\$4,800–\$5,000 (\$200–\$250 per ton) for perishable goods in reefer trucks	Agriculture products
		\$1,800–\$2,000 (\$100 per ton) for non-perishable goods	Cotton and textile products, as well as aluminum
Khujand to Almaty, via Uzbekistan	3 days	\$1,500 (\$75 per ton)	Agriculture products, cotton, and industrial products

^a This route is circuitous due to the inability to transit through Turkmenistan.

Source: TA consultant's shipper survey.

²⁵ Over the last ten years, transportation of raw material imports for aluminum manufacturing (alumina, raw/calcined coke, coal pitch, aluminum fluoride, and cryolite) and processed aluminum outputs (ingots, rod, wire, plate, etc.) have together amounted to an average of 1 million tons per annum.

The finished products (aluminum wire, rod, billet, ingot) are then exported over a long distance to final markets. Since different types of specialized wagons are required for inbound raw materials (open top wagons for alumina and other inputs) and for outbound finished products (closed wagons for aluminum ingots, plates, and wire), this leads to additional empty wagon movements that further increase costs.²⁶ On the other hand, trucks are agile in seeking backhaul traffic. After delivering an inbound load to Tajikistan, they offer reduced prices to attract TALCO's aluminum export products (especially those that are further processed into final products such as window frames and furniture parts) which helps them avoid making an empty return trip. In the past, TALCO mainly relied on railway but has recently been making increased use of road transport.

48. Since 41 platform wagons are required to form a container block train, ROT's low level of containerization prevents it from benefiting from improved speeds and service quality offered by dedicated block trains. Most containers have to be carried on regular trains that stop for classification along the way. Containerization is also constrained by lack of specialized equipment. Out of 2,058 freight wagons, only 143 are flat wagons. Between 2014 and 2018, its fleet of containers declined from 129 units to 104 units.²⁷ This may be because the container fleet is quite old and units are not replaced when they are no longer usable. In addition, ROT's old container cranes break down frequently, which can delay the grounding of containers for days.

49. As part of a privatization drive, ROT sold off two of the most important multimodal terminals to private parties. These terminals, which are designated for handling international shipments,

are Dushanbe-Terminal 2 and Khujand Station, each with a daily handling capacity of 500 wagons.²⁸ Freight forwarders reported that after the sale, the cost per container lift has doubled.

B. Market feedback

50. Interviews were conducted with a variety of shippers/receivers, freight intermediaries, trucking companies, and trade associations to understand freight market dynamics and users' perceptions of rail transport. The findings are summarized in Table 3.2.

51. Based on this market feedback, railway is currently competitive only for bulk or liquid cargo that is difficult to carry by truck, particularly for dangerous cargo and project cargo. It has advantages for consignment safety and security, and inspections by customs and other border management agencies are often faster and simpler for railway traffic than for road transport.²⁹ Railway could be more attractive for some other freight market segments if adequate wagons, terminals, handling facilities, and sidings were provided. However, for most types of cargo, road is preferred. It is considerably faster, often less costly, and road carriers take more responsibility for managing risks and solving problems that arise on route.

52. According to one large cement producer, ROT is difficult to deal with. For example, it only allows the company two hours of detention free time to load wagons at railway station. Consequently, it must mobilize at least 50 casual laborers to quickly transfer the cement from trucks coming from the factory into rail wagons. This shipper cannot understand why ROT shifted these tasks to shipper's responsibility since, in most countries, they are the responsibility of the railway.

²⁶ ROT has to return the empty open top wagons to interline railways once TALCO has unloaded its inbound raw materials; and has to position empty closed wagons to fulfil its outbound shipping needs.

²⁷ ROT also inherited 585 small containers of 3–5 tons capacity from the FSU. These are obsolete for modern day containerization and should be disposed of.

²⁸ ROT's remaining unsold multimodal terminals are smaller. These include the stations at Kanibadan, Bokhtar, Khatlon, Kulob, Danghara, Mahram, and Isfara.

²⁹ Border clearance procedures are sometimes changed at short notice. Recently the Kazakh Revenue Committee introduced time-consuming cargo examination procedures that can delay transit time by a week or more.

Table 3.2: Market Feedback on ROT Competitiveness for Different Traffic Types

Competitiveness	Traffic Type	Examples	Explanation of Rail Competitiveness
Rail is competitive	Project cargo, out-of-gauge cargo	Power generation equipment, mining equipment	Rail has advantages for extra heavy, over-dimension cargo.
	Bulk cargo	Alumina to TALCO Raw material for Huaxin-Ghayur's cement factory ^a	Rail is efficient for bulk which often moves in specialized equipment to optimize loading and unloading. It is particularly suitable for receivers with a rail siding and facilities for loading/unloading.
	Crude oil and refined petroleum products	Crude oil import from Kazakhstan and refined petroleum products from the Russian Federation (Gazprom)	Rail is the preferred mode for dangerous, volatile liquid cargo transported in tank wagons.
	Coal and minerals	From domestic mines and mines in neighboring countries	Rail is efficient for coal and minerals, which often move in trainload quantities using specialized equipment to optimize material transfer.
	Chemicals	Poisonous, flammable, corrosive cargo; fertilizers and other chemicals	Rail has advantages for safety and security which are prime considerations.
	Cross-border cargo	Import/export freight moving in wagons	ROT is a trusted party. Border management authorities are willing to cooperate to streamline inspections.
	Cargo to locations offering little backhaul traffic	Cargo to Central Asia	Shippers/receivers and freight forwarders do not have to manage empties when using rail wagons.
	Non-time sensitive cargo	Construction material to be accumulated prior to start of a project	Shippers/receivers benefit from free storage on wheels.
Rail is uncompetitive	Consumer products	Small to medium-sized shipments to many different receivers	Road is generally less costly, faster and simpler to organize.
			Shippers and receivers attach importance to single party door-to-door responsibility.
			Road is especially price competitive for shorter trips (e.g., 100–300 km) and for origins and destinations not located on railway line.
	Cargo origin or destination is far from rail stations	Many types of goods	After adding the cost of road transport to and from the railway station, the cost of using rail is higher than using road transport only.
	Time sensitive cargo	Trade exposition displays	Delivery must be in time for the exposition date. A German carrier recently handled such shipment from Guangdong via Khorgos to the United Kingdom because receiver needs time-definite delivery.
	High value cargo	Electronics, designer fashions	Central Asian railways face problems of theft but do not compensate shippers/receivers for loss and damage. Truck drivers are better at protecting cargo from theft.
Perishables (chilled or frozen)	Pharmaceuticals and vaccine. Chicken, pork, beef, fish, and various types of seafood	Road is faster, more reliable (including real time tracking and tracing). Reefer mechanical failure can be fixed expediently. Rail is frequently short of temperature-controlled wagons.	

km = kilometer.

^a Huaxin is a large Chinese company from Xinjiang.

Source: TA consultants.

Therefore, even for shipments for which railway should be competitive, rail usage is often much less than might usually be expected.

53. This cement shipper’s dissatisfaction is consistent with recent service quality ratings by local logistics professionals as shown in Table 3.3. Local logistics professionals rated the quality of Tajikistan’s railway service the lowest among its CAREC neighbors—significantly lower than in Kazakhstan, the Kyrgyz Republic, and Uzbekistan.

C. Problems affecting rail competitiveness

54. Feedback was also obtained on some of the main problems that limit the competitiveness of railway transport. These are discussed below.

55. Road transport is widely available, fast, flexible, and competitive. Shippers can use trucks to serve a much larger range of origins and destinations.

Empty movements are less of a problem for trucks, as road carriers respond quickly to seasonal and other changes in demand, are flexible about pricing, and can triangulate to achieve loaded, profitable round-trips (e.g., Dushanbe to Moscow, Moscow to Tashkent, and Tashkent to Dushanbe). Tajikistan’s road transport industry has 44,000 trucks, of which about 800 are engaged in international transport.³⁰ In addition, there is competition from foreign trucks coming from Turkey, Uzbekistan, the Kyrgyz Republic, Kazakhstan, and the Russian Federation. These trucks are generally newer than Tajik trucks, virtually all provide cargo insurance, and eager to discount to get a backhaul load home.

56. Railway network connectivity is limited. Having originally developed as a series of short branch lines, ROT’s network is small, confined to western parts of the country, and only covers some of the main cities and production centers. There is no direct link between the northern section and the central and southern sections, and cross-border railway connections are confined to a limited number of links to the Uzbekistan railway network.³¹

Table 3.3: Transport Service Quality Rated by Local Logistics Professionals

Country	% of Local Respondents Answering High or Very High Quality					
	Road Transport	Railway	Warehousing	Freight Forwarding	Customs Brokerage	Trade Advice
Kazakhstan	57	48	14	38	10	30
Kyrgyz Republic	20	5	7	20	15	14
Tajikistan	0	0	3	5	5	5
Uzbekistan	24	21	14	15	7	12
Lower middle income countries	21	4	23	47	19	13
Upper middle income countries	20	5	21	38	21	11
High income countries	55	26	62	70	52	43

Note: ITF computations based on aggregated annual data from Logistic Performance Index, 2010–2018.

Source: ITF 2019.

³⁰ ROT faces even more intense truck competition in international transport. As example, the Kyrgyz Republic has 7,000 trucks that operates internationally and Uzbekistan 4,500. A trip to the Dustik BCP west of Tursunzoda found trucks from Turkey, Uzbekistan, the Kyrgyz Republic, Kazakhstan, Iran, and the Russian Federation carrying goods into Tajikistan.

³¹ ROT has also impaired connectivity within its own network by fragmenting branch lines into many segments and selling these off individually.

These limitations in the railway network mean that large parts of the country do not have easy access to railway transport, and lead to longer trip distances for cross-border traffic, with higher cost and slower service, which makes railway less attractive for shippers and receivers.

57. Wagon shortages are a recurring problem. ROT's wagon fleet is old, and the mix of wagon types does not match market needs. There are seasonal shortages of wagons and shortages of particular wagon types which lead to delays in shipment.

58. ROT operates a capital-intensive business in a low margin environment. The road transport industry is comprised of large numbers of small trucking companies. They compete intensely, often through price cutting that has driven down profit margins to the low single digit range. This has led to sharp reductions in railway profit margins. However, unlike trucking companies that utilize road infrastructure built and maintained using government and donor funds, ROT must invest in its own railway infrastructure and acquire expensive long-life assets like locomotives and wagons. The existing low margins do not generate enough profit from ROT's operations to finance asset renewal or further development of the railway network.

59. Customers find it difficult to do business with ROT. Customers refer to problems interfacing with ROT, as well as frequent service changes and disruptions, and poor service quality. The process of obtaining a price quotation and securing a wagon takes much longer than arranging road transport. Should ROT be chosen, the shipper must prepay to buy a "code,"³² or pay for the service of a freight forwarder authorized to sell such a code, whereas trucks will allow shipper to pay after the cargo has been delivered.

A freight forwarder stated that ROT still uses a word processor to generate invoices and often the line items are so poorly printed that they are incomprehensible.

60. ROT does not do enough to offer multimodal transport solutions to customers.

To compete with road transport, ROT must develop its multimodal transport capability including offering rail and road transport combinations to utilize the railway network where available while providing seamless transfers to road transport to complete journey sections beyond the railway network and provide for efficient delivery and collection to and from customers' premises and transfer to and from rail. Until now, ROT management has not given enough attention to developing multimodal services even though customers consider them to be important, and has not established the capacity needed to run multimodal transport effectively. Recently, ROT sold some of its multimodal terminals to private parties and disposed of rail spurs without carefully considering how this could impair customers access to the railway network and network connectivity.

61. ROT's digital connectivity is poor. Modern supply chains rely as much on the timely transmission of information as on the timely transportation of goods. However, ROT has no online tracking and tracing service for customers. Tajik Customs has mentioned that it requested ROT to share cargo information digitally but so far this has not happened.

62. ROT only has a small influence on the total price paid for long distance railway transport. For long-distance international freight, the majority of the trip is on other countries' railways, with only a short section on ROT's network. Therefore, the rail tariffs of these countries play a more important role in determining the door-to-door price and competitiveness for such traffic. Moreover, some of the main international railway routes available to Tajikistan pass through

³² The code enables the shipper to move its cargo on ROT.

member countries of the Eurasian Economic Union (EEU)³³ which requires a higher tariff to be charged for transit traffic.

63. ROT does not adjust prices to match market conditions. Whereas road carriers are willing to adjust their prices depending on market conditions, ROT sets its railway tariff using traditional formulas. This prevents it from making higher returns on some consignments that can bear higher rates, and causes other consignments to lose to road carriers when they undercut ROT's rates. Tariff regulation by the Anti-monopoly Commission further restricts ROT's pricing flexibility. The review process required by the commission before approval of railway tariff changes (para. 18) means there is always a lag in ROT being able to adapt its pricing to changes in freight market conditions. This hampers its ability to compete with trucks and contributes to its low and declining share of the freight market.

64. ROT does not have an adequate sales and marketing function. The extent of ROT's sales and marketing function is limited to three employees (out of 5,400) assigned to formulating and maintaining tariffs. None are specifically assigned to perform sales and marketing tasks. Consequently, instead of developing close relationship with shippers, receivers, and freight forwarders to attract more business, ROT merely acts as a passive order taker. Without an adequate sales and marketing function to inform ROT about market conditions and customer requirements, ROT cannot identify trends, adapt to market changes, target high margin market segments, or develop new service products tailored to the evolving needs of the market.

65. ROT's organizational form, business, approach and governance arrangements are unsuited to attracting additional customers and improving business performance. Without sufficient commercial

orientation, ROT had been unable to reverse the trend of declining traffic and revenues. Shippers, freight forwarders, and road carriers expressed the view that it will be difficult for ROT to attract new sources of traffic until it implements far-reaching reforms in order to operate on a commercial basis.

66. In spite of these various problems, ROT also has some advantages and opportunities that could be used as part of efforts to improve business performance. For example, Tajikistan forbids daytime use of heavy trucks in summer on the premise that high summer temperatures soften the bitumen surface leading to roads being damaged by heavy trucks (the "heat regime"). So trucks entering Tajikistan during summer must wait in designated parking lots until nightfall before continuing their journey.³⁴ This enforced stop contributes to longer journey time and higher running costs. For refrigerated trucks, it leads to additional diesel usage to keep perishable goods cool. In the case of railway, there are no summer restrictions so ROT could build upon this advantage to attract some freight away from road transport. Another relevant example comes from the experience of a large cement manufacturer that recently paid ROT to build a spur to its factory south of Tursunzoda. Having a spur, together with specialized facilities for efficient loading and unloading at the cement plant has streamlined the company's supply chain, with use of rail now \$5 per ton cheaper than using road transport. There are likely to be other customers that would benefit similarly if ROT assisted them by providing a rail spur. If ROT was more commercially-oriented, it could also potentially have competitive advantages serving some origins and destinations in western Uzbekistan that are shorter to reach by railway than by highway, and could be more attractive for cross-border traffic as the time and cost for border clearance are significantly lower for railway compared with road transport.

³³ The members of the EEU are Armenia, Belarus, Kazakhstan, the Kyrgyz Republic, and the Russian Federation.

³⁴ Some trucks wait up to 15 hours to complete the last 65 km of a 4,500 km journey to Dushanbe.

RAILWAY OPERATING AND FINANCIAL PERFORMANCE

A. Introduction

67. This chapter provides a short assessment of ROT's commercial orientation and its operating and financial performance.

B. Commercial orientation

68. After the collapse of the FSU, ROT played a historic role taking over the railway and ensuring the continuation of railway services. However, its commercial orientation and customer service have been weak. Its methods of management and operation were inherited from the Soviet era and are outmoded. They are based on bureaucratic rules rather than serving the market on a commercial basis. ROT's organization structure does not include separate teams or profit centers to drive each of the main lines of business. Its accounting system does not support tracking of the performance of the main business lines. There is no activity cost tracking by customer to help in optimizing tariffs. Existing management information does not seem to focus on the types of commercial metrics used by high performance railways (e.g., terminal dwell time, asset turn velocity, train speed, and service reliability). To be capable of competing for additional traffic in the future, ROT needs to be reformed and restructured with the aim of becoming a modern customer-oriented railway operating along commercial lines. This will be very challenging but other countries, such as Kazakhstan and Georgia, have already made progress in this regard.

69. The government recognizes that reforms will be needed if it is to be capable of attracting the investment financing needed for asset renewal and business expansion. An approach taken by some other Central Asian countries has been to corporatize the railway in the form of a joint stock company operated according to commercial principles, and to adopt new management principles with a view to improving efficiency, profitability, and expanding the business.

C. Financial performance

70. Table 4.1 provides summary data on ROT's revenue and expense trend from 2014 to 2018 was provided by MOT. This indicates that revenue increased from 2014 to 2016 but then declined sharply in 2017 after Uzbekistan transit traffic diverted to UTY's newly completed Angren–Pap Railway (para. 11). The data on annual profitability appears to show that ROT has been consistently profitable, with profitability rising significantly even when traffic and revenue declined. In other countries, when railways suffer a sharp drop in revenue, this is generally accompanied by a fall in profitability as railways have high fixed costs. It is not clear how ROT was able to reduce its expenses to produce improved profitability.

71. In the absence of data on assets and liabilities in ROT's balance sheet, it is not possible to assess its financial strength and business performance. As observed in some other countries, it is possible that ROT's accounts may overstate profitability, for example by not reflecting the full costs of depreciation.

Table 4.1: Tajikistan Railway's Revenue and Expense Trend, 2014–2018 (TJS million)

	2014	2015	2016	2017	2018	Average growth %
Revenue	415	504	554	359	403	-0.76
Expense	387	485	527	329	363	-1.53
Profit	28	19	27	30	39	8.42
Profit margin (%)	6.8	3.7	4.9	8.3	9.7	9.30

TJS = Somoni.

Source: MOT.

72. As a unit of MOT, it may be reasonable to characterize ROT as a government department that tries to adjust its activities to generally keep costs within its revenues. However, many of the railway assets have reached the end of their economic lives and it appears that ROT has not accumulated reserves to finance asset renewal.

73. A thorough assessment of ROT's accounts should be prepared in order to obtain a reliable understanding of its financial performance. This will be needed if the government wishes to seek external financing to help ROT proceed with a program of commercialization, reform accompanied by priority revenue-generation investments.

D. Operational benchmarking

74. Drawing upon railway operational data obtained from the International Union of Railways (UIC),³⁵ aspects of the operational performance of ROT have been benchmarked in relation to other CAREC railways (except Afghanistan)³⁶ and leading railways from other regions (Germany, India, the Russian Federation, and North America).³⁷

In most cases the data refers to operational activities in 2017. In other cases, it refers to the most recent year for which data is available.

75. In terms of size of railway network and number of employees, ROT is one of the smallest railways in the CAREC region and very small compared with leading railways in other regions. This is shown in Figure 4.1.

76. Among the comparator countries, ROT has the fewest owned wagons and diesel locomotives. This is generally consistent with the small size of the railway. However, since much of ROT's rolling stock traces back to the Soviet era, its actual available rolling stock fleet may be even smaller. This is shown in Figure 4.2.

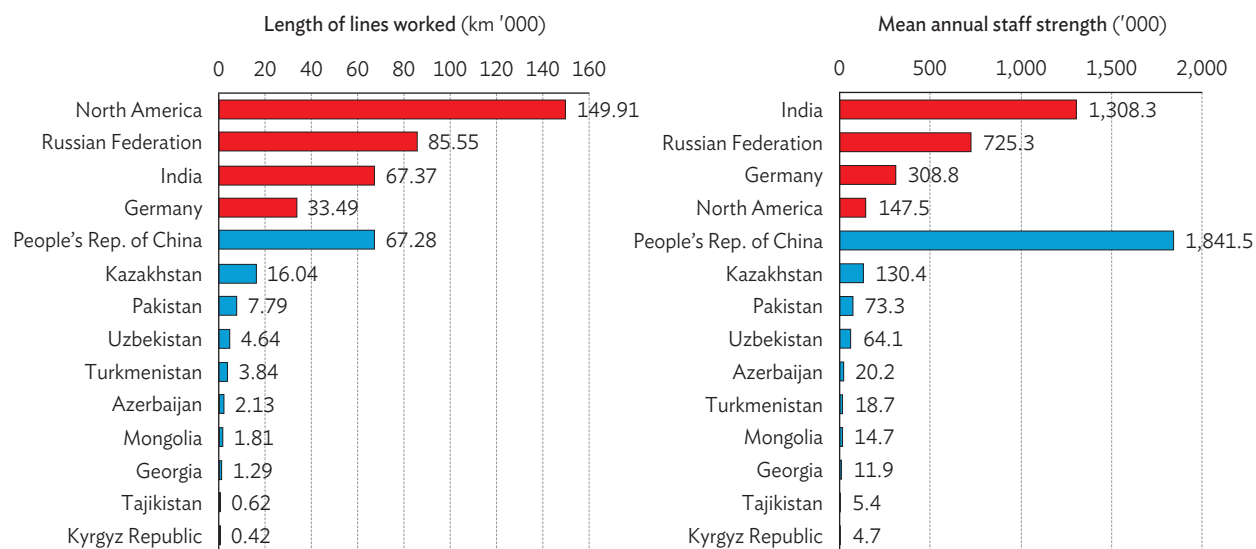
77. Similarly, ROT has the lowest annual freight and passenger turnover among the comparator countries. In the case of freight, which is the main source of ROT's revenues, the annual traffic level is much smaller than other CAREC Member Countries (MCs). This reflects the combined effects of low traffic tonnages and very low average haul distances on ROT's network which was originally developed as short haul branch lines of the major railway corridors now located in Uzbekistan and Kazakhstan. This is shown in Figure 4.3.

³⁵ The UIC database consists of data self-reported by individual railway organizations.

³⁶ The UIC database does not yet include data for Afghanistan so it is not included in the benchmarking analysis.

³⁷ In addition to the national railways of CAREC countries, the sample includes Indian Railways (India), Deutsche Bahn AG (Germany), Russian Railways, and the Association of American Railroads (North America) which represents the major freight railways of Canada, Mexico, and the US.

Figure 4.1: Comparison of Railway Length and Staff Size in Tajikistan, other CAREC Member Countries and other Leading Railway Countries

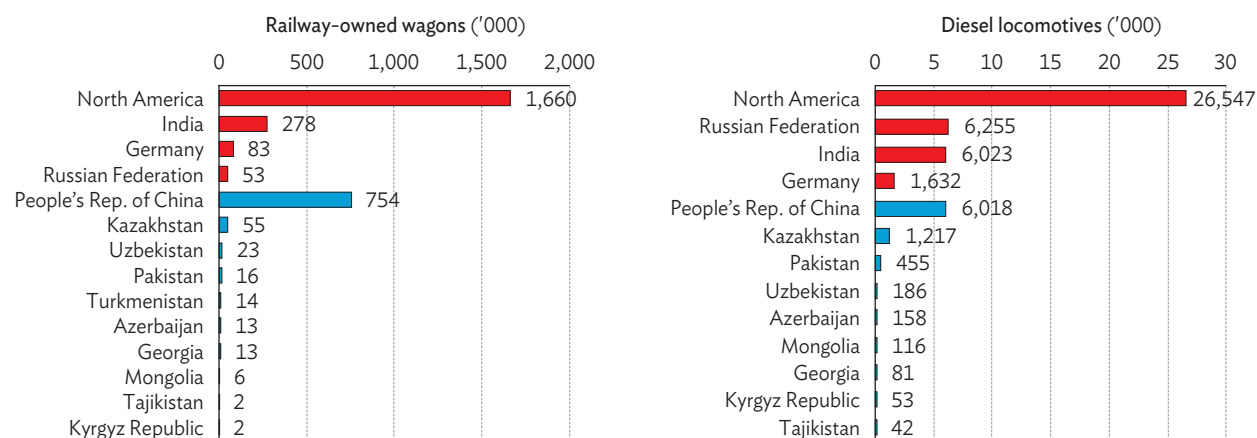


CAREC = Central Asia Regional Economic Cooperation, km = kilometer.

Note: CAREC Member Countries shown in blue, comparators from other regions shown in red.

Source: UIC 2019.

Figure 4.2: Comparison of Railway Rolling Stock Fleet in Tajikistan, other CAREC Member Countries and other Leading Railway Countries

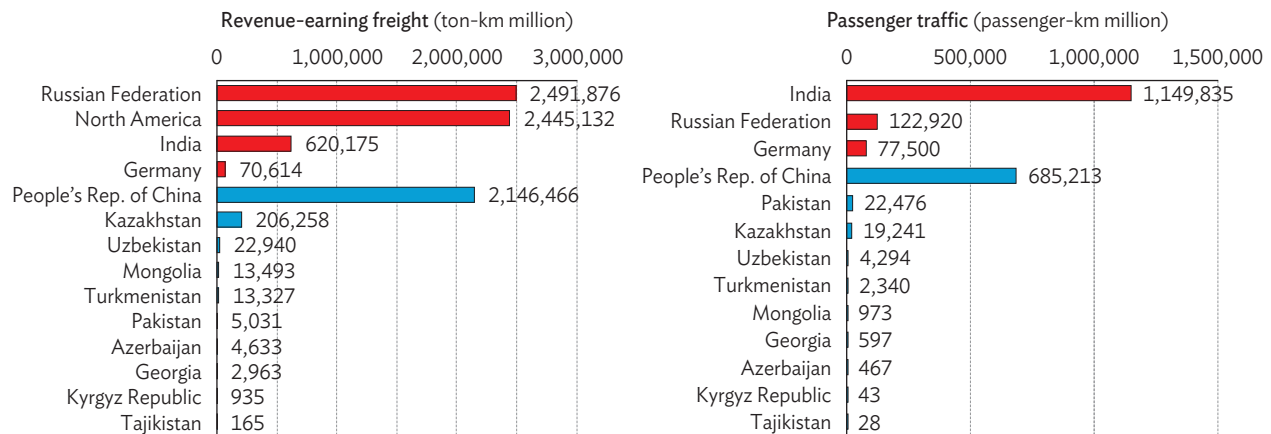


CAREC = Central Asia Regional Economic Cooperation.

Note: CAREC Member Countries shown in blue, comparators from other regions shown in red.

Source: UIC 2019.

Figure 4.3: Comparison of Annual Railway Freight and Passenger Traffic Levels in Tajikistan, other CAREC Member Countries and other Leading Railway Countries



CAREC = Central Asia Regional Economic Cooperation, km = kilometer.

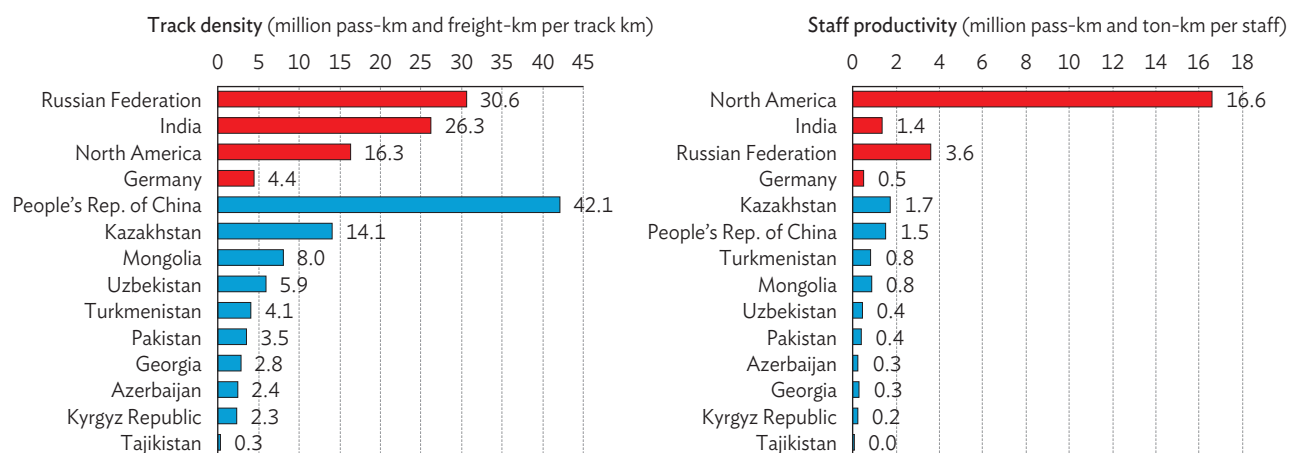
Note: CAREC Member Countries shown in blue, comparators from other regions shown in red.

Source: UIC 2019.

78. Track density measures the intensity of track utilization in terms of traffic turnover per km of rail. As Figure 4.4 indicates, ROT's track density is the lowest among the comparator countries. Staff productivity can be measured as the traffic turnover per staff member. ROT's staff productivity is the lowest among the comparator countries, and only a tiny fraction of the productivity level in the five higher productivity CAREC MCs. This provides a further indication that ROT is very much overstaffed for its present level of operations.

79. A further set of productivity measures concern rolling stock asset utilization. Locomotive productivity measures annual traffic turnover per locomotive. ROT's locomotive productivity is the lowest among the CAREC MCs, which suggests it has many more locomotives than the number required to run its operations. Wagon productivity measures annual traffic turnover per owned wagon. ROT's wagon productivity is again the lowest among the CAREC MCs, which reflects the large number of redundant wagons. This is shown in Figure 4.5.

Figure 4.4: Comparison of Railway Track and Staff Productivity in Tajikistan, other CAREC Member Countries and other Leading Railway Countries

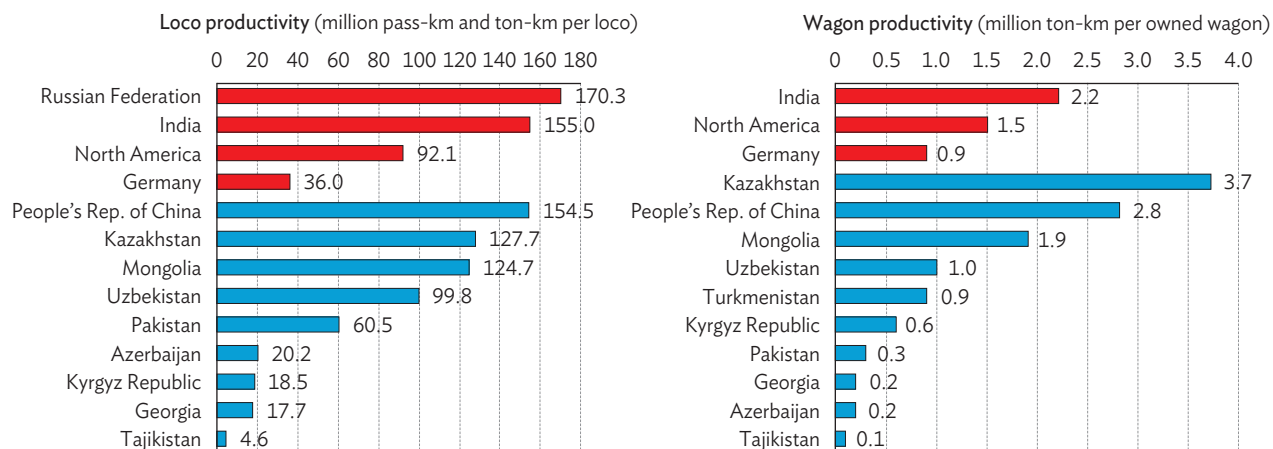


CAREC = Central Asia Regional Economic Cooperation, km = kilometer.

Note: CAREC Member Countries shown in blue, comparators from other regions shown in red.

Source: UIC 2019.

Figure 4.5: Comparison of Locomotive and Wagon Productivity in Tajikistan, other CAREC Member Countries and other Leading Railway Countries



CAREC = Central Asia Regional Economic Cooperation, km = kilometer.

Notes: (i) CAREC Member Countries shown in blue, comparators from other regions shown in red; (ii) productivity calculations are less accurate for countries with higher use of leased locomotives or wagons, such as Kazakhstan.

Source: UIC 2019.

PROPOSALS FOR INVESTMENT, COMMERCIALIZATION, AND REFORM

A. Introduction

80. Drawing on the previous chapters, this final chapter discusses opportunities for railway sector development in Tajikistan, drawing upon recent proposals on railway investment, commercialization, and reform. It concludes by identifying some promising opportunities to obtain prefeasibility study support, capacity development, and knowledge-related assistance through the present CAREC Railway Sector Development TA.

B. Policy setting

81. The government wishes railways to play a catalytic role in enabling national economic growth and is interested to consider new railway investment projects if their feasibility can be demonstrated and a suitable allocation of financing responsibilities and risks can be determined. Any investments need to address the problems that have led to declining market share, including lack of commercial orientation, and low service quality and efficiency. Until now, the government has looked to ROT to address these issues. ROT is aware of the need for reform but has not yet formulated a reform plan. Since ROT is one of the country's largest employers, it is likely that a reform plan would be politically sensitive.

82. Several factors may encourage the government to give more emphasis to railway commercialization and reform in future. Unless addressed, the problem of worn-out assets will worsen (particularly for rolling stock), leading to

further deterioration in service quality and reduction in traffic levels. The government is also aware that financiers are unlikely to consider significant railway investments until ROT has been reformed. Present indications are that the government may be interested to consider proposals involving a combination of reforms to turn around railway performance together with priority investments to address critical bottlenecks.

83. Previous efforts to commercialize ROT had disappointing results. Two years ago, ROT sold some of its facilities to the private sector without safeguarding access and connectivity for customers. This included some of its busiest multimodal terminals (e.g., Dushanbe 2). Today, shippers/receivers of containers must pay the new private multimodal terminal owner TJS800–TJS900 per container to load/unload from ROT wagons, which is more than twice of what ROT charged before. The privatization of branch lines also caused significant access and connectivity problems for customers. A forwarder reported that to deliver a wagon to the Coca Cola plant near Dushanbe, the wagon must now be routed over 4 km of tracks owned by 3 different entities—Gazprom, Somon Tahminot, and Hydro Montazh. This has created additional administrative work to record these movements and pay each owner. Should one of the track owners fail to maintain its section of branch line or deny passage, the Coca Cola plant would lose access to rail service. In view of this experience, future proposals for commercialization need to be carefully examined, especially those involving privatization.

C. Commercialization and reform

84. There is no single best practice model for railway commercialization and reform, but a possible starting point could be to (i) corporatize ROT in the form of a joint-stock company; (ii) reorganize its functions, management, and accounting system in accordance with its main lines of business; (iii) prepare and implement a market-based turnaround strategy, including a business plan, a revised tariff, and a program of small investments to address critical bottlenecks, with a view to quickly expanding the railway business and improving its financial performance; and (iv) prepare a longer term investment masterplan focusing on projects expected to be economically and financially viable.

85. Within this approach, key elements of commercialization would include setting up a sales and marketing function, developing an improved understanding of the cost of services offered, introducing a more flexible approach to pricing³⁸ with a view to attracting more traffic and optimizing revenues, and working with interline railways and customs authorities to offer more reliable and competitive cross-border railway services.³⁹ It would also be necessary to address overstaffing and staff skills development. Such an approach could be called the Railway Modernization and Growth Program. Since ROT does not have experience with implementing such a program, it would require strong direction from the government and substantial technical assistance support from development partners.

86. A series of small investments to address critical issues might include (i) development of multimodal terminals and railway sidings where immediate traffic growth opportunities have been identified, (ii) establishing modern rail-served logistics centers offering value-added processing, (iii) reviving industrial properties adjacent to railway sidings to generate additional traffic, (iv) upgrading ICT, (v) establishing a modern railway accounting system that can monitor and report upon the profitability of each of ROT's main lines of business, (vi) measures to improve operating efficiency and service quality, and (vii) adopting good asset management practices.

87. There could be potential for ADB to provide a small expenditure financing facility (SEFF) to help prepare and implement a commercialization and reform plan, and finance small investments to attract additional traffic and revenues. This could be followed by a larger investment project in the future once turnaround has been achieved and a pattern of rising traffic and net income established.

D. Proposals for support from CAREC Railway Sector Development TA

1. Prefeasibility studies

88. **Modern multimodal terminal at Kulob.** A good opportunity for ROT to grow rail traffic and increase railway revenues may be to develop a modern multimodal terminal at Kulob. The railway network terminates at Kulob which is located on the Pamir Highway that links the PRC border at Kulma Pass to Dushanbe (Figure 1.1).

³⁸ For example, introducing improved methodologies for setting tariffs and removing the requirement for the Anti-monopoly Commission to approve tariff changes.

³⁹ Early priority should also be given to attracting more customers to be served directly through rail sidings. ROT could consider forming an industrial development unit to work with the Ministry of Economy and local government to attract more enterprises to rail-served premises. This is a common practice among railways in Europe and North America and is an effective way of growing freight traffic.

Kulob is a regional center of the Khatlon region which is rich in agricultural resources. A multimodal terminal offering efficient transfers between rail and road—particularly for containerized shipments—would increase the amount of cross-border traffic using the railway west of Kulob. Such a multimodal approach would help ROT to expand its role as a transit railway connecting the PRC with Uzbekistan, western Kazakhstan, Turkmenistan, Iran, Turkey, and Europe. This would contribute to expansion of trade relations and economic integration between Tajikistan and the PRC (Xinjiang). Efficient multimodal container transport would also support further agricultural development in the Khatlon region and contribute to improvements in rural incomes.

89. Value-added logistics centers connected to important nodes in ROT's network. Another opportunity for ROT to grow its traffic is through the development of modern value-added logistics centers located at high traffic rail/road junction points near important population centers, production centers, or border crossings. In addition to regular logistics activities like cargo handling and warehousing, such centers can provide additional services for inspection, labeling, and minor product enhancements. Effective value-added logistics centers can attract industries to locate nearby and promote economic agglomeration that would provide additional cargo for ROT to transport.

90. Revival of abandoned industrial properties on ROT rail sidings. Like other MCs that were part of the FSU, Tajikistan has many industrial properties that fell into disuse after the FSU's planned economy collapsed. Some could be repurposed or renovated for productive use again. In Dushanbe, an abandoned Soviet factory was rebuilt two years ago to produce cement. ROT should undertake a study to identify abandoned industrial properties on its lines and work with the relevant government ministries and property developers to put them to productive use.

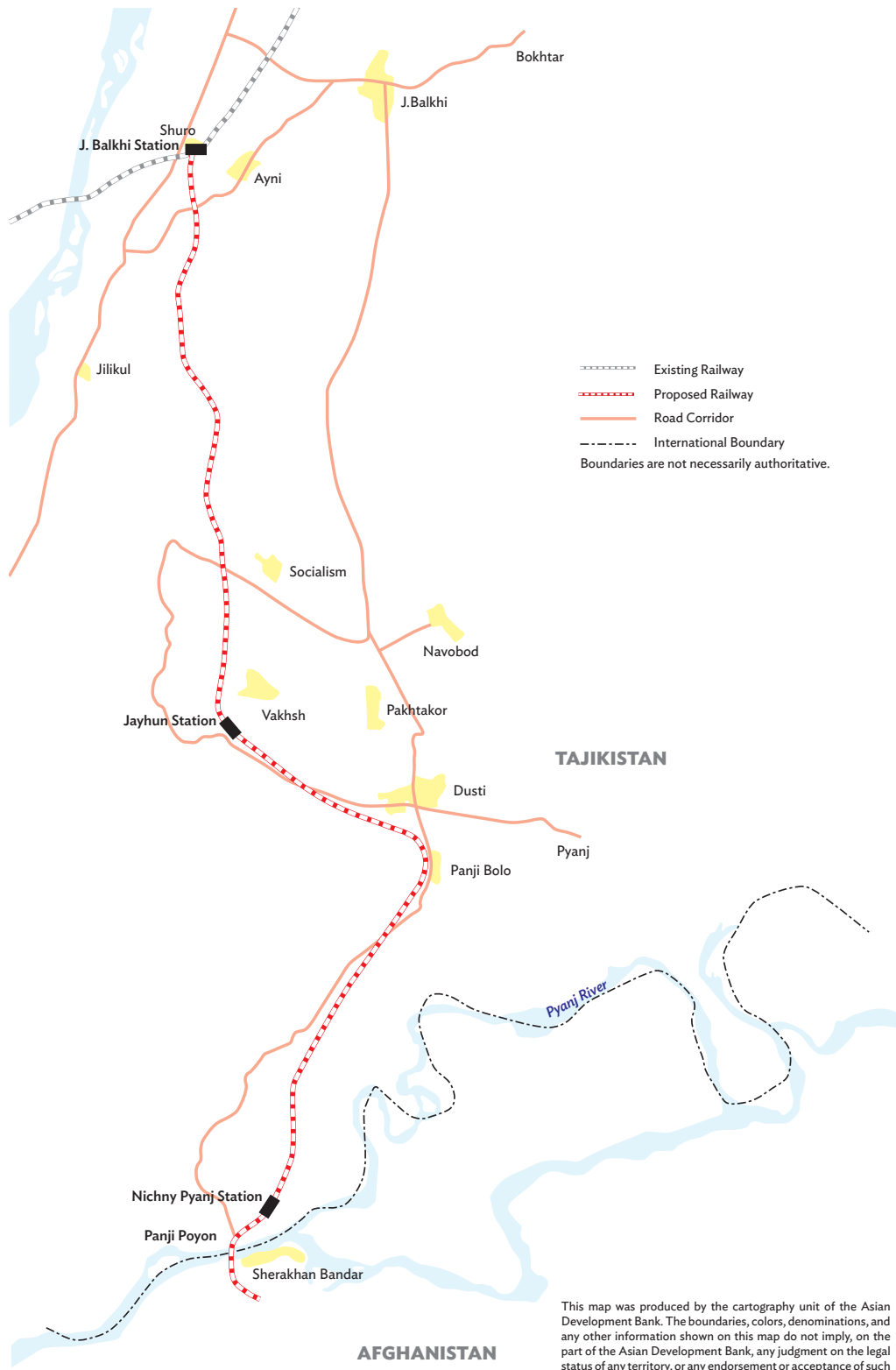
With imagination and determination, some could turn into new manufacturing or processing sites that would provide new sources of cargo for ROT.

91. Jaloliddini Balkhi–Jayhun–Nizhny Pyanj Railway. The proposed 51 km Jaloliddini Balkhi–Jayhun–Nizhny Pyanj Railway is a major investment project that would expand Tajikistan's railway network to the border crossing with Afghanistan at Nizhny Pyanj. The 51 km line would start in the vicinity of Kolkhozabad in Tajikistan, running south to the border. This would remove the need for traffic to transfer from railway to road (para. 20). From Nizhny Pyanj, traffic would cross the Pyanj River to the port of Sher Khan Bandar in Afghanistan. This is shown in Figure 5.1. A further 65 km extension to Kunduz and Mazar-e-Sharif (both Afghanistan) would form part of the proposed Turkmenistan–Afghanistan–Tajikistan railway corridor. The line would enable Turkmenistan railway traffic to reach Tajikistan without transiting Uzbekistan. Although preliminary studies were prepared in the past, which estimated the project cost at \$128.58 million, the feasibility of the project still needs to be demonstrated, particularly following recent trade liberalization measures and reopening of borders in Uzbekistan. The MOT has expressed interest in obtaining ADB assistance to conduct a feasibility study and would be willing to bear part of the cost.

92. X-ray machine for Tajik Customs. Tajik Customs indicated that it has no x-ray machines to assist inspections at borders. Consequently, border management time is longer than in most other CAREC MCs. As the cost of such machines has declined significantly, acquisition of such machines should be considered at major border crossing points.

93. Among these prefeasibility study proposals, those covering multimodal terminal at Kulob, value-added logistics centers, revival of railway sidings, and x-ray machines would only require relatively small investments and have potential to contribute to early growth in railway traffic and revenues.

Figure 5.1: Proposed Jaloliddini Balkhi–Jayhun–Nizhny Pyanj Railway



This map was produced by the cartography unit of the Asian Development Bank. The boundaries, colors, denominations, and any other information shown on this map do not imply, on the part of the Asian Development Bank, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries, colors, denominations, or information.

Source: MOT.

Some of these might therefore be worth considering among candidate investments for inclusion as part of a program of commercialization, reform, and investment (para. 87). In the case of larger, more costly investment projects, including the proposed Jaloliddini Balkhi–Jayhun–Nizhny Pyanj Railway, ROT would need to first strengthen its commercial orientation in order to attract traffic. It would therefore be more appropriate to examine such investment projects once commercialization and reform of ROT has been successfully implemented.

2. Knowledge products and events

94. Logistics capacity development for mid-level government officials and industry management. Knowledge gathered from this visit and prior visits indicate there is a strong need for logistics capacity development in Tajikistan. A short course covering supply chain management, modern logistics systems, quality management principles, cold chain logistics management, and multimodal transport will be very helpful. This can be accomplished with a modest sum and can be accomplished in conjunction with an appropriate Tajik university.

95. Skills training to attract financing for investments in accordance with international standards. MOT and ROT recognize that their staff lack familiarity and expertise in aspects of project preparation needed to attract investment financing from international financial institutions, and would be interested to receive support for associate corporate training and workshops.

E. Main opportunities for support under CAREC Railway Sector Development TA

96. Based on the preceding chapters, the more promising opportunities for possible support under the present TA are summarized in Table 5.1.

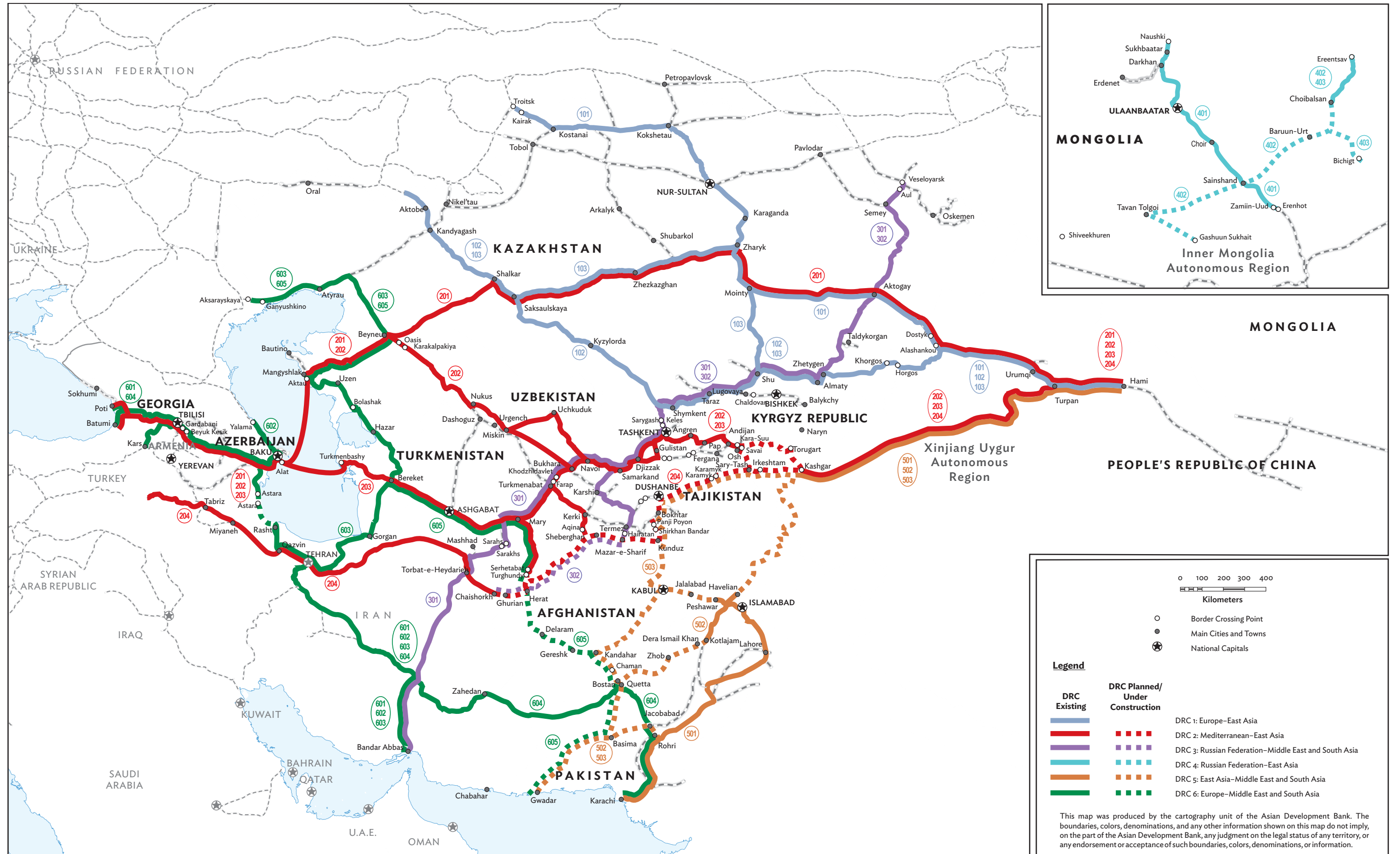
Table 5.1: More Promising Opportunities for Tajikistan for Possible Support Under CAREC Railway Sector Development TA

Type of Support	Subject
Overarching opportunity	Support for preparation of commercialization, reform, and investment program (“Railway Modernization and Growth Program”)
Preliminary study	Modern multimodal terminal at Kulob
	Value-added logistics centers
	Revival of abandoned industrial properties on ROT rail sidings
	Jaloliddini Balkhi–Jayhun–Nizhny Pyanj Railway
Capacity development	X-ray machine for Tajik Customs
	Logistics capacity development for mid-level government officials and industry management
Knowledge products and events	Skills training to attract financing for investments
	Railway sales and marketing function
	Commercial approaches to railway tariffs
	Measures to improve operating efficiency and service quality
	Modern railway accounting systems
	Good asset management practices

Note: Selection of preliminary studies, capacity development support, and knowledge products and events is based on established submission templates and selection criteria, and overseen by the Railway Working Group.

Source: TA consultants.

APPENDIX | CAREC DESIGNATED RAIL CORRIDORS



DRC = designated rail corridors.
Source: CAREC Secretariat.

REFERENCES

Asian Development Bank (ADB). 2017. *Unlocking the Potential of Railways: A Railway Strategy for CAREC, 2017–2030*. ADB: Manila.

———. 2018. *Railway Sector Development in Central Asia Regional Economic Cooperation Countries*. Technical Assistance Report. ADB: Manila.

———. 2019. *Basic Statistics, 2019*. ADB: Manila.

Government of Tajikistan. 2016. *National Development Strategy of the Republic of Tajikistan for the period up to 2030*. Dushanbe.

Harral Winner Thompson Sharp Klein. 2012. *Railway Development Plan—Afghanistan: Resource Growth Corridors*. Study for World Bank and Australian Aid.

Hindu Business Line. 2019. *US Gives Written Assurances to India in a Big Push to Chabahar Port Plan*. 25 December. <https://www.thehindubusinessline.com/economy/logistics/us-gives-written-assurances-to-india-in-a-big-push-to-chabahar-port-plan/article30393995.ece>.

International Transport Forum (ITF). 2019. *Enhancing Connectivity and Freight in Central Asia*. *International Transport Forum Policy Papers*. No. 71. OECD Publishing: Paris.

International Union of Railways (UIC). 2019. *UIC Statistics*. <https://uic.org/support-activities/statistics/>.

Ministry of Transportation (MOT) Tajikistan. 2019. *Construction of a new railway line: Jaloliddini Balkhi–Jaihun–Nizhny Pyanj*. ROT Design Institute.

Observatory for Economic Complexity. 2019. *Tajikistan Country Profile*. <https://oec.world/en/profile/country/tjk>.

Ojala, L., A. Kitain, and B. Touboul. 2004. *Tajikistan Trade Diagnostic Study, Transport and Trade Facilitation Study*. Final Draft.

Statistical Agency of the Republic of Tajikistan. 2019. *Tajikistan in Figures, 2018*.

UNECE. 2014. *Regulatory and Procedural Barriers to Trade in Tajikistan: Needs Assessment*.

World Bank. 2018. *Connectivity along Overland Corridors of the Belt and Road Initiative*. World Bank: Washington, DC.

Railway Sector Assessment for Tajikistan

Through a technical assistance project on railway sector development, the Asian Development Bank is helping member countries of the Central Asian Regional Economic Cooperation (CAREC) region to strengthen the role and performance of railways. This short report summarizes the findings of the railway sector assessment for Tajikistan, based on a country visit on 1–8 August 2019. It examines the context, characteristics, performance and potential of railways, and identifies opportunities for future investment, commercialization, and reform.

About the Central Asia Regional Economic Cooperation Program

The Central Asia Regional Economic Cooperation (CAREC) Program is a partnership of 11 member countries and development partners working together to promote development through cooperation, leading to accelerated economic growth and poverty reduction. It is guided by the overarching vision of “Good Neighbors, Good Partners, and Good Prospects.” CAREC countries include: Afghanistan, Azerbaijan, the People’s Republic of China, Georgia, Kazakhstan, the Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan.