UNECE

Logistics and Transport Competitiveness in Kazakhstan

UNITED NATIONS

ECONOMIC COMMISSION FOR EUROPE

LOGISTICS AND TRANSPORT COMPETITIVENESS IN KAZAKHSTAN

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UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UNECE)

The United Nations Economic Commission for Europe (UNECE) is one of the five United Nations regional commissions, administered by the Economic and Social Council (ECOSOC). It was established in 1947 with the mandate to help rebuild post-war Europe, develop economic activity and strengthen economic relations among European countries, and between Europe and the rest of the world. During the Cold War, UNECE served as a unique forum for economic dialogue and cooperation between East and West. Despite the complexity of this period, significant achievements were made, with consensus reached on numerous harmonization and standardization agreements.

In the post-Cold War era, UNECE acquired not only many new member States, but also new functions. Since the early 1990s the organization has focused on analyses of the transition process, using its harmonization experience to facilitate the integration of Central and Eastern European countries into the global markets.

UNECE is the forum where the countries of Western, Central and Eastern Europe, Central Asia and North America – 56 countries in all – come together to forge the tools of their economic cooperation. That cooperation concerns economics, statistics, environment, transport, trade, sustainable energy, timber and habitat. The Commission offers a regional framework for the elaboration and harmonization of conventions, norms and standards. The Commission's experts provide technical assistance to the countries of South-East Europe and the Commonwealth of Independent States. This assistance takes the form of advisory services, training seminars and workshops where countries can share their experiences and best practices.

TRANSPORT IN UNECE

The UNECE Inland Transport Committee (ITC) facilitates the international movement of persons and goods by inland transport modes. It aims to improve competitiveness, safety, energy efficiency and security in the transport sector. At the same time it focuses on reducing the adverse effects of transport activities on the environment and contributing effectively to sustainable development. The ITC is a:

- Centre for multilateral transport standards and agreements in Europe and beyond, e.g. regulations for dangerous goods transport and road vehicle construction at the global level
- Gateway for technical assistance and exchange of best practices
- Promoter of multi-country investment planning
- Substantive partner for transport and trade facilitation initiatives
- Historic centre for transport statistics.

For more than six decades, ITC has provided a platform for intergovernmental cooperation to facilitate and develop international transport while improving its safety and environmental performance. The main results of this persevering and important work are reflected in more than 50 international agreements and conventions which provide an international legal framework and technical regulations for the development of international road, rail, inland water and intermodal transport, as well as dangerous goods transport and vehicle construction. Considering the needs of transport sector and its regulators, UNECE offers a balanced approach to and treatment of facilitation and security issues alike.

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ABBREVIATIONS

ADB	Asian Development Bank
ALTID	Asian Land Transport Infrastructure Development
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAREC	Asian Land Transport Infrastructure Development Central Asia Regional Economic Cooperation Program
CIS	Commonwealth of Independent States
CU	Customs Union
DBK	Development Bank of Kazakhstan
EATL	Euro-Asian Transport Links
EBRD	European Bank for Reconstruction and Development
ECE	Economic Commission for Europe
ECO	Economic Cooperation Organization
EEC	Eurasian Economic Community
EEU	Eurasian Economic Union
ESCAP	Economic and Social Commission for Asia and the Pacific
IAEA	International Atomic Energy Agency
IBRD	International Bank for Reconstruction and Development
IDB	Islamic Development Bank
IMF	International Monetary Fund
GARR	Greater Almaty Ring Road
GDP	Gross Domestic Product
LPI	Logistics Performance Index
NF	National Foundation
NMSC	National Maritime Shipping Company
OCST	Organization of the Collective Security Treaty
OIC	Organization of Islamic Cooperation
OSCE	Organization for Security and Co-operation in Europe
OSJD	Organization for Cooperation of Railways
RB	RB Partners Group
SCO	Shanghai Cooperation Organization
SES	Single Economic Space
SPO	State Production Association
SWOT	Strengths, Weaknesses, Opportunities,Threats
TCTC	Trans-Caspian Transport Corridor
TEU	Twenty foot equivalent unit
TIR	Transports International Routiers
Tkm	Tonne Kilometre
TRACECA	Transport Corridor Europe-Caucasus-Asia
TSR	TRANS-Siberian Railway
WTO	World Trade Organization
UNECE	United Nations Economic Commission for Europe
UTLC	United Transport and Logistics Company

EXECUTIVE SUMMARY

This study has been commissioned by UNECE to review transport competitiveness and logistics in Kazakhstan. The aim of the project is to identify key transport related infrastructure and trends and review how transport in Kazakhstan can help it to develop its strategic position at the junction of Europe and Asia.

In this regard, the study reviews the current state and prospects for the development of transport and logistics in Kazakhstan, along with the transport regulatory framework of the country. The study also identifies actions for the further development based on current trends in development, risks and challenges for the sector. Data and information has been updated to September 2018.

The transport sector of Kazakhstan includes rail, road, inland water, aviation and pipeline transport. Roads, railways and navigable waterways play an important role in the implementation of intergovernmental and interstate relations. Investments in fixed capital of transport and storage accounted for 1.2% of GDP in 2017. Transport plays an essential role in the implementation of interstate relations, especially within the Central Asian region. This is driven by: geographical proximity and historically established trade links; a comparable level of cultural development; similarity of the peoples of these States; the use of Russian as a commonly understood language; and the interdependence of national economies that has developed over many decades.

Road transport is the largest freight transport sector thanks to the extensive network of highways. The Government of Kazakhstan attaches great importance to the development of this type of transport and to the development of roads that enable communication between all its regions as well as neighbouring countries. By 2021 it is planned to build and reconstruct 5,703 km of roads of republican significance and 1,124 km of roads of regional and district significance, and also to increase to 48% the share of highways I and II of the technical category of the total length of highways of republican importance.[1] This is foreseen to have a significant impact on the quality and competitiveness of the road sector. A thriving road transport market has been created due to the presence of a large number of transport companies and individual entrepreneurs.

Rail transport is also of significant importance for both domestic traffic as well as for exports/imports and transit freight traffic. In Kazakhstan, as in countries in the region, rail transport occupies a monopoly position in the transport certain goods. Significant investment is needed and is ongoing to improve the competitiveness of rail transport and to increase the efficiency of domestic routes. For this, substantial focus is placed on the construction of railways connecting the centre with strategically important regions in the country and international rail lines. By 2021, it is planned to build 1,302 km of railway sections, electrify 522 km of railway lines and modernize 6,925 km of the upper track structure, which will further increase the importance of Kazakhstan's railways in the region.[2]

[1] State programme for the development and integration of the infrastructure of the transport system of Kazakhstan until 2020.

[2] State programme for the development and integration of the infrastructure of the transport system of Kazakhstan until 2020.

Aviation has a key place in the transport sector considering the large territory of the country and the availability of 23 airfields. Kazakhstan is improving the level of service and competitiveness of its air transport companies. By 2021, 18 airfields will comply with ICAO requirements.

Over 4,000 km of inland waterways and access to the Caspian Sea is important for the country's economy. By 2021, it is planned to increase the capacity of the seaports of Kazakhstan to 20.5 million tons and to increase the share of Kazakhstan in the sea transportation of goods in the Caspian Sea to 70%, as well as to increase the volume of cargo transportation by inland waterways to 2.5 million tons and to increase the volume of transit cargo by water transport to 1.5 million tons.[3]

The creation of a highly efficient logistic system and ensuring its integration into the international logistic system is important for Kazakhstan. In this regard, it is planned to occupy the fourtieth position in the logistics efficiency index.

Given its location, Kazakhstan has the potential to be a significant transit country. Currently, this potential has not been fully exploited. Kazakhstan stands in a good position to capitalize on cargo flows between Europe and Asia. At present, Chinese transit through Kazakhstan is small, since the bulk of imports from China to the European Union follow the southern sea route. Calculations show that only 1% of cargo from China to Europe uses the land route (about US$ 7 billion out of a total of some US$ 697 billion).

To attract further transit cargo flows, Kazakhstan needs to create modern transport infrastructure.

Currently, specialists in Kazakhstan highlight the following challenges for the transport sector: limited international transport, restricted technological development, underdeveloped intermodal transport, a low level of transport and logistics services, insufficient number of vehicles and an outdated fleet. In addition, logistics, which contributes significantly to GDP in developed countries, is still in its infancy in Kazakhstan.

To address these challenges the Government is focusing on the future development of transport networks in Kazakhstan. This is confirmed by the implementation of state programmes for the development of transport. These transport related challenges can be further addressed with additional accession to UN inland transport Conventions and Legal Agreements and with participation in projects such as the UNECE Euro-Asian Transport Links.

The remainder of this study goes into more detail on each of these areas.

[3] State programme for the development and integration of the infrastructure of the transport system of Kazakhstan until 2020.

1. BRIEF ANALYSIS OF THE ECONOMIC SITUATION IN KAZAKHSTAN

1.1. MAIN INDICATORS OF THE SOCIAL AND ECONOMIC SITUATION

Kazakhstan is situated at the junction of Europe and Asia. It extends from the Volga in the west to the Altai mountains in the east and from the Siberian plain in the north to the Central Asian Tian Shan mountains in the south. The predominant part of the territory is occupied by plains. The Tian Shan, Dzungarian Alatau and Altay are mountain ranges in the south and the southeast. There are large underpopulated and uninhabited deserts and semi-deserts in the plains.

The territory of Kazakhstan covers 2,724.9 thousand square km. The country has the nineth largest land area in the world after the Russian Federation, China, United States, Argentina, Brazil, Canada, India and Australia; it has the second largest territory among the CIS countries. The total length of the state border is 13,394 km, including 600 km along the coast of the Caspian Sea. Kazakhstan does not have direct access to the ocean.

Kazakhstan is composed of 14 regions, 2 cities of national significance, 177 administrative districts, 87 cities, 30 villages and 6,668 rural settlements.

Figure 1.1: Administrative and territorial structure of Kazakhstan

Source: http://tr-kazakhstan.kz/wp-includes/2015/11/15.jpg.

The population of Kazakhstan in 2018 was 18.2 million, of which 57.4% live in an urban environment and the rest is rural. The population increased by 1.3% from the previous year.

The main macroeconomic indicators of Kazakhstan in recent years have shown positive trend. GDP was US$ 160 billion in 2017. In comparison with 2016 it grew by 4%. Manufacturing production increased by 5.7%, production of services increased by 2.7% and taxes on products increased by 5.9%. The trend of GDP in the national currency (the tenge) is also positive, it increased by 2.5 times in 2017 when compared with 2010. However, in US$ this growth was only 106.8%. The reason for this difference is a sharp decline in the value of the national currency since 2014 which has decreased by 1.82 times. Annual inflation in 2017 was 7.1% compared to 8.5% in December 2016. Food prices have increased by 6.5%, non-food products prices by 8.9% and commercial services by 5.9%.

The National Bank of Kazakhstan has gradually reduced the base interest rate from 17% in February 2016 to 10.25% in August 2017. In January 2018, the rate was further reduced to 9.75%.

The volume of investment in equity has increased by 5.5%. The growth is due to the implementation of innovative industrial and infrastructure projects in the framework of the State Programme "Nurly Zhol" and the Strategy of industrial and innovative development of Kazakhstan for 2003-2015. Table 1.1 below summarises this information.

Table 1.1: Main macroeconomic indicators of Kazakhstan

Indicator	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
GDP, mln. US$	148 052.4	192 627.6	208 002.1	236 633.3	221 417.7	184 387.0	137 278.3	158 180.3
As a percentage of the previous year	107.3	107.4	104.8	106.0	104.2	101.2	101.1	104.0
GDP per capita, US$	9 071.0	11 634.5	12 387.4	13 890.8	12 806.7	10 509.9	7 714.8	8 769.5
Population, mln. people	16 203.0	16 440.1	16 673.1	16 909.8	17 160.8	17 417.7	17 670.6	18 157.1
The number of permanent residents, as a percentage of the previous year	101.4	101.5	101.4	101.4	101.5	101.5	101.5	101.3
Average nominal monetary incomes, US$	264.8	313.2	347.8	371.1	347.5	303.6	223.8	246.1
Volume of industrial output, bln. tenge	12 105.5	15 929.0	16 851.8	17 834.0	18 529.2	14 903.19	19 026.81	22 659.0
The agricultural products, bln, tenge	1 822.1	2 720.4	2 393.6	2 949.5	3 143.7	3 307.0	3 684.4	4 097.4
Capital Investment , mln. US$	31 581.5	34 171.5	36 953.3	33 293.2	36 784.9	31 681.4	22 686.2	26 838.4
Food price index	110.1	109.1	105.3	103.3	108.0	110.9	109.7	106.5
Price index for non-food products	105.5	105.3	103.5	103.3	107.8	122.6	109.5	108.9
Foreign trade turnover, mln. US$, including	91 397.5	121 241.7	132 807.2	133 506.0	120 755.3	76 523.5	62 113.6	78 102.9
export, mln. US$	60 270.8	84 335.9	86 448.8	84 700.4	79 459.8	45 955.8	36 736.9	48 503.3
import, mln. US$	31 126.7	36 905.8	46 358.4	48 805.6	41 295.5	30 567.7	25 376.7	29 599.6

Source: World Bank. http://databank.worldbank.org/data.
Kazakhstan in 2017. Statistical collection. Astana 2018. http://stat.gov.kz.

Manufacturing accounted for 36.5% of GDP in 2017 while the share of services was 57% (table 1.2).

Table 1.2: Nominal value and structure of GDP in 2017

		As a percentage of the previous year	
	Structure, %	*Volume index*	*deflator*
Gross domestic product	100.0	104.0	105.6
Goods production	36.5	105.7	103.6
Agriculture, forestry, fishery	4.4	102.9	103.8
Industry	26.5	107.1	103.9
Construction	5.6	101.9	102.5
Service production	57.0	102.7	105.3
Gross value added	93.5	103.9	104.6
Taxes on goods	6.5	105.9	120.9

Source: The results of the social and economic situation in Kazakhstan in 2017. www.pharm.reviews/analitika/item/2844-itogi-sotsialno-ekonomicheskogo-razvitiya-respubliki-kazakhstan-za-2017-god.

In 2017 there was positive growth, when compared to 2016, in industry by 7.1%, communications 3.3%, trade 3.2%, agriculture 2.9% and construction 1.9%.

The volume of transport services increased by 4.8% and the volume of cargo transport increased by 5.2%. There was also an increase in the volume of passenger transport (1.7%), communication services (3.3%) and retail and wholesale (3.2%).

New loans in 2017 were mainly directed to trade (38.6%), industry (14%), construction (3.8%), transport (3.5%) and agriculture (1.6%).

The state budget deficit in 2017 was 2.8% of GDP.

At the start of 2018, the national debt of Kazakhstan amounted to US$ 40.6 billion or 26.2% of GDP in 2017. Domestic debt was 10.9% of GDP. External debt was 8.9% of GDP. At the start of 2018, the national debt was 18.9% higher than at the beginning of 2017.

Table 1.3 compares the GDP and GDP per capita of partner countries with those of Kazakhstan.

Table 1.3: GDP of Kazakhstan compared to neighbouring countries

Country	*1990*	*2000*	*2010*	*2017*
China	13.40	66.22	41.21	73.53
Russia	19.19	14.20	10.30	9.20
Uzbekistan	0.50	0.75	0.27	0.46
Turkmenistan	0.12	0.16	0.15	0.24
Kyrgyzstan	0.10	0.08	0.03	0.04
Kazakhstan	**1.0**	**1.0**	**1.0**	**1.0**

Source: World Bank.

Note: values indicated for each country are multipliers of Kazakh value.

Analysis shows that in terms of GDP, Kazakhstan is the third largest after China and the Russian Federation, and the gap with China increased by 5.5 times during the period under review. The gap with the Russian Federation, on the contrary, halved. For the other neighbouring countries the following can be noted: the GDP of Kazakhstan and Uzbekistan grew at approximately the same pace while the GDP of Turkmenistan increased at a faster pace, and the GDP of Kyrgyzstan, on the contrary, slowed.

Analysis of GDP per capita shows that in China, the Russian Federation and Turkmenistan this indicator has leveled off over the past 27 years, while the gap in GDP per capita of Uzbekistan and Kyrgyzstan in comparison with Kazakhstan increased by 1.5 and 2.6 times respectively (table 1.4).

Table 1.4: GDP per capita in Kazakhstan compared to neighbouring countries

Country	*1990*	*2000*	*2010*	*2017*
China	0.19	0.78	0.50	1.19
Russia	2.11	1.44	1.18	1.17
Uzbekistan	0.40	0.45	0.15	0.26
Turkmenistan	0.52	0.52	0.49	0.92
Kyrgyzstan	0.37	0.23	0.10	0.14
Kazakhstan	**1.0**	**1.0**	**1.0**	**1.0**

Source: World Bank.

Note: values indicated for each country are multipliers of Kazakh value.

In recent years, Kazakhstan has experienced steady population growth with annual growth of 1.3-1.5%.[4]

Kazakhstan is a member of more than 120 international organizations, including the United Nations, OSCE, ECO, the Organization of Islamic Cooperation, WTO, IMF, IBRD, EBRD, Islamic Development Bank, Asian Development Bank, IAEA, CIS, EurAsEC, Customs Union, EEU, CSTO, SCO, etc. Kazakhstan plays a special role in the CIS, the EEU and the SCO. The most active regional cooperation is carried out within the framework of the EEU. All tariff and quantitative restrictions have been abolished in mutual trade agreements between the EEU member countries and there is free movement of individuals and legal entities. Trade operations with almost all SCO member countries are also carried out within a free trade regime. Trade operations with China are carried out within the framework of WTO.

Kazakhstan's membership in the WTO creates stable and liberal conditions for access to the markets of WTO member countries in the form of most-favoured-nation treatment and the national regime for the export of goods.

The strict international standards in force in the European Union and Kazakhstan’s non-compliance with those standards is a barrier to the development of trade with those countries.

[4] Kazakhstan in figures. Brochure. Astana: Ministry of National Economy. Committee on Statistics, 2017.

Kazakhstan actively uses the potential of the Economic Cooperation Organization, which includes its trading partners: Turkey, Pakistan, Afghanistan, Iran, Kyrgyzstan, Uzbekistan, Tajikistan and Turkmenistan to increase the volume of foreign trade with those countries.

Kazakhstan's foreign trade turnover amounted to US$ 77.6 billion and increased by 25% in 2017 compared with the corresponding period of 2016. The countries of the EEU accounted for 22.2% of the total trade turnover of Kazakhstan: 10.7% of exports and 38.9% of imports.

The structure of foreign trade significantly changed in 2017. There was an increase in the share of non-primary products (22.1%). The amount of Kazakhstan's non-raw material exports was more than US$ 14 billion (32.7% of total exports).

The trade surplus in 2017 was US$ 19,037.4 million (in 2015 US$ 15,388.1 million).

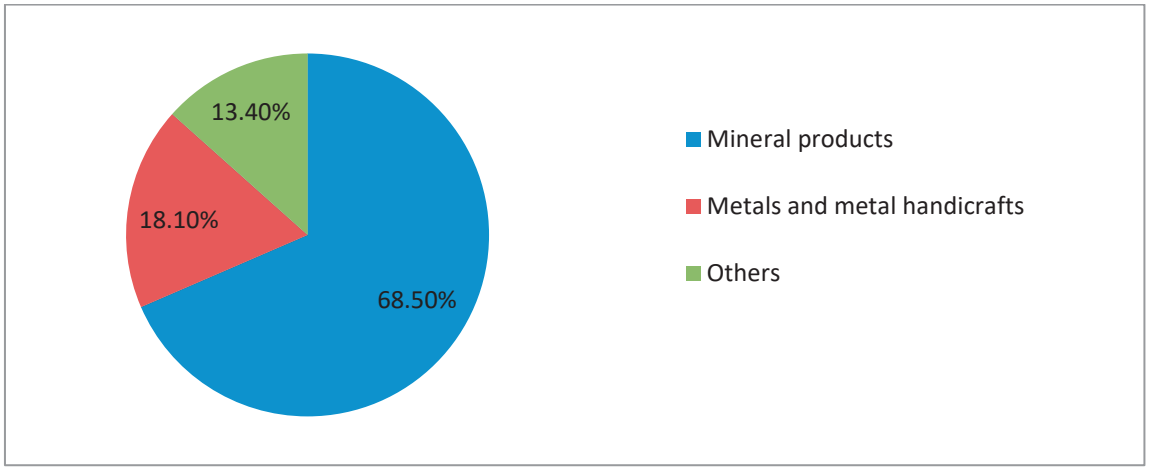
Kazakhstan exported to 102 countries of the world in 2017 and imported from 124 countries. The main buyers of Kazakhstan products were Italy (17.9% of total exports), China (12%) and the Netherlands (9.8%). The main importers of Kazakhstan products were the Russian Federation (39.6%), China (15.9%) and Germany (5%).[5]

The main trading partner of Kazakhstan is the Russian Federation (9.6% of Kazakhstan's exports and 39.6% of imports in mutual trade). The volume of mutual trade with the Russian Federation increased by 27.6%, including exports, which increased by 34.6%, and imports which increased by 26.3%.

The high external gross demand for Kazakhstan goods generated favourable terms of trade for Kazakhstan with third countries. The demand for Kazakhstan goods exceeded the demand of Kazakhstan for goods of third countries by 7.7%.

The Structure of exports and imports by main product groups in 2017 of Kazakhstan are presented in figures 1.2 and 1.3.

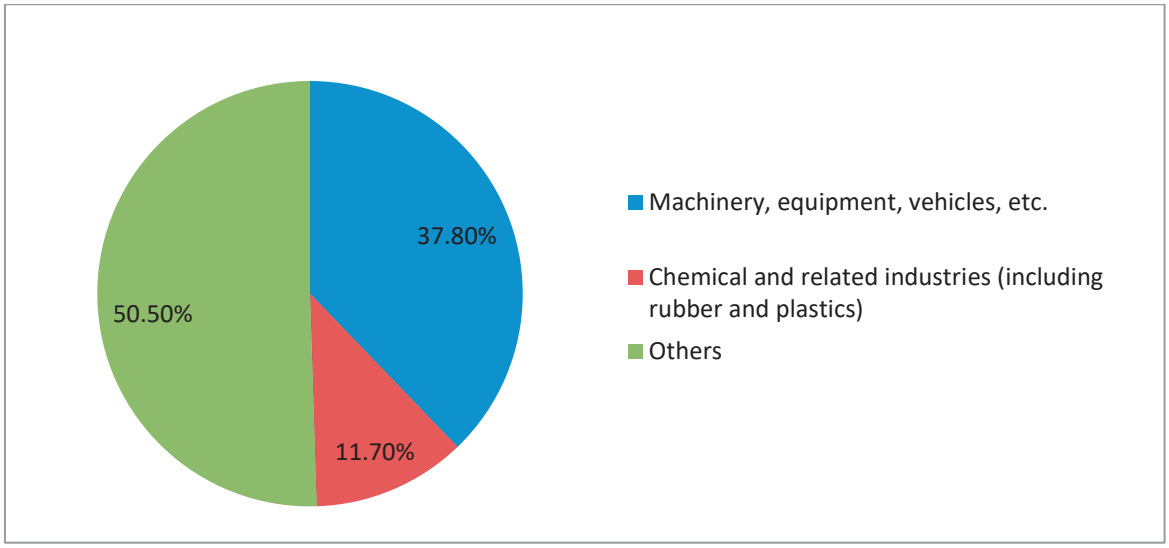
Figure 1.2: Structure of exports by main product groups in 2017



Source: Foreign Trade of Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

[5] Kazakhstan in 2017. Statistical Collection. Astana, 2018. http://stat.gov.kz.

Figure 1.3: Structure of imports by main product groups in 2017



Source: Foreign Trade of Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

Mineral products account for the largest share of exports (68.5%). The share of metals amounts to 18.1% and others products is 13.4%.

Analysis of the range of exports to the Russian Federation, Kazakhstan's main trading partner, shows that they are composed of general, liquid and bulk cargoes. Exports of ferrous metals, ores, etc. account for about half of Kazakhstan's total exports.

Imports from the Russian Federation include a wide range of small volume goods. The largest volumes of imports are mineral fuels, oil, bituminous substances and mineral waxes. Liquids and cargoes suitable for shipment in containers are the main cargo category.

1.2 TRANSPORT IN KAZAKHSTAN

All transport types are present in Kazakhstan: rail, road, pipeline (oil and gas pipelines), as well as water (river and sea) and aviation. Accordingly, the transport infrastructure of Kazakhstan includes a network of roads and railways, river shipping routes, numerous transport infrastructure facilities such as railway stations, airports, service enterprises and services that provide vehicle repairs, and services for the transport workers and passengers.

Each type of transport in Kazakhstan has its own sphere of activity, depending on what is transported and the distance travelled. This is set out in table 1.5 below.

Table 1.5: Transport development in Kazakhstan

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Freights carried, mln. tonnes	2 124.2	2 188.7	2 103.3	2 439.4	2 974.9	3 231.8	3 508.0	3 749.8	3 733.8	3 729.2	3 916.2
including:											
Railway	260.6	269.0	248.4	267.9	279.7	294.8	293.7	390.7	341.4	338.9	378.8
Road	1 667.4	1 721.0	1 687.5	1 971.8	2 475.5	2 718.4	2 983.4	3 129.1	3 174.0	3 180.7	3 300.8
Inland water	1.3	1.2	0.9	1.1	1.1	1.3	1.1	1.3	1.2	1.2	1.6
Maritime	1.1	1.7	3.6	4.6	4.6	4.0	4.0	3.6	2.5	2.6	2.1
Air, th. tonnes	25.7	22.7	22.0	28.9	31.6	21.9	23.9	19.1	17.2	18.0	22.4
pipeline	193.8	195.8	162.9	194.0	214.0	213.2	225.9	225.0	214.6	205.8	232.8
Cargo turnover, bln. tkm	350.5	369.7	337.0	385.3	448.8	478.0	495.4	554.9	546.3	518.6	555.4
including:											
Railway	200.8	214.9	197.5	213.2	223.6	235.9	231.3	280.7	267.4	239.0	262.1
Road	61.5	63.5	66.3	80.3	121.1	132.3	145.3	155.7	161.9	163.3	161.8
Inland water	0.05	0.06	0.06	0.08	0.08	0.06	0.03	0.03	0.03	0.02	0.03
Maritime	0.3	0.8	1.4	3.1	3.2	2.7	2.7	2.5	1.6	1.8	1.6
Air, million tkm	88.1	69.4	67.6	90.1	92.6	59.5	63.1	49.3	42.7	42.9	53.3
Pipeline	87.8	90.3	71.7	88.6	100.7	106.9	116.0	116.0	115.4	114.5	129.8

Source: Transport in Kazakhstan 2007-2017. Statistical collection. Astana. http://stat.gov.kz.

The volumes of cargo transport has changed cyclically in rail, sea, air and pipeline transport: traffic volumes grew until 2014, and then began to decline. The volume of road transport has been gradually increasing since the crisis of 2009. In inland water transport almost the same cargo volumes were transported from 2007-2016.

In 2017, there was an increase in the volume of traffic by all modes of transport with the exception of water transport.

Freight turnover correlates with the volume of cargo transport. Only in road transport has freight turnover steadily increased over the entire period under consideration. This suggests that this type of transport is of paramount importance for the country's economy. Cargo turnover correlates with the volume of cargo transport for the years under review.

As concerns cargo transport, it should be noted that rail is dominant for international and domestic journeys, while road and inland waterway transport are used for short distances in regional traffic (table 1.6).

Table 1.6: Freight and cargo turnover by modes of transport in 2017, percentage

	Freights carried, thousands of tonnes				*Cargo turnover, mln. tkm*			
	international	*Interrepublican*	*regional*	*urbane*	*international*	*interrepublican*	*regional*	*urbane*
All types of transport	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
including:								
Railway	49.4	69.3	-	-	61.9	69.9	-	-
Road	1.1	5.3	96.7	99.99	2.2	2.9	99.2	99.99
Air	0.003	0.004	-	-	0.02	0.01	-	-
Pipeline	48.8	25.4	-	-	35.2	27.2	-	-
Maritime	0.7	-	-	-	0.7	-	-	-
Inland waterway	-	0.03	3.3	0.01	-	0.08	0.01	-

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

The largest amount of freight was transported in areas bordering the Russian Federation and Kyrgyzstan in the West Kazakhstan and South Kazakhstan regions. The lowest was in East Kazakhstan and North Kazakhstan (table 1.7).

Table 1.7: Transport of cargoes and passengers by all modes of transport and by region in 2017

	Freights carried, millons of tonnes	*Cargo turnover, mln. tkm*	*Passengers transported, millons*	*Passenger turnover, mln. pskm*
The Republic of Kazakhstan	**3 946.085**	**563 958.6**	**22 744.698**	**273 193.4**
Akmola	116.139	5 265.2	1 643.889	7 281.8
Aktobe	76.823	6 409.3	294.685	16 070.1
Almaty	181.082	7 887.7	872.969	14 372.0
Atyrau	154.222	54 949.7	x	x
East Kazakhstan	39.265	3 100.1	451.517	8 531.0
Zhambyl	100.144	2 961.0	957.342	7 859.4
West Kazakhstan	795.518	10 843.1	x	x
Karaganda	291.531	11 413.7	1 796.550	17 951.4
Kyzylorda	104.601	13 905.2	367.482	6 531.0
Kostanay	238.557	8 520.1	88.775	4 698.4
Mangistau	x	x	2 607.559	22 266.3
Pavlodar	133.132	35 118.5	1 225.047	26 693.2
North-Kazakhstan	51.363	3 712.2	501.649	3 924.4
South Kazakhstan	600.835	16 099.1	1 709.158	22 272.5
Astana city	x	x	x	x
Almaty city	256.002	29 506.6	5 097.170	37 506.4
Unallocated volumes by region	496.766	335 990.0	22.914	18 222.2

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

Rail transport in Kazakhstan has the highest fixed asset value (apart from pipeline transport) of the transport modes accounting for 15.5% of the total. Road and city electric transport account for only 6.6% and urban passenger transport accounts for only 15.5% of road transport. The fixed asset value of water transport is only 10,132.7 million tenge or 0.1% of the fixed asset value of transport and storage. The fixed asset value of maritime transport is almost twice as high as the fixed asset value of air transport (table 1.8). It should be noted that warehousing and auxiliary transport activities also account for a large amount of this category.

Table 1.8: Fixed assets of transport enterprises at the end of the year in millions of tenge

	2013	*2014*	*2015*	*2016*	*2017*
Transport and storage	5 608 709.7	6 368 668.3	7 833 661.5	8 648 004.1	9 315 545.2
including:					
Railway	1 046 816.7	1 115 271. 7	1 149 488.4	1 337 438.4	1 817 591.4
Road and city electric	213 672.0	394 128. 2	542 090.1	567 902.2	709 486.2
including:					
Bus	51 889.1	57 371.3	76 700.4	84 565.2	86 907.1
Tram	1 580.4	1 716.3	2 097.0	2 099.5	2 357.1
Trolleybus	22 611.8	30 249.6	30 251.1	1 350.1	12 017.6
Pipeline transportation	2 167 161.9	2 349 132.9	3 482 115.3	3 861 294.3	4 174 973.3
Inland waterway	1 044.2	5 234.9	9 719.1	10 132.7	7 747.2
Maritime	72 747.0	78 244.5	48 769.2	133 868.7	142 260.2
Air	201 648.8	247 988.8	255 714.4	262 819.4	190 316.1
Warehousing and auxiliary transport activities	1 905 619.1	2 178 667.3	2 345 718.8	2 474 548.4	2 273 170.8

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

In assessing the degree of depreciation of fixed assets of transport enterprises, it should be noted that fixed assets in the main types of transport have depreciated by only a quarter. Consequently, they are in normal operating condition, with the exception of urban passenger transport (table 1.9).

Table 1.9: Degree of depreciation of fixed assets of transport enterprises, percentage

	2013	*2014*	*2015*	*2016*	*2017*
Transport and storage	27.2	24.2	24.4	23.6	24.2
including:					
Railway	24.7	26.2	28.4	27.0	30.1
Road and city electric	36.9	26.8	24.9	27.4	30.5
including:					
Bus	45.4	47.0	33.3	36.5	38.1
Tram	50.8	53.8	48.9	52.9	48.4
Trolleybus	21.6	14.0	24.7	63.1	10.3
Pipeline transportation	19.3	12.9	14.6	14.0	12.7
Inland waterway	41.7	44.9	35.2	34.3	45.6
Martime	18.2	16.5	34.6	16.4	22.8
Air	11.2	17.7	20.0	25.8	32.3
Warehousing and auxiliary transport activities	38.6	35.9	37.3	35.7	37.8

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

In terms of investment, pipeline and the warehousing and auxiliary transport activities category also have the highest share. This is followed by rail and then the other forms of transport.

Table 1.10: Investments in fixed assets by mode of transport, millions of tenge

	2013	*2014*	*2015*	*2016*	*2017*
Transport and storage	1 101 028	783 101	682 760	557 231	648 949
including:					
Railway	243 085	205 799	175 049	42 490	39 233
Road and city electric	29 875	27 778	46 531	31 913	63 341
Pipeline transport	635 956	385 459	320 491	309 588	374 051
Inland waterway	1	22	1	47	272
Maritime	2 965	4 719	1 482	8 925	-
Air	51 938	24 017	11 974	12 497	15 260
Warehousing and auxiliary transport activities	137 208	135 307	127 232	151 771	156 792

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

The largest number of employees is in land transport and transport by pipeline, the smallest number is in water transport. This could indicate the low level of development of water transport in Kazakhstan and the insignificant share of this type of transport in the total volume of cargo transported (table 1.11).

Table 1.11: Number of employees of transport enterprises, thousands

	2013	*2014*	*2015*	*2016*	*2017*
Transport - total	206.3	212.2	197.9	201.1	212.1
including:					
Land transportation and transportation through pipelines	93.9	100.7	95.8	104.6	115.1
Water transport	1.7	1.4	1.6	1.6	1.4
Air Transport	6.1	6.7	6.9	7.2	7.7
Warehousing and auxiliary transport activities	104.6	103.4	93.6	87.7	87.9

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

Thus, estimating the overall state of transport in Kazakhstan, it should be noted that rail transport is the most common form of transport. Kazakhstan railways provides 47.2% of freight turnover and 6.6% of the country's passenger traffic. However, road transport is gradually increasing its potential and in 2017 already accounted for 29.1% of the total cargo turnover.

The main volumes of freight in international and domestic transport are carried by rail. Road transport is used mainly for regional transport. The transport of goods by sea and air has not been properly developed. The volumes of transit traffic cannot be estimated because of a lack of information. There is also no information on intermodal transport.

The main challenges for the development of the transport system of Kazakhstan for the coming years are:

- Integration of the transport system into the Eurasian transport network;
- Further development of international rail and road transport of goods;
- Increasing the volume of cargo transport by inland waterways and sea;
- Increasing the volume of cargo and passenger transport by air;
- Development of intermodal transport;
- Development and improvement of the existing transport infrastructure.

2. ROAD TRANSPORT IN KAZAKHSTAN

2.1 ANALYSIS OF THE ROAD SECTOR

2.1.1 General information about roads

It is extremely important to create modern transport infrastructure in Kazakhstan. With the expansion of interstate economic relations, trade flows between countries are developing dynamically. This has resulted in an increase in the volume of domestic and international road transport of goods. Thus, requirements for the condition of roads, the quality of transport services and logistics services are increasing.

Cooperation with international institutions and programmes could contribute to solving problems in the road sector. At the global level, Kazakhstan is a member of UNECE and UNESCAP and cooperates with the European Union. On a regional level, Kazakhstan cooperates with the countries of the CIS, ECO, SCO, TRACECA and other organizations.

The high level of transport costs that landlocked countries have to bear hinders the development of exports, limiting the range of potential export goods and markets in which profitable trade is possible. High transport costs also lead to higher import costs. Therefore, carriers of such countries cannot compete with carriers of countries with seaports.

The geographical location of Kazakhstan at the intersection of East and West creates significant potential for the country to use the existing land transport corridors to increase both domestic and transit traffic.

International transport corridors provide practically the only way for the country to access regional markets for goods and services, and play a significant role in providing transport links between the main economic centres of the country.

The history of the development of road transport in Kazakhstan began in the 1920s. In 1924, the first road from Orenburg to Uralsk was built and in 1925 the road from Uralsk to Guriev was opened.

From the 1950s, the material and technical base of road transport was strengthened and the reconstruction of roads began. Since the beginning of the 1970s, the pace of road construction has increased dramatically. More than 30 thousand km of roads have been built per year.

The following routes were established: Karagandy – Temirtau – Astana, Semey – Pavlodar – Omsk, Guriev – Uralsk – Aktobe, Chimkent – Kyzylorda – Dzhusaly. Later the following highways were built: Almaty – Frunze, Zhambyl – Chimkent – Tashkent, Almaty – Taldy-Korgan – Ayaguz – Ust-Kamenogorsk with branches: Sary-Ozek – Panfilov, Ayaguz – Bakhty, Zhangiztobe – Zaisan.

According to the Law of Kazakhstan on Roads No. 245-II dated 17 July 2001 (with amendments and additions of 7 March 2017) the roads of Kazakhstan are divided into public roads, peripheral roads and streets of settlements.

Public roads are divided by their importance into international, national, regional and local roads.

Roads of international importance include highways connecting the capitals of neighbouring States, as well as those that are included in the international road network in accordance with interstate agreements. Roads of national importance include highways that provide transport links between major administrative, cultural and economic centres and neighbouring States, as well as highways of defensive significance. Roads of regional importance include highways connecting administrative centres with regional and local centres, as well as regional centres with roads of national importance. Roads of local importance include those connecting local centres with rural settlements. Peripheral roads include those on the territory of economic entities, serving industrial and economic transport, access roads to them from public roads, inter-farm roads of agricultural organizations, official, patrol and private roads. The streets of settlements are roads within respective administrative and territorial units.

In addition, roads are divided into 5 categories (table 2.1).

Table 2.1: Road categories

	Class of road						
	motorway	*expressway*	*ordinary road (not highway)*				
	Categories						
Parameters of roadway elements	*IA*	*IB*	*IC*	*II*	*III*	*IV*	*V*
Total number of lanes	4 and more	4 and more	4 and more	4 or 2	2	2	1
Lane width, m	3.75	3.75	3.5-3.75	3.5-3.75	3.25-3.5	3.0-3.25	3.5-4.5
Curb width (not less than), m	3.75	3.75	3.25-3.75	2.5-3.0	2.0-2.5	1.5-2.0	1.0-1.75
Width of separating strip, m	6	5	5	-	-	-	-
Crossings with roads	at different levels	at different levels	allowed at same level on roads with traffic lights	at different levels	at different levels	at same level	at same level
Crossings with railways	at different levels	at different levels	at different levels	at different levels	at different levels	at same level	at same level
Access to an adjacent road at the same level	not allowed	not allowed	not allowed	allowed	allowed	allowed	allowed
Estimated traffic density, units/day	more than 14 000	more than 14 000	more than 14 000	more than 6 000	2 000 to 6 000	200 to 2 000	up to 200

Source: http://avtotrans-consultant.ru/klassificatsiya-i-kategoriya-avtomobilnyx-dorog/.

Roads of national importance are categorised using a letter and a group of numbers as follows:

- "M" - for highways providing the most important interstate transport links, the mileage counting begins from the territory of the neighbouring State;
- "A" – for highways that provide transport links between major administrative, cultural and economic centres, as well as neighbouring States, including roads of defensive significance;
- "P" – for other roads.

2.1.2 Characteristics of the road network

The total length of roads in Kazakhstan is 138,700 km, of which 95,409 km are public roads and 42,400 km are peripheral roads.

During 2012-2017, the length of the road network fell by 2.1% from a high of 97,418 km in 2012 (table 2.2).

Table 2.2: Length of public roads, km

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
The Republic of Kazakhstan	**97 418**	**96 873**	**96 421**	**96 529**	**96 353**	**95 409**
Akmola region	8 111	7 900	7 864	7 891	7 890	7 884
Aktobe region	6 091	6 595	6 595	6 553	6 958	6 553
Almata region	9 482	9 482	9 317	9 316	9 334	8 952
Atyrau region	3 915	3 052	3 052	3 051	3 052	3 052
West-Kazakhstan region	6 531	6 531	6 531	6 428	6 531	6 497
Jambyl Region	5 291	5 335	5 351	5 351	5 228	5 094
Karaganda Oblast	8 844	8 844	8 844	8 844	8 854	8 856
Kostanay region	9 517	9 516	9 290	9 290	9 290	9 290
Kyzylorda Region	3 360	3 359	3 352	3 354	3 376	3 446
Mangystau Oblast	2 586	2 586	2 586	2 586	2 692	2 708
Turkestan region	7 198	7 181	7 147	7 197	6 810	6 670
Pavlodar region	5 658	5 658	5 658	5 659	5 454	5 449
North-Kazakhstan region	8 998	8 998	8 998	8 998	8 998	8 998
East Kazakhstan region	11 836	11 836	11 836	12 011	11 886	11 961

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

The East Kazakhstan region has the most extensive network of public roads, despite being only the third largest in terms of territory (283.2 km^2), fourth in terms of gross regional product (2,793.9 billion tenge), and ninth in terms of population density (4.9 people per 1 km^2). The second in terms of the length of roads is the Almaty region. Although in terms of the area of the territory and the size of its gross regional product, it is less significant than the East Kazakhstan region, it is much higher in terms of population density. Comparison of the different regions of Kazakhstan by the length of roads, the size of gross regional product, territory and population density shows that it is quite difficult to establish a correlation between the length of roads and the other indicators. Indicators such as climate, terrain, mineral resources, water resources and other factors also have to be taken into account (table 2.3).

Table 2.3: Territory and population density at the beginning of 2018

	Territory, thousand km²	*Density of population, people per km².*	*Size of gross regional product, billion tenge*
The Republic of Kazakhstan	**2 724.9**	**6.6**	-
Akmola region	146.2	5.0	1 344.3
Aktobe region	300.6	2.8	2 071.1
Almata region	223.6	8.9	2 190.0
Atyrau region	118.6	5.1	5 200.7
West-Kazakhstan region	151.3	4.2	2 032.7
Jambyl region	144.3	7.7	1 182.8
Karaganda region	428.0	3.2	3 712.1
Kostanay region	196.0	4.5	1 522.3
Kyzylorda region	226.0	3.4	1 308.3
Mangystau region	165.6	3.9	2 463.4
Turkestan region	117.3	24.5	2 789.2
Pavlodar region	124.8	6.1	1 975.5
North-Kazakhstan region	98.0	5.7	918.2
East Kazakhstan region	283.2	4.9	2 793.9

Source: Regions of Kazakhstan. Brochure. Astana, 2017. http://stat.gov.kz.

The total length of paved public roads in 2017 was 81,814 km or 85.7% of all public roads. Despite the fact that this indicator is quite high, the total length of such roads compared to 2012 decreased by 5,326 km or 6.1% (table 2.4).

Table 2.4: Length of paved public roads, km

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
The Republic of Kazakhstan	**87 140**	**86 581**	**86 419**	**86 244**	**87 029**	**81 814**
Akmola region	7 937	7 855	7 819	7 854	7 853	7 798
Aktobe region	5 351	5 478	5 478	5 427	6 110	5 454
Almata region	9 336	9 336	9 172	9 176	9 194	8 897
Atyrau region	3 101	2 251	2 262	2 221	2 237	2 241
West-Kazakhstan region	4 700	4 718	4 719	4 631	4 734	3 291
Jambyl region	5 291	5 220	5 194	5 194	5 169	5 089
Karaganda region	8 722	8 722	8 722	8 722	8 732	8 393
Kostanay region	7 927	7 927	7 874	7 873	7 874	6 203
Kyzylorda region	2 790	2 813	2 785	2 804	2 826	2 867
Mangystau region	2 408	2 409	2 421	2 421	2 476	2 399
Turkestan region	6 487	6 803	6 891	6 821	6 697	6 454
Pavlodar region	4 910	4 870	4 869	4 870	4 859	4 799
North-Kazakhstan region	7 114	7 114	7 114	7 114	7 114	7 114
East Kazakhstan region	11 066	11 065	11 099	11 116	11 155	10 815

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

The number of unpaved public roads in 2017 was 14.2% of the entire network and increased by 3.6 percentage points compared to 2012.

There is a high share of paved public roads with the lowest number of such roads in the Kostanay region (66.8%) and the highest number in the Akmola region (99.5%) (table 2.5).

Table 2.5: Percentage of public roads paved for their total length

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
The Republic of Kazakhstan	**89.4**	**89.4**	**89.6**	**89.3**	**90.3**	**85.7**
Akmola region	97.8	99.4	99.4	99.5	99.5	99.5
Aktobe region	87.8	83.1	83.1	82.8	87.8	87.8
Almata region	98.5	98.5	98.4	98.5	98.5	98.5
Atyrau region	79.2	73.8	74.1	72.8	73.3	73.3
West-Kazakhstan region	72.0	72.2	72.3	72.0	72.5	72.5
Jambyl region	100.0	97.8	97.1	97.1	98.9	98.9
Karaganda region	98.6	98.6	98.6	98.6	98.6	94.8
Kostanay region	83.3	83.3	84.8	84.7	84.8	66.8
Kyzylorda region	83.0	83.7	83.1	83.6	83.7	83.2
Mangystau region	93.1	93.2	93.6	93.6	92.0	88.6
Turkestan region	90.1	94.7	96.4	94.8	98.3	96.8
Pavlodar region	86.8	86.1	86.1	86.1	89.1	88.1
North-Kazakhstan region	79.1	79.1	79.1	79.1	79.1	79.1
East Kazakhstan region	93.5	93.5	93.8	92.6	93.9	90.4

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

In the last five years, paved roads have been built primarily in the Aktobe region (683 km) and West Kazakhstan region (103 km). In the same period, the length of such roads decreased in the Turkestan region by 124 km and in the Zhambyl region by 35 km.

In 2017, the density of public roads was 35 km per 1,000 km^2 and 5.25 km per 1,000 inhabitants. The density of national roads is 8.8 km per 1,000 km^2 of the territory and 1.33 km per 1,000 inhabitants. This level of density is much lower than in other countries and therefore it can be said that the public road network in Kazakhstan is underdeveloped. Furthermore, the table below shows that onyla small share of public roads are of category I and II which points to public roads being generally of poor quality (table 2.6).

Table 2.6: Length of public roads by categories in 2016, km

	Total length of roads	*Category*				
		I	*II*	*III*	*IV*	*V*
The Republic of Kazakhstan	**96 353**	**2 146**	**5 956**	**28 965**	**47 614**	**11 672**
Akmola region	7 891	375	355	3 119	3 670	372
Aktobe region	6 958	42	457	1 419	3 945	1 095
Almata region	9 334	376	870	2 902	4 532	654
Atyrau region	3 052	7	0	1 323	663	1 059
West-Kazakhstan region	6 531	3	153	2 324	2 600	1 451
Jambyl region	5 228	295	1 127	1 218	2 064	524
Karaganda region	8 853	140	133	3 879	4 634	67
Kostanay region	9 290	47	213	3 811	4 044	1 175
Kyzylorda region	3 376	246	566	332	1 557	675
Mangystau region	2 692	6	240	1 036	1 313	97
Turkestan region	6 810	438	166	1 054	4 080	1 072
Pavlodar region	5 454	107	738	1 776	2 693	140
North-Kazakhstan region	8 998	55	379	2 141	4 048	2 375
East Kazakhstan region	11 886	9	559	2 631	7 771	916

Source: Transport in Kazakhstan 2012-2016. Statistical collection. Astana, 2017. http://stat.gov.kz.

Public roads of category I make up only 2.2% of all roads in Kazakhstan, category II 6.2%, category III 30.3%, category IV 49.4% and category V 12.1%. The following regions have the highest percentage of roads of categories I and II: Zhambyl 27.2%, Kyzylorda 24.1% and Pavlodar 15.1%. The lowest percentage of categories I and II are in the Atyrau region 0.23%, in the West Kazakhstan region 2.4%, in the Kostanay region 2.7% and in the Karaganda region 3.1%.

The network of national roads in Kazakhstan is also underdeveloped. It is focused on meeting industrial and population needs. The technical condition of these roads does not meet the needs of the economy. Only 29.6% of the roads of national importance correspond to the first and second categories. 70.0% correspond to the third and fourth categories.

The total length of national roads in 2017 was 24,100 km or 25.3% of the public road network as a whole. At the same time, the length of roads of categories I and II was 7.4 thousand km, or 31% of the roads of national importance, and only 4% were of category I. By 2020, this figure should reach 50%.

However, the length of roads of national importance is growing continuously. In the period 2012-2017, the length of national roads increased by 615 km. In 4 of the 14 regions it did not change during the period under review, in three areas it slightly decreased, and in the rest it increased (table 2.7).

Table 2.7: Length of roads of national importance, km

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
The Republic of Kazakhstan	**23 485**	**23 657**	**23 680**	**23 699**	**23 910**	**24 100**
Akmola region	2 245	2 278	2 242	2 261	2 264	2 267
Aktobe region	1 864	1 894	1 894	1 894	1 893	1 894
Almata region	2 529	2 529	2 529	2 529	2 546	2 813
Atyrau region	990	990	990	990	990	990
West-Kazakhstan region	1 287	1 287	1 287	1 287	1 393	1 393
Jambyl region	1 067	1 176	1 237	1 237	1 237	1 237
Karaganda region	2 773	2 773	2 773	2 773	2 783	2 785
Kostanay region	1 410	1 410	1 410	1 410	1 410	1 410
Kyzylorda region	1 109	1 109	1 107	1 107	1 107	1 107
Mangystau region	1 033	1 033	1 033	1 033	1 033	1 049
Turkestan region	786	786	786	786	848	766
Pavlodar region	1 510	1 510	1 510	1 510	1 524	1 507
North-Kazakhstan region	1 468	1 468	1 468	1 468	1 468	1 468
East Kazakhstan region	3 414	3 414	3 414	3 414	3 414	3 414

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

As of the end of 2017, 93.5% of the roads of national importance were paved. In recent years, the length of paved national roads in the whole of the country has increased by an average of 78 km, but in 2017 it decreased by 1,237 km (table 2.8).

Table 2.8: Length of paved national roads, km

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
The Republic of Kazakhstan	**23 378**	**23 534**	**23 558**	**23 577**	**23 769**	**22 532**
Akmola region	2 208	2 241	2 205	2 224	2 227	2 172
Aktobe region	1 864	1 894	1 894	1 894	1 893	1 792
Almata region	2 502	2 502	2 502	2 502	2 519	2 759
Atyrau region	989	973	974	974	973	971
West-Kazakhstan region	1 284	1 284	1 284	1 284	1 390	1 129
Jambyl region	1 067	1 176	1 237	1 237	1 237	1 237
Karaganda region	2 773	2 773	2 773	2 773	2 783	2 444
Kostanay region	1 410	1 410	1 410	1 410	1 410	1 318
Kyzylorda region	1 109	1 109	1 107	1 107	1 089	1 030
Mangystau region	1 004	1 004	1 004	1 004	1 004	926
Turkestan region	786	786	786	786	848	766
Pavlodar region	1 507	1 507	1 507	1 507	1 521	1 448
North-Kazakhstan region	1 468	1 468	1 468	1 468	1 468	1 468
East Kazakhstan region	3 407	3 407	3 407	3 407	3 407	3 072

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

Most of the roads were built in the Almaty region - 257 km. In a number of areas, the length of roads of national importance has decreased. This has occurred in 10 regions. Despite the fact that 86% of highways of national importance are paved, their quality is low (table 2.9).

Table 2.9: State of the network of roads of national importance as of 1 January 2018

	Length of the network, km	*State of roads, km*					
		good		*satisfactory*		*unsatisfactory*	
		km	*%*	*km*	*%*	*km*	*%*
The Republic of Kazakhstan	**24 100**	**12 306**	**51.0**	**8 422**	**35.0**	**3 372**	**14.0**
Akmola region	2 267	1 518	67.0	551	24.0	198	9.0
Aktobe region	1 894	862	45.5	448	34.0	584	31.0
Almata region	2 813	1 220	43.0	1 554	55.0	39	1.0
Atyrau region	990	329	33.0	366	37.0	295	30.0
West-Kazakhstan region	3 414	1 343	39.0	1 078	32.0	993	29.0
Jambyl region	1 237	836	67.0	180	14.5	221	18.0
Karaganda region	1 393	542	39.0	733	53.0	118	8.0
Kostanay region	2 785	1 528	55.0	735	26.0	522	19.0
Kyzylorda region	1 107	819	74.0	288	26.0	-	-
Mangystau region	1 410	652	46.0	631	45.0	127	9.0
Turkestan region	1 049	604	58.0	395	38.0	50	5.0
Pavlodar region	1 507	806	53.5	675	45.0	26	2.0
North-Kazakhstan region	1 468	724	49.0	545	37.0	199	14.0
East Kazakhstan region	766	523	68.0	243	32.0	-	-

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

As of 1 January 2018, only 51% of the roads of national importance were in good condition. 14% were in an unsatisfactory condition.

The length of regional roads in the country as a whole in 2016 was 33,507 km or 34.8%. Over the past three years, their length has decreased by 377 km. This has happened mainly due to the transfer of some regional roads to national control. Thus, in the Zhambyl region, the network of regional roads decreased by 276 km, and in the Mangystau region it decreased by 70 km (table 2.10).

Table 2.10: Length of roads of regional importance, km

	2013	*2014*	*2015*	*2016*	*2017*
The Republic of Kazakhstan	30 365	33 961	33 884	33 507	32 743
Akmola region	2 657	2 657	2 665	2 661	2 661
Aktobe region	1 099	1 099	1 057	1 070	1 057
Almata region	3 364	6 788	6 787	6 788	6 139
Atyrau region	973	973	972	973	973
West-Kazakhstan region	1 861	1 861	1 758	1 758	1 724
Jambyl region	2 241	2 210	2 210	1 943	1 944
Karaganda region	3 549	3 549	3 549	3 549	3 549
Kostanay region	2 208	2 209	2 209	2 209	2 209
Kyzylorda region	274	476	477	472	472
Mangystau region	1 012	1 012	1 012	942	942
Turkestan region	4 330	4 330	4 331	4 330	4 261
Pavlodar region	1 184	1 184	1 184	1 139	1 139
North-Kazakhstan region	2 427	2 427	2 487	2 487	2 487
East Kazakhstan region	3 186	3 186	3 186	3 186	3 186

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

The length of paved regional roads in 2016 was 32,242 km or more than 96%. The length of such roads has fallen, and the reduction occurred in the same areas mentioned previously (table 2.11).

Table 2.11: Length of paved roads of regional importance, km

	2013	*2014*	*2015*	*2016*	*2017*
The Republic of Kazakhstan	29 133	32 694	32 620	32 242	31 995
Akmola region	2 649	2 649	2 665	2 661	2 661
Aktobe region	1 099	1 099	1 048	1 061	1 048
Almata region	3 321	6 670	6 674	6 675	6 138
Atyrau region	691	691	690	691	691
West-Kazakhstan region	1 580	1 581	1 493	1 493	1 931
Jambyl region	2 241	2 210	2 210	1 943	1 944
Karaganda region	3 458	3 458	3 458	3 458	3 458
Kostanay region	2 077	2 077	2 077	2 077	2 009
Kyzylorda region	268	470	471	466	466
Mangystau region	883	883	883	831	831
Turkestan region	4 291	4 330	4 315	4 291	4 222
Pavlodar region	1 173	1 173	1 173	1 133	1 133
North-Kazakhstan region	2 356	2 356	2 416	2 416	2 416
East Kazakhstan region	3 046	3 047	3 047	3 046	3 047

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

As of 1 January 2017, only 21% of regional roads were in good condition. 35.5% were in an unsatisfactory condition (table 2.12).

Table 2.12: State of the regional and local roads network as of 1 January 2017

Name of the region	Length of the network, km	State of roads, km					
		good		satisfactory		unsatisfactory	
		km	%	km	%	km	%
The Republic of Kazakhstan	**72 443**	**15 187**	**21**	**31 555**	**43.5**	**25 701**	**35.5**
Akmola region	5 626	1 120	19.9	2 627.3	46.7	1 879.1	33.4
Aktobe region	5 065	643	12.7	1 787.9	35.3	2 633.8	52.0
Almata region	6 788	1 582	23.3	3 699.5	54.5	1 506.9	22.2
Atyrau region	2 062	757	36.7	253.6	12.3	1 051.6	51.0
West-Kazakhstan region	5 138	570	11.1	847.8	16.5	3 719.9	72.4
Jambyl region	3 991	726	18.2	2 286.8	57.3	977.8	24.5
Karaganda region	6 071	1 864	30.7	2 683.4	44.2	1 523.8	25.1
Kostanay region	7 880	1 214	15.4	3 672.1	46.6	2 994.4	38.0
Kyzylorda region	2 269	858	37.8	562.7	24.8	848.6	37.4
Mangystau region	1 659	926	55.8	597.2	36.0	136.0	8.2
Turkestan region	5 962	1 031	17.3	2 784.3	46.7	2 146.3	36.0
Pavlodar region	3 930	1 002	25.5	2 024.0	51.5	903.9	23.0
North-Kazakhstan region	7 530	1 581	21.0	2 560.2	34.0	3 388.5	45.0
East Kazakhstan region	8 472	1 313	15.5	5 167.9	61.0	1 990.9	23.5

Source: Transport in Kazakhstan 2012-2016. Statistical collection. Astana, 2017. http://stat.gov.kz.

The quality of roads is reflected in the international rankings of the country's competitiveness. According to estimates of the World Economic Forum, during 2006-2011 there was a negative trend in the road quality factor. However, in 2012, this indicator improved by eight positions compared to 2011 (table 2.13).

Table 2.13: "Quality of roads" in the global index of competitiveness of the World Economic Forum for 2006-2017

	2006	2007	2008	2009	2010	2011	2012	2017
Rating, place	98	109	108	116	124	125	117	108
Change, +/-	- 11	+ 1	- 8	- 8	- 1	+ 8	+ 9	

Source: https://nonews.co/directory/lists/countries/quality-roads.

In its report for 2016-2017 on the state of the world economy, the World Economic Forum published a ranking of countries based on the quality of roads. Kazakhstan was ranked the 108th. The quality of roads has deteriorated over a long period and only last year managed to reach the 2008 level.

It should be noted that in order to maintain and retain the quality of its highways, in 1995 the Government adopted resolution No. 557, which imposed weight restrictions for vehicles. According to the resolution, a maximum load on a single axle of 6 tonnes was established, and a gross vehicle weight of 30 tonnes was defined. The passage of vehicles exceeding these indicators is possible only after the payment of a fee. This resolution granted foreign carriers access to a limited number of roads. Later, resolution No. 62 dated 19 January 2002 set the the weight parameters at 10 and 44 tonnes respectively.

On 23 January 2017, the Decree of the Minister for Investment and Development No. 761 of 4 November 2016 entered into force. This legislative act amends the permissible weight and dimensions of vehicles travelling on the roads of Kazakhstan. The permissible maximum weight of vehicles is now differentiated for single vehicles, trucks composed of tractor and semi-trailer, as well as trucks composed of tractor and trailer. The maximum permissible weight may not exceed 44 tonnes for a single vehicle with six or more axles. The permissible load on a single axis is 10 tonnes.

Despite the restrictions imposed, practice shows that charges for exceeding permissible loads do not save roads from damage. The development of world trade has led to a constant increase in traffic volumes, which, in turn, requires the use of heavy vehicles to improve the efficiency of long-distance transport. At the same time, restrictions on the passage of heavy vehicles, as well as charging for excess weight, reduce both the transit attractiveness of Kazakhstan and the efficiency of domestic traffic. In addition, the identification of overweight vehicles is ineffective and creates opportunities for corruption.

Roadworks entail significant costs. The average cost of restoring 1 km of road in Kazakhstan is estimated at around US$ 200 thousand. Major repairs are estimated at around US$ 100 thousand, and average repairs at around US$ 20 thousand. In this regard, the restoration of the roads in Kazakhstan requires a huge amount of investment.

The existing network of roads of national and regional importance allows road transport between all regional centres and access to the international highways of neighbouring countries.

Roads of local importance provide the possibility of delivering goods and passengers to rural areas. Their length in 2016 was 38,936 km or 40.4% of the entire road network. The network of roads of local importance decreased by 3,807 km, or by almost 9% over the period analysed. In 2018, 130 kilometers of local roads were built or reconstructed. These roads have the largest share in the entire road network of Kazakhstan. The largest number of these roads is in the Kostanay, East Kazakhstan and North Kazakhstan regions (table 2.14).

Table 2.14: Length of roads of local importance, km

	2013	*2014*	*2015*	*2016*	*2017*
The Republic of Kazakhstan	42 851	38 780	38 946	38 936	38 567
Akmola region	2 965	2 965	2 965	2 965	2 956
Aktobe region	3 602	3 602	3 602	3 995	3 602
Almata region	3 589	-	-	-	-
Atyrau region	1 089	1 089	1 089	1 089	1 089
West-Kazakhstan region	3 383	3 383	3 383	3 380	3 380
Jambyl region	1 918	1 904	1 904	2 048	1 913
Karaganda region	2 522	2 522	2 522	2 522	2 522
Kostanay region	5 898	5 671	5 671	5 671	5 671
Kyzylorda region	1 976	1 769	1 770	1 797	1 867
Mangystau region	541	541	541	717	717
Turkestan region	2 065	2 031	2 081	1 632	1 643
Pavlodar region	2 964	2 964	2 965	2 791	2 803
North-Kazakhstan region	5 103	5 103	5 043	5 043	5 043
East Kazakhstan region	5 236	5 236	5 411	5 286	5 361

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

The length of paved roads of local importance in 2017 was 27,287 km or more than 70.8%. Overall, the length of paved roads decreased on 3,697 km in 2017. The largest number of such roads is in the Kostanay, East Kazakhstan and North Kazakhstan regions (table 2.15).

Table 2.15: Length of paved roads of local importance, km

	2013	*2014*	*2015*	*2016*	*2017*
The Republic of Kazakhstan	33 914	30 167	30 047	30 984	27 287
Akmola region	2 965	2 965	2 965	2 965	2 965
Aktobe region	2 485	2 485	2 485	3 155	2 614
Almata region	3 513	-	-	-	-
Atyrau region	587	597	557	557	579
West-Kazakhstan region	1 854	1 854	1 854	1 851	231
Jambyl region	1 803	1 747	1 747	1 989	1 908
Karaganda region	2 491	2 491	2 491	2 491	2 491
Kostanay region	4 440	4 387	4 386	4 387	2 876
Kyzylorda region	1 436	1 208	1 226	1 253	1 371
Mangystau region	522	534	534	641	642
Turkestan region	1 726	1 775	1 720	1 558	1 466
Pavlodar region	2 190	2 189	2 190	2 205	2 218
North-Kazakhstan region	3 290	3 290	3 230	3 230	3 230
East Kazakhstan region	4 612	4 645	4 662	4 702	4 696

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

In 2017, 175 billion tenge were allocated for the development of the local transport infrastructure, 72% of which went to 18 priority growth points, according to the regional development programme until 2020. Of this, 91.8 billion tenge were allocated to four urban agglomerations; 33.9 billion tenge were allocated to 14 second level cities; and 50.6 billion tenge were allocated to Astana, as the transport and logistics centre of the country. Furthermore, 13% of the total budget of Astana is assigned to the development of transport infrastructure. In addition, the roads in Karagandy have received 12% of the budget and those in Ust-Kamenogorsk - 10%.[6]

2.1.3 International road network

The "Nurly Zhol" programme envisages the creation of an extensive network of roads for both transit and national traffic.

Figure 2.1: Road projects in the "Nurly Zhol" programme

Source: www.kazautozhol.kz/index.php/en/roads/reconstruction.

The implementation of the programme will see the completion of a network of roads connecting Kazakhstan with neighbouring countries, as well as a network connecting the capital with the largest cities in Kazakhstan.

All international road corridors in Kazakhstan are included in the road network of the Euro-Asian Transport Links (EATL) project. These road corridors provide access to many States, major ports, transport hubs and terminals.

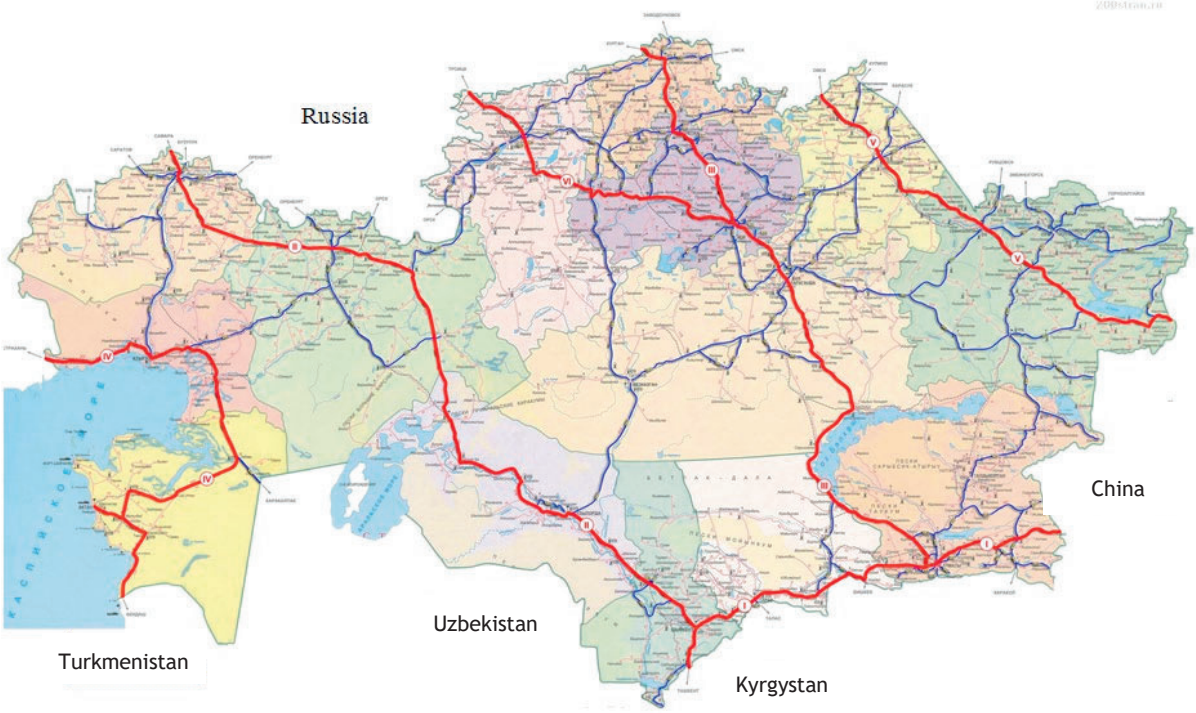
[6] www.inform.kz/ru/skol-ko-stoilo-stroitel-stvo-dorogi-v-rk-v-2016-godu_a3029927.

The EATL project is part of a long-term collaborative effort to improve trade and social and economic development on the continent. Kazakhstan supports the project. Phase 3 of the EATL project has recently been completed.

The main task of the development of road infrastructure in the framework of the "Nurly Zhol" program at the present stage is the completion of the reconstruction of six major international transit road corridors:

1. Tashkent - Shymkent - Taraz - Almaty - Khorgos (1,122 km);
2. Shymkent - Kyzylorda - Aktobe - Uralsk - Samara (2,052 km);
3. Almaty - Karaganda - Astana - Petropavlovsk with access to Omsk (1,886 km);
4. Astrakhan - Atyrau - Aktau - the border of Turkmenistan (1,190 km);
5. Omsk – Pavlodar – Semey - Maykapchagay (1,159 km);
6. Astana - Kostanay - Chelyabinsk - Ekaterinburg (880 km).

Figure 2.2: International road corridors in Kazakhstan



Source: https://img.tourister.ru/files/4/5/2/6/2/5/7/original.jpg.

International Road Corridor I: Tashkent - Shymkent - Taraz - Almaty - Khorgos. This corridor in the Shymkent - Almaty - Khorgos section coincides with the EATL road corridor IV. This corridor connects Southeastern Europe with the ports of Lianyungang and Shanghai, crossing Romania, Georgia, Azerbaijan, Kazakhstan, Uzbekistan, Kyrgyzstan and the eastern regions of China. Route IV continues with Pan-European Transport Corridors IV, V and IX. There are two ferries with trailer loading and unloading on the route of this corridor (from Romania to Georgia and from Azerbaijan to Kazakhstan) and eight border crossing points.

On the Almaty - Syry-Ozek - Khorgos section, road corridor I coincides with road corridor EATL route II, which runs parallel to the railway route EATL II. The length of this corridor is more than 8,000 km. It starts from the eastern borders of the EU with the Republic of Belarus and Ukraine, passes through Russia, Kazakhstan and eastern China to the ports of Lianyungang and Shanghai. It continues the Pan-European Transport Corridors II and IX and is almost entirely related to the Asian Highway network.

The International Road Corridor I from the border with Uzbekistan (Zhybek - Zholy crossing point) to Almaty runs along the A-2 highway, then from Almaty to Sheleg it runs along the A-351, then to the border with China along the R-21. This Central Asian highway of international importance passes through mountain, sand and desert terrain across the territory of Uzbekistan and Kazakhstan. The road runs through the territory of the Turkestan, Zhambyl and Almaty regions. The section of the road from Almaty to Khorgos has been a toll road since December 2017.

Until the 1990s, the road passed through Kyrgyzstan on the Kordai - Kara-Balta section. Then Kazakhstan paved the bypass road on its territory. Now transport can proceed to Tashkent, circling the territory of Kyrgyzstan, saving time and money on customs procedures when entering and leaving Kyrgyzstan. This corridor follows the European road E-40.

Of the main Kazakhstan road corridors, Corridor I, which is part of Asian Highway A-5, is internationally recognized. The corridor ensures the connection of East Asia with the countries of the Near and Middle East, and is also the shortest route between East to West. The route is approved as an international corridor as part of the ALTID project. The remaining corridors in Kazakhstan under this project have received “sub-regional” status and are not included in the network of major Eurasian routes.

International Road Corridor II: Shymkent - Kyzylorda - Aktobe - Uralsk - Samara. This corridor in the Uralsk - Aktobe - Karabutak - Kyzylorda - Shymkent section coincides with the EATL road corridor III. This corridor begins on the eastern borders of the EU with Ukraine and ends on the coast of China in the ports of Lianyungang and Shanghai. It crosses the territory of Ukraine, Russia, Kazakhstan, Kyrgyzstan and the eastern regions of China. Road route III continues the Pan-European Corridors II, IV, V, VII and IX to the east and partly coincides with the Asian Highway network. There are eight border crossing points on the route.

Length of the road from Shymkent to the border with the Russian Federation is 2,052 km. This route runs along the international road M-32. It originates at the Syrym customs checkpoint on the border with the Russian Federation, 60 km north-west of the city of Uralsk. On the section from Uralsk to Karabutak the road runs parallel to the border with the Russian Federation. It then leads to the southeast, through the steppe zone to the city of Aktobe. Between the cities of Aktobe and Khromtau, the road is 2x2 lanes. The road then passes along the northern side of the Aral Sea, to the north of Ayteke-Bi village, through Baikonur, Kyzylorda to Turkestan. On the section from Ayteke-Bi to Turkestan, the route runs parallel to the Syr Darya River, crossing it in the area of Zhozaly and Kyzylorda. After Aralsk, desert territories are replaced by irrigated lands. The M-32 road ends in Shymkent.

From the border of the Russian Federation to Kyzylorda, the road is of category II (two lanes). From Kyzylorda to Shymkent it is of category I (four-lanes with separation).

International road corridors I and II (Khorgos – Almaty – Taraz – Shymkent – Kyzylorda – Aktobe – Uralsk - border of the Russian Federation) are part of the transcontinental corridor "Western Europe - Western China".

Figure 2.3: Kazakhstan section of the transcontinental corridor "Western Europe - Western China"

Source: www.kazautozhol.kz/index.php/en/roads/reconstruction.

The total length of the corridor on the route St. Petersburg – Moscow – Nizhny Novgorod – Kazan – Orenburg – Aktobe – Kyzylorda – Shymkent – Taraz – Almaty – Khorgos – Urumqi – Lanzhou – Zhengzhou – Lianyungang is 8,445 km. 2,233 km pass through the territory of the Russian Federation, 2,787 km pass through the territory of Kazakhstan and 3,425 km pass through the territory of China.

In Kazakhstan, 2,452 km of the road have been reconstructed. Of these, category I roads of 4-lane traffic account for 1,390 km (Kyzylorda – Turkestan – Shymkent – Taraz – Almaty – Khorgos). The remaining sections with a length of 1,062 km correspond to category II (border of the Russian Federation – Martuk – Aktobe – Karabutak – Kyzylorda). The surface is paved in asphalt and concrete. The cost of construction of the Kazakhstan portion was 825 billion tenge. Sources of financing were loans from IBRD, EBRD, ADB, IDB and JICA. The implementation period was 2009-2017.

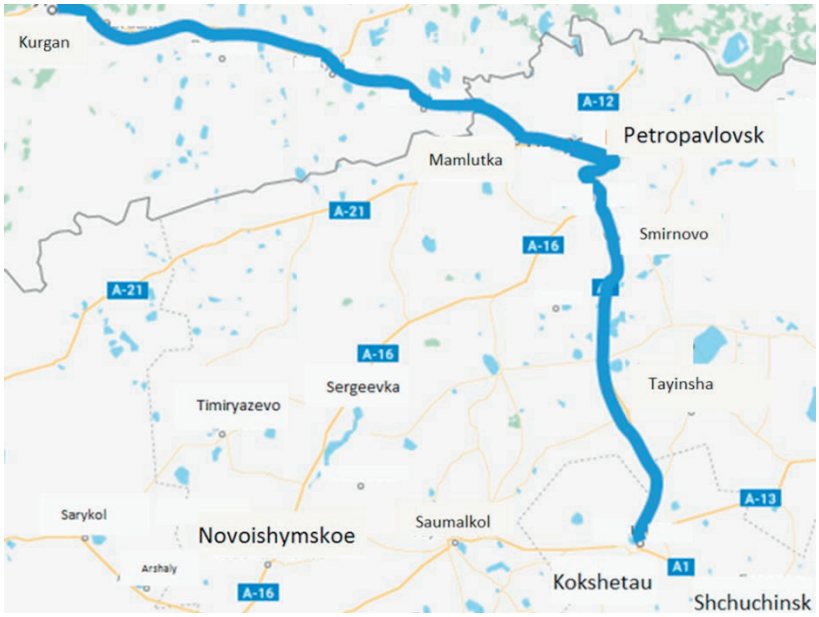
International Road Corridor III: Almaty - Karagandy - Astana - Petropavlovsk with access to Omsk (Kurgan). This corridor coincides with the EATL road corridor II.

The road is part of the European road E-125, which runs from north to south through the Russian Federation, Kazakhstan and Kyrgyzstan. The beginning of the E-125 is Ishim (Russian Federation) and the end is Torugard (Kyrgyzstan). Its length is 2,600 km.

The corridor runs along the following route: Almaty – Balkhash – Karagandy – Astana – Kokshetau – Petropavlovsk – border with the Russian Federation (Karakog checkpoint). The length of the road from Almaty to Petropavlovsk is 1,768 km, and from Petropavlovsk to the border with the Russian Federation (Karakog checkpoint) to Omsk is another 118 km. The road between Astana and Kokshetau is a first-class motorway with three lanes in each direction. On the Astana – Schuchinsk section, a length of 217 km is toll road. At the end of 2017, the Astana – Temirtau section, as well as a 79 km long section of the A-3 highway also became toll roads.

The Kokshetau – Petropavlovsk – border with the Russian Federation section, 159 km long, has an asphalt and concrete surface of category II. It was completed from Kokshetau to Petropavlovsk (87 km) in 2016. The section Petropavlovsk – border of the Russian Federation with access to Kurgan (61 km) will be completed in 2019.

Figure 2.4: Kokshetau – Petropavlovskovsk – border of the Russian Federation section of international road corridor III



Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

International Road Corridor IV: Astrakhan – Atyrau – Aktau – border of Turkmenistan. This corridor on the Beineu – Aktau section coincides with the EATL road corridor IV, which provides an alternative link between South-Eastern Europe and the ports of Lianyungang and Shanghai. The corridor passes through Bulgaria, Turkey, Iran, Uzbekistan and Kazakhstan. This route continues the Pan-European corridors IV, VIII, IX and TRACECA to the Chinese coast.

In the Astrakhan region, the corridor coincides with international transport corridor IX from Helsinki - Astrakhan, and in the south it leads to the seaport of Aktau and further to the border with Turkmenistan.

The route runs from the border with the Russian Federation to Dosor along the national road A-27, then turns to the southeast and passes through Kulsary – Beineu – Say – Utes – Shetpe – Zhetybay to the port of Aktau along the national road. Near Munaishi, the A-33 road flows into the R-114 road, which follows the border with Turkmenistan.

The A-27 is considered the second main road in the west of Kazakhstan after the M-32. The road traverses country that is flat with small deserts and steppe. The peculiarity of the road is that it is 28 meters below sea level. Before the border with the Russian Federation, the road runs through wetlands with sandbanks. On the Russian side, the E-40 leads to the city of Astrakhan, which is 60 km from the border. The length of the route from the border with the Russian Federation to the port of Aktau is 1,190 km.

Figure 2.5: Astrakhan –Atyrau – Aktau – border of Turkmenistan section of international road corridor IV

Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

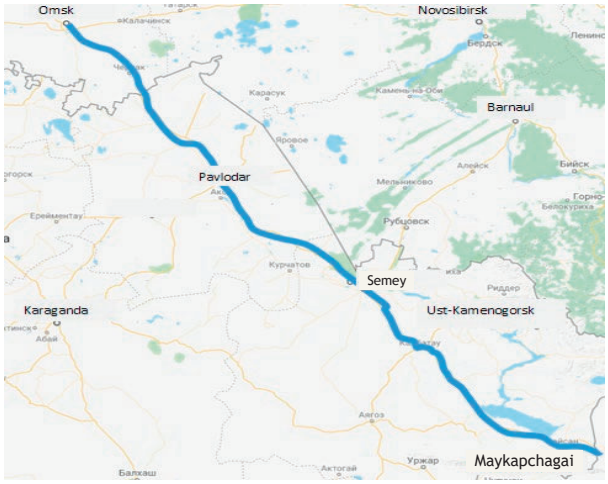
Road corridors 1, 2, 3 and 4 coincide with the Central, Central Asian, North and West railway corridors, respectively.

International Road Corridor V: Omsk – Pavlodar – Semey – Maykapchegai. This corridor in the section Petropavlovskovsk - Omsk - Pavlodar - Semey - Taskesken - Usharal - Dostyk coincides with branch IIb of the EATL road corridor II.

It provides the shortest route from the Pavlodar region and industrial regions of Western Siberia to China.

This route coincides with the M-38 road. The road originates from the Russian-Kazakhstan border near Zhelezinka and proceeds through the regional centres of Pavlodar and Semey. It goes through the steppe to the South through Kalbatau and then to the Maykapchagai customs post on the border with China. Maykapchagai is connected with the Zimunai checkpoint, which is 0.5 km from the Chinese checkpoint and 60 km from the city of Zaysan (Kazakhstan). The Zimunai checkpoint is located in the Zimunai district of Altai region at a distance of 24 km from the centre of Zimunai (China), 198 km from the city of Altai (China), and 650 km from the city of Urumqi (China).

Figure 2.6: Omsk – Pavlodar – Semey – Maykapchagai section of international road corridor V

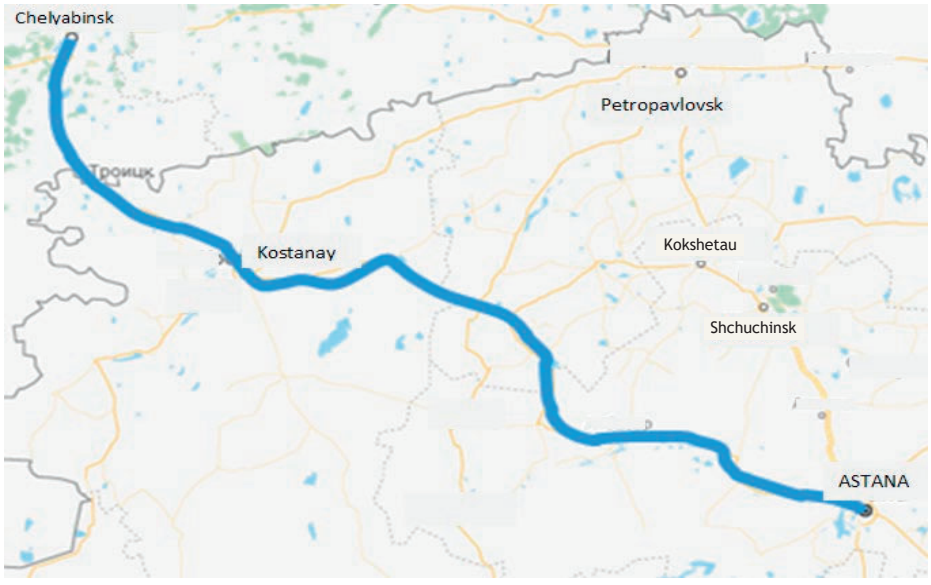


Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

The Maykapchagai customs post is the closest customs point to the Russian Federation. The capacity is 2,000 people and 350 vehicles per day. The length of the route from the Russian border to Maykapchegai is 1,159 km. The road has four lanes and traffic is not dense. In winter, the M-38 route is often closed due to difficult weather conditions caused by strong winds and snowfalls.

International Road Corridor VI: Astana – Kostanay – Chelyabinsk – Ekaterinburg. The corridor is part of the European route E-123 and the Asian route AN-7. The AN-7 connects the Urals with the coast of the Indian Ocean. It starts in Ekaterinburg and passes through the territory of seven States: the Russian Federation, Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, Afghanistan and Pakistan. The final destination is Karachi. The total length of the route is 5,868 km.

Figure 2.7: Astana – Kostanay – Chelyabinsk – Ekaterinburg section of international road corridor VI



Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

In Kazakhstan, the route begins on the border with the Russian Federation (at the Kayrak checkpoint), then leads to Kostanay and Astana. The length of this section is 880 km.

By 2020, it is planned to complete the reconstruction of the six main corridors. Corridors II, III and VI in the south are joined to the international Trans-Asian corridor A-5, and in the north, they lead to the second Trans-European Corridor Berlin – Warsaw – Minsk – Moscow – Nizhniy Novgorod – Ekaterinburg – Chelyabinsk. These corridors provide links between Western and Eastern Europe and the Urals through Kazakhstan to China, Turkey, Pakistan and the Indian Ocean coast.

The largest volume of cargo transport, both domestic and transit, is carried along corridors I, III and VI.

By 2020, it is planned to introduce a charging system on 6,000 km of highways of national importance to repair 30,000 km of roads, 46,600 km will be of satisfactory quality.[7]

International road corridors pass mainly from the north to the southeast, with the exception of Corridor I. Highways of national importance connect the network of international road corridors. There are 36 roads of category A and 54 roads of category P. Their total length is 23,910 km.

2.1.4 Main highways of national importance and their upgrading

Roads of national importance connect international road corridors and provide access to neighbouring States. The main roads of national importance are:

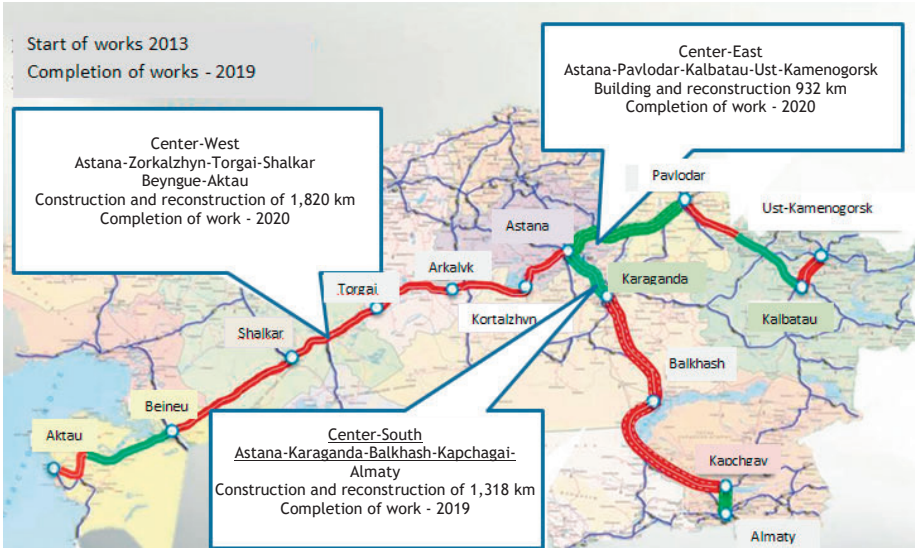
- Chelyabinsk – border of Kazakhstan (Zhanazhol customs post) – Petropavlovsk – Karagoga customs post of the North Kazakhstan region – border of the Russian Federation and further to Omsk and Novosibirsk. The length of the M-51 road on the territory of Kazakhstan is 190 km;
- Almaty – Ust-Kamenogorsk. The length of the A-3 road is 1,083 km;
- Kyzylorda – Pavlovsk. The length of the A-17 road is 1,388 km;
- Kyzylorda – Petropavlovsk. The length of the A-16 road is 1,446 km;
- Atyrau – Uralsk. The length of the A-28 road is 487 km.

According to the World Bank, the current value of the national road network of Kazakhstan is about US$ 109.7 billion or 69.3% of GDP in 2017.

The figure below illustrates the planned construction and renewal projects on public roads according to the State Programme for Infrastructure Development of Kazakhstan “Nurly Zhol” for 2015-2019.

[7] https://strategy2050.kz/en/news/3616/.

Figure 2.8: Construction and reconstruction of roads in the centre-west, centre-east and centre-south directions



Source:Development of transport infrastructure of the Republic of Kazakhstan till 2020. http://docplayer.ru/30130676-Razvitie-transportnoy-infrastruktury-respubliki-kazahstan-do-2020-goda.html.

Direction Centre-South. The length of the route from Astana to Almaty is 1,282 km. The whole route will have an asphalt and concrete surface of category I. The cost is 880 billion tenge. Sources of financing are NF, and loans from IBRD and EBRD. The work should be completed by 2020.

The main areas of reconstruction include:

- ***Astana - Karagandy (185 km)***. The section Astana – Temirtau with a length of 171 km has been opened. Work is underway on the construction of a power-generation plant and road-building and roadside services on the Astana – Temirtau section. The reconstruction of the Temirtau – Karaganda section (14 km) is was planned to be completed by the end of 2018. Construction and reconstruction of the Northern and Eastern bypasses of Karaganda are forthcoming.
- ***Karaganda – Balkhash (403 km)*** is due for reconstruction after 2020;
- ***Balkhash – Burylbaytal (297 km)*** is planned for reconstruction from 2018 with IBRD loans;
- ***Burylbaytal – Kurt (228 km)***, reconstruction started in 2017 using EBRD and IBRD loans. Completion of work is expected in 2020;
- ***Kurty – Kapshagai (67 km)***, reconstruction is planned after 2020;
- ***Kapshagai – Almaty (104 km)*** was completely reconstructed in 2016.

Direction Centre-East. The length of the road from Astana to Maykapshagai through Pavlodar and Kalbatau is 914 km. The whole road will have an asphalt and concrete surface. The length of the category I road section is 436 km; the length of the category II section is 478 km. The cost is 390.5 billion tenge and funding is being provided by NF. The work should be completed by 2020.

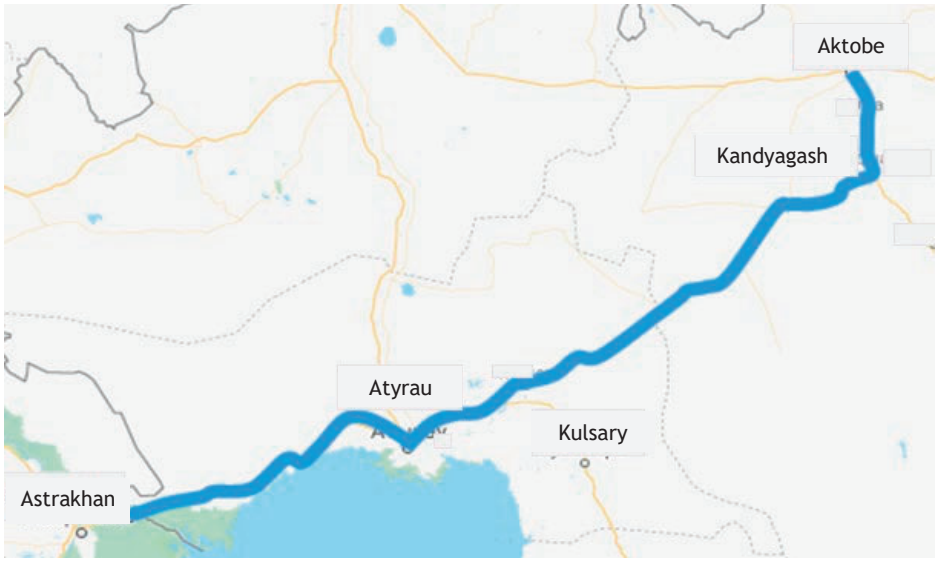
Direction Centre-West. The length of the road from Astana to Aktau is 1 820 km. The route passes through Korkalzhyk, Arkalyk, Torgai, Shalkar and Beineu. The work should be completed by 2020.

The main areas of reconstruction include:

- ***Beineu – Aktau (470 km)***, the road will have an asphalt and concrete surface of categories I and II with financing from ADB. The implementation period is 2010-2020;
- ***Beineu – Shetpe (300 km)***, reconstruction was completed in 2017;
- ***Shetpe – Aktau (170 km)***. The work should be completed by 2020.

Aktobe – Atyrau – Astrakhan. The length of the route from Aktobe to the border with the Russian Federation is 758 km. The entire route will have an asphalt and concrete surface. The categories of the road are I and II. The cost is 319 billion tenge and funding is being provided by ADB, IDB and NF. The work should be completed by 2020.

Figure 2.9: Construction and reconstruction of the Aktobe - Atyrau road



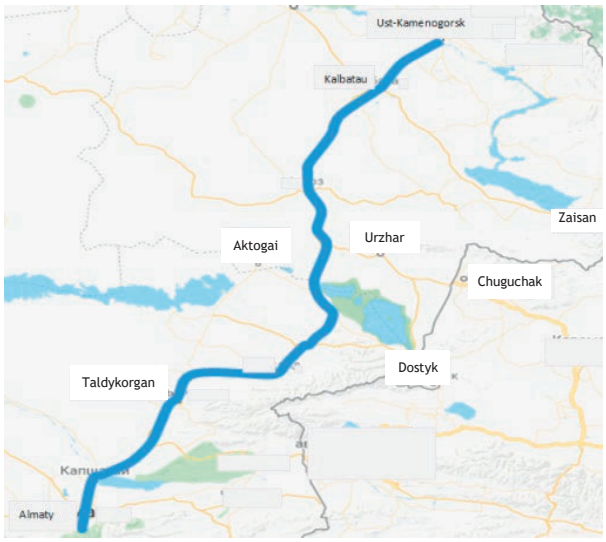
Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

The main areas of reconstruction include:

- ***Aktobe – Kandyagash (159 km)***. It is planned to reconstruct this section with IDB loans. The work should be completed by 2020;
- ***Atyrau – Astrakhan (274 km).*** It is planned to reconstruct this section with IDB loans. The work should be completed by 2020;
- ***Kandyagash – Makat (299 km)***. It is planned to reconstruct this section with ADB loans. The work should be completed by 2020.

Almaty – Ust-Kamenogorsk. The length of the road from Almaty to Ust-Kamenogorsk is 904 km. The whole route will have an asphalt and concrete surface (the category I section is 141 km, and the category II is 763 km). The cost is 349 billion tenge and financing will be provided by NF and EximBank. The work should be completed by 2020.

Figure 2.10: Reconstruction of the Almaty – Ust-Kamenogorsk road



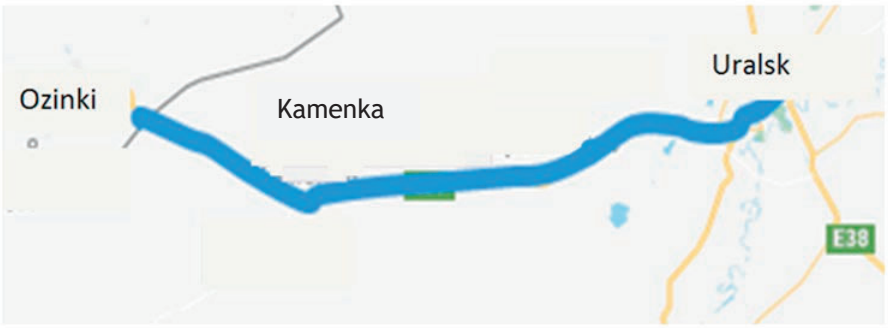
Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

The main areas of reconstruction include:

- ***Kapshagai – Taldykorgan (141 km)***. In 2017, reconstruction of 24 km was completed;
- ***Taldykorgan – Ust - Kamenogorsk (763 km).*** It is planned to reconstruct this section with financing from EximBank. The work should be completed by 2020.

Uralsk – Kamenka with access to Saratov (100 km). The route will have an asphalt and concrete surface of category II. The cost is 24 billion tenge. Financing will be provided by NF. The work should be completed by the end of 2018.

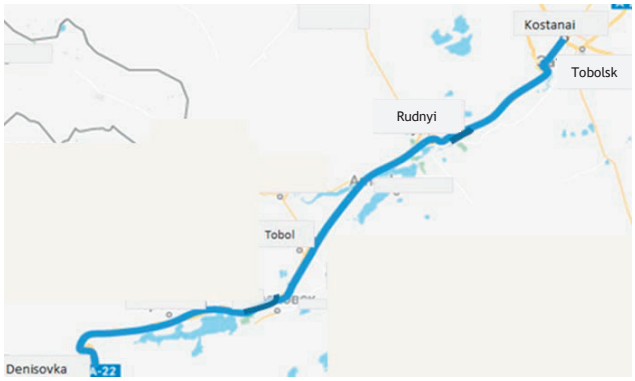
Figure 2.11: Reconstruction of the Uralsk – Kamenka road



Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

Kostanay – Denisovka (114 km). The road will have an asphalt and concrete surface of category II. The financing required is 45 billion tenge. The work is planned to begin in 2018.

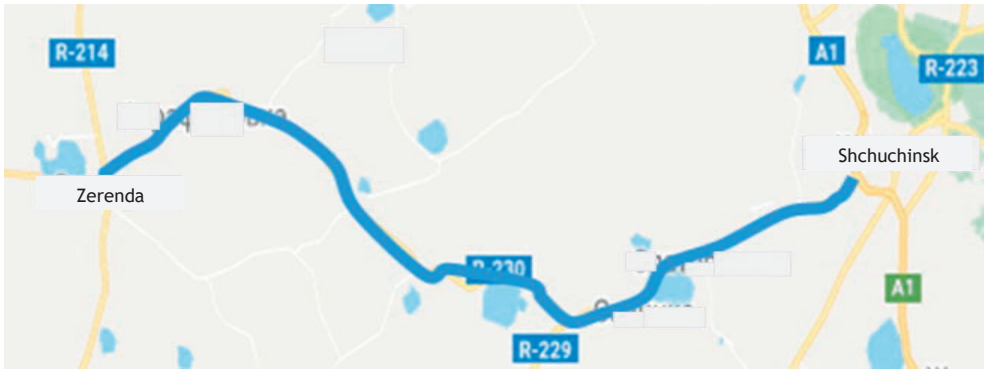
Figure 2.12: Reconstruction of the Kostanay – Denisovka road



Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

Shchuchinsk – Zerenda (80 km). The road will have an asphalt and concrete surface of category III. The financing required is 15.5 billion tenge. The project implementation period is 2017-2020.

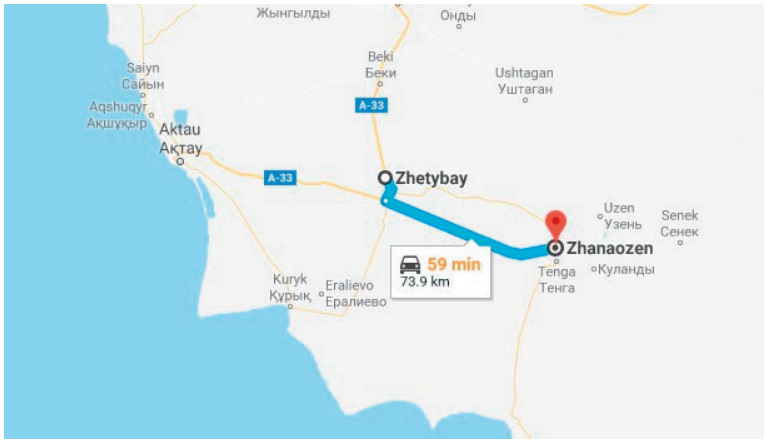
Figure 2.13: Reconstruction of the Schuchinsk – Zerenda road



Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

Zhetybai - Zhanaozen (73 km). The road will have an asphalt and concrete surface of categories I and II. The cost is 31 billion tenge with financing being provided by ADB. The project implementation period is 2017-2019.

Figure 2.14: Reconstruction of the Zhetybai – Zhanaozen road



Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

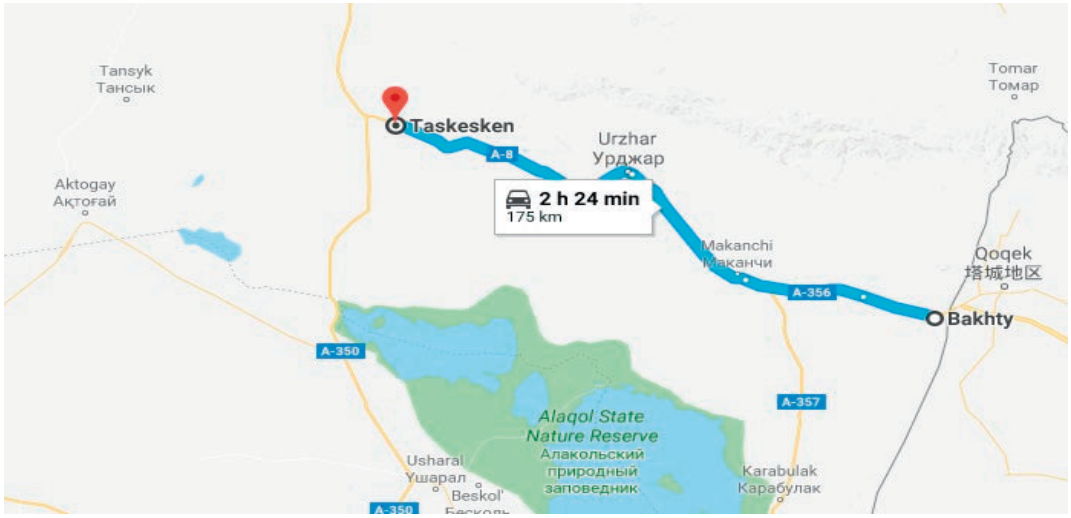
Usharal – Dostyk (180 km). The road will have an asphalt and concrete surface of category II. The cost is estimated at 58 billion tenge. The project implementation period is 2017-2020.

Figure 2.15: Reconstruction of the Usharal – Dostyk road

Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

Taskesken – Bakhty (20 km). The road will have an asphalt and concrete surface of category II. The cost is 4.3 billion tenge. The project implementation period is 2017-2019.

Figure 2.16: Reconstruction of the Taskesken – Bakhty road



Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

Southwest bypass of Astana (33 km). The road will have an asphalt and concrete surface of category I. The cost is 56 billion tenge with financing provided by Eximbank. The project implementation period is 2017-2020.

Figure 2.17: Reconstruction of the south-west bypass of Astana

Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

Bypass of the village of Kordai (80 km). The road will have an asphalt and concrete surface of category I. The cost is 20 billion tenge. The work should be completed by 2019.

Figure 2.18: Reconstruction of the road bypassing the village of Kordai

Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

Beineu - Akzhigit (85 km). The road will have an asphalt and concrete surface of category II. The project will be implemented in 2020.

Osinovsky Pass (32 km). The section of the pass will have an asphalt and concrete surface of category II. The project should be completed by 2019.

In an address by the President of Kazakhstan to the people on 30 November 2015, it was stressed that public private partnerships and other measures should be used to encourage private investment in priority sectors of the economy, not only for the construction of roads, gas pipelines, hospitals, schools and other facilities, but also for their reconstruction and maintenance.

In this connection, a project for the construction of the **Greater Almaty Ring Road** (GARR) has been developed. This project aims to create a toll road with a length of 66 km. The road will correspond to category IA with 9 km of four lane infrastructure and 57 km of six lane infrastructure. The construction of the road is planned based on a public private partnership on a concession basis for a period of 20 years. The construction period is 2018-2021.

The GARR project is defined as a pilot concession project and is classified as particularly significant.

Figure 2.19: Construction of the Greater Almaty Ring Road

Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

Implementation of the project "Creating the infrastructure for a vehicle checkpoint on the Almaty – Khorgos road section (the transcontinental corridor "Western Europe – Western China")" will be divided into two parts: the construction period is 2017-2018 and the operational period is 2018-2025.

The concession project "Construction and operation of high-speed highways in the South Kazakhstan region" has a length of 254 km, is of category IB and will have four lanes. Road construction includes a bypass of the city of Shymkent (48 km), a bypass of the city of Saryagash (56 km) and the reconstruction of a section of the A-15 highway (42 km). The existing roads are the northern bypass of the city of Shymkent (36 km) and the section of the road A-2 from Shymkent to Tashkent (72 km).

Studies of the road network of Kazakhstan show that the Government pays particular attention to the construction and reconstruction of roads of both international and national importance. The strategic development plan of Kazakhstan until 2020 provides targets for the road sector (tables 2.16 and 2.17).

Table 2.16: Target indicators for the development of roads in Kazakhstan

Indicator	*Units*	*2012 (base)*	*By the end of 2016*		*By the end of 2020*
			plan	*base*	
Share of highways of national importance in good or satisfactory technical condition, including:	%	79	86	85	89
in good condition	%	30	38	44	48
in satisfactory condition	%	49	48	41	41
Share of highways of national or regional importance in good or satisfactory technical condition, including:	%	63	72	64.5	78
in good condition	%	16	23	21	28
in satisfactory condition	%	47	49	35.5	50
Share of toll roads in the total length of roads of national importance of categories I and II	%	4	10	51	55
Increase in the volume of transit cargo on the roads in Kazakhstan	mln.t	1.46	2.3	-	3.5

Source: State program for the development and integration of the infrastructure of the transport system of the Republic of Kazakhstan until 2020. www.miid.gov.kz.

The target indicators for national roads as of the end of 2016 have been almost achieved. The indicator "share of national roads in good condition" was exceeded by 6%, while the indicator for those in a satisfactory condition was not met. Nevertheless, this shows significant progress as the length of road in good condition has increased significantly in comparison with the plan. On roads of national and regional importance, these targets have not been met both in general and in particular quality categories. This indicates that the focus was on roads of national importance, which are involved in transit and export/import operations (table 2.17).

Table 2.17: Target indicators for the development of roads in Kazakhstan, km

Index	*Unit*	*By end of 2016*	*By end of 2020*
Construction and reconstruction of highways of national importance	km	2 932	5 703
Construction and reconstruction of highways of regional importance	km	659	1 124
Increase in the percentage of roads of categories I and II in the total length of highways of national importance	%	36	48
Repair of highways of national importance	km	4 170	10 195
Repair of roads of regional importance	km	4 366	12 601
Level of defect-free maintenance of highways of national importance	%	80	90
Length of roads operating on the principle of self-repayment for defect-free maintenance	km	841	6 186
Share of updated normative and technical documents	%	66	78
Degree of coverage of road maintenance systems	km	8 000	23 485
Provision of highways of national importance with roadside services	%	25	76
Satisfaction of the population with the state of paved public roads	%	58	70
Increase in the share of qualified personnel with engineering and technical specialization	%	17	40

Source: State program for the development and integration of the infrastructure of the transport system of the Republic of Kazakhstan until 2020. www.miid.gov.kz.

Along with measures for the rehabilitation and reconstruction of the basic network of highways, the equipping of long distance sections with service facilities is no less important for carriers. A comparison of the availability of service facilities on international corridors in Kazakhstan indicates the shortage of service stations (especially for large-capacity vehicles) on certain routes, the saturation on international roads of gas stations and the apparent lack of motels and camping facilities for drivers and guarded parking facilities.

After completion of the planned construction and reconstruction of the road network in Kazakhstan, the deadline for which is 2021, a modern transport network will have been created in the country.

2.2 ANALYSIS OF THE STATE AND DEVELOPMENT OF ROAD TRANSPORT

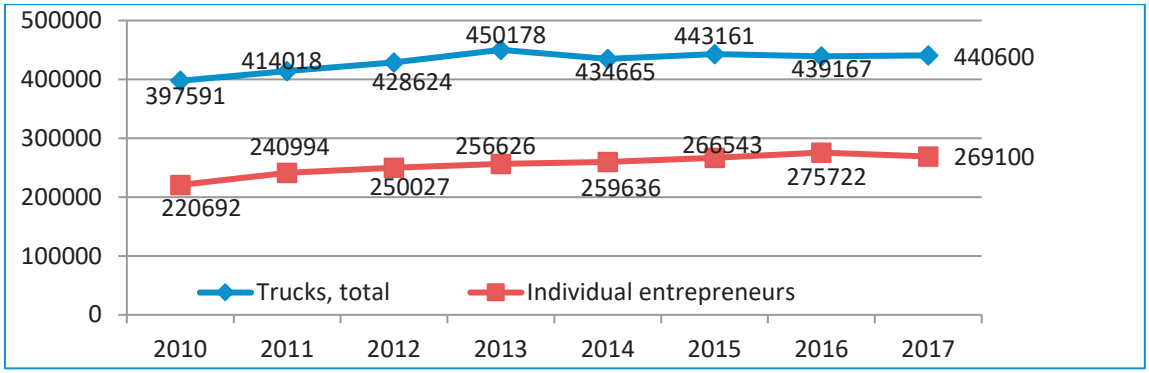
2.2.1 General characteristics of road transport

In recent years, road transport in Kazakhstan has taken over first place among modes of transport in terms of the carriage of goods and passengers. A more developed network of roads compared to the railway network has contributed to the development of road transport. The density of roads is 35 km per 1,000 km^2, which is more than 6 times the density of the railways. In addition, a shortage of railway wagons for the transport of goods has led to an increase in the competitiveness of road transport, contributing to its development. Consequently, this may lead to road transport developing more rapidly than other modes of transport in the future.

The vehicle fleet of Kazakhstan at the start of 2018 amounted to 440,600 trucks, 90,400 buses and 3,851,600 cars. In addition, there were 10,600 motorcycles and 68,000 car trailers.

The growth in the number of trucks in Kazakhstan in the period 2010-2017 is shown in figure 2.20. During this period, the number of trucks grew by 10.8%. The average annual growth rate was 1.5%.

Figure 2.20: Growth in the number of trucks in Kazakhstan



Source: Transport in Kazakhstan 2011-2015. Statistical collection. Astana, 2016. http://stat.gov.kz. Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

The number of trucks in private ownership grew more rapidly than the total number reflecting the attractiveness of this business for Kazakh citizens and the development of the market in this sector (table 2.18).

Table 2.18: Number of trucks by ownership

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
All trucks	397 591	414 018	428 624	450 178	434 665	443 161	439 167	440 600
Including in private ownership	220 692	240 994	250 027	256 626	259 636	266 543	275 722	269 100
Proportion of trucks in private ownership, %	55.5	58.2	58.3	57.0	59.7	60.1	62.8	61.1
Trucks of enterprises of all industries	176 899	173 024	178 597	193 552	175 029	176 618	163 445	171 500
Including trucks of transport enterprises	-	-	10 088	10 372	11 390	12 687	13 320	13 400

Source: Transport in Kazakhstan. 2010-2017. Statistical collection. Astana. http://stat.gov.kz.

It should be noted that the increase in the number of vehicles in transport enterprises reflects the increase in their competitiveness, however, the total number has decreased slightly.

Table 2.19 provides information on the period of operation of cars in Kazakhstan. The data show that the majority of cars have an operational lifespan of over 10 years.

Table 2.19: Characteristics of vehicle use in Kazakhstan

		Period of operation									
Type of vehicle	*Total*	*Up to 3 years*	*%*	*From 3 to 7 years*	*%*	*From 7 to 10 years*	*%*	*Over 10 years*	*%*	*Other*	*%*
Cars	3 845 301	616 545	16.0	400 696	10.4	344 786	9.0	2 270 931	59.1	212 343	5.5

Source: http://mid.gov.kz/images/stories/contents/gp_150520141656.pdf.

The main causes of fleet ageing are the lack of financial resources of companies and individual entrepreneurs, high interest rates on lease payments and a new system of customs payments, which has significantly increased the cost of vehicles. The new customs regulations prohibit the importation of vehicles manufactured before 2007.

Investment in road transport remains at a low level, at between 28-47 billion tenge per year, which has restricted the updating of the fleet (table 2.20).

Table 2.20: Capital investment in road transport in millions of tenge

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Transport and warehousing	660 891	1 101 028	783 101	682 760	557 231	648 949
Including:						
Road vehicles and urban electric transport	27 687	29 875	27 778	46 531	31 913	63 341
Percentage of total investment, %	4.2	2.7	3.3	6.8	5.7	9.8

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

Between 2012 and 2017, road vehicles and urban electric transport received between 4-10% of total fixed capital investment in transport and warehousing. The total amount of financing in transport and warehousing in Kazakhstan in 2017 amounted to 1.3% of GDP. Similar countries invest between 4-7% of GDP in transport.

The small levels of investment in road vehicles can be explained by the large share of the private sector in this area and its attractiveness for business and the belief by the Government that it should be developed by the private sector. In addition, the share of road transport and urban electric transport is only 7.6% of the value of all the major means of transport and storage, while rail transport accounts for 19.5%, and pipelines for 44.8%.

An increase in investment in the industry could contribute to stricter environmental requirements for vehicles. Such measures could restrict imports of obsolete vehicles and promote Kazakhstan's car assembly companies. However, the introduction of restrictions on imports of Euro-3 and Euro-4 vehicles has been deferred repeatedly. The main deterrent is the slow modernization of refineries.

Another problem is associated with the reform of the industry, which has led to the predominance of small-scale private carriers that do not have sufficient funds to expand their businesses. The updating of the fleet is based on the acquisition of imported foreign vehicles and domestic production. It should be noted that the production of vehicles in Kazakhstan is not sufficient to replace the worn out vehicle stock (table 2.21).

Table 2.21: Production and imports of goods vehicles in Kazakhstan

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Production of vehicles - total,	21 132	40 684	38 985	14 043	7 355	19 078
Including goods vehicles	1 747	2 306	2 341	1 555	1 805	1 639
Imports of vehicles - total,	148 471	203 334	200 431	90 071	28 404	38 215
Including goods vehicles	20 952	28 222	20 216	10 722	3 979	7 697

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

At the beginning of 2017 there were 439,000 trucks and their standard duration of operation was 10 years. The fleet is renewed annually with not less than 43,000 trucks. In 2017 only 9,336 vehicles came into operation. The main means of updating the fleet is buying new foreign vehicles, even though the old ones are still in operation. In fact, the vast number of carriers cannot afford to update their fleet. Thus, the fleet will age and Kazakhstan carriers may gradually be squeezed out of the Eurasian market for transport services.

The transport strategy of Kazakhstan up to 2015 included the target of reducing the number of trucks aged more than 12 years from 63% to 35%. At the start of 2017, the proportion of cars with more than 10 years of age amounted to 59%. Hence, despite all the measures taken to promote the income growth of the population, the replacement of old vehicles has not taken place, despite investment in the replacement of the fleet of trucks, buses and agricultural machinery and a tightening of requirements regarding the technical parameters of vehicles.

The problem of the ageing vehicle fleet lies not only in the automotive sphere, but also in the petrochemical industry. The reconstruction of Kazakh oil refineries for the production of high-quality fuel is required. One of the main goals is to meet the fuel requirements of Euro-5 vehicles, which will help to reduce the environmental impact of road transport in Kazakhstan.

2.2.2 Road traffic accidents

Road traffic accidents are a major concern for Kazakhstan as shown in the table below (table 2.22).

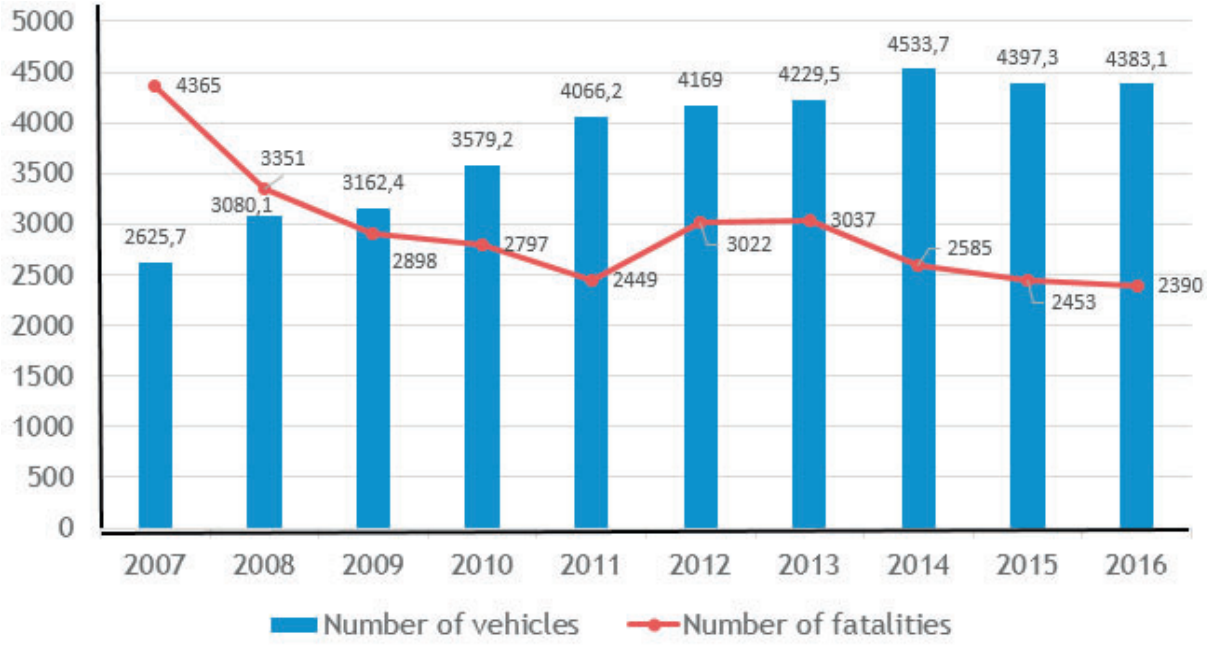
Table 2.22: Number of traffic accidents

	Number of accidents				*Number of fatalities*				*Number of injured*			
	2014	*2015*	*2016*	*2017*	*2014*	*2015*	*2016*	*2017*	*2014*	*2015*	*2016*	*2017*
Kazakhstan	**20 378**	**18 890**	**17 974**	**17 019**	**2 585**	**2 453**	**2 390**	**2 086**	**25 942**	**24 055**	**23 389**	**22 256**
Akmola region	642	512	510	579	155	99	114	135	899	764	796	889
Aktobe region	846	831	699	639	103	103	71	76	1 082	1 046	823	820
Almata region	1 834	1 694	2 086	1 934	468	463	505	394	2 158	2 300	2 820	2 632
Atyrau region	436	410	333	285	91	79	70	54	530	487	426	328
West-Kazakhstan region	404	503	448	405	84	99	92	99	573	642	546	534
Zhambyl region	1 293	1 298	1 387	1 386	203	243	210	166	2 005	2 002	2 253	2 240
Karaganda region	927	871	797	730	210	173	145	139	1 133	1 112	945	921
Kostanay region	729	613	444	443	128	105	64	71	934	772	612	548
Kyzylorda region	367	381	378	374	83	89	92	88	463	466	445	454
Mangystau region	358	410	336	328	103	79	99	87	451	518	423	413
Turkestan region	3 370	2 251	2 076	1 961	432	390	431	343	4 565	3 053	2 836	2 785
Pavlodar region	1 057	1 032	880	872	86	92	76	57	1 398	1 359	1 217	1 189
North-Kazakhstan region	310	255	227	189	56	45	44	39	426	314	284	233
East Kazakhstan region	1 463	1 583	1 462	1 208	154	178	179	142	1 791	2 042	1 955	1 587
Astana	754	694	708	583	52	57	42	60	834	761	777	624
Almaty	5 588	5 552	5 203	5 103	198	159	156	136	6 558	6 559	6 231	6 059

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

The number of accidents in the country as a whole and for each area has fallen. Also, the number of deaths and injuries in accidents has fallen. This is despite the growth in the number of cars in the country between 2012 and 2017 of 5.1%.

Figure 2.21: Number of fatalities in road traffic accidents by number of vehicles



Source: Transport in Kazakhstan 2007-2016. Statistical collection. Astana. http://stat.gov.kz.

The majority of accidents are between cars and pedestrians (43.4%) and accidents between cars (31.4%). The overwhelming number of road accidents took place in cities and towns (78.6%) and on international and national roads (12.7%). Of course, one of the main factors in reducing the number of accidents is the improvement of the quality of the roads.

2.2.3 Transport of goods by road

In Kazakhstan, nearly 98% of the companies working in the field of transport and storage belong to the category of small enterprises employing less than 100 people. Medium-sized enterprises employing from 101 to 250 people accounted for 1.4% of the total and only 0.6% are large enterprises with over 250 employees. It should be noted that the same ratio exists for other areas of the economy, where the number of small businesses is 97.7%, medium 1.7%, and large 0.6% (table 2.23).

Table 2.23: Number of companies by forms of ownership, size and type of activity as of 1 January 2017

	Including forms of ownership					
				of which		
	Total	*state*	*private, total*	*with the participation of the state (without foreign participation)*	*joint ventures (with foreign participation)*	*foreign*
Kazakhstan	**383 850**	**27 051**	**336 738**	**918**	**10 518**	**20 061**
Small	374 912	22 684	332 578	706	10 216	19 650
Medium	6 502	3 355	2 906	110	177	241
Large	24	1 012	1 254	102	125	170
Transport and warehousing	14 740	56	13 847	49	404	837
Small	14 444	43	13 584	26	386	817
Medium	204	4	189	10	8	11
Large	92	9	74	13	10	9

Source: Kazakhstan in 2016. Statistical yearbook. Astana, 2017. http://stat.gov.kz.

Of the small enterprises in the transport and warehousing sector, 94% are in private ownership and only 5.6% of them were created with foreign capital. Among large enterprises the share of public companies is 9.8%. Over 90% of freight transport is carried out by private entrepreneurs with 1-2 vehicles, and only 10% of vehicles belong to transport companies (table 2.24).

Table 2.24: Development of transport enterprises

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Number of transport enterprises	1 269	1 486	1 644	1 710	1 817	1 968
Among them:						
Freight transport	759	833	1 077	1 036	1 125	1 240
Share of freight road transport enterprises in the total number of transport enterprises	59.8	56.1	65.5	60.6	61.9	63.0

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

During the 2012-2017 period, the number of transport enterprises as a whole increased by 55.1% while road transport specific enterprises increased by 63.4%.

An important challenge for road transport is increasing the size of road transport companies to improve their competitiveness.

In 2016, 3,180.7 million tonnes of cargo were transported by road vehicles, with a cargo turnover of 163.3 billion tonne-kilometers. Compared to 2015, the volume of transport of goods increased by 0.2%, and turnover by 0.9%. Road transport accounts for 99.6% of passenger transport. For many regions of Kazakhstan, road transport is the only form of transport.

In 2017, 3,322.3 million tonnes of cargo were transported, which is 10.1% above the level of 2016. In 2017, the share of road transport accounted for 84.2% of the total volume of transported goods.

Table 2.25: Volumes of goods and freight turnover in road transport

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Transported c argo, luggage, freight millions of tonnes	2 124.2	2 188.7	2 103.3	2 439.4	2 974.9	3 231.8	3 508.0	3 749.8	3 733.8	3 729.2	3 946.1
Including:											
By road	1 667.4	1721.0	1 687.5	1 971.8	2 475.5	2 718.4	2 983.4	3 129.1	3 174.0	3 180.7	3 322.3
Turnover, tkm.	350.5	369.7	337.0	385.3	448.8	478.0	495.4	554.9	546.3	518.6	564.0
Including:											
By road	61.5	63.5	66.3	80.3	121.1	132.3	145.3	155.7	161.9	163.3	166.1

Source: Transport in Kazakhstan. 2007-2017. Statistical collection. Astana. http://stat.gov.kz.

Over the past 10 years, carriage of goods by road has continued to grow. In 2017, it increased in comparison to 2010 by almost 1.7 times. The growth of transport of goods in the period under review took place due to the economic recovery of the country, as well as the relevance and attractiveness of this mode of transport. An extensive road network facilitated this growth.

In 2017, the turnover of road transport declined slightly compared to the previous year (0.9%) and amounted to 166,146.1 million tkm. At the same time, compared to 2010, it increased by more than two times. Over the previous seven years (2003-2010) it also grew by two times. The average transport distance travelled in 2010 was 41 km, and in 2017 it amounted to 49 km showing that goods are transported mainly small distances by road.

The largest volumes of transport of goods by road are in the Karaganda and East Kazakhstan regions (table 2.26). These areas have the second and third largest levels of regional GDP: 3,712.1 and 2,793.9 billion tenge respectively.

Table 2.26: Volumes of carriage of goods by road in the regions, millions of tonnes

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Kazakhstan	**1 971.8**	**2 475.5**	**2 718.4**	**2 983.4**	**3 129.1**	**3 174.0**	**3 180.7**	**3 322.3**
Akmola region	95.8	112.4	112.6	121.5	121.3	120.3	113.1	116.1
Aktobe region	41.0	54.5	58.1	62.2	63.6	70.1	76.3	76.8
Almata region	116.6	142.7	158.1	159.0	951.9	167.2	179.0	181.1
Atyrau region	52.2	71.5	72.4	82.6	82.1	75.7	75.0	75.9
West Kazakhstan region	30.0	33.8	35.7	38.8	39.9	39.5	39.4	39.3
Zhambyl region	56.0	70.5	80.4	88.4	88.9	91.3	91.3	100.1
Karaganda region	444.0	551.1	619.7	676.7	719.2	709.9	727.5	795.5
Kostanay region	221.5	268.0	275.6	299.7	297.3	294.9	277.3	291.5
Kyzylorda region	66.3	95.5	98.4	106.1	107.2	99.0	96.9	104.6
Mangystau region	136.9	182.0	203.7	211.1	214.0	225.3	216.4	236.5
Turkestan region	77.5	106.5	123.8	133.0	145.4	155.0	158.7	x
Pavlodar region	57.8	70.2	76.6	83.3	91.8	93.6	97.7	88.6
North Kazakhstan region	40.0	46.0	46.1	49.3	49.9	49.7	48.2	51.4

	2010	2011	2012	2013	2014	2015	2016	2017
East Kazakhstan region	327.1	417.9	476.6	553.3	595.1	598.3	581.9	600.2
Astana City	66.7	97.2	112.6	124.1	136.7	142.5	142.6	x
Almaty City	142.4	155.6	168.3	194.4	216.8	232.1	252.2	254.5

Source: Transport in Kazakhstan. 2010-2017. Statistical collection. Astana. http://stat.gov.kz.

The Atyrau and Pavlodar regions are leaders in terms of cargo turnover. These two regions account for almost 56% of total freight turnover. The average transport distance in the Atyrau region is 357 km and in Pavlodar 264 km. These goods are transported to/from the Russian Federation, with which Kazakhstan has the greatest volume of trade (table 2.27).

Table 2.27: Turnover of road transport in the different regions, millions of tonnes

	2010	2011	2012	2013	2014	2015	2016	2017
Kazakhstan	**80 260.6**	**121 074.1**	**132 297.3**	**145 347.1**	**155 665.6**	**161864.7**	**163 262.7**	**166 146.1**
Akmola region	2 827.7	4 057.7	4 426.4	4 768.1	4 996.4	5 010.5	4 992.6	5 265.2
Aktobe region	3 109.7	4 258.1	4 784.8	5 265.1	5 778.7	6 114.9	6 126.1	6 409.3
Almata region	4 770.4	5 816.3	6 220.6	6 874.7	7 476.9	7 480.9	8 042.2	7 887.7
Atyrau region	6 748.3	13 370.2	13 886.6	18 282.3	18 089.0	18 933.9	15 511.7	12 850.4
West Kazakhstan region	1 539.2	2 129.2	2 425.4	2 633.6	2 722.3	2 721.7	2 906.0	3 099.6
Zhambyl region	1 707.7	2 247.0	2 477.8	2 726.5	2 731.5	2 733.4	2 735.1	2 961.0
Karaganda region	5 610.4	7 406.1	8 441.4	9 664.6	10 055.2	9 871.5	10 355.1	10 843.1
Kostanay region	5 538.8	8 257.2	9 237.1	9 883.0	10 119.6	10 701.1	10 527.5	11 413.7
Kyzylorda region	9 071.1	13 122.1	13 791.8	14 106.5	14 107.0	14 123.2	13 877.6	13 905.2
Mangystau region	1 990.7	4 284.9	4 846.5	5 885.7	6 423.7	7 252.5	6 484.2	6 935.9
Turkestan region	4 510.0	6 370.7	7 123.9	7 617.0	8 35.3	9 115.5	9 101.5	x
Pavlodar region	7 917.7	14 312.7	16 152.8	15 640.1	16 772.6	18 083.5	19 661.5	19 029.3
North Kazakhstan region	2 808.0	3 199.3	3 215.4	3 223.3	3 222.9	3 345.0	3 445.9	3 712.2
East Kazakhstan region	7 160.8	10 383.2	11 245.0	13 087.7	14 325.5	14 478.9	15 220.2	16 078.6
Astana City	3 562.4	5 826.6	6 427.0	6 821.8	7 873.9	10 403.9	10 570.7	x
Almaty City	11 387.7	16 038.8	17 899.7	18 867.3	21 732.8	21 494.5	23 704.6	27 482.8

Source: Transport in Kazakhstan. 2010-2017. Statistical collection. Astana. http://stat.gov.kz.

Despite the improvement in the quality of roads and the construction of new highways, traffic density is growing at a slow pace and varies significantly by region (table 2.28).

Table 2.28: Density of traffic by region

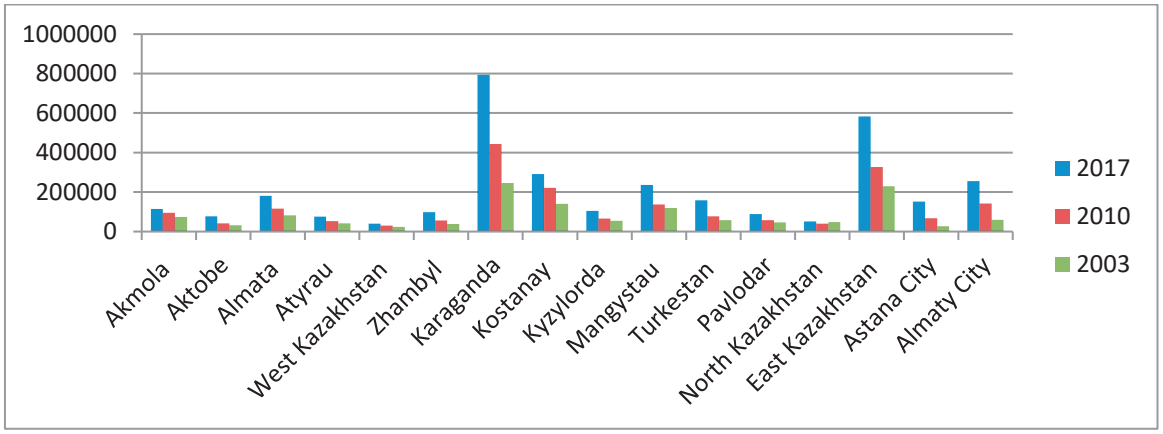
	Millions of tkm/1 km					
	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Kazakhstan	**1.4**	**1.5**	**1.6**	**1.7**	**1.7**	**2.0**
Akmola region	0.5	0.6	0.6	0.6	0.6	0.7
Aktobe region	0.8	0.8	0.9	0.9	0.9	1.2
Almata region	0.7	0.7	0.8	0.8	0.9	0.9
Atyrau region	3.5	6.0	5.9	6.2	5.1	5.7
West Kazakhstan region	0.4	0.4	0.4	0.4	0.4	0.9
Zhambyl region	0.5	0.5	0.5	0.5	0.5	0.6
Karaganda region	1.0	1.1	1.1	1.1	1.2	1.3
Kostanay region	1.0	1.0	1.2	1.2	1.1	1.8
Kyzylorda region	4.1	4.2	4.2	4.2	4.1	4.9
Mangystau region	1.9	2.3	2.5	2.8	2.4	2.9
Turkestan region	1.0	1.1	1.2	1.3	1.3	1.3
Pavlodar region	2.9	2.8	3.0	3.2	3.6	4
North Kazakhstan region	0.4	0.4	0.4	0.4	0.4	0.5
East Kazakhstan region	1.0	1.1	1.2	1.2	1.3	1.5

Source: Based on the data in tables 2.2 and 2.27.

The density of traffic grew mainly on roads of international importance in the direction of the Russian Federation through the Pavlodar and Atyrau regions, as well as towards the ports of Aktau and Kuryk through the Mangystau and Atyrau regions.

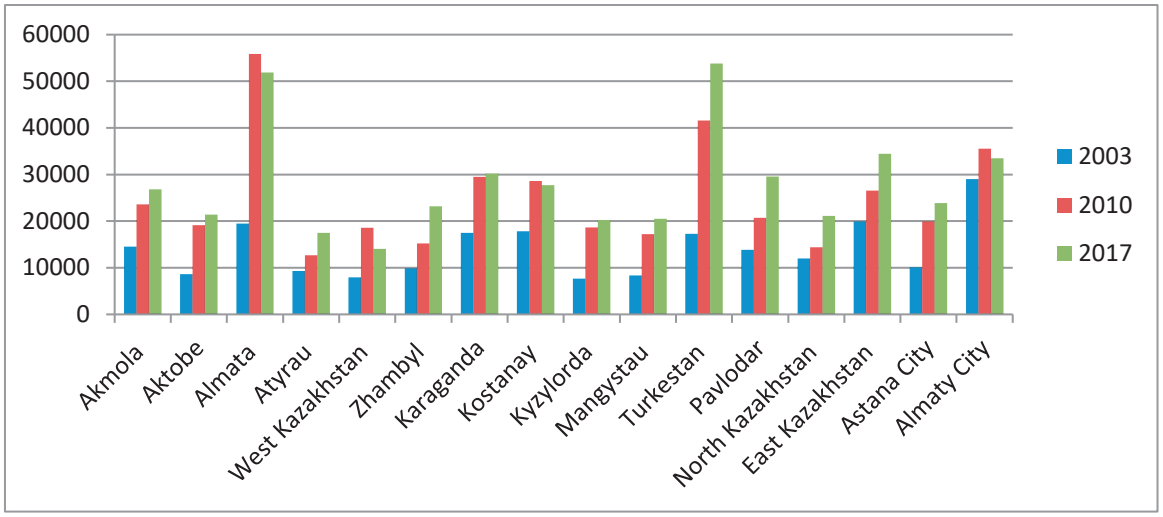
In the different regions of Kazakhstan, the distribution of freight transport was extremely uneven, due both to the difference in the economic performance of the regions and investments in freight transport and infrastructure. Over the past 14 years, the distribution of regions of Kazakhstan in terms of freight transport has remained the same. The leading position is held by the Karaganda and East Kazakhstan regions. Almost all areas have maintained their position in the ranking. All regions were able to double the volume of goods transported during the period under review.

Figure 2.22: Transport of goods by road in a breakdown by regions, thousands of tonnes



Source: Transport and communication in Kazakhstan 2000-2003. Statistical collection. Almaty. 2004. Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

Figure 2.23: Numbers of trucks in a breakdown by region



Source: Transport and communication in Kazakhstan 2000-2003. Statistical collection. Almaty, 2004. Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

However, the comparison of the data in figures 2.22 and 2.23 indicates that the volume of transport does not always correlate with the fleet of vehicles. For example, in 2017 as in 2010, the Karaganda region had the largest volume of traffic, but the number of vehicles in this region was more than two times lower than in the Almaty region, which had traffic volumes four times smaller. In addition, there is no information about the place of registration of vehicles carrying out freight transport.

Analysis of the average transport distance of 1 tonne of freight shows that it is small. In 2017 it was only 5 km (table 2.29).

Table 2.29: Average transport distance of 1 tonne of freight by regions

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Kazakhstan	**48.7**	**48.7**	**49.7**	**51.0**	**51.3**	**50.0**
Akmola region	39.3	39.2	41.2	41.7	44.1	45.3
Aktobe region	82.4	84.6	90.9	87.3	80.3	83.4
Almata region	39.3	43.2	46.8	44.7	44.9	43.6
Atyrau region	874.8	221.3	220.3	250.0	207.0	169.3
West Kazakhstan region	67.9	67.9	68.2	69.0	73.7	79.0
Zhambyl region	30.8	30.8	30.7	29.9	30.0	29.6
Karaganda region	13.6	14.3	14.0	13.9	14.2	13.6
Kostanay region	33.5	33.0	36.7	36.3	38.0	39.2
Kyzylorda region	140.2	133.0	131.6	130.0	133.1	132.9
Mangystau region	23.8	27.9	30.0	32.2	30.0	29.3
Turkestan region	57.5	57.3	58.1	58.8	57.3	56.9
Pavlodar region	210.9	187.8	182.7	193.3	201.3	214.7
North Kazakhstan region	69.7	65.4	64.6	67.3	71.5	72.3
East Kazakhstan region	23.6	23.7	24.1	24.2	26.2	26.8
Astana City	54.4	55.0	57.6	73.0	74.2	59.6
Almaty City	106.4	97.1	100.2	92.6	94.0	108.0

Source: Based on the data in tables 2.26 and 2.27.

Comparison of data from figure 2.22 and table 2.29 shows that the greater the volume of traffic, the shorter the distance of cargo transport, and vice versa. For example, the largest volumes of traffic were in the Karaganda and East Kazakhstan regions but these regions have the smallest distances for the carriage of goods.

2.2.4 Transport of goods in international traffic

Research undertaken during this analysis suggest that the role of road transport in Kazakhstan will increase, especially when operators are provided with high-quality and flexible logistics services. Road transport should be considered as an addition to rail transport and not as a direct competitor. In particular, the areas of application of road transport are:

- Cross-border trade in small volumes;
- Long distance transport where there are no railway lines or they cannot provide efficient services for certain goods (perishables, high value, etc.); and
- As a component in an intermodal rail transport system. The section by road connecting the consignor (consignee) and the intermodal terminal or logistics centre could be hundreds or even thousands of kilometers. This is especially true for Kazakhstan.

The latter option is the most important from the point of view of supply chains and increasing the competitiveness of EATL. In order to achieve the efficiency of road transport over long distances, it is important to ensure consistent weight and dimension parameters for trucks along the main routes.

Data on the carriage of goods by road shows that goods are mostly transported in the national, regional and urban context. The volumes of road transport in international traffic are negligible and not more than 0.1% (table 2.30).

Table 2.30: Volume of road transport of goods by type of journey

	2013	*2014*	*2015*	*2016*	*2017*
Transported cargo, luggage, freight, thousands of tonnes	2 983 350.1	3 129 109.7	3 174 021.8	3 180 655.7	3 322 267.3
Including types of journey:					
International	1 119.8	1 277.8	906.6	904.1	3 323.2
In countries of the CIS	969.2	808.4	730.4	-	-
In countries outside the CIS	150.7	469.4	176.2	-	-
Transit	-	-	-	19.0	61.4
National	18 677.6	19 732.0	20 619.5	23 316.2	18 234.4
Regional	14 450.7	18 132.0	14 774.5	10 737.8	x
Urban	46 807.8	48 459.0	41 352.8	48 047.0	x

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

The main reason is that the carriage of goods in international transport is carried out mainly by rail, as it is the most efficient means of transport in terms of costs. In addition, Kazakhstan does not have enough modern trucks that comply with Euro-4 and Euro-5, not to mention Euro-6.

Higher value, perishable and other urgent cargoes are transported by road transport. The largest share of cargoes in international transport by road in Kazakhstan are construction materials (over 30%) and products of plant and animal origin, food and others (almost 35%) (table 2.31). However, the transport of goods is carried out mainly over small distances, for which rail transport is not efficient.

Table 2.31: Goods transported by road, by type

	2012		*2013*		*2014*		*2015*		*2016*	
Transported cargo, freight, thousands of tonnes	54 395.3	100.0	81 055.9	100.0	87 600.8	100	77 653.4	100.0	83 005.1	100.0
Building materials	13 884.5	25.5	17 997.8	22.2	19 974.4	22.8	20 814.0	26.8	26 437.9	31.1
Ores of non-ferrous metals	10 121.8	18.6	11 215.5	13.8	9 991.9	11.4	9 830.1	12.7	9 855.3	11.6
Coal	1 348.4	2.5	1 501.9	1.9	3 384.7	3.9	5 387.2	6.9	7 782.8	9.2
Crude oil	2 848.1	5.2	2 512.2	3.1	2 341.6	2.7	4 348.3	5.6	2 910.6	3.4
Ferrous metals	64.3	2.3	490.7	0.6	1 125.0	1.3	1 097.1	1.4	1 043.8	1.2
Grain	1 511.5	2.8	1 412.9	1.7	1 310.2	1.5	1 165.1	1.5	9 81.5	1.2
Other goods	22 557.9	41.5	4 2862.6	52.9	46 670.6	53.3	32 528.6	41.9	30 253.6	35.6
Transport of dangerous goods	397.1	0.7	1 135.0	1.4	263.0	2.4	1 421.6	1.8	2 953.3	3.5
Carriage of goods in containers	51.8	0.1	73.7	0.4	82.2	0.4	445.0	2.1	761.7	2.9

Source: Transport in Kazakhstan 2012-2016. Statistical collection. Astana, 2017. http://stat.gov.kz.

Only a small amount of goods is transported in containers, which discourages the use of intermodal transport. However, analyzing the growth of transport in containers, over the past five years, it can be seen that it has increased by 29 times.

In Kazakhstan's general commodity trade the export of raw materials dominates: mineral products (70.2%) as well as metals and metal products (18.9%). Products of animal and vegetable origin account for only 6.3%. Therefore nearly 90% of goods exported by rail are not suitable for container transport.

The main import commodities are: machinery, equipment, vehicles (34.7%); mineral products (14.9%); products of the chemical industry (12.5%); metals and metal products (10.7%) and products of animal and vegetable origin (9.3%).

The main share of import traffic from European countries was by foreign carriers from Belarus, Ukraine, the Russian Federation and the Baltic countries. In Kazakhstan there are more than 400 companies that work in international road transport. But Kazakhstan carriers are being forced out of the international market for transport services by the inadequate technical condition of their vehicles, as well as due to the creation of artificial barriers to Kazakhstan's carriers in other States.

Measures taken to increase the competitiveness of domestic carriers will lead to an increase in the share of Kazakhstan carriers in the international freight market by 2020 to 50%. One of the important aspects of the increase in the share of domestic carriers in the market for international road transport services is the development of the market for forwarding services.

In the future, it will be necessary to take measures to prevent the decline of domestic carriers' share in international cargo transport as well as the reduction of quotas to/from third countries. This will allow Kazakhstan carriers to take a dominant position when shipping to/from the countries of Central Asia. To address these important issues, it is necessary to increase the number of vehicles that meet international standards.

Along with problems of a technical nature, transit through Kazakhstan is faced with challenges of an institutional nature related to unwarranted delays and procedural complexities at customs and border controls. This is something that can be addressed by Kazakhstan.

In recent years, China's economic growth has shifted from its eastern provinces to the western and central provinces, which are well positioned for rail transport across Kazakhstan. In accordance with the development programme "Western China Development Planning 2011-2015" for the development of the western and central regions of China it was planned to invest up to US$ 1 trillion. The accelerated development of the western provinces of China will contribute to an increase in freight traffic through Kazakhstan.

The increase in transit flows and increased demand for high-speed container trains has resulted in the need for simplification of customs control and non-tariff regulations. Customs clearance on the borders of Kazakhstan has the following advantages:

- VAT on imported goods in Kazakhstan is only 12%;
- Customs duties on many goods in Kazakhstan are lower than in other countries of the EEU after the entry of Kazakhstan into the WTO;

- Customs clearance at the Kazakhstan-China border is quick due to a shift of emphasis in customs control from registration procedures to the stage of post-control (after the release of the goods for free circulation). This is consistent with the generally accepted world practice. As a result there has been a significant increase in throughput at customs posts;
- From February 2016 for goods transported through Kazakhstan from the Chinese province of Xinjiang, which does not have its own border with the Russian Federation, there is a simplified mode of customs clearance without the need for customs declaration and customs inspection. Previously, all goods transported from Xinjiang to the Russian Federation had to stop in Kazakhstan for customs inspection. Now the trucks only need to be registered to transit through Kazakhstan;[8]
- In April 2016, after a three-year interruption, the transit corridor through Kazakhstan for exports from the Russian Federation to China opened again. Russian carriers have received a special quota for the transit of Russian cargoes through Kazakhstan. The special route for transit runs through the border crossing point in the Altai region.[9] In addition, an important advantage for transit of goods from China via Kazakhstan is the high speed of delivery. Overland transport of goods from China to Moscow by road and rail with customs clearance through the Kazakhstan-China border is 15-20 days faster than shipping the same cargo through ports in the Baltic States and St. Petersburg.

All of this significantly reduces the costs of customs clearance of goods imported from China to Kazakhstan, which increases the attractiveness of the country for transit transport.

The establishment of the EEU contributes to the creation of an effective transport corridor linking China with Europe through Kazakhstan, Kyrgyzstan and the Russia Federation, and through the simplification of customs procedures, as EEU customs controls are only conducted at the external borders of the Union on the borders with China and the European Union.

To expand freight transport it is necessary to continue drawing up intergovernmental agreements with foreign States which provide mutually beneficial conditions for the carriage of goods.

It should be noted that the tariffs for road transport in the period 2012-2016 have remained practically unchanged.The tariff increased by 10.4% compared to the previous year in 2017. This is due to the growth in traffic (table 2.32).

[8] http://ekd.me/2016/02/kz-transit/.
[9] http://inier.ru/blog/inier/15/.

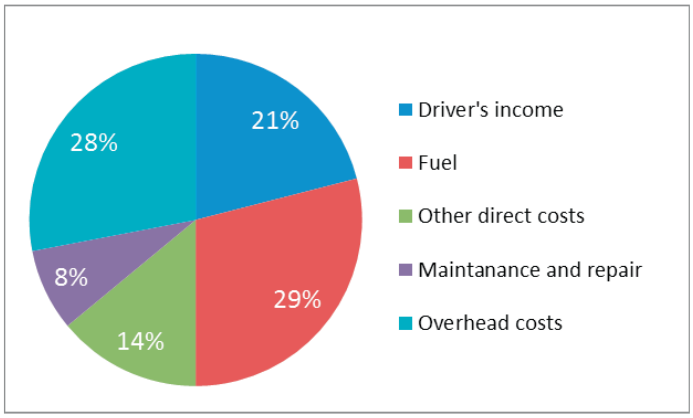
Table 2.32: Tariffs for cargo transport as an index

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Cargo transport	115.9	102.4	113.6	125.9	104.6	106.8
including:						
Rail	114.8	101.7	105.7	120.8	103.9	100.9
Road	105.0	101.4	103.2	98.4	101.6	110.4
Pipeline	118.5	103.3	124.2	135.2	105.6	106.2
Inland water	104.5	100.4	103.1	99.5	100.0	101.7
Air	104.3	100.0	100.0	100.0	122.3	106.8

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

The study on the cost of carriage of goods by road shows that, on average in the European Union, Kazakhstan, Belarus and the Russian Federation, the cost per kilometer is approximately the same.[10] In the European Union it is 0.660 Euro/km, in Kazakhstan 0.692 Euro/km, in the Russia Federation 0.685 Euro/km and in Belarus 0.682 Euro/km. Focusing on the structure of the cost, the income of the driver and the cost of fuel are the highest in the European Union at 21% and 29%, respectively. The overhead costs in European Union countries are the lowest at 28%. The cost of repairs, as well as other direct costs are virtually the same in all the countries (figures 2.24-2.27).

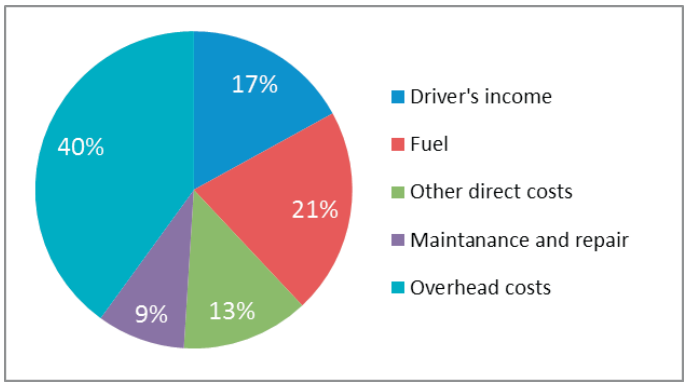
Figure 2.24: Structure of the cost of freight transport in European Union countries



Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

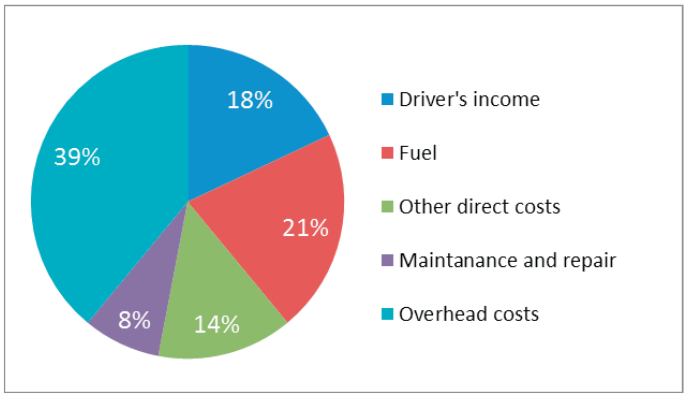
[10] Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

Figure 2.25: Structure of the cost of freight transport in Kazakhstan



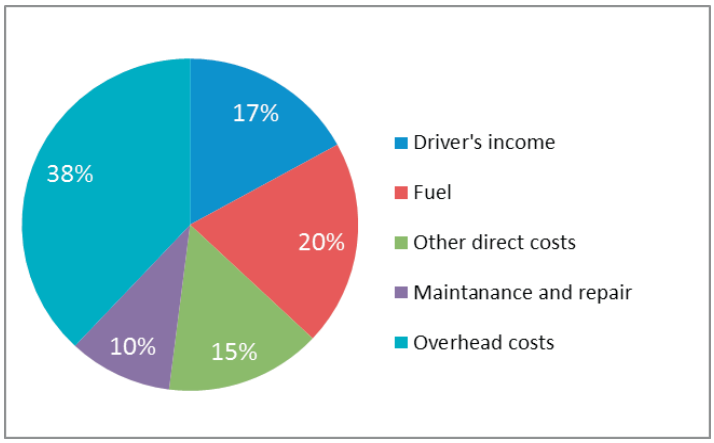
Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

Figure 2.26: Structure of the cost of freight transport in the Russian Federation



Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

Figure 2.27: Structure of the cost of freight transport in Belarus



Source: Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

In the conditions of intense international competition, relevant state bodies need to develop flexible transit tariff policies that incentivise the movement of transit cargo through Kazakhstan rather than through neighbouring countries. With the expansion of regional trade and the creation of attractive conditions for transit business, Kazakhstan should expect the arrival of foreign providers of logistics services. National rules for freight transport in Kazakhstan need to be closer aligned to international standards in order to attract interested partners to take advantage of transit through Kazakhstan.

To promote the development of international road transport in the customs union of the Russian Federation, Belarus and Kazakhstan, the permit system was cancelled for all types of transport in 2015. This concerns bilateral transport performed in transit through the territory of the three States by carriers resident in the Union, as well as transport to/from third countries, but within the territory of the EEU. For example, a Kazakhstan carrier can carry goods from Belarus to the Russian Federation without a permit. Within the three States no permit is required for transport. For third countries a phased liberalization has been agreed. Quotas for transport to and from third countries are still in operation.

Fixed stages have been set out for the introduction of cabotage in the road transport of goods:

- The first stage ended on 31 December 2017. In this stage, carriers registered in the Russian Federation, Belarus, Armenia and Kyrgyzstan, after completion of international carriage of goods by road from a non-member State of the Union, had the right to perform one cabotage operation within the territory of the Union upon return to the State of registration. In this stage, when carrying out cabotage, unloading had to be carried out within three calendar days of the completion of international transport in the member State in which the cabotage was carried out.
- In the second stage (1 January 2018 – 31 December 2019), EEU carriers have the same rights as in the first stage. However, when carrying out cabotage in road transport of goods, unloading must be completed not within three calendar days, as in the first stage, but within seven calendar days after the completion of international transport in the member State in which the cabotage is carried out.
- In stage three (1 January 2020 – 31 December 2024), Armenia, Belarus, Kyrgyzstan and the Russian Federation grant the right to carriers registered in the territory of the EEU, after completing the international carriage of goods by road in the territory of another member State, to perform one cabotage operation in road transport of goods between points located in other States of the EEU, upon return to the State of registration. In this stage, when carrying out cabotage, unloading must be completed within seven calendar days of the completion of international transport in the member State in which cabotage is carried out.

- In the fourth stage, after 1 January 2025, the EEU member States grant the right to carriers registered in one of the member States, after completing the international carriage of goods by road in the territory of another member State, to perform in the same vehicle up to three consecutive carriages of goods between points located in that other member State. In this stage, when carrying out cabotage in the road transport of goods, the last unloading must be made within seven calendar days of the date of the completion of international transport in the member State in which the cabotage is carried out.

Kazakhstan is joining the regime of cabotage shipping within the framework of the EEU only in the fourth stage, i.e. from 1 January 2025.

2.3 SWOT ANALYSIS OF THE ROAD SECTOR AND ROAD TRANSPORT

To determine the main directions for the further development of the road sector and road transport, a SWOT analysis has been conducted, examining the strengths and weaknesses of Kazakhstan in terms of developing national, transit and export-import transport, as well as the country's opportunities and the threats it may face as a result of the implementation of the planned activities (table 2.33).

Table 2.33: SWOT analysis of the road sector and road transport in Kazakhstan

Strengths
1. There is a strategy for the development of the road sector, included in the Strategic Development Plan of Kazakhstan until 2020.
2. The interest of Kazakhstan and neighbouring States in the development of land corridors.
3. Favourable location from the standpoint of transport accessibility to world leaders in export-import of finished products and raw materials.
4. The presence of a network of international transport corridors connecting China with the European Union and the EEU countries through Kazakhstan.
5. The shortest overland route from China to the huge Russian market passes through Kazakhstan.
6. Transport corridors linking the Russian Federation with Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan pass through Kazakhstan.
7. A key transport corridor connecting China with Uzbekistan passes through Kazakhstan.
8. The huge reserves of various types of mineral products which require good roads for their transport.
9. A high level of cooperation with Russian enterprises in the development of transport links and logistics.
10. Steady growth in freight transport by road.
11. China's desire to significantly increase the volume of freight transport by land, including through Kazakhstan.
12 Goods, once they have passed customs clearance in Kazakhstan, are transported through the territory of the EEU without being subject to internal customs transit procedures.
13 A competitive level of tariffs for the delivery of transit cargo in intermodal transport (sea-road transport).
14 China gives preference to Kazakh road carriers for the export of Chinese goods.
15. Simplified customs clearance of goods transported through Kazakhstan from the Chinese province of Xinjiang.

Weaknesses

1. The difficult terrain in some regions of the country hinders the construction of highways and requires large financial investment.
2. The large financial investments required for the construction and reconstruction of roads reduces the capacity to maintain and repair existing roads with the limited financing for the road sector.
3. A significant number of local roads with low traffic density consume financial resources channeled into the road sector.
4. Accelerated ageing of the road infrastructure due to increased traffic density, especially heavy vehicles.
5. Inadequate transport links in the west-east direction increases the distance travelled and the cost of delivery of goods.
6. Absence of systemic management of transport corridors.
7. Undeveloped transport infrastructure in the regions.
8. Low level of income of transport companies and the population in general, and an insufficient number of high-quality and alternative roads make it difficult to widely introduce toll roads.
9. Lack of modern technologies for the maintenance and repair of road surfaces.
10. Lack of skilled workers and specialists in the road sector.
11. Low quality of roads reduces the speed of delivery of goods, increasing the cost of transport.
12. Low level of freight forwarding services in road transport.
13. Small number of large trucking enterprises capable of carrying out large volumes of cargo transport on regular routes.
14. Low percentage of carriers that are members of the Union of International Road Carriers of Kazakhstan “KazATO”, which indicates their weak financial position.
15. Transport companies are not customer-oriented and offer a limited range of services.
16. Depreciation of motor vehicles owned by Kazakhstan carriers and small share of environmentally friendly vehicles.
17. Low share of combined transport.
18. The large territory of the country makes it difficult to effectively control the work of foreign road carriers.
19. Inadequate number of measuring devices of weights and dimensions of vehicles on highways.
20. Length of time of customs controls by Kazakh borders.
21. The high percentage of road accidents.

Opportunities

1. The high growth rates of the economies of China and South-East Asian countries could contribute to an increase in transit cargo flows through Kazakhstan.
2. Expansion of toll roads.
3. Attracting loans for the development of the road sector.
4. Application of modern technologies for construction, maintenance and repair of roads.
5. Involvement of foreign workers and specialists in road construction.
6. Expansion of public-private partnerships in the road sector.
7. Organization of systemic management of international corridors.
8. Development of forwarding services in road transport.

9. State stimulation of renewal of fleet of trucks.
10. State stimulation of development of international road transport by Kazakh carriers.
11. State stimulation of intermodal transport including road transport.
12. Integration within the framework of the EEU of an information system that allows electronic monitoring of vehicle permit forms.
13. The introduction of an automated system for monitoring the movement of freight vehicles.
14. Introduction of standardized shipping documents.
15. Increase in the number of measuring devices for weights and dimensions of vehicles on the most intensive sections of highways.
16. Limiting the movement of heavy trucks in the daytime in high temperatures in order to preserve the road surface.
17. Increasing compliance with speed limits to reduce the number of road accidents.

Threats

1. The increase in the density of traffic along international corridors and the increasing demands of society for higher quality roads require increased funding for the road sector with the limited financial capacity of the State.
2. High interest rates on debts.
3. Limited interest of private businesses in participating in public-private partnerships in the road sector and road transport.
4. Increased demand for fleet renewal in combination with limited financial resources at the disposal of the State and the private sector.
5. Limited access to loans for the purchase of vehicles by small and medium-sized enterprises, as well as by private individuals.
6. The development of the railway and road sectors in the Russian Federation will reduce the flow of goods through Kazakhstan.
7. Danger to freight transport posed by difficult meteorological conditions.

2.4 RECOMMENDATIONS FOR THE DEVELOPMENT OF THE ROAD SECTOR AND ROAD TRANSPORT

This chapter outlines the main attributes and problems in the road sector and road transport in Kazakhstan. Based on this and the SWOT analysis, the following recommendations can be made.

2.4.1 For the road sector

- In a market economy, the road network should develop as an independent business structure on the basis of public-private partnerships for the construction and reconstruction of certain sections of highway;
- Make efforts to meet the expectations of the public regarding the quality of roads and traffic safety;
- Promote the integration of Kazakhstan's road network into Euro-Asian transport corridors to increase freight flows, ensure the high speed of delivery of goods, timeliness, accessibility and reliability of transport;

- Continue the construction of new sections of highway and engineering facilities to solve the problems of interregional road transport and provide access to historical, cultural and natural sites for the development of domestic and international tourism;
- Improve mechanisms for financing road construction through public-private partnerships and expanding the network of toll roads;
- Improve the state of public roads in accordance with regulatory and technical requirements, taking into account the growth of traffic and axle loads;
- Expand the construction and reconstruction of access roads and bypass roads around large cities and towns in order to reduce the negative impact of road transport on the environment;
- Ensure the maintenance of the network of public roads to a level guaranteeing the safe year-round passage of vehicles;
- Promote the development of roadside infrastructure and bring it into conformity with international standards;
- Create an effective system for controlling the weight and dimensions of vehicles used for the transport of goods; and
- Improve the level of training of engineering and management personnel.

The development of transport infrastructure in conditions of limited financial resources should be implemented according to the following principles:

- Use internal sources of financing with national interest only. At the stage of feasibility studies, projects should be ranked taking into account political risks and an objective assessment of possible cargo flows;
- Co-finance projects when the interests of two or more States are affected;
- Use the political and financial support of international organizations and interested transnational companies when there are global interests.

2.4.2 For road transport

- Continue the practice of concluding intergovernmental agreements with neighbouring States in order to minimize the bypassing of Kazakhstan by transit traffic;
- Ensure that all UN Transport Conventions and Legal Agreements related to the road sector and border crossing facilitation are implemented and applied fully.
- Make efforts to provide villages and small towns with quality transport services;
- Develop public-private partnerships in the field of road transport;
- Allow for cabotage within the framework of the EEU in the near future;
- Increase the share of Kazakhstan carriers in the national market of international road transport by 2020 to 50% by reducing quotas for foreign carriers and developing forwarding services;
- Increase the fleet of vehicles suitable for the transport of temperature-controlled goods and increase the speed of delivery and safety of goods;

- Reduce the share of transport costs in the cost of the final product through the development of transport logistics;
- Develop a flexible policy of transit tariffs to attract transit traffic through Kazakhstan;
- Improve the quality of services provided by domestic operators in the field of international freight transport and increase the number of Euro-5 and higher vehicles to 20,000 by 2020 to ensure the competitiveness of national carriers in the international road transport market;
- Develop intermodal transport to reduce the cost of transport services;
- Implement an electronic document management system for the transport of goods, both internationally and at national level.

3. RAIL TRANSPORT IN KAZAKHSTAN

3.1 HISTORY OF THE DEVELOPMENT OF RAIL TRANSPORT IN KAZAKHSTAN

Rail transport is of strategic importance for Kazakhstan. The special geographical conditions of the country, the vastness of its territory, the absence of direct access to the sea, the large reserves of raw materials, as well as the insufficient development of road infrastructure are all reasons for the importance of rail transport in the country's economy.

Given the strategic ambition of the President to establish Kazakhstan as the largest regional transit hub, a key role will be played by rail transport and its infrastructure, since most of the transit and export-import cargoes that cross Kazakhstan are transported by this mode of transport.

Since the country does not have access to the sea, the main burden in the transport of bulk cargoes is borne by rail. The railways account for 47.2% of total freight turnover and 6.6% of total passenger turnover in the country.

The railways of Kazakhstan began their history as a link between Russia and its south-eastern provinces. The first railway was built in 1893. It linked Uralsk with Saratov and Central Russia and was named the Ryazan – Ural Railway. In 1894, a 200 km section of the southern part of the Transsiberian was built through Petropavlovskovsk.

Figure 3.1: History of the establishment of the railway network of Kazakhstan

Source: Kazakhstan Railways - Railway. https://ru-railway.livejournal.com/3137242.html.

Three routes were formed: Tselinnaya, Alma-Ata and West Kazakhstan. In 1990, on the basis of these railways, the state enterprise "Kazakhstan Temir Zholy" was established in order to optimize the management structure and the financial recovery of railway enterprises.

In 2002, the company "National Company Kazakhstan Temir Zholy" was established on the basis of "Kazakhstan Temir Zholy". The State held 100% of the shares. The railway network was transferred to the ownership and use of the company "KTZh". In 2004, "KTZh" was transferred to the joint stock company "National Company Kazakhstan Temir Zholy". At the same time, the Programme for the Restructuring of Railway Transport in Kazakhstan for 2004-2006 was adopted which focused on developing competition in the industry and attracting private investment.

With the independence of Kazakhstan, the task was to create a national, integrated railway network, as a number of regions did not have domestic transport links and passengers and freight were forced to travel through neighbouring States. For example, the railway links of Pavlodar with the East Kazakhstan region, as well as Central Kazakhstan with West Kazakhstan passed through the territory of the Russian Federation.

In 2001, the new railway line Aksu – Degelen was launched with a length of 187 km. It was the fastest route connecting Pavlodar and the East Kazakhstan region.

In 2004, the construction of the railway line Khromtau – Altynsarino with a length of 404 km was completed. It connected the regions of Kostanay and Aktobe.

In 2008, the Charsk – Ust-Kamenogorsk railway line was put into operation with a length of 150 km. That completed the connection of the national railway network within the borders of Kazakhstan.

The same year "Kazakhstan Temir Zholy" started the implementation of an asset modernization programme. More than 1,000 locomotives were upgraded, 37,500 freight and 1,500 passenger wagons were manufactured or modernized, 4,700 km of track were modernized or renovated and 1,700 km of new railway lines were laid providing the shortest routes for transporting goods both west to east and north to south.

The implementation of the programme allowed for the domestic production of modern freight and passenger cars, electric locomotives, diesel locomotives and other components for the railways which were also thenare exported to other countries in the region.

In 2010, a new programme was adopted to develop transport infrastructure until 2014. Within the programme the following activities were implemented:

- Amendments and additions were made to international treaties and the national legislation of Kazakhstan on rail transport issues;
- Tariffs for the transport of goods by type of transport were unified;
- A mechanism for subsidizing losses of carriers engaged in inter-regional passenger transport was developed;
- JSC "NC KTZh" was transformed into a transport and logistics holding company that provides rail and sea transport, transport and logistics services, and develops road, sea and airport infrastructure.

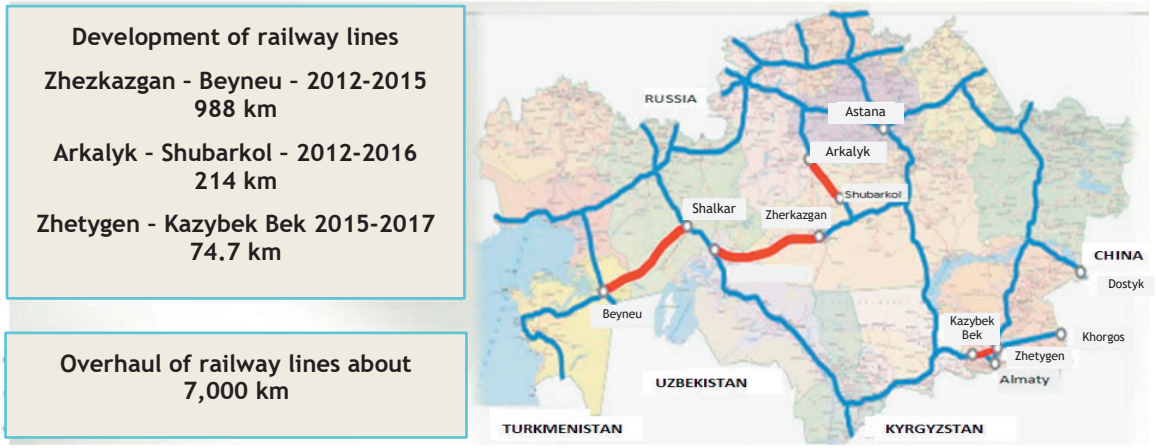
In 2012, the railway section Zhetygen - Altynkol was put into operation which opened the second railway crossing on the border with China. The new 550 km long section has reduced the distance from China to the southern regions of Kazakhstan and neighbouring countries of Central Asia.

In 2014, the International Transport Corridor Uzen – Bereket - Gorgan was opened. This corridor significantly shortens journey times from China and the countries of the Asia-Pacific region to Iran and the countries of the Persian Gulf.

A number of infrastructure projects were implemented, which offered competitive railway routes:

- The construction of 2,500 km of new railway lines, including Zhetygen - Khorgos (320 km), Uzen - Bolashak (22 km), Zhezkazgan - Beyneu (988 km), Arkalyk - Shubarkol (214 km) and Borzhakty - Ersai - Kuryk with the ferry complex.

Figure 3.2: Development of the railways of Kazakhstan



Source: http://docplayer.ru/30130676-Razvitie-transportnoy-infrastruktury-respubliki-kazahstan-do-2020-goda.html.

- The Zhezkazgan - Shalkar - Beyneu line directly connected the east and west of the country, opening up many areas of the centre. Construction was completed in 2015. This railway extends through the Caspian and Caucasus to Europe in the west, and in the east to the port of Lianyungang on the Pacific Ocean. Putting these railway sections into operation increased the transit opportunities of the Trans-Asian and Euro-Asian transport corridors passing from China and the countries of South-East Asia in the direction of the Russian Federation and Europe. It also provided transit opportunities through the Caspian Sea to Azerbaijan, Georgia, Turkey and the countries of Southern Europe; and through Turkmenistan to the countries of the Persian Gulf in the east and the port of Lianyungang on the Pacific Ocean;
- Putting into operation the first section of the port of Kuryk.

Also, a better link between the internal regions was ensured, which contributed to the growth of the transit and export potential of Kazakhstan.

3.2 CHARACTERISTICS OF THE INFRASTRUCTURE AND VOLUMES OF TRANSPORT BY RAIL

In 2016, JSC "NC KTZh" modernized 354 km of railway lines. On the rolling stock front, 25 new locomotives, 116 passenger wagons, and 4 convoys of suburban electric trains were purchased.

One of the limitation of the railway network of Kazakhstan is the high proportion of single-track lines where the capacity used is 70-100%. This limits the possibility of introducing additional freight flows and significantly reduces the speed of trains.

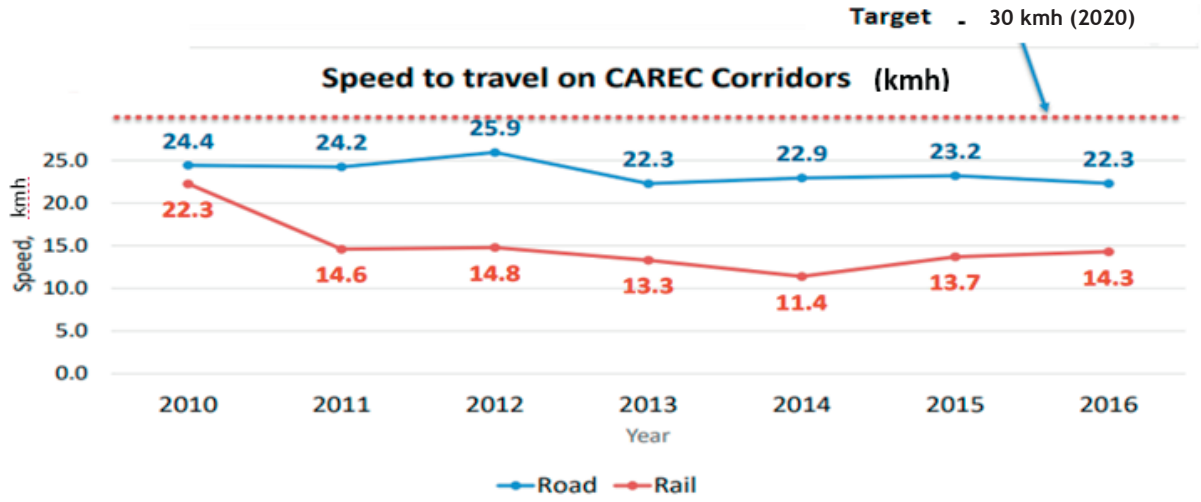
Another problem is the inconsistency of the condition of the Kazakh railways with the requirements of international standards, which hinders the country's transit potential. The growth in traffic has meant that the tracks are wearing out sooner, further affecting performance.[11] Therefore, one of the ways to improve rail transport is renewal and modernization of the track surface to increase speeds and the throughput and carrying capacity of railways by introducing more wear resistant. The advantages of this are: reduced repair costs and current maintenance of the track (by 25-30%), increases the service life of the rails (by 15-20%) and the service life of the sleepers (by 5-6%). Improving the reliability of the track surface contributes to an increase in speed and reduces the need to repair wheels and bogies.

A study of the average speed of transportation of goods through the CAREC corridors, as well as along the railways of Kazakhstan is extremely low. The speed of traffic decreased on automobile routes by 8.6%, and on railway routes - by almost 36% during the period under review. In 2016, the average speed on the CAREC rail routes was 14.3 km/h.

The average speed of a freight train in Kazakhstan is 44 kilometers per hour, while in China, it exceeds 60 kilometers per hour. The speed of freight trains in Germany and the United States is 50-60 kilometers per hour and about 45 kilometers per hour, respectively.[12]

[11] www.kazakhstan-bern.ch/en/?page_id=379.
[12] https://lenta.ru/articles/2013/02/01/trains/.

Figure 3.3: Cargo transport speed along CAREC corridors



Souce: www.unece.org/fileadmin/DAM/trans/doc/2018/speca/S1_GS_CAREC.pdf.

There has also been a gradual deterioration of the main transport infrastructure. The problem areas are: Aktogay - Shymkent, Aktogay – Beskol - Dostyk, Aktogai - Mointy, Petropavlovsk - Astana, Ozinki - Saryagash, Kandyagash - Makat, Makat - Nikeltau, Aktogai - Lokot, border of the Russian Federation – Atyrau - Beineu, Iletsk - Zhaysan and Kyzylorda - Shiely.

At the start of 2018, the total length of the railway was 16,614 km (table 3.1).

Table 3.1: Length of railways, km

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Regions of Kazahstan	**15 333**	**15 341**	**15 341**	**15 341**	**16 104**	16 614
Akmola region	1 559	1 559	1 559	1 559	1 559	1 559
Aktobe region	1 443	1 443	1 444	1 444	1 499	1 839
Almata region	1 394	1 402	1 402	1 402	1 401	1 401
Atyrau region	742	742	742	742	742	742
West Kazakhstan region	431	431	431	431	431	431
Zhambyl region	1 103	1 104	1 104	1 104	1 104	1 104
Karaganda region	1 940	1 940	1 940	1 940	2 467	2 467
Kostanay region	1 271	1 271	1 271	1 271	1 336	1 336
Kyzylorda region	755	755	755	755	871	871
Mangystau region	926	926	926	926	926	1 097
Turkestan region	552	552	552	552	552	552
Pavlodar region	925	925	925	925	925	925
North Kazakhstan region	807	807	807	807	807	807
East Kazakhstan region	1 209	1 209	1 209	1 209	1 209	1 209

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

Out of the 16,614 km of railway lines operated by JSC "NC KTZh", 574 km in Kazakhstan belong to other States. Furthermore, 275 km of railways owned by Kazakhstan are located in other States. Of the railways that belong to Kazakhstan, 4,217 km are electrified and 4,900 km are two-track or multi-track.

The Karaganda, Akmola, Aktobe, Almata and Kostanay regions have the longest railway lines. They account for more than half of the railway network in Kazakhstan. At the same time, these areas occupy 47.5% of the entire territory of the country.

The density of railways on territory in 2017 was 6.1 km per 1,000 km^2 (table 3.2).

Table 3.2: Density of railway lines, km per 1,000 km^2 of territory

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Regions of Kazahstan	**5.53**	**5.53**	**5.53**	**5.53**	**5.70**	6.1
Akmola region	10.66	10.66	10.66	10.66	10.66	10.7
Aktobe region	4.80	4.80	4.80	4.80	4.95	6.1
Almata region	6.23	6.26	6.26	6.26	6.27	6.3
Atyrau region	6.26	6.26	6.26	6.26	6.26	6.3
West Kazakhstan region	2.85	2.85	2.85	2.85	2.11	2.8
Zhambyl region	7.64	7.65	7.65	7.65	7.23	7.6
Karaganda region	4.53	4.53	4.53	4.53	5.76	5.8
Kostanay region	6.48	6.48	6.49	6.49	6.48	6.8
Kyzylorda region	3.34	3.34	3.34	3.34	3.85	3.9
Mangystau region	5.59	5.59	5.59	5.59	5.59	6.6
Turkestan region	4.71	4.71	4.70	4.70	4.70	4.7
Pavlodar region	7.41	7.41	7.41	7.41	6.32	7.4
North Kazakhstan region	8.23	8.23	8.23	8.23	6.31	8.2
East Kazakhstan region	4.27	4.27	4.27	4.27	4.27	4.3

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

The density of railways does not correlate with its length in some regions. The highest density is in the Akmola region, where the length of railways is not the largest. The Karaganda region, which has the largest length of railways, has only an average level of density. The northern regions of the country that are closest to the main export-import market of the Russian Federation, as well as the southeast regions through which Chinese exports are transported to the countries of Central and South Asia, have the greatest densities.

Kazakhstan railways run on the Russian standard gauge of 1,520 mm.

As part of the creation of domestic transport production capacity, factories have been constructed for the production of diesel locomotives, shunting locomotives, freight and passenger wagons and modern electric locomotives. These activities have allowed the growth of the number of locomotives and freight wagons to meet the needs of the country in the transport of goods (table 3.3).

Table 3.3: Characteristics of locomotives and wagons in Kazakhstan

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Locomotives	1 865	1 896	1 893	1 804	1 725	1 732
Freight wagons of railway transport service providers	66 503	65 803	60 940	59 025	56 504	54 925
Freight wagons of enterprises of consumers of railway transport services	61 192	63 477	71 351	73 177	72 848	75 496
Average daily productivity of a freight car, tkm net per day	7 590	8 246	8 545	8 997	9 959	9 967
Traffic speed, km/h	41.9	42.8	42.9	44.0	44.0	44.2
Turnover of the working wagon, day	5.3	5.8	5.8	5.4	5.0	5.1

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

Despite the fact that the number of locomotives and freight wagons has decreased in recent years, the rates of use of rolling stock is growing. Therefore, it can be assumed that the average daily productivity of a freight car and the traffic speed is growing and the turnover of wagons is increasing.

The fleet of electric locomotives under the age of years in 2017 increased by 2.8% compared with 2016, their number over the age of over 25 years also decreased. Only 20.1% of the fleet of electric locomotives are up to 10 years old.

The situation with diesel locomotives is different: 36.6% of diesel locomotives are younger than 10 years. The share of freight cars under 10 years old is 52.7%, and the share of cars over 25 years old is 25.7% (table 3.4).

Table 3.4: Age structure of the rolling stock of public railways at the end of the year, percentage

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Electric locomotives	100.0	100.0	100.0	100.0	100.0	100.0
including those in service, years						
up to 5 years	6.3	9.1	11.3	6.7	10.0	12.8
between 5 to 10	0.9	0.3	0.3	4.7	4.5	7.3
between 10 to 15	-	0.5	0.5	0.6	0.9	1.0
between 15 to 20	2.0	-	-	-	-	-
between 20 to 25	26.5	7.5	13.4	7.7	2.0	0.9
over 25 years	64.3	82.6	74.5	80.3	82.6	78.0
Diesel locomotives	100.0	100.0	100.0	100.0	100.0	100.0
including those in service, years						
up to 5 years	24.3	30	29.5	30.1	22.9	11.8
between 5 to 10	0.8	1.6	2.8	5.6	14.8	24.8
between 10 to 15	0.04	0.22	0.3	0.8	0.8	2.1
between 15 to 20	0.8	0.03	0.03	0.1	0.1	0.1
between 20 to 25	23.6	7.1	6.3	3.9	1.0	-
over 25 years	50.5	61	61.0	59.5	60.3	61.2

	2012	2013	2014	2015	2016	2017
Freight cars	100	100	100	100	100	100
including those in service, years						
up to 5 years	37.8	41.3	41.4	41.9	28.9	30.0
between 5 to 10	9.8	11.9	15.2	22.1	22.6	22.7
between 10 to 15	6.4	5.7	5.9	5.2	14.0	13.8
between 15 to 20	0.4	0.9	2.7	3.6	6.6	7.7
between 20 to 25	18.6	11.2	6.9	13.9	1.3	0.1
over 25 years	27.0	29.0	27.9	13.3	26.6	25.7

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

Over the last 10 years, from 8.4% to 12.3% of the total volume of transported goods was carried by rail. There has also been a gradual decrease in the share of rail transport in the total volume of transport. Kazakhstan railways transported 387.2 million tonnes of cargo in 2017, while in 2016 it transported 338.9 million tonnes. The freight turnover in 2017 was 266.6 billion tkm, which was 11.5% more than in 2016 (table 3.5).

Table 3.5: Freight transport by rail in Kazakhstan

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cargo, luggage, freight mln. tonnes	2 124.2	2 188.7	2 103.3	2 439.4	2 974.9	3 231.8	3 508.0	3 749.8	3 733.8	3 729.2	3 946.1
Including :											
railways	260.6	269.0	248.4	267.9	279.7	294.8	293.7	390.7	341.4	338.9	387.2
Share of railways in the total volume of transport	12.3	12.3	11.8	11	9.4	9.1	8.4	10.4	9.1	9.1	9.8
Cargo turnover, bln.tkm	350.5	369.7	337.0	385.3	448.8	478.0	495.4	554.9	546.3	518.6	564.0
Including:											
railways	200.8	214.9	197.5	213.2	223.6	235.9	231.3	280.7	267.4	239.0	266.6

Source: Transport in Kazakhstan 2007-2017. Statistical collection. Astana. http://stat.gov.kz.

The volume of goods transported in national traffic is 62.1% and in international traffic 37.9%. The main flow of goods as exports or imports is, with the CIS countries, almost 89% and only 1.2% is transit (table 3.6).

Table 3.6: Key performance indicators of rail freight transport

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Cargo, luggage, freight million tonnes transported	294.8	293.7	390.7	341.4	338.9	387.2
including by type of journey:						
International	136.0	137.2	121.1	137.0	130.6	146.7
CIS countries	119.7	137.2	105.1	121.3	116.2	-
Transit	16.3	-	16.0	15.7	14.4	17.5
Inside the country	158.8	156.3	154.2	204.4	208.3	240.6
Cargo turnover, billion tkm	235.9	231.3	280.7	267.4	239.0	266.6
including by type of journey:						
International	144.2	143.4	129.3	159.7	130.1	143.8
CIS countries	117.0	143.4	101.5	132.2	104.9	-
Transit	27.2	-	27.8	27.6	25.2	28.0
Inside the country	91.7	87.9	87.3	107.6	108.9	122.8

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

The change in volumes of freight transport and freight turnover show no clearly defined trend. In 2015, as compared to the previous year, the indicators decreased, and in 2017 they practically reached the level of 2015. Transit volumes and cargo turnover are also decreasing. This is more connected with the external economic situation than with the economic situation in Kazakhstan.

3.3 INTERNATIONAL RAIL TRANSPORT

Rail transport plays a leading role in EATL and, above all, in the intermodal services sector. For the development of intermodal transport, railways must:

- Cooperate extensively with forwarders, operators, terminals, transport companies and logistics providers;
- Offer competitive tariffs and be able to adjust them in accordance with the market situation;
- Be flexible in the choice of routes and schedules; and
- Cooperate at the international level to provide long-distance services.

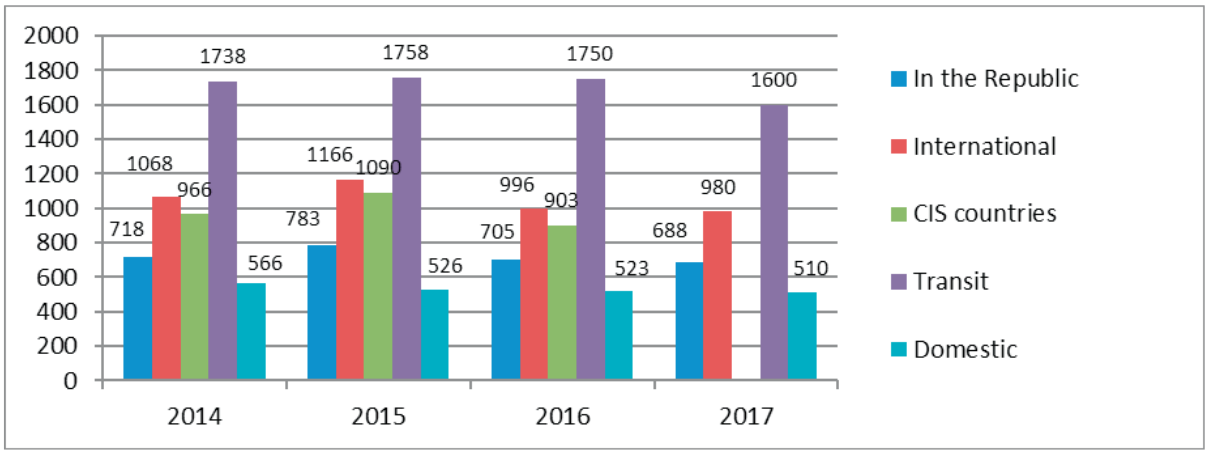
In international traffic, Kazakhstan's rail transport specializes in the transport of bulk cargo such as ore, ferrous and non-ferrous metals, oil, coal, grain and grain products, which account for more than 80% of the total volume of transported goods.

The East-West and North-South transport routes have become more competitive in the transport services market. The main competitors for Kazakhstan railway routes in Euro-Asian transport are sea carriers, which provide more attractive terms (especially with regard to tariffs), as well as the Russian Railways.

The Russian Federation is intensively upgrading its international transport corridors, especially in the Trans-Siberian direction, both technically and organizationally. The competition became even more acute after the commissioning of the Trans-Korean Railway in 2011, which reduces the time for the transport of Euro-Asian cargo.

The average distance of transport of goods in the whole country and in international traffic is quite large. For domestic traffic it is 680-780 km and for international traffic it is 1,000-1,200 km. This shows that the transport of goods is carried out mainly to neighbouring countries and, primarily, to the Russian Federation. The average distance of transport of transit cargo is 1,600-1,760 km.

Figure 3.4: Average distance of transit cargo transport



Source: Based on the data in table 3.6.

In recent years, at the level of government transport policy and in the expert community of the Eurasian Economic Union countries, the competition of two groups of railway routes for the delivery of goods between Europe and Asia is being actively discussed:

- The "North-South" railway corridors along the western and eastern shores of the Caspian Sea and the Northern Trans-Siberian with its branch lines; and
- The southern corridor – TRACECA.

These corridors are part of the Euro-Asian transport network. The Russian Federation prioritizes the development of the Trans-Siberian Railway and its branch lines, since it is not a party to the intergovernmental commission of TRACECA. Kazakhstan is interested in the development of both the "North-South" railway corridor and the northern route.

Kazakhstan, together with Turkmenistan and Iran, is actively involved in the development of the "North-South" corridor along the eastern shore of the Caspian Sea. This direction was developed after the completion of the Uzen (Kazakhstan) – Kyzyl – Kiyak – Bereket - Etrek (Turkmenistan) - Gorgan (Iran) railway line in 2013 with a total length of about 700 km, which is part of the international "North-South" transport corridor. The expected cargo turnover for 2018 is more than 10 million tonnes. In the future, the cargo turnover may exceed 20 million tonnes. The new route allows a reduction in the transport distance from north to south in comparison with the existing route through Beynau – Turkmenabat - Serakhs of more than 600 km, and a travel time of about two days. If the railway is fully exploited, the project will break even within 10 years.

In turn, the Ministry of Roads and Transportation of Iran is working on the construction of the 150 km railway section Gorgan – Gonbade – Cavus – Ince-Barun terminal on the border with Turkmenistan.

An additional impetus to the development of the "North-South" corridor along the eastern shore of the Caspian Sea was the accession in 2014 of Turkmenistan to the intergovernmental agreement on the TRACECA corridor.

Using its unique geographical position, Kazakhstan is ready to play the role of a transcontinental and transit bridge in trade between Europe and Asia. The basis for this is the creation of favourable conditions for international transport between West and East and a significant improvement in Euro-Asian transport links by land, as well as the development of logistics.

The main destination countries for transit cargo flows through Kazakhstan are the countries of Central Asia (Uzbekistan 45%, Kyrgyzstan 20%, Turkmenistan 6%, Tajikistan 9%, Afghanistan 5%). For the Russian Federation it is 5.6% and for China 4.5%.

The position of Kazakhstan situated between the largest trading partners, China, Russian Federation and the European Union countries, is central to the development of the country's transport-logistics system. According to expert forecasts, by 2020 the volume of trade between China and the European Union will increase to US$ 1 trillion, and the total freight turnover will be about 170 million tonnes or about 17 million TEU.

Even before 2015, transit through Kazakhstan exceeded transit through Eastern Siberia and the Far East. In 2014, the volume of transit traffic from East Asia and, above all, from China to the Russian Federation and Europe via Kazakhstan was 91,500 tonnes, transit through Eastern Siberia was 73,100 tonnes, and through the Far East 5,400 tonnes.

In 2017, the situation changed. 995,500 tonnes were transported from China to the Russian Federation and in transit through Kazakhstan and the Russian Federation, which was 51% higher than in 2016. Furthermore, 871,000 tonnes were transported from the Russian Federation and in transit through the Russian Federation and Kazakhstan, which was 28% higher than the level in 2016.

In 2017, 28.2 million tonnes were transported directly from the Russian Federation to China, which was 21% or 4.9 million tonnes higher than the level of 2016. The main cargo transported was: timber - 16.9 million tonnes (+11%), coal - 4.5 million tonnes (growth of 6.2 times), ore – 3.1 million tonnes (-18%), cellulose – 1.3 million tonnes (+8%), and chemical mineral fertilizers – 1 million tonnes (-34%). From China, 3.4 million tonnes were transported to the Russian Federation, which was 40.5% or 993,000 tonnes higher than the level of 2016. The main cargo transported was: chemicals – 551,400 tonnes (-10%), hardware – 485,200 tonnes (+63%), ferrous metals – 282,000 tonnes (+16%) and building materials – 285,200 tonnes (-8%).[13]

The Russian Federation is developing direct transport to/from China, thereby reducing transit flows through Kazakhstan.

According to calculations of specialists, about 2% of cargo goes to China from Europe by land. Considering that by 2020 China's trade with European countries will be US$ 1 trillion, the land route will transport goods worth about US$ 20 billion per year. Transit through Kazakhstan is less than transit through Eastern Siberia and the

[13] About the work of OSJD. http://osjd.org/statico/public/en?STRUCTURE_ID=5190.

Far East. The volume of transit cargo transport to/from China to the Russian Federation and Europe via Kazakhstan according to OSJD reached 1,826.5 thousand tonnes in 2017, and through East Siberia and the Far East it amounted to 31,600 thousand tonnes. Consequently, transport of only 5.5% of transit cargo through Kazakhstan in the direction of the Russian Federation and Europe and back, would amount to US$ 1,100 million per year.[14]

The development of container transport is a key objective of the business strategy of JSC "NC KTZh". The growth of container transit through Kazakhstan is largely determined by the competitiveness of services for exports from China and European countries with the alternative route by sea. In addition, thanks to the newly acquired fleet of refrigerated containers, all-season transport of computer equipment from China to Europe is now available and 24 hour monitoring, control and remote temperature control technology has been implemented.

The availability of high-quality logistics infrastructure and services has contributed to the growth of container traffic.

In May 2016, the first container train was successfully organized from China to Europe through the border crossing Khorgos - Altynkol. In the near future it is planned to arrange the passage of all container trains along this route.

The organization of container transport through the border crossing of Khorgos-Altynkol in comparison with the route through Dostyk-Alashankou has the following advantages:

- The Dostyk-Alashankou border crossing and adjacent areas have severe meteorological restrictions in the autumn and winter, which makes it difficult to handle containers and increases the delivery time;
- The performance of Altynkol station in comparison with Dostyk station is much higher at 1,638 and 360 TEU per day, respectively;
- Reduction of distance and delivery time for consignees; and
- Lack of the possibility to consolidate and form container trains at Dostyk station.

The potential volume of transit cargo traffic through Kazakhstan (via Dostyk and Khorgos) could reach up to 8% or 1.4 million TEU of total China-European Union-China trade.

Since the organization of the first container train from China to Europe, a total of 2,964 container trains had been organized by the end of 2016. Currently, 200 container trains are being organized and operated on OSJD railways on a regular basis, and 278 trains can be dispatched when required.

Despite the small volumes of transit cargo in the whole country, the volume of transit container shipments in trade between China and Europe in Kazakhstan in 2016 amounted to 104,600 TEU, more than twice the 2015 value (47,300 TEU). Furthermore, 1,230 container trains passed through the border crossings of Alashankou and Khorgos from China to Europe (an increase of 111% compared to the same period in 2015). This was also the case with the Manchuria border crossing with

[14] About the work of OSJD. http://osjd.org/statico/public/en?STRUCTURE_ID=5190; https://forbes.kz/finances/markets/popast_vkoleyu_1.

311 trains (an increase of 101%), and the Erlian border crossing with 161 trains (an increase of 106%). In 2016, 66 new container train routes were organized.

The average distance traveled by container trains in Kazakhstan is 937 km/day, and from China to Europe 977 km/day.

Container trains have operated transit through Kazakhstan along the following main routes:

- Chengdu (China) – Lodz (Poland) since 19 December 2012;
- Zhengzhou (China) – Hamburg (Germany) since 17 July 2013;
- Chongqing (China) – Duisburg (Germany) since 19 March 2011;
- Wuhan (China) – Pardubice (Czech Republic) since 5 June 2014;
- Wuhan (China) – Hamburg (Germany) since 1 December 2014;
- Yiwu (China) – Madrid (Spain) since 8 December 2014;
- Hefei (China) – Hamburg (Germany) since 2015;
- Lanzhou (China) – Hamburg (Germany) since 2015;
- Putian (China) – Terespol (Poland) since 2015;
- Duisburg (Germany) – Chongqing (China) since 2013;
- Hamburg (Germany) – Zhengzhou (China) since 2014;
- Hamburg (Germany) – Wuhan (China) since 2014;
- Lodz (Poland) – Chengxiang (China) since 2015;
- Madrid (Spain) – Yiwu (China) since 2014;
- Kotka (Finland) by appointment to China since 2015;
- Hamburg (Germany) – Lanzhou (China) – 32 trains (new route).

Kazakhstan, represented by “Kazakhstan Temir Zholy”, has made great efforts to support the development of the Trans-Caspian Transport Corridor. As a result, in 2013, in the framework of the II International Transport and Logistics Business Forum "New Silk Road" in Astana, the heads of the NC KTZh JSC, Azerbaijan Railways CJSC, Georgian Railway JSC signed an Agreement on the establishment of Coordination Committee for the Development of the Trans-Caspian International Transport Route (TITR).

In February 2014, the Coordinating Committee for the Development of TITR was established , which included: “Georgian Railways”, “Aktau International Sea Trade Port”, “Kazakhstan Temir Zholy”, “Azerbaijan Railways”, “Azerbaijan Caspian Shipping Company”, “Baku International Sea Trade Port” and “Batumi Sea Port”.

The work of the Coordinating Committee has resulted in the:

- Adoption of rates for container transport and preferential tariffs for transport of fuel oil, gas oil and grain;
- Approval of the technology for interaction between transport companies involved in the organization of container trains on the China-Kazakhstan-

Azerbaijan-Georgia-Turkey route with the participation of rail and sea transport in a direct international rail-ferry service;

- Creation of a container service called "Nomad Express"; and
- Organization of three pilot "Nomad Express" container trains: Shihezi (China) – Kishly (Azerbaijan) on 28 July 2015; Lianyungang (China) – Istanbul (Turkey) on 29 November 2015; and Ilyichevsk (Ukraine) – Dostyk (Kazakhstan) on 15 January 2016.

In December 2016, the participants of the Coordinating Committee from Kazakhstan, Azerbaijan and Georgia, decided to establish the International Association of the Trans-Caspian International Transport Route (IA TITR), an association of legal entities registered in Kazakhstan.

In April 2016, an agreement was signed in Baku on the establishment of the Trans-Caspian International Transport Consortium (TITC) between the railway departments of Azerbaijan, Georgia and Kazakhstan.[15] The members of the consortium are "ADY Express" and "ACSC Logistics" from Azerbaijan, "KTZ Express" from Kazakhstan and "Trans Caucasus Terminals" from Georgia. "Ukrzaliznytsia" and "Ukrferi" (Ukraine) and "Translogistic" (Moldova) subsequently became members of the Coordinating Committee.

In order to further develop the transport corridor connecting the ports of the Caspian and Black Seas and increase cargo flows along the trans-Caspian international transport route, a Memorandum was signed in Astana on 15 June 2017, which is intended to initiate the accession of the Romanian port of Constanta to the Association.[16]

The Trans-Caspian International Transport Route runs through China, Kazakhstan, the Caspian Sea, Azerbaijan, Georgia and further through Turkey and Ukraine to Europe.

[15] http://titr.kz/en/about-the-association/consortium.
[16] http://titr.kz/en/pressa/news/17-romanian-port-of-constanta-plans-to-enter-to-the-international-association-trans-caspian-international-transport-route.

Figure 3.5: Trans-Caspian International Transport Route

Source: https://azertag.az/ru/xeber/Ukrzaliznicya_stala_chlenom_Mezhdunarodnoi_associacii_Transkaspiiskii_mezhdunarodnyi_transportnyi_marshrut-1047634.

The basic principles of the development of TITR are the integrity of the service from the point of departure to final destination, including through common tariff rates, simplification of administrative procedures and the implementation of intermodal transport using a single consignment note.

On January 2018, representatives of the international seaports of Kazakhstan, the Georgian international sea port of Anaklia, and the dry port "KTZE-Khorgos Gateway" signed an agreement on the entry of the port of Kuryk into the TITC.[17]

On 8 May 2018, in Baku, at a meeting of the Association, a protocol was signed that approves tariffs for the transport of coal, cereals, oil and vegetables, as well as the admission of two new members: Anaklia Development Consortium (Georgia) and "NMSK "Kazmortransflot" (Kazakhstan).

In June 2018 in Almaty, at a general meeting of the TITR Association, it was noted that TITR has huge potential for increasing freight turnover among the member countries.[18] It was expected that by the end of 2018 the volume of transport would reach about 1.2 million tonnes instead of the planned 700,000 tonnes.

To further develop the route, competitive tariffs approved by all TITR participants should be fixed for a longer period. New opportunities for the growth of transport along the route are expected with the opening of the new Baku – Tbilisi – Kars railway and the launch of the vehicle ferry terminal at Kuryk port.

[17] www.kazpravda.kz/multimedia/view/port-kurik-prinyat-v-assotsiatsiu-transkaspiiskii-mezhdunarodnii-transportnii-marshrut/.

[18] http://prs.kz/press/30428/Okolo-1-2-milliona-tonn-gruzov-vmesto-planiruemih-700-tisyach-tonn-budet-perevezeno-po-Transkaspijskomu-marshrutu-do-konca-2017-goda/

Kazakhstan will create conditions to facilitate the growth of cargo flows and shorten the time for the delivery of goods on the route.

To attract cargo traffic to the route, regular container trains should be organized at least twice a month from China to Turkey/Georgia. In addition, consideration should be given to the use of feeder vessels capable of transporting 40-50 containers.

OSJD international transport corridors are also of great importance in the development of international freight and passenger transport. The OSJD International Transport Corridors 1, 2, 5, 8 and 10 pass through Kazakhstan.

The OSJD International Transport Corridors 2, 5, 8, 10 passing through Kazakhstan are included in the EATL network. These corridors provide access to neighbouring States, major ports, transport hubs and terminals.

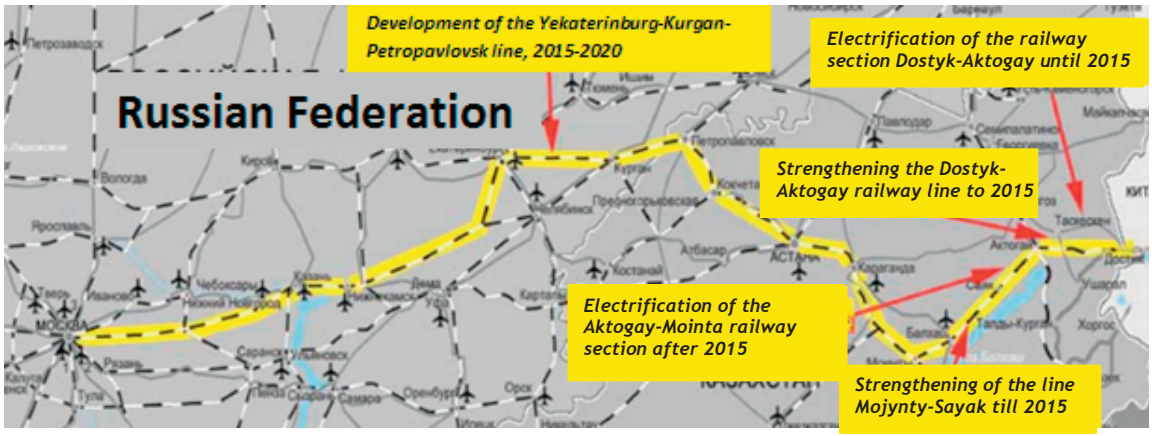
OSJD International Transport Corridor 1. The corridor passes through the territories of Poland, Latvia, Lithuania, Estonia, Belarus, Russian Federation, Kazakhstan, Uzbekistan, China, Mongolia and the Democratic People's Republic of Korea. A branch of the OSJD International Transport Corridor 1 passes through Kazakhstan. The route of the branch is Moscow – Ryazan – Syzran – Orenburg – Aktobe – Kandyagash – Arys – Tashkent. The length of the corridor through Kazakhstan is 1,754 km.

Figure 3.6: OSJD International Transport Corridor 1

Source:Transit potential of the Republic of Belarus: assessment and development. Minsk, 2017.

OSJD International Transport Corridor 2. This corridor in the Petropavlovskovsk - Astana - Karaganda - Moyinty - Balkhash - Aktogay - Dostyk section coincides with the EATL railway corridor II. The route extends more than 8,000 km from the eastern borders of the EU with the Republic of Belarus and Ukraine, through the Russian Federation, Kazakhstan and eastern China to the ports of Lianyungang and Shanghai. Route II continues Pan-European Transport Corridors II and IX in the direction of Asia. Most of this route is part of the Trans-Asian Railway network. On this route, on the border between Kazakhstan and China, the gauge changes from 1,520 mm to 1,435 mm.

Figure 3.7: OSJD International Transport Corridor 2



Source: Prospects for the development of the infrastructure of roads and railways included in EurAsEC transport routes. Almaty, 2011.

Corridor 2 runs through the territories of the Russian Federation, Kazakhstan, China and Viet Nam. It serves the transport of goods between the Russian Federation and China. The route of the corridor is as follows: Moscow – Kazan – Ekaterinburg – Kurgan – Petropavlovsk – Astana – Dostyk – Alashankou – Urumqi – Zhengzhou – Xuzhou – Lianyungang. The territory of Kazakhstan accounts for 19% of the length of the corridor. The corridor provides access to the port of Lianyungang, which is open to foreign vessels.

The corridor passes through the territory of Kazakhstan along the Petropavlovsk – Kokshetau – Astana – Karaganda – Moyynty – Balkhash – Aktogay – Dostyk section. The total length of the corridor is 1,900 km. It crosses the country from the border with the Russian Federation (Petropavlovsk station) to the border with China (Dostyk station).

Branch a of the corridor passes through Kazakhstan along the Tobol - Astana section and is 664 km in length.

Figure 3.8: Branch a of the OSJD International Transport Corridor 2

Source: Prospects for the development of the infrastructure of roads and railways included in EurAsEC transport routes. Almaty, 2011.

The northern, central and south-eastern economic regions of Kazakhstan are located on the corridor. In the central economic region of Kazakhstan there is a coal mining and metallurgical complex that uses its own raw materials. From this region oil, ferrous and non-ferrous metals and ferrous scrap are transported to China. From the northern economic region, iron ore concentrate, ferrous metals and ferrous scrap

are supplied to China. At present, there are no alternatives to transport through Dostyk station. The implementation of the action plan for the development of Dostyk station and the Aktogay - Dostyk section has led to an increase in the volume of cargo transport through Dostyk station to 13.1 million tonnes.

The largest volumes of cargo transport (up to 36, 33 and 30 million tonnes) are carried along the route of the OSJD corridor 2 Astana – Anar, Anar – Karaganda – Sortirovochnaya, and Karaganda-Sortirovochnaya - Zharyk along sections of the Kazakhstan railway.

In Kazakhstan, the main cargo flow of containers passes through the border crossing with China at Dostyk – Alashankou. Despite the growth of container traffic through Dostyk terminal, there are technological problems with handling container cargo in specialized trains and the lack of a system for preliminary information exchange between the railways of China and Kazakhstan. Therefore, an objective will be to reorient container freight traffic to the Altynkol – Khorgos terminal.

On the Kazakhstan section of the OSJD corridor 2 there are container terminals at the stations of Kokshetau, Astana, Karaganda and Dostyk. The terminals are equipped with technology for processing large containers and have a reserve of processing capacity.

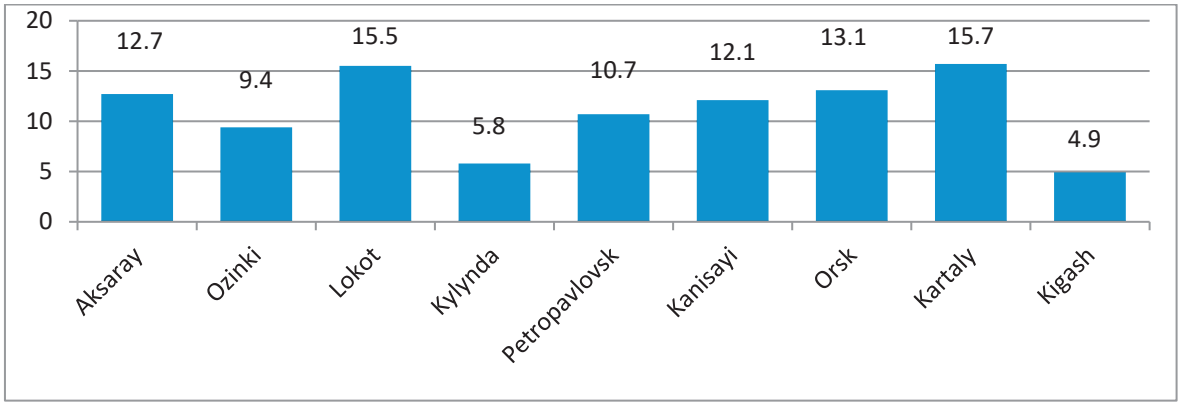
The largest exporters of ferrous metals to Kazakhstan are the Russian regions of the Urals and Western Siberia. They account for about 80% of all Russian exports of ferrous metals to Kazakhstan.

Analysis of the range of export cargoes to the Russian Federation, Kazakhstan's main trading partner, shows that basically they are comprised of general, liquid bulk and dry bulk cargoes. Exports such items as ferrous metals and ores account for about half of Kazakhstan's total exports. The bulk of this cargo flow is iron ore from the Sokolovsko-Sarbaiskoye Mining and Concentration Association and the main consumer of these products in the Russian Federation is the Magnitogorsk iron and steel works.

Almost all the coal exported to the Russian Federation from Kazakhstan is from the Ekibastuz basin. The largest Russian consumer regions are Sverdlovsk, Chelyabinsk and Omsk, which account for about 95% of the total volume of coal exported from Kazakhstan to the Russian Federation.

About a third of the volume of Russian export cargo to Kazakhstan was transported through the railway border points of Lokot and Kartaly.

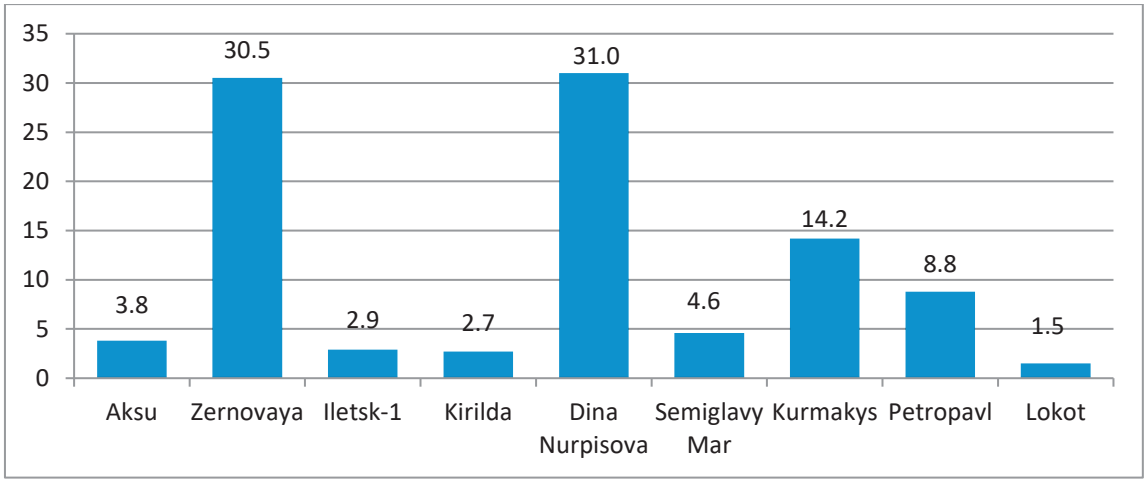
Figure 3.9: Volume of Russian export cargoes to Kazakhstan, through railway border points, in percentage



Source: Prospects for the development of the railway transport market of the Single Economic Space. Almaty, 2014.

The most significant flows of Kazakhstan export cargoes to the Russian Federation pass through the railway checkpoints of Zernovaya (30.5%) on the line connecting the Kostanai region with the South Urals region in the Russian Federation and the Trans-Siberian Railway and the new export checkpoint of Dina Nurpeisova (31%), which, after modernization serves the shortest route for cargo flows from West Kazakhstan to the Russian Federation and Ukraine.

Figure 3.10: Volume of the Kazakhstani exports to the Russian Federation, through railway border points, in percentage

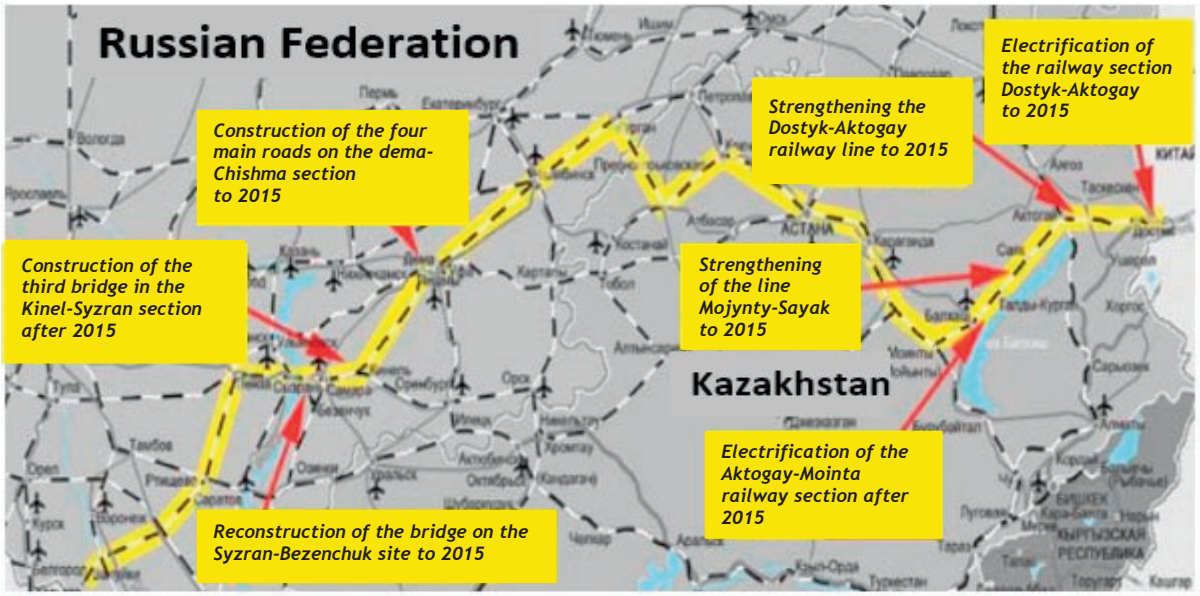


Source: Prospects for the development of the railway transport market of the Single Economic Space. Almaty, 2014.

The comprehensive plan for the OSJD International Transport Corridor 2 provides for the further development of railway infrastructure, improvement of the operation of border stations, containerization of cargo flows, informatization and the unification of tariffs.

OSJD International Transport Corridor Transport Corridor 5. This corridor on the Presnogorkovskaya - Astana - Karaganda - Moiynty - Balkhash - Aktogay - Dostyk section coincides with the EATL railway corridor Route II. The corridor 5 has the following main route: Valuiki – Penza – Kurgan – Presnogorkovskaya – Kokshetau – Astana – Karaganda – Aktogay – Dostyk. The length is 4,618 km.

Figure 3.11: OSJD International Transport Corridor 5

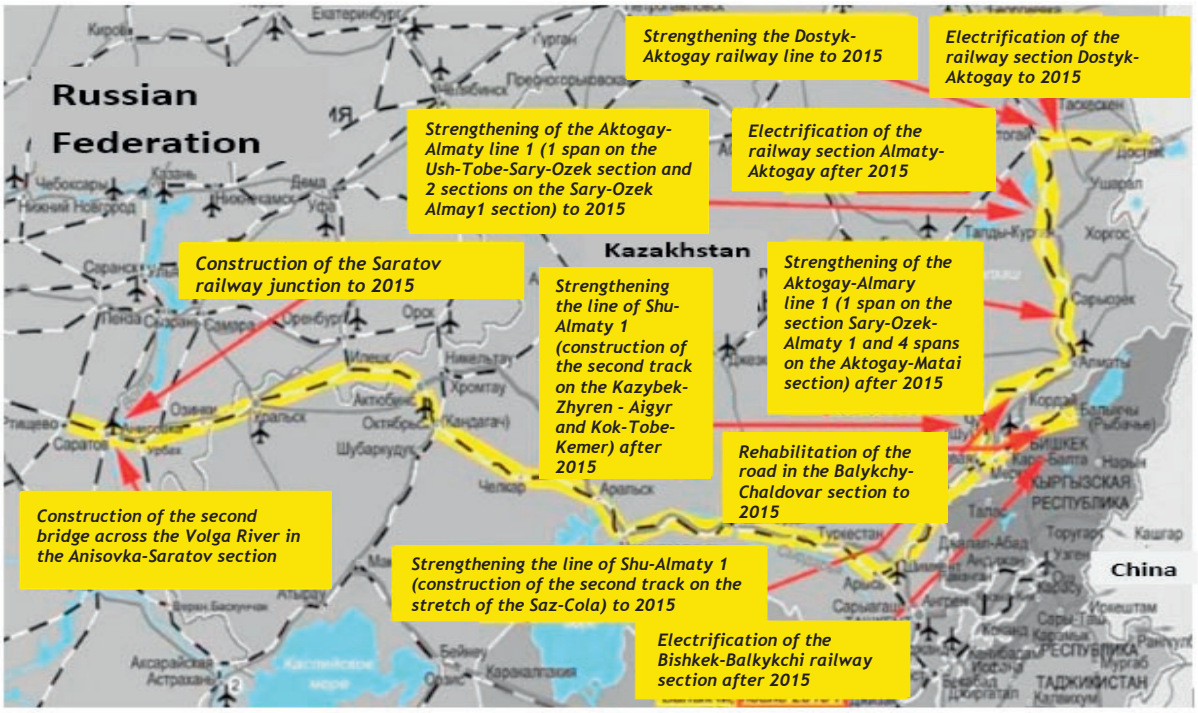


Source: Prospects for the development of the infrastructure of roads and railways included in EurAsEC transport routes. Almaty, 2011.

Branch j of the OSJD International Transport Corridor 5: Rtishchevo – Ozinki. The corridor then passes through Uralsk, Aktobe, Shalkar, Kyzylorda, Arys, Almaty, Aktogay and Dostyk (4,238 km) and through Lugovaya, Bishkek to Rybachye (322 km).

On the Almaty - Aktogay - Dostyk section, the route of corridor No. 5j coincides with the EATL railway corridor route II.

Figure 3.12: Branch j of the OSJD International Transport Corridor 5

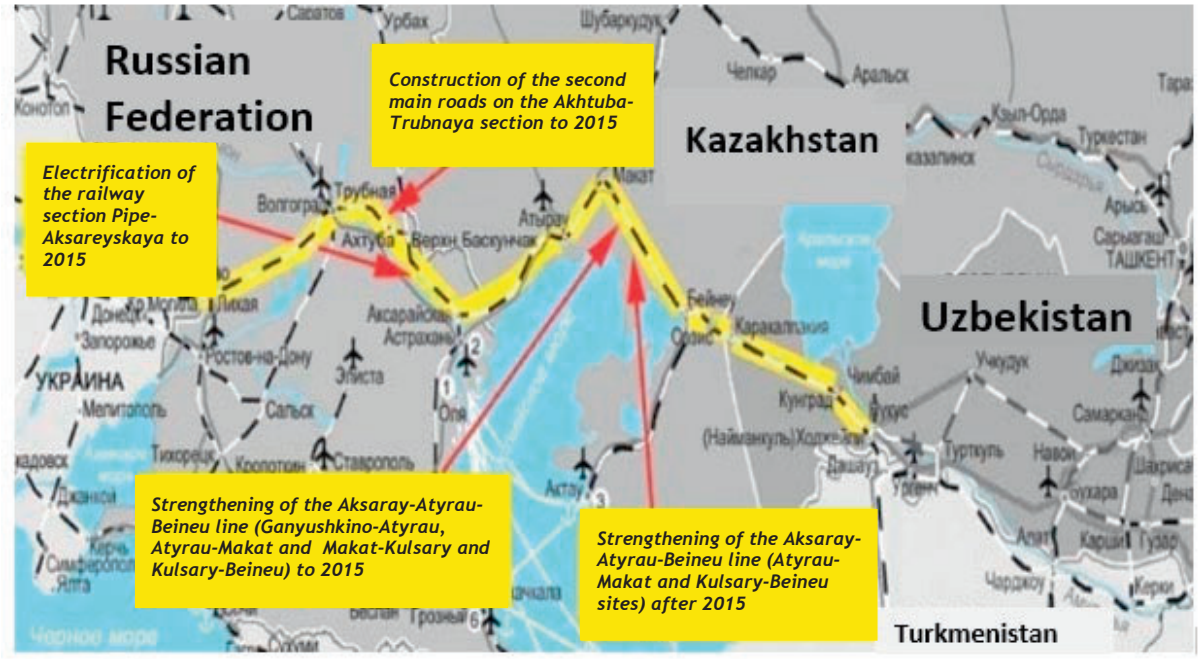


Source: Prospects for the development of the infrastructure of roads and railways included in EurAsEC transport routes. Almaty, 2011.

OSJD International Transport Corridor 8. The main route: Red Tomb - Gukovo - Likhaya - Volgograd - Aksaraiskaya - Atyrau - Makat - Oasis - Karakalpakia - Naimankul - Nukus - Uchkuduk - Navoi. The length is 1,528 km. On the Atyrau – Makat – Beyneu – Nukus section, the route III, V, VI (branch VId) and VII coincides with the EATL railway corridor, and the III, IV and VII routes coincide with the Shymkent - Almaty - Dostyk section.

On the OSJD corridor 8, the export products of Turkmenistan and Uzbekistan are supplied through West Kazakhstan along the northern coast of the Caspian Sea to Russia's Volga region, as well as to Ukraine.

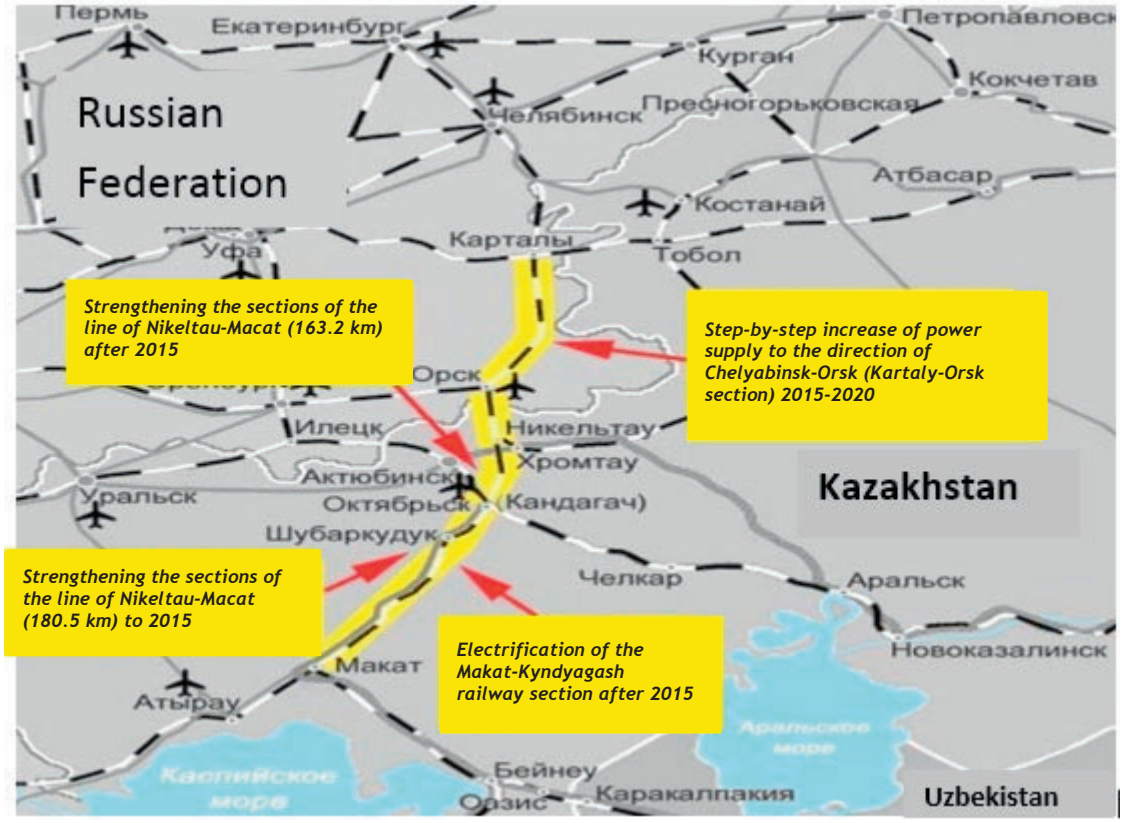
Figure 3.13: OSJD International Transport Corridor 8



Source: Prospects for the development of the infrastructure of roads and railways included in EurAsEC transport routes. Almaty, 2011.

Branch b of the OSJD International Transport Corridor 8: Makat – Kandyagash – Nikeltau – Kartaly (912 km).

Figure 3.14: Branch b of the OSJD International Transport Corridor 8



Source: Prospects for the development of the infrastructure of roads and railways included in EurAsEC transport routes. Almaty, 2011.

OSJD International Transport Corridor 10. The main route is as follows: border of Turkmenistan – Bukhara – Djizak – Khavast – Tashkent – Saryagash – Lugovaya/Bishkek – Aktogay – Dostyk; Aktogay – Lokot – Novosibirsk – Far Eastern ports of the Primorsky Territory of the Russian Federation. The length is 9,005 km. The length through Kazakhstan from Saryagash to Dostyk is 1,521 km and from Saryagash to St. Lokot 2,064 km.

On the Saryagash – Shymkent – Almaty – Dostyk section, the corridor coincides with the EATL rail corridors III, IV and VII.

Figure 3.15: OSJD International Transport Corridor 10

Source: Prospects for the development of the infrastructure of roads and railways included in EurAsEC transport routes. Almaty, 2011.

The OSJD corridor 10, supplies raw materials from Western Siberia are shipped to Kazakhstan, Kyrgyzstan, Uzbekistan and Turkmenistan. In the opposite direction, agricultural products of these countries are shipped.

In order to improve the efficiency of the OSJD corridors, the participating countries of the corridors 2, 5, 8 and 10 have agreed with the proposal of Kazakhstan to connect the following lines:

- Iletsk – Kandyagash – Nikeltau – Tobol, as a branch of the OSJD transport corridor 2;
- Zhetygen – Altynkol, as a branch of the OSJD transport corridor 5;
- Beineu – Uzen – Bolashak on the OSJD corridor 8; and
- Dostyk – Mointy – Zhezkazgan – Saksaulskaya – Beyneu – Aktau port on the OSJD corridor 10.

In this regard, it was decided to update the Comprehensive Plans for improving transport and the development of the OSJD international transport corridors 2, 5, 8 and 10 by 2020 and to make appropriate changes to the Memoranda of cooperation in the field of technical, operational and commercial development of the OSJD Transport Corridors.

3.4 RAILWAY COOPERATION WITH INTERNATIONAL ORGANISATIONS

Kazakhstan is actively involved in the activities relating to the updating of the European Agreement on Main International Railway Lines (AGC) as well as the European Agreement on Important International Combined Transport Lines and Related Installations (AGTC) through its participation in the varius Working Party meetings held at UNECE. In addition, it has been actively involved in the work of the Group of Experts on the creation of Unified Railway Law aimed at creating one legal regime, one contract of carriage and one liability regime for freight transport between Europe and Asia.

The UNESCAP secretariat is currently implementing the following projects: "Development of unhindered intermodal transport services in North-East and Central Asia with the participation of railways in order to expand the Euro-Asian transport connections" and "Facilitation of transboundary movements for international rail transport".

Within the framework of these projects the following areas will be investigated:

- Determining the list of current documentation requirements for intermodal rail transport with road and sea transport segments, as well as border crossing procedures for rail transport;
- Analysis of best available international practices;
- Possible ways of simplifying and streamlining documents and formalities for intermodal rail transport (including seaports and border crossings) between participating countries of the project in North-East and Central Asia.

In April 2016, representatives of UNESCAP held a number of meetings in Kazakhstan on the implementation of these projects with government agencies, representatives of national railway companies and freight forwarding companies.

In 2016, the intergovernmental agreement on Dry Ports entered into force within the framework of UNESCAP, aimed at supporting and developing dry ports of international importance, as a means of stimulating and developing an internationally integrated intermodal transport and logistics system in Asia and ensuring its connection with neighbouring regions.

In light of the growing interest in mutual trade among the countries of South-East Asia and Central Asia, the Caucasus and Europe aimed at attracting additional volumes of cargo for rail transport and ensuring unimpeded transport, work is continuing on cooperation between OSJD and UNESCAP in order to improve the efficiency of rail freight between these two regions.

Kazakhstan Railways participates in the following organizations:

- Central Council of Railway Transport of the Commonwealth and Baltic States (CCRT). The agreement was signed on 14 February 1992 in Minsk, Belarus;
- Economic Cooperation Organization (ECO). Kazakhstan joined in 1992;
- Organization for Cooperation between Railways (OSJD). The agreement was signed by the Department of Transport and Communications of Kazakhstan on 30 May 1995 in Hanoi, Viet Nam;

- Transport Corridor Europe-Caucasus-Asia (TRACECA);
- Shanghai Cooperation Organisation (SCO); and
- Coordinating Transport Council (CTC);

"Kazakhstan Temir Zholy" cooperates with the following international bodies:

- United Nations Economic Commission for Europe (UNECE);
- United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP);
- Intergovernmental Organization for International Carriage by Rail (OTIF);
- International Railway Transport Committee (CIT);
- European Union Agency for Railways (ERA);
- International Union of Railways (UIC);
- Coordinating Council on Trans-Siberian Transport (CCTT); and
- International Federation of Freight Forwarders Associations (FIATA).

Kazakhstan also participates in decision-making on rail transport issues in the Eurasian Economic Community (EEC) and the Organization of Central Asian Cooperation (OCAC). Within the framework of these organizations, uniform regulatory documents have been developed for international freight and passenger transport, tariffs and international transport corridors.

Kazakhstan has bilateral and multilateral agreements on the coordination of rail transport with neighbouring countries. Intergovernmental meetings of commissions have been organized between Kazakhstan and the following countries: Kyrgyzstan, Uzbekistan, Russian Federation, Iran, Turkmenistan, and Turkey. Issues concerning the regulation of rail transport are discussed at these meetings.

Certain adjustments are needed in the work on rail transport to guide its development in accordance with the requirements of international competition and to attract cargo flows through the territory of Kazakhstan.

3.5 SWOT ANALYSIS OF THE RAILWAY SECTOR

The implementation of a Strategy for the development of the railway sector can have multiple effects on the sector. In this regard, a SWOT analysis has been conducted, considering Kazakhstans' strengths and weaknesses in terms of the development of rail transport, as well as the opportunities available to the country and potential threats it may face in implementing the planned activities (table 3.7).

Table 3.7: SWOT analysis of the railway sector in Kazakhstan

Strengths
1. A strategy for the development of rail transport is included in the strategic development plan of Kazakhstan until 2020
2. Favourable location of the country from the standpoint of transport accessibility to world leaders in the production of finished products and consumption of raw materials
3. China's aspiration to increase the volume of cargo transport by land and, above all, by rail

4. Five international OSJD railway corridors pass through Kazakhstan: 1, 2, 5, 8 and 10, linking the country to China, the Russian Federation, the European Union and Central Asian countries
5. Inclusion of four new railway routes in Kazakhstan in the network of international OSJD corridors
6. The international corridor TRACECA passes through Kazakhstan
7. Rapid development of the Trans-Caspian international transport route
8. Huge stocks of various raw materials which are suited to transport by rail
9. Rapid development of container rail transport through Kazakhstan
10. Commissioning of KTZE-Khorgos Gateway Dry portin the special free Economic Zone "Khorgos-Eastern Gate" which has railway connections with international corridors
11. Acceptable level of transit tariffs for the delivery of goods in intermodal transport (rail – maritime – road transport)

Weaknesses

1. The topography of some regions of Kazakhstan and the large proportion of single-track railways reduce the speed of delivery of goods and increase the cost of transport
2. Low level of freight forwarding services in railway transport
3. A small proportion of electrified railways
4. Obsolescence of the locomotive rolling stock, especially of electric locomotives
5. Small average distance of transport of transit cargo, which increases the cost of transport
6. Insufficient railway links between some regions in the west-east direction, which increases the distance of transport and the cost of delivery of goods
7. Difficulties in setting unified long-term tariffs on the Trans-Caspian route
8. Insufficient capacities for cargo processing and inability to form trains at Dostyk station
9. Complex meteorological conditions in the autumn-winter period at Dostyk station, which makes it difficult to handle containers and increases the delivery time
10. The different width of the track of the Chinese and Kazakh railways, which increases the processing time of cargo and increases the cost of transport
11. Low average speed of trains of 44 km/h
12. Low share of intermodal transport with the participation of rail, water and road transport
13. Absence of public-private partnerships in rail transport

Opportunities

1. Attracting loans for the development of the railway sector
2. Development of public-private partnerships in rail transport
3. Involvement of foreign workers and specialists in the railway sector
4. Development of freight forwarding services in rail transport
5. Expansion of production of domestic freight wagons
6. Development of leasing of domestic freight wagons
7. Stimulate the expansion of the private wagon fleet
8. Continued electrification of the railways
9. Apply the practice of flexible tariffs for transit and domestic transport over long distances

10. Expand the railway network in the west-east direction
11. Implement modern customs control systems for goods
12. Upgrade the capacity for cargo processing at Dostyk station
13. Increase the speed of trains
14. Stimulate the development of intermodal transport with the participation of rail, water and road transport

Threats

1. Constant increase in the need for the renewal of railway rolling stock with limited financial resources from the state and the private sector
2. High interest rates on external and internal loans
3. The Russian Federation's aspiration to attract imports and transit cargo flows bypassing Kazakhstan
4. Any major catastrophe in rail transport of a technogenic nature will require significant financial investments to eliminate its consequences

3.6 RECOMMENDATIONS FOR THE DEVELOPMENT OF RAIL TRANSPORT

The completion of the construction and reconstruction of important sections of railway corridors has made it possible to link the eastern and southern regions of Kazakhstan with international OSJD transport corridors Nos. 1, 2, 5, 8 and 10 and to provide access to the ports of Aktau, Kuryk and Bautino.

Figure 3.16: Railways of Kazakhstan as of 1 January 2016

Source:
www.wikidata.org/wiki/Q1069105#/media/File:Railway_Map_of_Kazakhstan_(kk).png.

In recent years, transit container transport has grown at a rapid pace in China-Europe-China trade through Kazakhstan. In 2016, 104,600 TEU passed through Kazakhstan which is more than two times higher than in 2015. Recently, however, economic relations between the United States and China have worsened due to the introduction of additional duties by the United States on a number of imported Chinese goods. If the situation worsens, this may have a knock-on effect on freight traffic to Europe from China.

As set out above, ferrous metals are transported along the OSJD corridor 2 to Kazakhstan from the Russian regions of the Urals and Western Siberia. These are fundamental flows for the rail sector. Coal from the Ekibastuz basin is exported from Kazakhstan to the Russian Federation. The largest Russian consumers of coal are the Sverdlovsk, Chelyabinsk and Omsk regions. Their share is about 95% of the total volume of coal imported from Kazakhstan to the Russian Federation. About a third of the volume of Russian exports to Kazakhstan was transported through the railway border points of Kartaly and Lokot.

Considering the desire of the leaders of EEU countries to develop trade within the union, further growth of cargo flows between the Russian Federation and Kazakhstan along the OSJD railway corridors 2 and 5 can be expected, having a positive effect on the demand for rail services through Kazakhstan.

Based on the review contained in this chapter and the SWOT analysis set out above, the following recommendations can be made:

- Continue electrification of the main railway lines;
- Expand the practice of building a second track on the main railway routes;
- Create conditions for the development and enhancement of the competitiveness of national transport operators;
- Make efforts to agree with all countries of TCTC on a single competitive tariff valid for a long period on international rail corridors;
- Develop freight forwarding services in rail transport;
- Actively use leasing to renew the locomotive and wagon fleet;
- Continue the organization of transport of cargoes by container routes from China to Europe and back through the territory of Kazakhstan;
- Increase the transport of goods in large-tonnage containers;
- Organize high-speed freight trains for the transport of perishable goods from south to north;
- Continue to develop transport infrastructure and introduce traffic automation tools to increase the speed of freight trains;
- In order to rationally use the capacity of the railway infrastructure, provide for an increase in the composition of container trains;
- Expand the free development of tariffs for rail transport on the basis of supply and demand;
- Introduce a system for monitoring the movement of goods;
- Continue work on improving electronic information exchange between border stations, including preliminary information on the approach of cargoes to adjacent stations;
- Expand the transport of goods using the CIM/SMGS consignment note;
- Expand the training of personnel in the railway sector.

4. WATER TRANSPORT IN KAZAKHSTAN

4.1 INLAND WATER TRANSPORT

Water transport in Kazakhstan is composed of maritime and inland water (river) transport. The efficiency of using water transport depends largely on the availability of cargoes and coordination with other modes of transport. Kazakhstan's water transport has significant potential to participate in the transit of goods, as the main rivers in the country flow through the territory of several States.

There are eight water basins in the country: Aral-Syrdarya, Balkhash-Ili, Irtyshsky, Ural-Caspian, Ishimsky, Nur-Sarysu, Shu-Talasskiy and Tobol-Turgayskiy.

Figure 4.1: Water basins of Kazakhstan

Source: https://ru.wikipedia.org.

The total water resources of rivers are 101 km³, of which 57 km³ originate in the country. The rest come from neighbouring States: Russian Federation 8 km³, China 19 km³, Uzbekistan 15 km³ and Kyrgyzstan 3 km³. The inland waterways in Kazakhstan are public and are in state ownership.

The development of water transport, like other modes of transport, is closely linked with industrial development and the rich natural resources of the country.

Shipping in Kazakhstan is possible on rivers such as the Irtysh, Syrdarya, Ural, Ili and Ishim. River transport has been developed in the east in the basin of the Irtysh River, in the west in the Ural and the Caspian basin, and in the south-east in the Balkhash-Ili basin.

The transport of goods and passengers is carried out by private companies, with a fleet of approximately 560 vessels.

Inland water transport accounts for a small percentage of the total volume of transport of just 0.04%. Over the past 10 years, the volume of goods transported by inland navigation has remained practically unchanged. In 2017 it increased by 33% compared to 2016 (table 4.1).

Table 4.1: Volumes of freight and cargo turnover of inland water transport

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Transported cargo, luggage, freight mln. t	2 124.2	2 188.7	2 103.3	2 439.4	2 974.9	3 231.8	3 508.0	3 749.8	3 733.8	3 729.2	3 946.1
Including:											
Inland water	1.3	1.2	0.9	1.1	1.1	1.3	1.1	1.3	1.2	1.2	1.6
Turnover, bln. tkm	350.5	369.7	337.0	385.3	448.8	478.0	495.4	554.9	546.3	518.6	564.0
Including:											
Inland water	0.05	0.06	0.06	0.08	0.08	0.06	0.03	0.03	0.03	0.02	0.03

Source: Transport in Kazakhstan 2007-2017. Statistical collection. Astana. http://stat.gov.kz.

In 2017, turnover increased slightly and amounted to 26,030 million tkm. In 2017, compared to 2010, freight turnover decreased by 1.7 times due to a decrease in the average transport distance which in 2010 was 72.7 km and in 2017 only 18.7 km. In 2017, 1,649,440 tonnes of cargo and 58,700 passengers were transported.

Regional cargo transport by inland waterways amounted to 1.103 million tonnes (92.8%). Among the goods transported 667,500 tonnes (56.2%) were construction materials.

The length of inland waterways at the end of 2018 was 4,151 km (table 4.2).

Table 4.2: Length and density of inland waterways

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Length of all inland waterways in common use, km	4 151	4 151	4 151	4 151	4 151	4 151
Density of inland waterways, km per 1 000 km² of territory	1.52	1.52	1.52	1.52	1.52	1.52
Density of transport by inland waterways per 1 km length:						
Cargo turnover, thousands. tkm	14.9	7.8	6.4	7.4	5.2	5.2
Passenger turnover, thousands passenger km	448.0	223.4	285.2	104.0	282.0	282.0

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

The data in table 4.2 show that the cargo turnover in thousand tkm during the period 2012-2017 decreased almost three times, while passenger turnover decreased by 1.6 times. Considering that the length of inland waterways in this period has not changed, the turnover of river transport has also decreased three times.

River transport is undertaken mainly by non-self-propelled cargo barges (38.6%). Self-propelled dry cargo vessels make up only 5.3%. Since 2015, there are no self-propelled vessels in the river fleet. Barges are mainly used for dry cargo. Only 12.1% are used for liquids. This indicates that it is mostly bulk cargo that is transported by river transport (table 4.3).

Table 4.3: Number of vessels operating in inland water transport

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Total, including:	152	151	142	141	179	171
Self-propelled cargo vessels	10	12	12	8	9	9
Dry	8	10	10	8	9	9
Liquid	2	2	2	-	-	-
Non-self-propelled cargo vessels (barges)	59	54	51	53	69	66
Dry	56	52	49	51	61	58
Liquid	3	2	2	2	8	8
Tugboats	56	56	54	55	74	75
Passenger, cargo vessels	27	29	25	25	27	21

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

The proportion of self-propelled cargo vessels over the age of 27 years is 77.8%, and the proportion aged 47 years or older is 22.2%. Despite the worn out state of the fleet of self-propelled vessels, the fleet is not being modernized. The situation is much better for non-self-propelled cargo vessels. In 2017, the proportion of these vessels increased by 24.5% compared with 2015. However, in 2017, the share of these vessels compared with the previous year decreased by 4.4%. The same situation can be observed for tugboats, the number of which increased by 36.4% in 2017 compared with 2015 (table 4.4).

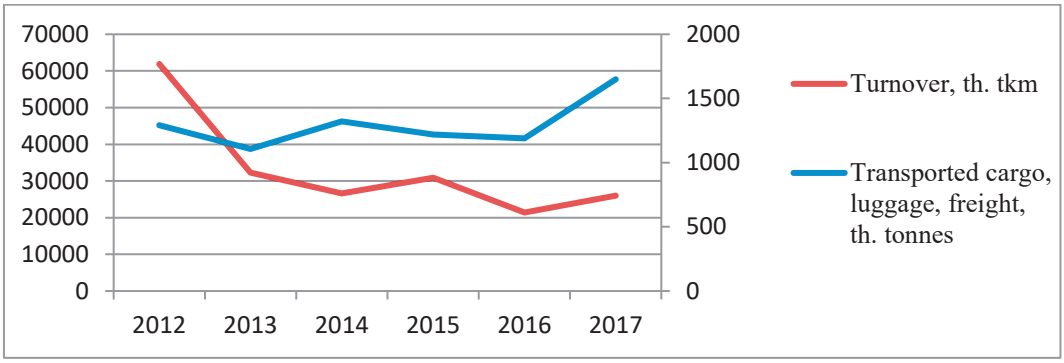
Table 4.4: Age of vessels in inland water transport, percentage

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Self-propelled cargo vessels, including by year of manufacture (%)	100.0	100.0	100.0	100.0	100.0	100.0
Before 1970	10	16.7	16.7	25.0	22.2	22.2
1970 - 1979	40	41.7	41.7	12.5	22.2	22.2
1980 - 1989	40	33.3	33.3	37.5	33.3	33.3
1990 and later	10	8.3	8.3	25.0	22.2	22.2
Non-self-propelled cargo vessels, including by year of manufacture (%)	100.0	100.0	100.0	100.0	100.0	100.0
Before 1970	17.0	11.1	9.8	9.4	11.6	10.6
1970 - 1979	18.6	20.3	19.6	18.9	13.0	12.1
1980 - 1989	52.6	55.6	58.8	56.6	49.3	48.5
1990 - 1999	6.8	7.4	7.8	5.7	5.8	6.1
2000 and later	5.0	5.6	4.0	9.4	20.3	22.7
Tugboats, including by year of manufacture (%)	100.0	100.0	100.0	100.0	100.0	100.0
Before 1970	5.4	5.4	5.6	7.3	14.9	16.0
1970 - 1979	28.6	28.6	27.8	29.1	24.3	21.3
1980 - 1989	39.2	39.2	38.8	38.2	31.1	30.7
1990 - 1999	21.4	21.4	22.2	20.0	16.2	16.0
2000 and later	5.4	5.4	5.6	5.5	13.5	16.0

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

The volume of inland water transport and cargo turnover has been decreasing as shown in the figure below.

Figure 4.2: Key performance indicators of inland water transport in Kazakhstan



Source: Based on table 4.1.

In 2017, the internal waterways of Kazakhstan transported approximately 1,649,440 tonnes of cargo. This was 16% higher than in 2016. A total of 350 thousand tonnes was with the Russian Federation. The turnover in 2017 amounted to 26,030 million tkm. Increasing the volume of cargo turnover has been achieved through the timely implementation of activities to establish conditions for safe navigation on the inland waterways of Kazakhstan and the Russian Federation.

In addition, by increasing the throughput of inland waterways, the interaction of participants in river transport and the reduction of non-physical barriers, volumes of river transport are expected to increase by 1.5 times and ensure competition with traditional modes of transport in regional transport.

Almost the entire volume of cargo is transported domestically and particularly within the regions - 93.8%. In 2015 to 2016, there was no international transport of goods by inland waterways, although in 2012 international transport accounted for 4.2% (table 4.5).

Table 4.5: Key performance indicators of inland water transport

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Transported cargo, luggage, freight, thousands of tonnes	1 290.7	1 106.5	1 320.8	1 218.9	1 188.6	1 649.4
Including type of transport:						
International	54.8	7.2	5.1	-	-	-
CIS countries	54.8	7.2	5.1	-	-	-
Inside the country	121.9	121.8	19.1	96.7	85.5	101.8
Regional	1 114.0	977.5	1 224.6	1 122.3	1 103.1	1 547.1
City	-	-	-	-	-	0.5

	2012	2013	2014	2015	2016	2017
Turnover, mln. tkm	61.9	32.3	26.6	30.9	21.4	26.0
Including type of transport:						
International	32.9	4.3	3.0	-	-	-
CIS countries	32.9	4.3	3.0	-	-	-
Inside the country	19.4	20.3	15.3	17.2	18.8	18.0
Regional	9.6	7.7	8.3	13.7	2.7	8.0
City	-	-	-	-	-	0.04

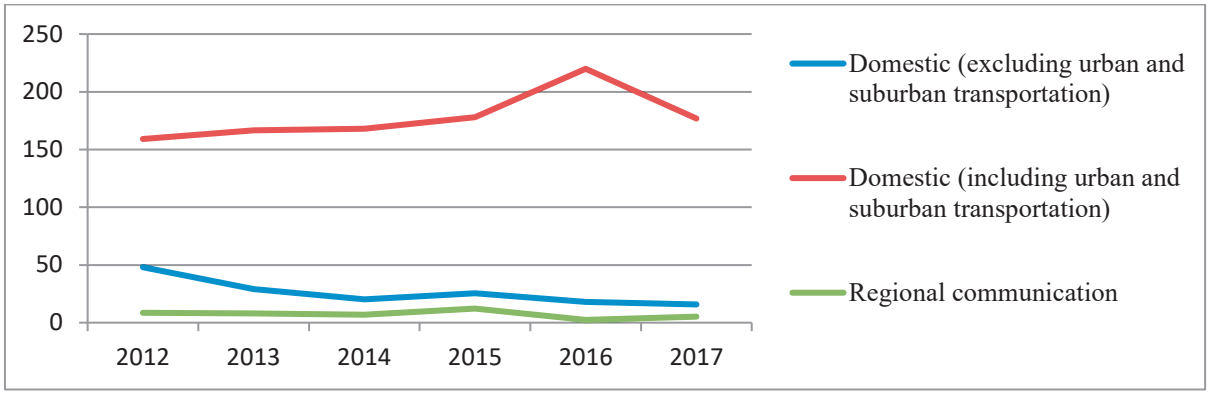
Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

In 2017, the volume of carriage with the Russian Federation amounted to 350 thousand tonnes.[19]

Turnover during the period under review decreased by 2.4 times and there was a sharp decline in regional transport.

During the review, the average distance of carriage of goods by inland water transport in the country as a whole and in regional transport it fell by 3.0 times and 1.6 times respectively, and and in national transport (between regions) it increased by 1.1 times.

Figure 4.3: Average distance of carriage of goods by inland waterways in Kazakhstan



Source: Based on table 4.5.

The number of freight and passenger berths in ports and wharves of inland waterways in common use during 2012-2017 has remained at almost the same level (table 4.6).

[19] https://zonakz.net/2017/12/13/350-tys-tonn-sostavil-obem-gruzoperevozok-rechnym-transportom-mezhdu-rk-i-rf-v-2017-g/.

Table 4.6: Number of berths in ports and wharves

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Number of freight and passenger berths in ports and wharves of inland waterways in common use, units	14	16	16	15	15	15
Of which, number of mechanized freight and passenger berths in ports and wharves	11	11	11	10	10	10
Total length of cargo and passenger berths in ports and wharves of inland waterways in common use, m	2 181	2 201	2 201	1 801	1 801	1 801
Of which, total length of mechanized cargo and passenger berths in ports and wharves, m	2 181	2 151	2 151	1 751	1 751	1 751

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

However, the overall length of cargo and passenger berths in ports and wharves of inland waterways in common use declined in 2017 compared to 2012 by 380 m. Also, the total length of mechanized cargo and passenger berths decreased by 430 m. This shows that inland water transport in Kazakhstan is not being given proper attention.

The main river ports in the basin of the Irtysh River are Pavlodar, Semey, Ust-Kamenogorsk and Bukhtarminsky. The river port of Uralsk and the port of Atyrau have special status on the Ural River. Transport along the Ili River and Balkhash Lake serves the port of Kapchagai and the wharves of Balkhash. In the city of Petropavlovsk on the Ishim River there is a motorized wharf.

All river ports and mechanized wharves are provided with loading mechanisms and storage facilities, as well as the necessary infrastructure for transshipment of goods transported as part of intermodal transport. Currently, they are all privately owned.

In recent years, due to the economic crisis, the volume of cargo handling in ports has declined sharply. The systematic lack of funds to upgrade and restore ports has led to the outdating of fixed assets. In general, ports and wharves, with the exception of Pavlodar river port, are in crisis conditions. The primary task for river transport is the restoration of infrastructure and vessels.

Cargo transport by inland waterways is carried out on the navigable sections of the Irtysh, Ural-Caspian and Balkhash-Ili basins.

The Irtysh basin has 1,719.5 km of waterways from the border of China to the border with the Russian Federation, including 1,116.5 km in the East Kazakhstan region and 603 km in the Pavlodar region.

The Irtysh River is the main water artery of Kazakhstan and the world's longest river-tributary. It is the main tributary of the Ob River and exceeds the length of the Ob River itself. The length of the Irtysh River is 4,248 km, and together with the Ob it is 5,410 km in length. The Irtysh is the longest river in the Russian Federation and the second after the Yangtze River in Asia. The river originates on the border of Mongolia and China and flows into the Ob near Khanty-Mansiysk. It flows through China, East Kazakhstan and Pavlodar Regions (Kazakhstan) and the Omsk, Tyumen Regions and Ugra Regions (Russian Federation). The area of the basin covers 1,643 thousand km^2.

Figure 4.4: The basin of the River Irtysh

Source: https://go.mail.ru/search_images?fr=pult&gp=811620&q=%D1%80%D0%B5%D0%BA%D0%B0%20%D0%B8%D1%80%D1%82%D1%8B%D1%88#urlhash=6008106089889241009 .

In the basin there are three shipping gateways, which provide navigation on the Irtysh River (table 4.7)

Table 4.7: Characteristics of gateways on the Irtysh River

Technical characteristics	*Ust-Kamenogorsky*	*Bukhtarminsky*	*Shulbinsky*
Year of commissioning	1960	1963	2004
Draught, m	42.5	68.6	29.0
Volume of water in the reservoir, billions m^3	0.65	49.8	2.39

Source: http://geol.bobrodobro.ru/835.

The main port in the basin is Pavlodar river port. Its capacity is 13.2 thousand tonnes per working period. The operating mode is round-the-clock. The port has two berths, a cargo length of 650 m and one for passengers of 120 m.

The carriers are both Kazakhstan and Russian organizations: “Pavlodar River Port”, “Nurkas PV”, “Irtyshtrans”, “Altaiimport”, as well as Russian ship owners.

The main categories of goods transported are sand and gravel mixture, gravel, sand, coal and fish products.

In 2015, the basin accounted for 1.184 mln. tonnes of cargo, including 760,000 tonnes destined for the Russian Federation, as well as 20,500 passengers.

Ensuring the safety of navigation and the maintenance of navigable locks in the basin is carried out by the “Irtysh Waterway Enterprise”.[20]

[20] http://transport.mid.gov.kz/ru/kategorii/statisticheskie-dannye-transport.

On average, navigation is allowed for 188 days in the year, from April to November. In the upper reaches the high water level begins in April and falls off in October. In the lower reaches of the Irtysh River the high water level lasts from May to September with a peak in June. In the upper reaches, the freeze usually starts at the end of November, and in the lower reaches at the beginning of November. The ice melts in early April.

In the middle of the 19th century, the Irtysh River was used for trade with China and Mongolia. Early cargoes included skins, furs, wool and cotton and later the natural ore resources from the Altai Region.

In the first decades of the 20th century trade relations developed with China, as well as transport between regions of the country. Imports to China included metals and various consumer goods. Exports from China included livestock products, wheat and rice. Inside the country, grain, wood, coal, ore and building materials were transported.

With the construction of the Bukhtarma, Ust-Kamenogorsk and Shulbinskaya hydroelectric power stations, reservoirs were formed, the total length of which are 552 km.

From the village of Burchun (China) to Lake Zaisan the depth of the Black Irtysh River does not exceed 1 m. Lake Zaisan with the Bukhtarma and Ust-Kamenogorsk reservoir represents one huge reservoir, divided by the Bukhtarma dam. On this stretch, the draughts of vessels are not limited. From Ust-Kamenogorsk hydropower station to Ust-Kamenogorsk port (10 km), the depth is 210 cm. From Ust-Kamenogorsk port to the Shulbinsky reservoir, 124 km, the depth of the river is 105 cm. From Shulbinsky reservoir to the city of Semey (75 km) the depth is also 105 cm.

With the construction of the Shulbin hydroelectric power station, the river was closed, but after the construction of a shipping lock was completed, through navigation between Ust-Kamenogorsk and Semey resumed. The vessel draught below the hydroelectric power station is determined by the water supply from the Bukhtarma, Ust-Kamenogorsk and Shulba reservoirs in accordance with the rules for the operation of the hydroelectric power stations.

The construction of the hydroelectric power station significantly worsened the situation of the Irtysh River, as the water flow decreased by four times, which led to the formation of banks that are not washed away with the low water flow.

Currently, the Irtysh River is used for navigation over 3,784 km from the village of Buran to the mouth of the Ob River. Navigation on the Irtysh usually lasts from late April until mid-November. In 2017, shipping companies transported more than 7.2 million tonnes of cargo including oil, timber, grain and construction materials.[21]

In 2015, a private Chinese company from the Xinjiang Uighur Autonomous Region (XUAR) invited the Russian Federation to export Siberian oil and gas to China on the Irtysh River.

[21] http://omskregion.info/news/59094-na_irtshe_ofitsialno_otkrlas_172_ya_navigatsiya/.

Navigation along the Irtysh River is complicated by the fact that in recent years it has become shallower as a result of the construction of the Black Irtysh - Karamay and Irtysh - Urumchi canals in China. On the first canal, part of the Black Irtysh runoff is transferred to Lake Ulyungur, the area of which has grown by 200 km^2 in recent decades. The second canal is intended for water supply to the Tarim oil and gas basin, where large oil and gas fields have been discovered and are being intensively developed.

In this regard, Kazakh ecologists predict significant shallowing of the Black Irtysh and Irtysh Rivers and Lake Zaisan.

The Ural-Caspian basin has 1,024 km of waterways from the village of Rubezhka to the Ural-Caspian Canal, including 634 km in the West Kazakhstan region and 390 km in the Atyrau region.

Figure 4.5: The basin of the Ural River

Source: https://ru.wikipedia.org/wiki/Файл:Ural_river_basin.png.

The Ural-Caspian river basin covers 415,000 km^2 within the territory of Kazakhstan and includes the catchment area of the Ural River (236,000 km^2), the Volga-Ural interfluve (107,000 km^2) and the Uralo-Emba interfluve (72,000 km^2). The Ural River basin includes part of the territory of the Russian Federation, the West Kazakhstan and Atyrau regions and part of the Aktobe region.

The Ural River is the second largest in terms of length and volume of transport in Kazakhstan.

The average duration of the navigational period along the Ural and Kigach rivers from April to November is 187 days, and 235 days along the Ural-Caspian canal.

The main port in the basin is Atyrau river port. The port is located at the mouth of the Ural River and is able to accommodate vessels with a draught of up to 2.3 m. There was reconstruction of the port infrastructure in 2010. The cargo capacity of the port is 550,000 tonnes per year and it operates around-the-clock.

The carriers are LLP “Estoral” and fishing companies. The main categories of transported goods are sand and gravel mixture, oversized cargoes and fish products.

In 2015, 69.5 thousand tonnes of cargo and 18 thousand passengers were transported in the basin.

The navigable waterways of the Ural River are maintained by two state waterway enterprises:

- The Ural Waterway Enterprise provides navigable conditions on the section from the village of Rubezhka to the village of Inder for a length of 623 km;
- The Atyrau Waterway Enterprise provides navigable conditions on the section from the village of Gora to the Ural-Caspian Canal (maritime part), a length of 333 km.

Among the problems facing the Ural and Caspian Basin are the complexity of navigation, a lack of industry experts and the obsolescence of vessels. The development of navigation in the Ural is also hampered by conservation measures and water taken from the river for irrigation.

The Transport Committee of the Ministry of Investment and Development of Kazakhstan is considering two main options for the development of navigation in the Ural Caspian basin:

- Transport on the northern route, requiring dredging operations within the limits of the Caspian Sea and the Ural River and the modernization of the port in Atyrau; and
- Direct access to the sea, requiring dredging operations on the Caspian Sea, the construction of a new maritime terminal and the construction of a special cargo road.

The Balkhash-Ili basin is one of the largest lake ecosystems on the planet and is a unique natural complex. It covers an area of 413,000 km^2 in the South-East of Kazakhstan and the North-West of China. The basin is home to one fifth of the country's population. The basin area in Kazakhstan is 353,000 km^2. The city of Almaty is in the basin.

Figure 4.6: Balkhash-Ili basin

Source: https://yandex.by/images/search?text=Or-Balkhash pool on the map&lr=157.

The Balkhash-Ili basin has 1,308 km of waterways along the Ili River from the Dubun dock on the Kapchagai Reservoir to Lake Balkhash, including 330 km in the Almaty region and 978 km in the Karaganda region. The length of the shipping route is 350 km, including 240 km of natural river with no guaranteed depth and 110 km on the Kapchagai reservoir. During the life of the Kapchagai reservoir, a shallow bank has formed in the overflow zone, which at times, when the water level in the reservoir decreases, becomes impassable for loaded barges and tugboats. The average duration of navigation from April to November is 222 days.

The main carriers include “Aina-Su”, “Rybprom”, “Fishmarket”, “Alpina XXI” and private shipowners. The main goods transported are fish products.

In 2015, 12.2 thousand tonnes of cargo and 9.1 thousand passengers were transported in the basin.

Maintenance of navigation is carried out by:

- In the Almaty region “Ili Waterway Enterprise”; and
- In the Karaganda region “Balkhash waterway enterprise”.

The total length of the navigable routes of Lake Balkhash is 978 km. Guaranteed depths are provided in normal conditions. Of the 506 km of navigable routes equipped with navigation signs, transport vessels use only 300 km. The rest is used only by fishing vessels. The duration of navigation is on average 210 days a year.

Currently, the ecological situation in the Balkhash-Ili basin area is characterized as unstable, with the vulnerability of Lake Balkhash. This is caused by irrational water use, an inadequate resource management system, interstate water allocation problems and other factors. The lack of a solution to the issue may lead to an ecological catastrophe, the loss of natural heritage, social tensions and environmental migration of the population.

Water transport also plays an important role in the development of tourism. In this connection, it is necessary to improve port infrastructure, including the reconstruction of the port at the resort of Peschanka and other ports along the Irtysh River, as well as the port in the city of Aktau.

The western part of Kazakhstan has a coast with the Caspian Sea, which connects the country with the Russian Federation, Iran, Azerbaijan and Turkmenistan. Through the ports of the Caspian Sea, as well as the rivers and canals of the Russian Federation, Kazakhstan is connected with the Black and Baltic Seas and further with the countries of Western Europe.

4.2 SEA TRANSPORT

On the Caspian coast of Kazakhstan there are three major seaports - Aktau, Bautino and Kuryk.

The port of Aktau started operations in 1963, with the transport of products from the uranium industry and the oil fields of Mangyshlak. At that time, the port included four dry cargo berths. In the 1969-1986 period, four tanker piers and a ferry complex were added. The main cargo transported was oil which accounted for up to 7 million tonnes. Transport of dry cargo did not exceed 300,000 tonnes per year. In 1999, the port underwent its first reconstruction and in 2015 work was undertaken to expand

the port of Aktau to the north. As a result, the carrying capacity of the port has increased from 16.8 million tonnes to 20.5 million tonnes a year.

The port of Aktau is the only ice-free sea port on international routes. It includes a ferry complex, tanker berths, a grain terminal, a cargo terminal, loading and unloading and loading in the Bautino area.

Ferry terminal in the port of Aktau. Between the ports of Aktau and Baku (Azerbaijan) there is constant ferry service. Railway ferries and Ro-Ro ships carrying petroleum products, consumer goods, grain and mineral fertilizers. The ferries cover the 253 nautical miles in 18-20 hours and can usually accommodate up to 54 wagons and 35 heavy trucks. The throughput capacity of the port is two million tonnes per year. The processing of ships takes, on average, 18 hours.

Oil berths have a capacity of 12 million tonnes per year.

The Grain Terminal "Ak Biday Terminal" was established in 2002 for the expansion of grain exports to the countries of the Caucasus and Middle East. The sole shareholder is the JSC "National Company "Food Contract Corporation".

The terminal has 11 silos for the temporary storage of grain up to a total volume of 22,500 tonnes. The capacity of the terminal for transshipment of grain is up to 350 tonnes per hour, which provides the ability to handle up to 3,000 tonnes of grain per day and sea vessels carrying up to 4,000 tonnes of grain per day.

The terminal operates 24 hours a day. It is equipped with active ventilation, high-precision electronic scales and an automated control system.

The Cargo Terminal contains 3 berths with a capacity of 2.5 million tonnes per year. The terminal has 80,000 m^2 of open storage space and a covered transit warehouse area of 2,000 m^2. In addition, the cargo terminal can handle up to 84 tonnes of oversized cargo.

The loading and unloading facilities contains six 10-40 tonne gantry cranes, five mobile cranes with a capacity of 36-84 tonnes, a self-propelled crane on an automobile chassis with a carrying capacity of 53 tonnes, forklift trucks with a carrying capacity of 1.5-28 tonnes, forklift trucks with a lifting capacity of 3 tonnes, five port tractors with a load capacity of 32 tonnes, a backhoe loader and eight semitrailers with a carrying capacity of 50 tonnes.

The construction of the railway line Zhezkazgan - Beineu with a length of 988 km, has reduced the distance of transit transport to 1,200 km from the stations of Dostyk and Altynkol to the port of Aktau.

The above-mentioned installations are responsible for an increase in the volume of goods in transit through the territory of Kazakhstan, including between China and the countries of the Persian Gulf and Europe. They will also contribute to the efficient functioning of the international North-South and TRACECA corridors, and the East-West corridor in Kazakhstan.

In addition, to promote the development of water transport in the Caspian Sea region an international standard transport and logistics hub will be created in the port of Aktau.

In order to improve the level of repair services for large vessels a ship repair facility and shipyard will be built in the area of the village of Kuryk.

The Bautino cargo area, a division of "Aktau International Sea Trade Port", is located in the village of Bautino 150 km from the city of Aktau in the Bautin bay. The port can handle up to 200,000 tonnes of cargo per year. Its main advantage is that it is naturally protected from the elements, which allows cargo operations to be conducted even in stormy weather.

Navigation in the port is year-round, 24 hours a day. Pier one is equipped with two gantry cranes with a capacity of 32 and 5 tonnes.

Cargoes include industrial equipment, construction materials, stone, firewood, food, fodder for livestock, containerized cargo, scrap metals and others.[22]

The Port of Kuryk is located on the east coast of the Caspian Sea, to the south of the port of Aktau in a natural bay in the Gulf, which provides protection in unfavourable weather conditions for cargo handling and Ro-Ro ferries. The ferry facility, once completed will be used primarily for the transshipment of grain, petroleum products, fertilizers, chemicals and other types of cargo. Diesel, mineral fertilizers and barite from Karaganda are exported from here. Consumer goods in containers in transit follow the Trans-Caspian International Transport Route through Altynkol from China. All cargo is delivered to the Azerbaijan port of Alyat, then it goes by rail to Georgia, then by the Black Sea to Europe, Turkey and other countries. Food and furniture from Ukraine are carried on the return journey.

In the port of Kuryk, cargo and containers are transported intermodally: rail/road transport – sea transport – rail/road transport; combined (piggyback) transport on railway ferries and Ro-Ro vessels: rail transport – sea transport – rail transport; road transport – sea transport – road transport. The port handles mainly cargo delivered by rail. Kazakh coal is transported in high-sided wagons.

The construction of this ferry facility in the port of Kuryk began in April 2015. Once completed it will have the following core infrastructure:

- Finger pier with two berths equipped with lifting facilities to service railway ferries;
- Finger pier for Ro-Ro type ferries carrying vehicles;
- A universal berth for the reception of all types of ships, including for transshipment of oversized and heavy cargoes; and
- Other hospitality facilities.

The ferry terminal in the port of Kuryk will serve five ferries a day, providing for the processing of 4 million tonnes of cargo a year.[23]

Cargo arrives in tankers, wagons and containers. Diesel, mineral fertilizers and barite are exported from Karaganda. Consumer goods in containers in transit follow the Trans-Caspian International Transport Route through Altynkol from China. All cargo is delivered to the Azerbaijan port of Alyat, then by rail to Georgia, then by the Black Sea to Europe, Turkey and other countries. Food and furniture from Ukraine are brought back.

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[22] www.portaktau.kz/ru/.

[23] The launch of the ferry complex in the port of Kuryk will increase ttransit via the Caspian Sea. http://24.kz/ru/tv-projects/blogery-2-0/item/129798-zapusk-paromnogo-kompleksa-v-portu-kuryk-uvelichit-tranzit-cherez-kaspij.

Railway carriages are handled at the port of Kuryk, and cargoes at the port of Aktau. The processing of each ferry takes on average 6-7 hours, including the roll-out of wagons and registration of shipping documents and transit declarations. At the station there are customs, veterinary, sanitary and epidemiological services processing documents and checking the goods.

Seven km from the port, a receiving and sorting station is being built to accelerate the formation of unloaded trains. At present, cargo is sorted at Mangyshlak station.

The capacity of the port of Aktau is insufficient for handling cargo transport. This problem arose as a result of a sharp increase in the flow of goods from Turkey and Ukraine. The single ferry pier in the port of Aktau could not cope. To address this situation there are plans to build a vehicle pier in the port of Kuryk and a road from the village of Kuryk to the port of Kuryk.

By 2020, the port of Kuryk is expected to complete construction of shipbuilding and ship repair facilities, which should meet up to 70% of the need for ship repairs.

A new customs clearance zone for cargo and passengers is also planned which will serve as a model for the construction in the future of similar customs points. It will occupy 5,000 m^2 and provide 120 jobs.[24]

Direct shipments on vessels are carried out only for containers. In this connection, it is recommended to create a container terminal in the port to expand the volumes of container handling in this port.

In 2017, the maritime transport fleet of Kazakhstan numbered 66 vessels or 1.4 times more than in 2014 (table 4.8).

Table 4.8: Maritime transport fleet

	2014	*2015*	*2016*	*2017*
All vessels	48	59	65	66
Including:				
Self-propelled cargo vessels	15	16	19	20
Non-self-propelled cargo vessels	19	18	18	18
Tugs	14	25	28	28

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

The number of self-propelled and non-self-propelled cargo vessels is almost identical. The total number of vessels is increasing. The number of tugs doubled in the period 2014-2017. The degree of depreciation of fixed assets in maritime transport enterprises is only 16.4%, which is lower than that of transport enterprises and storage in general (23.6%). In 2016, 8.925 million tenge was invested in maritime transport, which was six times more than in 2015.

Growth in the transport of goods and cargo by sea transport was negative in the period 2012-2017. The volume of goods declined by 47.5%, and turnover by 40.8%. The volume of carriage of goods by sea in 2017 amounted to 0.05% of the total volume of transport by all modes of transport (table 4.9).

[24] State programme for the development and integration of the infrastructure of the transport system of Kazakhstan until 2020. http://adilet.zan.kz/rus/docs/U1400000725.

Table 4.9: Volumes of cargo turnover of maritime transport

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Transported cargo, luggage, freight mln. t	2 124.2	2 188.7	2 103.3	2 439.4	2 974.9	3 231.8	3 508.0	3 749.8	3 733.8	3 729.2	3 946.1
Including:											
Maritime	1.1	1.7	3.6	4.6	4.6	4.0	4.0	3.6	2.5	2.6	2.1
Turnover, bln. tkm.	350.5	369.7	337.0	385.3	448.8	478.0	495.4	554.9	546.3	518.6	564.0
Including:											
Maritime	0.3	0.8	1.4	3.1	3.2	2.7	2.7	2.5	1.6	1.8	1.6

Source: Transport in Kazakhstan 2007-2017. Statistical collection. Astana. http://stat.gov.kz.

Over the past 10 years, the volumes of carriage of goods by sea grew until 2011, then gradually started to decline. The 2017 value is less than half the 2010 volume.

In 2017, the turnover of maritime transport also declined compared to the previous year by 11.1% amounting to 1.6 bln. tkm. Compared to 2011, turnover halved. The average distance of maritime transport was 696 km in 2011 and 762 km in 2017.

Table 4.10: Key performance indicators in maritime and coastal transport by type of message

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Transported cargo, luggage thousands of tonnes	4 048.3	3 984.5	3 630.2	2 476.6	2 565.5	2 102.6
Including:						
International	4 048.3	3 984.5	3 630.2	2 476.6	2 565.5	2 102.6
CIS countries	3 826.3	10.0	3 630.2	-	-	-
Countries outside the CIS	212.5	3 974.5	-	-	-	-
Exports	-	-	-	2 476.6	2 546.0	2 091.3
Domestic	-	-	-	-	-	-
Turnover, tkm	2 752.8	2 709.4	2 468.5	1 597.6	1 772.2	1 584.2
Including:						
International	2 752.8	2 709.4	2 468.5	1 597.6	1 772.2	1 584.2
CIS countries	2 601.9	4.2	2 468.5	-	-	-
Countries outside the CIS	144.5	2 705.2	-	-	-	-
Exports	-	-	-	1 597.6	1 757.4	1 575.4
Domestic	-	-	-	-	-	-

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

The main cargo types in maritime transport are crude oil 86.1%, grain 8.4% and other goods 5.5%, while in inland water transport the main cargoes were coal and construction materials (table 4.11).

Table 4.11: Transport of goods by water transport by type of cargo, thousands of tonnes

	2012		2013		2014		2015		2016	
	Inland water	*Maritime*	*nland water*	*Maritime*	*Inland water*	*Maritime*	*Inland water*	*Maritime*	*Inland water*	*Maritime*
Transported cargo, luggage	1 290.7	4 048.3	1 106.5	3 984.5	1 320.8	3 630.2	1 218.9	2 476.6	1 188.6	2 565.5
Including types of cargo:										
Crude oil	-	3 816.3	-	3 791.8	-	3 630.2	-	2 245.7	-	2 208.1
Coal	21.7	-	19.9	-	21.6	-	29.2	-	16.5	-
Forestry products	-	-	-	-	-	-	-	-	-	-
Building materials	1 055.4	-	811.5	-	1 016.9	-	829.6	-	667.5	-
Grain	-	108.2	-	55.3	-	-	-	178.2	-	214.9
Other goods	213.6	123.8	275.0	137.3	282.3	-	360.1	52.7	504.6	142.6

Source: Transport in Kazakhstan 2012-2016. Statistical collection. Astana, 2017. http://stat.gov.kz.

To date there is no container transport of goods by sea or inland waterways in Kazakhstan.

In order to increase the volume of maritime transport of goods, it is planned to increase the number of dry cargo vessels to 20 vessels by 2020 and to purchase two ferries. In the future, in the field of maritime transport, it is planned to implement measures to occupy a dominant position in the Caspian Sea and to ensure the transport of cargo using intermodal cargo delivery schemes.

It is also planned to upgrade the capacity of the port of Bautino and the construction of terminals in the port of Kuryk, as a result of which, by 2030 the capacity of the seaports of Kazakhstan will be 25 million tonnes.

In the conditions of tough competition in the Caspian Sea, in which state shipping companies or companies with state participation compete, it is necessary to continue providing state support for national shipping companies, which will ensure up to 75% of the transport of goods is handled by seaports in Kazakhstan.

4.3 SWOT ANALYSIS FOR WATER TRANSPORT

The strengths and weaknesses of water transport in Kazakhstan and the opportunities and threats that this sector may face are highlighted in the SWOT analysis below (table 4.12).

Table 4.12: SWOT analysis of water transport in Kazakhstan

Strengths
1. A Water Transport Development Strategy is included in the Strategic Development Plan of Kazakhstan until 2020.
2. The availability of raw materials, which should be transported by water.
3. Possibility to transport raw materials to China from the Russian Federation through Kazakhstan by intermodal transport: railway - Irtysh River - road transport and sea - rail - road.
4. The Ural River sea transport corridor passes through Kazakhstan, linking the Russian Federation with Turkmenistan and the countries of the Persian Gulf.
5. The international transport TRACECA corridor passes through the Kazakh ports of Aktau and Kuryk.
6. Competitive level of tariffs for the delivery of goods in intermodal transport (sea - rail - road).
7. The presence of three national seaports on the Caspian Sea with developed infrastructure.
8. The presence of its own maritime fleet for the carriage of bulk, liquid and general cargoes.
9. Long experience in cargo transport by sea.
Weaknesses
1. High level of wear of the fleet.
2. Absence of domestic shipbuilding/ship repair enterprises.
3. Insufficient development of river port infrastructure.
4. Insufficient number of service vessels.
5. Low level of freight forwarding services in water transport.
6. Absence of flexible tariff regulation for transport by water transport.
7. Low share of intermodal transport with the participation of water transport.
8. The lack of a mechanism for public-private partnerships in the field of water transport
Opportunities
1. Completion of the construction of a shipbuilding/ship-repair plant in the port of Kuryk.
2. Creation of a dry port in the port of Kuryk.
3. Construction of a road pier in the port of Kuryk.
4. Providing state support to national shipping companies.
5. Development of public-private partnerships in the field of water transport.
6. Development of forwarding services in water transport.
7. Improving mechanisms of tariff regulation for water transport.
8. Development of intermodal transport with the participation of sea and river transport.
Threats
1. Constant growth of resources required to upgrade the fleet with limited financial capabilities of the state and private sector.
2. High interest rates on external and internal loans.
3. Possible decrease in demand for raw materials in world markets.

4.4 RECOMMENDATIONS FOR THE DEVELOPMENT OF WATER TRANSPORT

Sea transport is important for the development of Kazakhstan's international trade. Three large seaports (Aktau, Bautino and Kuryk) are located on the Caspian coast of Kazakhstan. The largest port is Aktau. It includes a ferry terminal, oil loading berths, a grain terminal, and a dry cargo terminal. Its capacity is up to 20.5 million tonnes per year. To increase the efficiency of the port's operation, the railway line Zhezkazgan – Beineu, described in chapter 3, was opened in 2015 bringing significant benefits to cross-Kazakhstan rail freight flows. As a result, the volume of transit cargo through the territory of Kazakhstan has increased between China and the countries of the Persian Gulf and Europe, including transit cargoes through the seaport of Aktau.

In order to develop water transport in the Caspian region, it is necessary to create an international transport and logistics hub based in the seaport of Aktau. The construction of the hub would allow both export and import cargoes to be processed. Intermodal transport (road and sea transport) is also widely used.

Considering the importance for the country of export-import and transit transport through sea ports, as well as the efforts of “NC KTZh” to develop the port infrastructure and attract cargo flows, a growth in traffic through the Caspian ports should be expected.

Based on the analysis set out above and the SWOT analysis, the following recommendations can be made in relation to water transport:

- Create attractive conditions for investing in the development of water transport;
- Continue in the investments in and around the port of Kuryk to increase capacity;
- Increase the number of Ro-Ro vessels based on the capacity of the Aktau and Kuryk ports, as well as the volumes of cargo;
- Provide state support to national shipping companies;
- Build a dry port in the port of Aktau to expand the volumes of cargo in intermodal transport;
- Expand the range and improve the quality of forwarding and logistics services provided in the sea and river ports;
- Reduce the share of transport costs in the cost of final products through the development of intermodal transport with the participation of maritime transport;
- Develop river-sea cargo transport between the Russian Federation and Kazakhstan;
- Increase the volume of transport of bulk and container cargo along the Irtysh River between the Russian Federation and China;
- Implement a set of measures to ensure regular navigation in the Balkhash-Ili water basin;
- Develop a mechanism for public-private partnerships in the field of water transport;
- Consider building a shipbuilding and ship repair yard in the port of Kuryk to meet the needs of the sector.

5. CIVIL AVIATION IN KAZAKHSTAN

5.1 CIVIL AVIATION REGULATION

State regulation of civil aviation in Kazakhstan is carried out by the Civil Aviation Committee of the Ministry of Investment and Development.

In its activities, the Civil Aviation Committee relies on various legal acts, orders, documents of the International Civil Aviation Organization, decrees, laws and so on.

5.2 CIVIL AVIATION ASSETS

The aircraft fleet of Kazakhstan amounted to 895 aircraft as of the end of 2017 (table 5.1).

Table 5.1: Number of civil aircraft

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Total number of civil aircraft at the end of the year	783	788	794	840	885	895

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

The aircraft fleet is growing, but it has many obsolete aircraft of both Soviet and foreign production, which are still in service.

There are 23 airports in Kazakhstan. They are in the following cities: Astana, Almaty, Aktobe, Karaganda, Shymkent, Ust-Kamenogorsk, Petropavlovsk, Taldykorgan, Kostanay, Taraz, Kokshetau, Semey, Pavlodar, Zhezkazghan, Atyrau, Uralsk, Balkhash, Kyzylorda, Aktau and Boraldai in the Almaty region. Of these, 17 meet ICAO standards and are allowed to service international flights (table 5.2).

Table 5.2: Airports in Kazakhstan

	Total	*Of these - serving international flights*
Kazakhstan	**23**	**17**
Akmola region	1	1
Aktobe region	1	1
Almata region	2	-
Atyrau region	2	1
West Kazakhstan region	1	1
Zhambyl region	1	1
Karaganda region	3	2
Kostanay region	1	1
Kyzylorda region	1	1
Mangystau region	1	1
Turkestan region	1	1
Pavlodar region	1	1
North Kazakhstan region	1	1
East Kazakhstan region	4	2
Astana city	1	1
Almaty city	1	1

Source: Transport in Kazakhstan 2013-2017. Statistical collection. Astana, 2018. http://stat.gov.kz.

5.3 MAIN AIRLINES

As of 1 January 2018 there were 54 airlines and operators performing regular and charter flights, cargo flights and aviation activities in Kazakhstan. Seven operate flights on a regular basis, 10 of them operate charter flights, four operate cargo flights, 32 are involved in other aviation activities and one is a general aviation operator.

Airlines operating scheduled flights include Air Astana, SCAT, Zhezkazgan Air, Zhetysu, BEK Air, Qazaq Air and Southern Sky.

Air Astana is the largest airline in Kazakhstan, registered in 2001. Its founders are JSC "Samruk-Kazyna National Welfare Fund" (51% of shares) and BAE Systems PLC (UK) (49% of shares). The company uses three airports in the country: Almaty International Airport, Nursultan Nazarbayev International Airport in Astana and Atyrau International Airport.[25]

The Air Astana fleet consists of 33 aircraft of western production with an average operational age of 8.5 years. By the end of 2020, it is planned to increase the fleet of Air Astana to 43 units by purchasing modern Boeing 787, Airbus A320NEO and Embraer 190 aircraft. The route network includes more than 60 domestic and international flights.

[25] http://avia.pro/blog/aviakompaniya-eyr-astana.

Figure 5.1: Air Astana route network

Source: https://airastana.com/rus/en-us/About-Us/Overview/Route-Map.

In 2017, Air Astana recorded an increase in passenger traffic and revenues by 12% and 22%, respectively, after falling in 2015 and 2016. The airline transported 4.2 million passengers in 2017. The growth of cargo transport amounted to almost 30%. Transport capacity increased by 7% following the introduction of new flights from Astana to Delhi and Kyiv, and also additional flights to London, Beijing, Seoul, Moscow, St. Petersburg, Ekaterinburg, Novosibirsk, Omsk, Tbilisi, Tashkent, Istanbul, Bangkok, Dubai and Urumqi.[26]

JSC Airline SCAT was founded in 1997 in Shymkent. It is one of the leading airlines in Kazakhstan. Its main offices are located in Shymkent and it operates flights from Shymkent, Astana, Almaty and Aktau. The airline flies to 50 destinations including international flights to Malaysia, Viet Nam, United Arab Emirates, India, Turkey, China and Thailand. In the CIS countries there are flights to Baku, Astrakhan, Yerevan, Dushanbe, Krasnodar, Kyiv, Mineralnye Vody, Makhachkala, Novosibirsk, Moscow, Samara, Rostov, Tashkent, St. Petersburg and Tbilisi. Domestically it flies to Aktobe, Aktau, Astana, Almaty, Atyrau, Zaysan, Zhezqazghan, Kostanay, Petropavlovsk, Uralsk, Karagandy, Kyzylorda, Taraz, Semey, Urzhar, Shymkent and Ust-Kamenogorsk. The airline also handles cargo transport.

In 2014, SCAT withdrew all Soviet equipment (An-2, An-24, Yak-42 aircraft) from its fleet. These aircraft were transferred to a subsidiary of SCAT, **Southern Sky**. SCAT's fleet consists of 20 aircraft: one Boeing 767-300, three Boeing 737-500, four Boeing 757-200, one Boeing 737-700 NG, one Boeing 737-MAX8, four Boeing 737-300 and six CRJ190 / 200. The majority are owned by the company. The annual passenger traffic is more than 1 million passengers.

In addition, SCAT has a Part-145 certificate, which allows it to provide maintenance services for aircraft of western production.[27]

[26] www.rusaviainsider.com/kazakhstans-air-astana-sees-profit-rebound-2017/.
[27] http://avia.pro/blog/aviakompaniya-skat.

The airline **Zhezkazghan Air** was founded in 1996 by Zhezkazghan Airport (Karagandy Region) and Zhezkazghan Combined Air Squadron. It is owned by KZMS PLC. The company's fleet consists of 5 aircraft: one An-2, one Let L-410, one Yak-40 and two Mi-8 helicopters.

The air carrier provides domestic scheduled flights to Balkhash and Karaganda, as well as charter flights. It also has its own office at Balkhash airport.[28]

JSC Airline Zhetysu was founded in 1996 and is based in the airport of Taldykorgan. Geographically, the airport is located 12 northeast of Taldykorgan on the route from Europe to China. After reconstruction in 2004, the terminal building is now equipped with modern technological and inspection equipment with a capacity of 100 passengers per hour. Flights are carried out to Astana and Almaty by three Yak-40 aircraft. The airport has parking for aircraft of the type IL-76, TU-154, TU-134, AN-24, YAK-42, YAK-40 and other smaller aircraft with the possibility of carrying out commercial services. The aerodrome can be used as an alternate airport.[29]

The airline **BEK AIR** was established in 1999 to carry out VIP flights. In 2008, it acquired a stake in JSC International Airport "Ak Zhol" in Uralsk, which is currently managed by the airline. Today it is the most important low-cost airline in Kazakhstan. The company operates seven Fokker-100 aircraft, most suitable for regional flights.

BEK AIR carries out domestic scheduled air services to/from the cities of Astana and Almaty to the cities of Atyrau, Aktau, Aktobe, Uralsk, Kostanay, Pavlodar, Karagandy, Shymkent, Kyzylorda, Zhezkazghan and between them, as well as to Moscow and St. Petersburg from the city of Uralsk and charter flights to many CIS countries, as well as the United Arab Emirates, Turkey, Mongolia and China.

In the near future the company plans to launch regular flights to other cities of Kazakhstan, as well as charter flights to Istanbul, Sharjah and Urumqi.

JSC QAZAQ AIR is a regional airline that serves domestic routes in Kazakhstan. All shares belong to the JSC "National Welfare Fund Samruk-Kazyna". The company was registered in 2015.

The airline operates three Bombardier Q400 NextGen turboprops of Canadian production. Over the past year, the airline has developed and optimized its route network, which includes 14 internal routes, 6 of which are not served at all by other carriers or have not been for a long time. For example, on the Astana-Taldykorgan route, the fleet has replaced outdated Yak-40 aircraft. The company also serves routes such as Almaty - Taldykorgan, Shymkent - Aktobe, Aktobe - Atyrau and Shymkent - Pavlodar, which have not been served in recent years. The QAZAQ AIR route network has been significantly expanded to include Almaty - Semey - Astana, Atyrau - Uralsk and Atyrau - Aktau.

[28] http://avia.pro/blog/aviakompaniya-zhezkazgan-eyr.
[29] http://taldyk.kz/airport/aboutkz.html.

Figure 5.2: QAZAQ AIR's route network

Source: www.flyqazaq.com/en/menu/information/route-map.

Southern Sky is a subsidiary of SCAT. In 2014, the entire fleet of SCAT was transferred to Southern Sky. The base airport is Shymkent.

The fleet includes An-2, An-3, An-24 and Yak-42. The airline performs domestic flights to Almaty, Astana, Aktobe, Atyrau, Pavlodar, Kostanay and Shymkent, as well as medical flights.[30]

Other airlines in Kazakhstan perform only charter flights. Cargo transport is carried out by Sigma Airlines (Almaty), Jupiter Jet (Almaty) and Kaz Air Trans (Taraz).It should be noted, however, that cargo transport is performed not only by cargo aircraft, but also by passenger aircraft.

The airline **Jupiter Jet** is based at Almaty airport. It offers cargo services for transport of a wide variety of goods, including heavy and oversized cargo internationally.

Sigma Airlines is based in Almaty.Capable of specific cargo delivery of virtually any type of freight, the company provides on-demand or ad-hoc charter service. The company's fleet consists of two Il-76TD aircraft.

The airline **JSC Kaz Air Trans** is based at the airport of Aulie-Ata, which is located 15 km south-west of the city of Taraz. The fleet consists of one Tu-154M aircraft. The airline makes regular flights on the route Shymkent - Istanbul.

5.4 TRANSPORT OF PASSENGERS AND CARGO BY AIR

Official information on the volumes of cargo transport by both cargo and passenger airlines is not available.

At the end of 2016, the Ministry of Investment and Development recognized as unprofitable seven airports in the cities of Semey, Taraz, Zhezkazghan, Taldykorgan, Kokshetau, Petropavlovsk and Balkhash. Currently, these airports serve from 7 to 70 thousand passengers per year. They cannot reach the annual threshold of

[30] www.airlines-inform.ru/world_airlines/Southern_Sky.html, http://avia-pro.net/blog/aviakompaniya-zhetysu.

100 thousand passengers. According to the results for 2016, the most profitable airports were Almaty and Astana. They served 70% of all passengers in the country.

In this regard, regional airports are looking for new sources of revenue. In Petropavlovsk and Taraz, they plan to work mainly with cargo transport with neighbouring States, primarily with China, given that the cargo sector at airports is usually profitable.

The volumes of cargo transport and air cargo turnover in Kazakhstan have not been stable. The data in table 5.3 show that before 2009 the volumes fell, then for two years there was growth, and in the last five years there has been no discernable pattern.

Table 5.3: Basic performance indicators for air transport

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Total cargo transported, mln. tonnes	2 124.2	2 188.7	2 103.3	2 439.4	2 974.9	3 231.8	3 508.0	3 749.8	3 733.8	3 729.2	3 946.1
including:											
by air transport, th. tonnes	25.7	22.7	22.0	28.9	31.6	21.9	23.9	19.1	17.2	18.0	22.5
Cargo turnover, billion tkm	350.5	369.7	337.0	385.3	448.8	478.0	495.4	554.9	546.3	518.6	564.0
including:											
by air transport, mln. tkm	88.1	69.4	67.6	90.1	92.6	59.5	63.1	49.3	42.7	42.9	53.8
Passengers carried, mln. people	11 160	11 325	11 806	13 186	16 647	18 485	20 004	21 281	21 839	22 333	22 720
including:											
by air transport	2.7	2.8	2.7	3.4	4.1	4.5	5.0	5.4	5.9	6.0	7.4
Passenger turnover, mln. pkm	124 366	127 455	130 834	149 065	188 939	213 036	235 738	246 959	251 251	266 784	272 832
including:											
by air transport	5 457	5 495	5 303	6 469	7 838	8 623	9 688	10 586	11 153	11 313	14 384

Source: Transport in Kazakhstan 2007-2017. Statistical collection. Astana. http://stat.gov.kz.

The cargo turnover of air transport in 2007-2014 had a clear growth trend. However, after 2014 there was a decline for two years and only in 2017 did the industry reach the 2014 level again.

The data in table 5.3 show that cargo transport by air has not been the focus of the sector. Despite the fact that in Astana, Almaty and Shymkent large transport and logistics centres have been built, intermodal transport involving air transport has not been sufficiently exploited.

Unlike air cargo transport, the volume of passenger transport during 2007-2017 grew constantly as did passenger turnover. In 2017 there was an increase in passenger turnover by 27.1%.

There was a significant increase in the volume of cargo transport in 2017. Cargo transport to Western and Southern Kazakhstan resumed. However, in general, goods were transported to/from Almaty (more than 90.6%) (table 5.4). At the same time, intermodal transport was used. However, it is not possible to determine how much cargo was transported with the participation of air and land transport due to the lack of such data.

Table 5.4: Cargo and luggage carried by air transport, tonnes

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Kazakhstan	**21 954.2**	**23 873.5**	**19 082.4**	**17 178.2**	**18 015.9**	**22 531.0**
Western Kazakhstan	183.0	227.2	239.4	131.0	x	x
Southern Kazakhstan	768.0	1 062.0	978.0	x	x	x
Eastern Kazakhstan	5.8	-	-	-	-	
Astana city	-	-	-	-	-	-
Almaty city	20 997.4	22 584.3	17 865.0	15 956.2	16 810.9	20 432.0

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

A similar situation occurred with cargo turnover and the volume of cargo transport which both fell. Most cargo was transported through Almaty (table 5.5). In 2017 cargo turnover grew by 25.4% compared to 2016.

Table 5.5: Cargo turnover in air transport, thousand tkm

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Kazakhstan	**59 462.2**	**63 130.1**	**49 273.3**	**42 699.9**	**42 903.5**	**53 793.0**
Western Kazakhstan	367.0	469.3	370.3	189.3	x	x
Karagandy	-	-	-	-	-	-
Southern Kazakhstan	1 100.0	1 517.0	1 350.0	x	x	x
Eastern Kazakhstan	4.8	-	-	-	-	-
Astana city	-	-	-	-	-	-
Almaty city	57 990.4	61 143.8	47 553.0	40 704.6	41 060.5	59 509.0

Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

Over the last five years the volume of goods carried by air in international and domestic transport were approximately the same. However, starting from 2014, domestic transport grew faster (table 5.6).

Table 5.6: Basic performance indicators by type of air transport

	2012	*2013*	*2014*	*2015*	*2016*	*2017*
Cargo, luggage tonnes	21 954.2	23 873.5	19 082.4	17 178.2	18 015.9	22 531.0
including:						
International	11 514.3	12 287.0	9 345.0	8 247.0	8 169.0	10 272.0
CIS countries	2 522.0	3 444.0	5 606.0	2 810.0	-	-
countries outside the CIS	8 992.3	8 843.0	3 739.0	5 437.0	-	-
domestic	10 439.9	11 586,5	9 737.4	8 931.2	9 846.9	12 259.0
Freight turnover, mln. tkm	59.5	63.1	49.3	42.7	42.9	53.8
including:						
International	43.1	45.4	35.8	30.7	30.7	38.8
CIS countries	2.8	10.0	19.0	7.6	-	-
countries outside the CIS	1.7	35.4	16.8	23.1	-	-
domestic	16.3	17.7	13.5	12.0	12.2	15.0

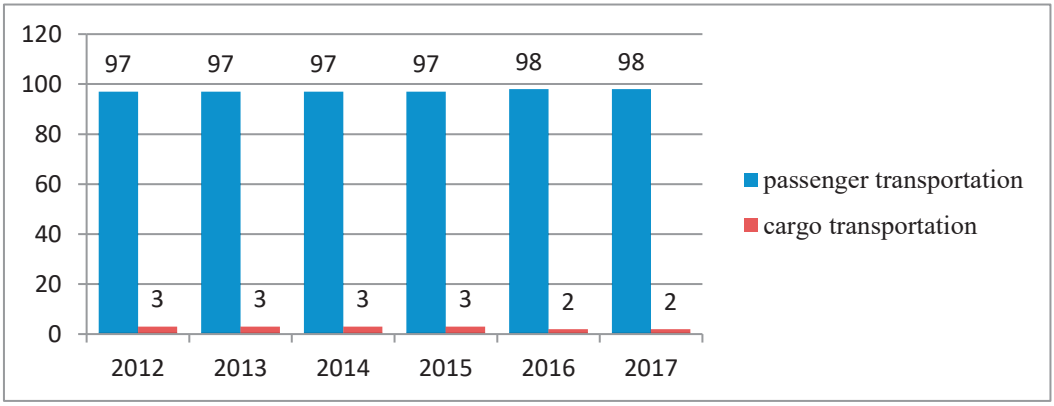
Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

Considering that the average distance of carriage of goods in international traffic is greater than in domestic traffic, freight turnover in international traffic is accordingly much higher than in domestic traffic.

Analysing the transport of goods by type of countries, it can be stated that non-CIS countries accounted for more cargo than the CIS countries, particularly in 2015 where three-quarters of the turnover was outside CIS countries. After 2015, data on the transport of goods to the CIS countries and outside the CIS are not published.

Airlines receive almost all their revenue from passenger transport. Transport of goods represents a very small percentage of their revenues.

Figure 5.3: Revenues of air transport enterprises from cargo and passenger transport



Source: Transport in Kazakhstan 2012-2017. Statistical collection. Astana. http://stat.gov.kz.

The lack of interest of air carriers in cargo transport is also due to the fact that even in large international airports there are no cargo terminals and equipment capable of automatically processing goods. In addition, customs services are not sufficient to handle export-import cargoes, transport and warehouse logistics in air transport are not developed, personnel working at cargo terminals are not trained and many other factors are hampering the growth of transport of goods by this promising mode of transport.

The presence of international transport and logistics hubs and centres in the cities of Almaty, Shymkent and Astana has led to the promotion of cargo transport by various modes of transport, including with the participation of air transport. Nevertheless, they are not contributing to the growth of cargo transport by aviation.

5.5 SWOT ANALYSIS OF THE STATE OF CIVIL AVIATION

The conducted SWOT analysis considered the strengths and weaknesses of Kazakhstan in terms of the development of civil aviation, as well as the country's opportunities and the threats it may face in the development of air cargo transport (table 5.7).

Table 5.7: SWOT analysis of the state of civil aviation in Kazakhstan

Strengths
1. There is a Civil Aviation Development Strategy included in the Strategic Development Plan of Kazakhstan up to 2020.
2. There are 23 airports, of which 17 comply with ICAO standards and are approved for servicing international flights.
3. There are 21 national airlines, including four freight airlines.
4. National airlines serve a wide network of international and domestic routes.
5. Air corridors connecting Africa, Europe and the Russian Federation with the countries of South-East and Central Asia pass through Kazakhstan.
6. The global growth in the volume of cargo transport by air necessitates the development of air cargo transport in Kazakhstan.
7. The development of e-commerce in the world, and especially in China, is contributing to the growth of transport of cargo by air.
8. Higher profitability of air cargo compared to passengers.
9. The large territory of the country is contributing to the development of domestic air traffic.
Weaknesses
1. Low interest of national air carriers in cargo transport.
2. Low level of forwarding services in air transport.
3. Lack of own modern cargo fleet.
4. Obsolescence of the small fleet of Soviet-made aircraft used in cargo transport.
5. Absence of modern cargo terminals at airports for processing cargo flows.
6. Lack of competition in the field of cargo and passenger transport by air.
7. Lengthy customs control procedures by Kazakh customs, which is unacceptable for air transport.

8.	Low share of intermodal transport involving air transport.
9.	Absence of cargo transport by regular air flights.
10.	Small volumes of cargo transport by air.
11.	Need to improve national legislation in accordance with ICAO regulations.
12.	Low level of transport and warehouse logistics in air transport.
13.	Insufficient number of qualified personnel to work in air cargo terminals.
Opportunities	
1.	Creation of joint venture partnerships with foreign investors/airlines.
2.	Attracting foreign air carriers to meet the growing volumes of export-import cargoes.
3.	Expanding destinations for air cargo.
4.	Improving national legislation in accordance with ICAO regulations.
5.	Using airports in Astana and Almaty as transit hubs for cargo handling and aircraft maintenance.
6.	Developing transport and warehouse logistics in air transport.
7.	Organizing regular flights for air cargo on demand.
8.	Creating modern cargo terminals in international airports.
9.	Arranging training for workers in cargo terminals.
10.	Developing public-private partnerships in civil aviation.
Threats	
1.	Increased resource requirements for air fleet renewal with limited financial capacity of the state and private sector.
2.	Limited opportunities to obtain loans for the development of the air fleet by private business.
3.	China's policy aimed of expanding its influence in the field of civil aviation.

5.6 RECOMMENDATIONS FOR THE DEVELOPMENT OF CIVIL AVIATION

Studies have shown that cargo transport by air is not given due attention. Despite the fact that in Astana, Almaty and Shymkent large transport and logistics centres have been built, intermodal transport involving air transport has not been properly developed, which limits possibilities for the urgent delivery of goods.

In Kazakhstan, the prerequisites for the development of air cargo transport have been created with the following:

- A network of aviation lines covering almost the whole country;
- 17 airfields that are allowed to service international flights;
- Freight transport is cost-effective;
- Near the major cities logistics centres have been built or are planned; and
- Regional airports with spare capacity.

Nevertheless, the volume of air cargo is extremely small.

For the development of air cargo transport, it is recommended to create a modern cargo terminal in Almaty airport that would serve as a transit hub for cargo from the Asia-Pacific region to Europe, the Russian Federation and the African continent. Almaty is located in the centre of air corridors. Delivery of goods could be undertaken at the same time as passenger transport to the regional airports of Kazakhstan.

It should be noted that the State Programme for the Development and Integration of the Infrastructure of the Transport System of Kazakhstan until 2020 states that by 2030, it is expected that the country will have modern hub airports with a developed route network.[31] Based on this, the review in this chapter and on the above SWOT analysis, the following additional recommendations should be considered for the development of civil aviation in Kazakhstan:

- Improve national legislation in accordance with ICAO regulations;
- Create a modern system of flight safety and aviation security;
- Ensure state preferences for the formation of a modern air fleet;
- By 2020, acquire 61 aircraft and 30 aircraft for smallscale aviation;
- Ensure the functioning of 70 domestic and 138 international routes by 2020;
- Kazakhstan to improve to 50th place in the ranking of the quality of air transport infrastructure by 2030;
- Ensure that the national air carrier is among the three largest airlines in the CIS and the 100 largest airlines in the world;
- Create cargo terminals at international airports to handle cargo traffic;
- Create conditions for the development of competition in the field of air cargo;
- Promote intermodal transport involving air transport;
- Develop transport and warehouse logistics in air transport;
- Raise the level of qualifications of staff working at cargo terminals;
- Make efforts to use the airports of Astana and Almaty as transit hubs for cargo transshipment and aircraft maintenance; and
- Stimulate private business to participate in public-private partnerships for the development of air cargo transport.

[31] State Programme for the Development and Integration of the Infrastructure of the Transport System of Kazakhstan until 2020.

6. LOGISTICS IN KAZAKHSTAN

In the globalized world economy, logistics plays an important role in the development of a country. Many States have relied on the development of logistics as one of the main factors in stimulating the development of the national economy. In turn, logistics can be a very profitable sector. The world market for transport logistics is estimated at US$ 2.7 trillion, or about 7% of world GDP. The share of transport logistics in developed countries is 13-14% of GDP. For example, in Ireland this indicator exceeds 14.2%, in Singapore 13.9%, in Hong Kong 13.7%, and in Germany 13%.[32] Therefore, this sector is an important source of national income.

The share of logistics in the GDP of Kazakhstan is small. In this regard, the President of Kazakhstan has repeatedly stressed that the development of transport logistics is one of the most important challenges for the economy of Kazakhstan. At the 25th plenary meeting of the Foreign Investors Council held under the aegis of the President, it was noted that Kazakhstan plans to become the largest transit and logistics hub in the Asian region, acting as a bridge between Europe and Asia.

The National Programme for Infrastructure Development “Nurly Jol” for 2015-2019 stated that the formation of a single economic market should be carried out by integrating the country's regions based on building effective infrastructure based on the hub principle to ensure Kazakhstan's long-term economic growth. One of the key objectives of the programme is the creation of efficient transport and logistics infrastructure based on the “spoke” principle.

The strategy “Kazakhstan 2050”indicates that one of the prime objectives for the development of transport and logistics services is to create industrial transport and logistics facilities outside Kazakhstan. To do this, it is necessary to create joint ventures in the region and throughout the world and also to create transport and logistics hubs in the key transit points of the world.

The measures taken in the field of transport and logistics have made it possible to significantly improve the country's position in the Logistics Performance Index (LPI), as evidenced by the results of logistics surveys undertaken in Kazakhstan in 2007, 2010, 2012, 2014, 2016 and 2018 (table 6.1).

Table 6.1: Logistics perfomance index in Kazakhstan

Indicator		*2007*	*2010*	*2012*	*2014*	*2016*	*2018*
LPI		133	62	86	88	77	71
Score		2.12	2.83	2.69	2.70	2.75	2.81
% of the highest score		46.1	60.2	54.2	54.4	54.3	56.5
Effectiveness of customs and border clearance	*rank*	139	79	73	121	86	65
	score	1.91	2.38	2.58	2.33	2.52	2.66
Quality of trade and transport infrastructure	*rank*	138	57	79	106	65	81
	score	1.86	2.66	2.60	2.38	2.76	2.55

[32] Urkimbayev A. In the member countries of the CU 10-12% of GDP is due to logistics. https://kapital.kz/expert/25573/za-schet-logistiki-v-stranah-chlenah-ts-formiruetsya-10-12-vvp.html.

Indicator		*2007*	*2010*	*2012*	*2014*	*2016*	*2018*
Simplicity of the organization of international transport at competitive prices	*rank*	129	29	92	100	82	84
	score	2.10	3.29	2.67	2.68	2.75	2.73
Quality and competence of logistics services	*rank*	126	73	74	83	92	90
	score	2.05	2.60	2.75	2.72	2.57	2.58
Tracking and tracing of cargo	*rank*	117	85	70	81	71	83
	score	2.19	2.70	2.83	2.83	2.86	2.78
Domestic prices of logistics services	*rank*	96	-	-	-		-
	score	2.81	-	-	-		-
Timely delivery of goods	*rank*	120	86	132	69	92	50
	score	2.65	3.25	2.73	3.24	3.06	3.53

Source: Connecting to Compete. 2007, 2010, 2012, 2014, 2016, 2018. Trade Logistics in the Global Economy. Communications Development Incorporated, Washington, D.C.

In 2007 the country ranked 133rd in the LPI. After analyzing the logistics situation, the Ministry of Transport and Communications of the Republic of Kazakhstan, in conjunction with the Transport Operators Union of Kazakhstan "Kazlogistics", developed a “Plan of Measures to Improve the Logistics System of the Republic of Kazakhstan”.The implementation of these measures has made it possible to improve the LPI indicator thanks to the completion of major infrastructure projects in the various transport sectors; improving the efficiency of the customs and border services, which affected the reduction in border crossing times; elimination of physical and non-physical barriers; reduction of the number of documents required in foreign economic activities; tracking of goods throughout the supply chain; as well as expanding the list of services provided by private entities in transport and in the field of transport logistics.

Thanks to the implementation of the Action Plan, Kazakhstan moved from 133 place in 2007 to 77 place in 2016 and 71 place in 2018, advancing 62 places. The republic achieved the greatest results in terms of the efficiency of customs and border clearance, rising by 74 places, as well as the timeliness of cargo deliveries - 70 places. None of the other CIS and Central Asia countries has achieved such success.

In 2018, according to the LPI, Kazakhstan ranked the 71st one among 160 countries identified, rising by 17 positions compared to 2014, ahead of all other EEU countries: Russia (75), Armenia (92), Belarus (103) and Kyrgyzstan (108).

Looking more specifically at the last four years, Kazakhstan’s position on customs efficiency (+56 places), quality of infrastructure (+25 places), ease of organizing international transport (+16 places) and timeliness of cargo deliveries (+19 places) have improved. During the same period though, some of the indicators worsened: tracking and tracing of cargo (-2 places) and the quality and competence of logistics services (-7 places). This indicates that this logistics sector requires fundamental change and development.

The situation has changed significantly over the past two years. The results worsened in infrastructure (-16 places), tracking and tracing of cargo (-12 places) and the ease of organizing international transport at competitive prices (-2 places). At the same time, the situation with respect to the timeliness of cargo deliveries (+42 places),

customs efficiency (+21 places), the quality and competence of logistics services (+2 places) improved.

In the future, Kazakhstan intends improve its position to 40th in the LPI rankings. To accomplish this, the following measures will be pursued:

- Further simplification of customs procedures;
- Reduction of transport permits necessary for export-import operations;
- Creation of attractive conditions for foreign companies that can provide high-level transport-forwarding services;
- Creation of an effective system for goods tracking; and
- Expansion of the network of regular container trains in the main directions of cargo flows, reducing the cost of transport and delivery times.[33]

The position of Kazakhstan between the largest trading partners – China and the European Union – is the main stimulus for the development of the country's transport and logistics system. As already mentioned, the share of Kazakhstan in providing transit is currently less than half a percent and the bulk of goods from China to the European Union goes by sea through the Suez Canal.

The creation of a highly efficient transport and logistics system in Kazakhstan is also dictated by the fact that in the main areas of development of China's economy are the western and central provinces that are well positioned for rail transport through Kazakhstan. From 2000 to the present, the Chinese state has invested 6.85 trillion yuan (US$ 1.04 trillion) in the western regions of the PRC. Though this, the country's authorities are helping the less developed inner regions of China to catch up with the economically developed coastal regions in the east. In 2017, approximately 500 billion yuan (approximately US$ 74 billion) was invested in the western regions of China. They ensured the implementation of 17 infrastructure projects in the areas of transport, protection of water resources and energy.[34]

The accelerated development of the western provinces of China will contribute to the development of logistics and increase the flow of goods through Kazakhstan. The creation of the Eurasian Economic Union with a single customs space has led to the development of efficient transport corridors connecting China with Europe, since customs procedures are carried out only on the borders with China and the European Union countries.

Experts predict an increase in the volume of foreign trade between China and the European Union to US$ 781 billion by 2020, and the volume of freight traffic in this direction will increase to 170 million tonnes, or about 17 million TEU. Since the potential volume of transit traffic through the border crossings of Dostyk and Khorgos could account for 8% of the total turnover, up to 1.4 million TEU could be transported through Kazakhstan.

As noted earlier, Kazakhstan is 71st in the world in terms of logistics development, ahead of all other CIS countries. Nevertheless, the market for logistics services is still not sufficiently developed in the country. Despite the considerable success in

[33] http://transport.mid.gov.kz/ru/news/za-poslednie-dva-goda-kazahstan-podnyalsya-na-11-poziciy-po-indeksu-effektivnosti-logistiki-lpi.
[34] www.chinapro.ru/rubrics/1/16610/print.

the field of logistics over the past 10 years, this sector has grown most in large industrial centres. This is evidenced by the fact that the bulk of enterprises in the transport and warehousing sector are in the two largest cities in the country, where the main financial flows are concentrated, Almaty and Astana. The other regions and cities of Kazakhstan are experiencing an acute shortage of logistics services.

Given the importance of rail transport in international freight traffic, the President of Kazakhstan has set the task of creating a transport and logistics cluster based on the JSC "National Company Kazakhstan Temir Zholy (KTZh)". In this connection, the seaport of Aktau, the free economic zone (FEZ) "Khorgos - Eastern Gate", airports and the terminal network have been transferred to within this company. Kazakhstan Temir Zholy will become an intermodal logistics operator on a transnational scale with all the assets of these companies.

The integration of transport assets into a single structure will ensure the necessary level of coordination and management, the integration of intermodal services and the implementation of the one-stop-shop principle, thereby creating favourable conditions for the realization of the country's export and transit potential. Access to all transport assets will provide the intermodal operator with transport and logistics functions, both within the country and within the framework of the EEU and beyond, as well as the ability to create alliances and enterprises with global players.

Balanced asset management will optimize investment costs, and the linking of transport services will ensure forecasting and predictability of transport, which in combination with the integrated services of a single operator will enable it to offer an efficient transport and logistics product.

As a single centre of transport and logistics services, "KTZh" will become a coordinator of cargo flows, providing transport infrastructure and increasing the efficiency and competitiveness of Kazakhstan's transport corridors. As an intermodal operator it will be in a position to ensure the unification of a single tariff for all types of transport and the optimization of costs for transport throughout the country as well as to simplify the passage of goods and customs clearance.

The development of the transport and logistics system will be facilitated by the involvement of the global operator Dubai Port World in the port and terminal infrastructure of Kazakhstan.[35]

Kazakhstan, together with the Russian Federation and Belarus, established the United Transport and Logistics Company (UTLC) within the framework of the Common Economic Space. UTLC is an instrument for implementing transit potential and is designed to ensure the development of a unified transport and logistics system in Kazakhstan, Belarus and the Russian Federation on the basis of uniform principles for pricing, mutual use of rolling stock, and the introduction of unified technology for transport services in the countries of the Customs Union and the EEU. The railway administrations of the three countries have formed a single market of integrated services based on the principle of a one-stop-shop, unified technology, quality standards and policy.

[35] http://docplayer.ru/41850425-Ao-nacionalnyy-centr-razvitiya-transportnoy-logistiki-biznes-model-funkcionirovaniya-terminala-v-portu-lyanyungan.html.

The activities of UTLC are aimed at coordinating the technological parameters for railway infrastructure development of the main transport corridors. The establishment of UTLC as a global competitor is contributing to the competitiveness of the Customs Union in the global market for transport and logistics services, ensuring the growth of container traffic, and the quality of logistics services for customers.

The optimization of the terms and cost of transport will allow national railway companies to increase the volumes of transit cargo by more than 800,000 TEU by 2020. To this end, Kazakhstan will attract about 5 trillion tenge of public and private investments for the development of infrastructure.

With a view to increasing the fleet of grain wagons, a joint venture has been created with the participation of the Kazakhstan and Russian operators Kaztemirtrans and Rusagrotrans. The number of grain wagons will increase to more than 10,000 units. This will allow Kazakhstan to avoid leasing wagons at great expense from foreign railway administrations for the transport of Kazakh grain.

It is necessary to create a strong network of transport and logistics centres within the country and abroad in order to meet the needs of Kazakh companies for quality logistics services, to implement the transit potential of the country, to engage in a direct dialogue with shippers and to promote the advantages of overland routes through Kazakhstan.

In the European Union, the creation of a Europe-wide product distribution system provides for the presence of several European logistics centres and regional logistics transport and distribution centeres that interact with them. This solution is designed to ensure the choice of the most direct routes and to accelerate commodity flows.

Based on the European experience, it would be advisable to establish a commodity distribution system in Kazakhstan from the network of cross-border international logistics hubs (dry ports) and regional transport and logistics centres in the places of origin of exports and the crossing of transit cargo flows.

The National Programme for Infrastructure Development “Nurly Jol” for 2015-2019 states that it is planned to continue the development of the transport and logistic infrastructure by creating international logistics hubs in large urban centres designed to store and process large volumes of cargo for subsequent delivery to other regions. These hubs will be connected with Astana, as well as with regional transport and logistics centres by road, railway and airline routes or spoke routes. In addition to these spoke routes, regional transport and logistics centres will be linked to roads of regional and national importance. For this purpose, such road corridors as Western China - Western Europe; Astana - Almaty; Astana - Ust-Kamenogorsk; Astana – Aktobe - Atyrau; Almaty - Ust-Kamenogorsk; Karaganda - Zhezkazghan - Kyzylorda; and Atyrau – Astrakhan have been finished.

A dry port has been established in the east of the country in the free economic zone (FEZ) of Khorgos - Eastern Gate. In the west, in the ports of Kuryk and Aktau, as well as in the centre in Astana, dry cargo terminals have been created. This network will promote the development of internal logistics, as well as increase the export and transit potential, both in the western and eastern directions.

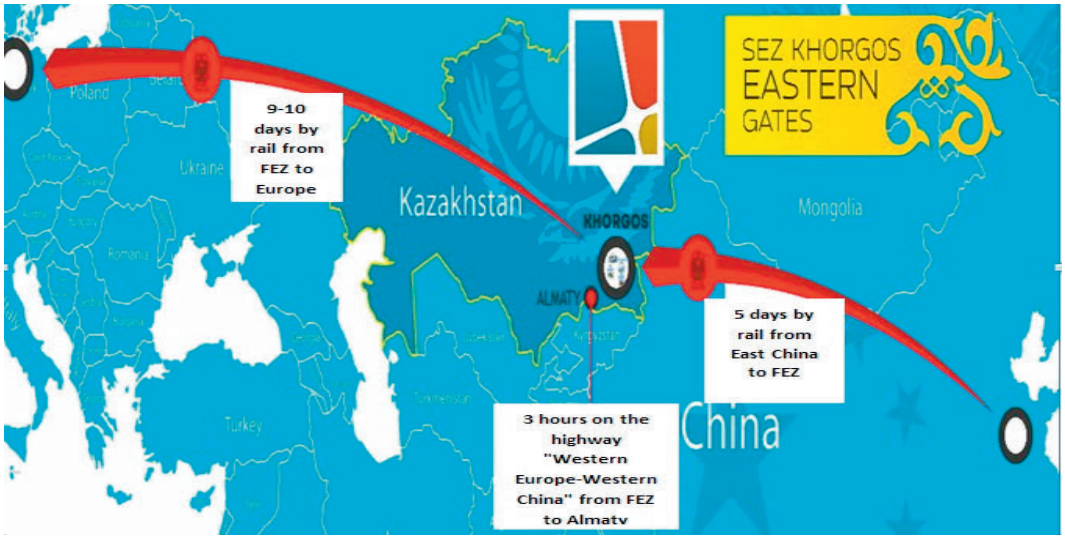
The Khorgos – Eastern Gate FEZ is in the Panfilov district in the Almaty region. It was put into operation in 2016, and its planned operation is until 2035. The total area of the FEZ is 4,591.5 hectares.

The FEZ is intended for the:

- Creation of a favourable investment climate with a view to attracting domestic and foreign investments for the implementation of innovative projects;
- Accelerated development of the eastern region and promoting integration into the world economy; and
- Creation of a large transport and logistics and industrial centre, specializing in trade and export activities, as well as contributing to the development of the transit potential of Kazakhstan.

The Khorgos-Eastern Gate FEZ has a strategic location. It is connected with the railway line Zhetygen – Khorgos and the Western Europe – Western China road corridor. In addition, Almaty International Airport is only 360 km away.

Figure 6.1: Strategic location of the Khorgos - Eastern Gate free economic zone



Source: http://atameken.kz/uploads/content/files/для инвесторов Хоргос.pdf.

In the FEZ there are:

- A dry port which acts as a transport and logistics centre;
- Trade and exhibition facilities;
- An industrial zone;
- Supporting infrastructure; and
- A zone for future developments.

The dry port KTZE-Khorgos Gateway is located on the Kazakhstan-China border, in Kazakhstan, in the centre of the Khorgos-Eastern Gate FEZ. On the south side of the free economic zone is the Western Europe - Western China road, on the west side the Pidzhim road and Altynkol station, on the north side the Zharkent road and the state border of Kazakhstan with China, and on the east side a border checkpoint and the Khorgos river.

Connecting the railway line Zhetygen - Khorgos, the Western Europe-Western China road corridor and the international airport of Almaty, the Khorgos-Eastern Gate FEZ has established Kazakhstan as a regional business centre and a trade and logistics hub.

The total area of the dry port is 129 hectares, the total area of the logistics zone is 225 hectares and the industrial zone is 224 hectares.

Figure 6.2: Map of the Khorgos - Eastern Gate free economic zone

Source: http://atameken.kz/uploads/content/files/для инвесторов Хоргос.pdf.

The dry port KTZE-Khorgos Gateway functions as a large transport and logistics centre and an industrial centre on an international scale. It will service the world market from China to Europe, through the countries of Central Asia, Turkey and the Persian Gulf.

The operator of the dry port is KTZE-Khorgos Gateway LLP, a subsidiary of KTZ Express, in joint management with DP World, the third largest port operator in the world.

Thanks to the experience and management of DP World, KTZE-Khorgos Gateway is a world-class project providing services in accordance with international standards based on efficiency, safety and environmental protection.

The effectively conceived infrastructure of the project actively promotes the development of trade and economic relations between East and West. Also, new logistics solutions significantly reduce costs in the supply chain and accelerate delivery times to world markets.

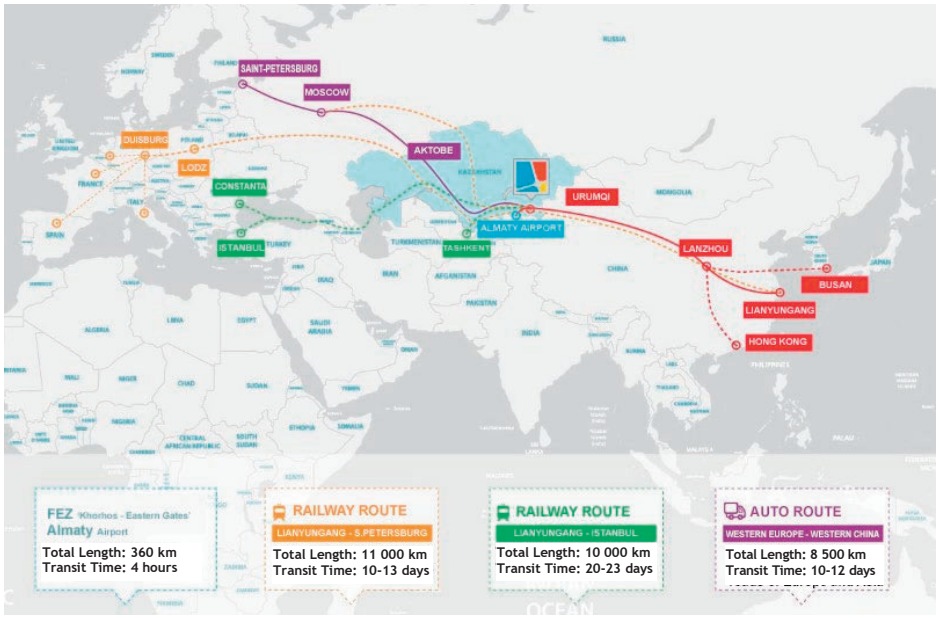
The dry port KTZE-Khorgos Gateway is an evolving intermodal logistics hub, which services cargo operations, such as trucking and container operations, reshipping, terminal handling and additional logistics services.

The dry port is connected with cargo terminals in Europe and Asia by rail and water routes. Cargo is carried through the “West Gate” of the seaport of Aktau on the Caspian Sea.

Almaty International Airport with a cargo terminal of 5.5 hectares is located 360 km from the FEZ. The management company offers a single customs service integrated with the airport's cargo terminal. The average flight time from the airport to any European city is about five hours.

The Khorgos – Eastern Gate FEZ has direct access to the 4-lane Western Europe – Western China motorway with a total length of 8,445 km, ensuring the delivery of goods from China to Europe within 10 days.

Figure 6.3: Intermodal capability of the KTZE - Khorgos Gateway dry port



Source: http://atameken.kz/uploads/content/files/для инвесторов Хоргос.pdf.

It is expected that by 2020, cargo flows through the Khorgos - Eastern Gate FEZ will amount to 170 million tonnes of cargo. It is planned that up to 6% of Chinese exports to Europe will be transported by rail. At the same time, the volume of container transit will be 1.7 million tonnes.

The operational activities of the dry port include:

- Acceptance and dispatch of trains;
- Transshipment of goods from wagons of a gauge of 1,435 mm into wagons of a gauge of 1,520 mm and vice versa;
- Transshipment of road trains;
- Transshipment of vehicles (wagon - wagon, truck - wagon);
- Formation of container trains;
- Warehouse operations and a container site: loading, sorting, storage, dispatch of cargoes, etc.;
- Storage of dangerous goods and cargoes with temperature requirements;
- Scanning, weighing, packing/unpacking; and
- Customs procedures and insurance providing guarantees for all types of risks.

The dry port has the following capacity:

- A container area for 18,000 containers a day;
- A container terminal with six loading and unloading places;
- A terminal for packaged goods on narrow and wide gauge track;

- A terminal for bulky goods;
- A terminal for explosives and dangerous goods;
- A terminal for goods with temperature requirements;
- An area for sanitary-veterinary control;
- Railway tracks totalling 25 km in length (narrow and wide gauge); and
- Two warehouses with an area of 5,000 m^2 each, including cameras with a climate control function of 700 m^2 each.

The main advantages of the dry port include:

- Access to the Western Europe - Western China motorway.
- Fast train handling time;
- Intermodality;
- The possibility to consolidate cargo from different modes;
- Safety and security of cargo in accordance with DP World standards;
- Minimal probability of loss of cargo;
- Online cargo information;
- Information in real time, including photographs of cargo/containers available on the website;
- Services for the formation of container trains in various directions;
- A fixed on-line schedule for the reception and dispatch of container trains;
- Providing new opportunities for business development thanks to the convenient location of the logistics and industrial zones;
- Tax benefits (exemption from VAT, land tax and property tax);
- Preferential customs treatment (exemption from customs procedures for goods imported into the territory of the FEZ);
- Simplified procedures for employment of foreign citizens;
- Strategically important location (at the crossroads of the old and new Silk Roads and the centre of the Eurasian continent); and
- Open access to a wide market (Eurasian Economic Union, Central Asia, China, Europe, Turkey and the Persian Gulf countries).[36]

The dry port is intended as an international logistics hub in Central Asia. To facilitate this, a railway line connecting Kazakhstan and Iran via Turkmenistan has been put into operation. Trains with goods and raw materials from the Russian Federation and Asian countries can travel to the port of Bandar Abbas in the south of Iran. This port provides access to major sea trade routes. The total length of the railway line Uzen (Kazakhstan) – Gyzylgaya – Bereket – Gyzyletrek (Turkmenistan) – Gorgan (Iran) is 935 km. The territory of Kazakhstan accounts for 130 km, and the territory of Iran

[36] https://kazakh-tv.kz/en/view/news_kazakhstan/page_150603_construction-of-dry-port-facilities-at-%E2%80%98khorgos-eastern-gate%E2%80%99-fez-under-way.

accounts for 82 km. At the start of 2018, the volume of cargo transport between Kazakhstan and Turkmenistan amounted to 1.4 million tonnes.

The opening of the North-South transport corridor with access to the Persian Gulf will increase both the volume of transit goods through Kazakhstan and export opportunities for the country. The planned volume of transshipment of cargo is up to 10 million tonnes per year. In addition, Kazakhstan plans to build grain terminals on the border of Turkmenistan and Iran for grain exports to the east.

The construction of the largest transport and logistics centre in Astana was completed in 2015 by Continental Logistics, which is actively developing a network of transport and logistics centres across Kazakhstan. Starting in 2015, specialists from Continental Logistics successfully developed integrated logistics services for 3PL operators in Kazakhstan.[37]

The transport and logistics centre (TLC) in Astana is located on the national road from Karaganda to Astana, near the ring road and Sorokovaya railway station.

The TLC comprises dry warehouses with an area of 29.3 thousand m^2 (including a warehouse for temporary storage – 4,541 m^2, a mezzanine – 1,176 m^2, shelf storage – 38,253 pallet places), a climate controlled warehouse – 13,300 m^2 (a refrigerated zone – 5,771 pallet places (0 ± 5°C), frozen storage – 4,150 pallets (- 18°C), a controlled atmosphere zone – 577 m^2, a warehouse for temporary storage - 580 m^2), a distribution centre – 25,000 m^2, a container area – 70,000 m^2 and a shopping centre – 24,000 m^2.

There is also a customs clearance centre operating as a one-stop-shop. The TLC in Astana is an intermodal centre benefitting from rail and road transport. A total of 5 km of access railways are connected to the warehouses.

According to the warehouse management system, goods enter the warehouse and are automatically entered into a database, which fixes their place of storage. Various strategies are used for warehouse management, warehouse operations, including scheduling of shipments, automatic marking of compliance and other operations. The use of advanced technologies allows the speed of loading and unloading of goods to be significantly increased. The capacity of the TLC is up to one million tonnes of cargo per year and about 850 new jobs have been created.

In addition to the creation of large international logistics hubs in Kazakhstan, considerable attention is being paid to the development of the domestic transport and logistics network. Transport and logistics centres will be built in the major cities of Aktobe, Pavlodar, Almaty, Uralsk, Atyrau, Aktau, Kostanay and Ust-Kamenogorsk.

Hubs will be created for storage, processing and consolidation of goods in regional centres. In the long term, these large regional logistics centres will be connected with the central hub in Astana according to the “spoke” principle. The construction and reconstruction of roads between central and regional logistics hubs are planned in the framework of the Nurly Zhol programme until 2020.

Regional logistics centres will create logistics infrastructure through which goods will be distributed to smaller logistics centres intended for storage, processing and consolidation of goods.

[37] http://c-l.kz/kontakty/novosti/38/.

In December 2017, a class A transport and logistics centre, which distributes goods imported from China and the Russian Federation in the southern regions of Kazakhstan (Zhambyl and Kyzylorda regions and Almaty) was put into operation near the airport in Shymkent.

Figure 6.4: Transport and logistics centre in Shymkent

Source: http://c-l.kz/o-tlts/tlts-v-g-shymkent.php.

The total area of the TLC is 34 hectares. Its main advantages are its proximity to the new railway terminal, the possibility to deliver goods by road and rail, the siting of the facility away from populated areas and the 24-hour operation of its warehouses.

The Shymkent TLC offers a full range of logistics services including secure storage, temperature control, selection of orders and shipment of goods of client companies, as well as additional services related to the supply, cleaning and unloading of railway wagons and large-tonnage containers, customs registration, sorting of defective goods, inventory and other services.

The TLC fully complies with the requirements for class A warehouses according to Knight Frank's international classification.

The TLC comprises a dry warehouse with an area of 10,400 m² (warehouse for temporary storage – 2,300 m², mezzanine – 1,000 m², shelf storage – 12,788 pallet places), climate controlled warehouse –10,400 m² (refrigerated zone – 3,250 pallet places (0 ± 5°C), frozen storage – 2,560 pallets (- 18°C), controlled atmosphere zone - 609 m², warehouse for temporary storage – 4,125 m²), container area – 40,000 m², and shopping centre – 2,500 m².

The warehouse complexes are equipped with high-rise reach stackers and automatic docks, which will significantly increase the capacity of the loading and unloading zone by up to 1,000 pallets a day.

It is planned to build a TLC in Aktobe. The total area will be 40 hectares.

The main advantages of the TLC will be its direct access to the highway and proximity to the railway at Aktobe station, which will allow it to carry out intermodal transport.

The TLC will include the offices of Kazakhstan Temir Zholy and KTZ receivers, the offices of state control authorities (phytosanitary and veterinary), veterinary examination rooms, vehicle weighing facilities and support facilities.

The following facilities will be part of the TLC:

- Dry warehouse with an area of 19,000 m², including a warehouse for temporary storage (4,000 m²);
- Climate controlled warehouse – 10,000 m²;
- Container area – 26,500 m²;
- Warehouse for temporary storage – 7,000 m²;
- Administrative buildings and facilities – 4,000 m²;
- Customs clearance centre – 1,900 m²;
- Inspection complex; and
- Vehicle repair workshop and garage – 1,500 m².

In addition to regional transport and logistics centres, residents and non-residents of Kazakhstan can create their own warehouse network for the servicing of their production.

Systemic work to improve the quality of transport and logistics services is being carried out including the reduction of transport time through route optimization, reduction of transport costs, cargo security, optimization of tariffs, training and retraining of personnel, etc.

Kazakhstan also needs to develop an international strategy for the further promotion of foreign markets by creating and developing terminal and service infrastructure and a modern sales network outside the country, mainly on trade routes between Asia and Europe. To facilitate this, terminal capacities should be constructed or rented in the seaports and dry ports of the Caspian Sea, Black Sea and Baltic Sea, as well as in China, the Russian Federation, the European Union and the Persian Gulf.

The network of transport and logistics centres, linked by a centralized management system and a single technological process, will provide Kazakhstan with international transport corridors and access to key sea trade routes in South-East Asia and Europe.

The terminal in the port of Lianyungang on the east coast of China was created as a result of the implementation of activities outlined by the Kazakhstan 2050 strategy to expand the country's presence in key logistics centres of other countries. The terminal is connected with Kazakhstan by a road corridor and railway line.

The logistics terminal in Lianyungang port is also connected by rail to a number of major Chinese ports such as Shanghai, Ningbo, Qingdao and others, as well as by sea with the Japanese port of Osaka and the port of Busan in the Republic of Korea.

KTZ Express, together with its Chinese partners, operates a Kazakh-Chinese terminal in the port of Lianyungang (China).

Container trains run regularly from Lianyungang port to Kazakhstan, Iran, Turkey, Central Asia and Europe.

Terminal services in the port of Lianyungang include cargo handling, cargo storage, cargo consolidation, cargo distribution, container shipment from the terminal, a temporary storage warehouse, etc.

The terminal in Lianyungang also provides the opportunity for processing and transshipment of transit cargo from the countries of South-East Asia and North America, as well as goods exported from Kazakhstan. The delivery time of goods has decreased from 45 to 10-15 days.

An important issue for transport through the terminal is the use of uniform tariffs for the carriage of goods, which will reduce the cost of exports and imports. It is planned that the terminal will be able to service over 500,000 TEUs by the end of 2020.

Kazakhstan should also create its own terminals in the Chinese centres of Urumqi and Chongqing, which would allow it to influence the formation of the cargo flows, conduct direct dialogue with the shippers and promote the advantages of overland routes through Kazakhstan. In addition, given the great potential for Kazakhstan's agricultural exports, primarily grain and meat, joint ventures should be set up to build or purchase trade and logistics facilities in the Russian Federation. This could lead to increased meat exports to foreign markets of 180,000 tonnes by 2020 and promote Kazakhstan’s meat in the Siberian regions of the Russian Federation.

The effectiveness of logistics depends not only on the level of development of transport infrastructure and optimization of supply routes, but also on the availability of modern warehousing. Currently in Kazakhstan, and especially in the regions Currently there is not enough warehouse space of class A or even B.

6.1 SWOT ANALYSIS OF THE LOGISTICS SECTOR

The development of the logistics sector in Kazakhstan faces risks that may hamper the achievement of the planned results. In this regard, a SWOT analysis has been conducted, examining the country’s strengths and weaknesses in terms of logistics development, as well as its potential and the threats it may face in the course of implementing the planned activities (table 6.2).

Table 6.2: SWOT analysis of Kazakhstan's logistics sector

Strengths
1. Desire of the country's leadership and business to develop transport logistics
2. High demand for Kazakh raw materials and goods in external and internal markets requires optimization of transport costs
3. Removal to the external borders of the EEU of customs clearance of cargo promotes the growth of freight traffic and the development of transport and warehouse logistics
4. Interest of China, Kyrgyzstan, Tajikistan and Uzbekistan in the development of land corridors through Kazakhstan contributes to the need for the development of logistics
5. Delivery of goods by intermodal transport requires the use of logistics
6. Availability of free economic zones that need to develop logistics
7. Need to build modern transport and logistics centres
Weaknesses
1. Low level of logistics services
2. Insufficient number of own terminal networks outside Kazakhstan, which increases logistics costs for cargo processing

3.	Lack of a logistics management system
4.	Insufficient transport links between regions in the West-East direction, which increases logistics costs
5.	Low level of automation in the field of logistics services
6.	Low level of use of logistics for export, import and transit operations
7.	Lack of third and fourth party logistics operators in the country, especially in remote regions
8.	Low level of interest of business in the development of public-private partnerships in logistics

Opportunities	
1.	Adoption of the State programme for the development of the logistics sector in Kazakhstan
2.	Development of an Action Plan to improve the logistics performance index (LPI) and to reach 40th position in the world for this indicator
3.	Creation of a three-tier network of transport and logistics centres
4.	Expand the practice of creating transport and logistics centres outside the country to reduce logistics costs
5.	Efforts to attract export cargo flows from Japan and the Republic of Korea through the terminal in Lianyungang
6.	Attract foreign logistics operators
7	Make efforts to develop transit air flights and create a transshipment hub in Astana and Almaty
8.	Introduce the specialty course “Logistics” in universities

Threats	
1.	Lack of financial resources to create a wide network of transport and logistics centres and terminals, both in Kazakhstan and abroad
2.	Limited opportunities for obtaining loans in the logistics sector
3.	High interest rates on external financial resources
4.	Lack of interest of private business in public-private partnerships in the field of logistics
5.	Possibility of cargo transport between China and the European Union bypassing Kazakhstan
6.	Desire of the Russian Federation to develop its own logistics for the export-import of goods using Russian logistics operators

6.2 RECOMMENDATIONS FOR THE DEVELOPMENT OF LOGISTICS

The creation of a highly efficient transport and logistics system in Kazakhstan is dictated by the development of the western and central provinces in China that are well positioned for rail transport through Kazakhstan.

Based on the European experience, a network of international logistics hubs (dry ports) should be established in Kazakhstan as well as transport and logistics centres in the places of origin of exports and border crossing of transit cargo flows. These hubs should be connected with Astana and with transport and logistics centres by road, rail and airline routes. In addition to radial routes, transport and logistics centres shold be linked by roads of regional and national importance.

Drawing on the experience of creating a dry port in the Khorgos - Eastern Gate FEZ, similar dry ports should be established in the west in the ports of Kuryk and Aktau and also in the centre in Astana. Such a network would contribute to the development of domestic logistics, as well as increase the export and transit potential, both in the western and eastern directions.

In addition to creating large international logistics hubs, an internal transport and logistics network should be developed. Transport and logistics centres need to be built in the large cities of Aktobe, Pavlodar, Almaty, Uralsk, Atyrau, Aktau, Kostanay and Ust-Kamenogorsk.

In the long term, the TLCs will be connected with the central hub in Astana according to the "spoke" principle. To build such a network, the construction and reconstruction of roads is planned between the central and regional TLCs in the framework of the "Nurly Zhol" programme until 2020.

Regional TLCs will create a logistics infrastructure through which goods can be distributed to smaller logistics centres intended for storage, processing and consolidation of goods.

For the further development of transport logistics it is recommended to:

- Introduce a system for the simplified passage of goods across borders through effective organization and regulation of customs and technological procedures;
- Improve existing standards and tariff policies;
- Attract large investors, including domestic ones, to invest in the development of the transport complex of the country by creating favourable conditions for them;
- Improve the legal framework for the transport of goods, especially with regard to international container transport;
- Choose the optimal siting of transport and logistics complexes taking into account the prospects for the development of the region and international transport corridors; and
- Create favourable conditions for the effective integration of transport and logistics systems into international transport services markets.

Furthermore, the following additional recommendations for the development of logistics can be made:

- Provide state support for the integration of the transport and logistics infrastructure of Kazakhstan into the Euro-Asian transport and logistics system;
- Create a three-level system of logistics centres: three dry ports (Khorgos - Eastern Gate, Astana and the Aktau port area), logistics centres in large cities and a network of modern small logistics centres in other regions;
- Expand the practice of creating logistics centres in the countries where the main cargo flows originate;
- Provide conditions for increasing the competitiveness of the country's transport and logistics system;
- Determine the organization responsible for the development of logistics;

- Approve the reporting form for logistics activities;
- Legally bind the organization and entrepreneurs carrying out logistic activities and submit reports in accordance with established procedures;
- Create the necessary conditions for attracting external freight traffic to the country's transport routes;
- Considering the importance of the Trans-Caspian Corridor for the country's economy, create an effective network of logistics operators at the points of origin and transshipment of goods;
- Apply intermodal transport principles taking into account optimal schemes for the interaction of the different modes of transport;
- Move from the practice of competition with Russian transport routes to competition in the field of logistics;
- Provide state support for creating the infrastructure of the logistics system;
- Develop the transport and logistics infrastructure in the regions;
- Ensure efficient functioning of customs logistics;
- Reduce logistics costs in supply chains; and
- Open courses on logistics in universities.

7. LEGISLATION IN THE TRANSPORT SECTOR

7.1 THE REGULATORY AND LEGAL FRAMEWORK IN THE FIELD OF TRANSPORT

A listing of relevant legal instruments in the field of transport is provided in the Annex to this study. A review of the existing legislative and regulatory framework has shown that much has been done to improve the legislative framework in the field of transport, customs and trade, but that there are still areas where further legislation needs to be pursued.

The improvement of legal support for the transport sector must be carried out taking into account the fact that transport legislation should:

- Provide legal regulation not only for transport in general, but also for each mode of transport: rail, road, water and air;
- Be harmonized as closely as possible with the relevant legal norms of neighbouring countries and other trading partners. At the same time, national legislation and bilateral and multilateral treaties and agreements should not conflict with international conventions and agreements on transport.

Improvements in transport legislation of Kazakhstan should focus on addressing:

- The lack of a clear delineation of powers of ministries and departments in the organization of management and control of the transport sector as a whole and of certain modes of transport;
- The need to improve the accountability of the large number of small operators providing transport and logistics services;
- Insufficient information support for participants in the transport industry on normative legal acts; and
- Inadequate measures to counter corruption in transport that allows certain participants not to comply with the provisions of the law.

A fully-fledged transport services market has been created in the road transport sector, where enterprises with different ownership as well as individuals are represented. More than 50% of carriers in road transport are private individuals.

Effective state regulation of the transport market can only be carried out if complete and objective information is received by the Committee on Statistics of the Economics Ministry.

According to the Law on State Statistics, legal entities are obliged to submit information on transport activities to the Committee on Statistics.[38] For non-core companies, information on property and financial results is sufficient. Individual carriers must submit performance reports in accordance with the requirements of the law. However, further explanation of this requirement is not given. Consequently, more than half of carriers do not submit reports on their activities to the statistical bodies.

[38] Law of the Republic of Kazakhstan On State Statistics No. 257-IV dated March 19, 2010.

In addition to direct reporting by carriers and forwarders, there are other channels for obtaining information on the transport market. For example, customs authorities maintain records of the foreign economic activities of transport companies. Their databases contain complete information on international transport. Based on this information, it is possible to analyze and forecast cargo flows by all modes of transport, by destinations and groups of goods.

The traffic police gather information on the activities of vehicles on the domestic market.

Other ministries and departments also have some information about the transport services market.

However, due to the fact that transport issues are not within the competence of these state structures, their information is not provided to statistical bodies. This information is provided only at the request of interested parties.

Improving the quality of statistics in the transport sector of Kazakhstan is possible through selective surveys of carriers.

It is important to develop mechanisms to facilitate the interaction of various government bodies with a view to creating a unified framework for monitoring the market for transport, logistics and forwarding services. One recommendation that stems from this is to set up transport sector databases managed by a single operator accountable to the Ministry of Investment and Development.

Currently, insufficient attention is paid to intermodal transport, which is regulated by the following documents:

- Civil Code of Kazakhstan (a specific part);
- Law on Road Transport;
- Law on Rail Transport; and
- Order of the Acting Minister for Investment and Development on Approval of Rules for Intermodal Transport.

Intermodal transport has not developed satisfactorily in Kazakhstan. In this regard, it would be advisable to review the experience of the European Union in promoting intermodal transport. In accordance with Directive 92/106/EEC, European Union member States shall take all necessary measures to reduce or reimburse taxes that are imposed on vehicles used in intermodal transport. Moreover, vehicles used before or after intermodal transport (delivery of cargo to/from cargo terminals) should be exempted from all kinds of tariff regulation. Subsequently, tax benefits have been applied to vehicles of all modes of transport involved in intermodal transport.

The European Union also supports intermodal transport by financing innovative projects in the field of intermodal transport which demonstrate the effectiveness and viability of this mode of transport.

Control and enforcement in the field of transport are carried out on the basis of the following regulatory acts:

- Code on Administrative Offenses No. 235-V of 5 July 2014 (as amended on 16 April 2018);

- Law on Transport in Kazakhstan; and
- Decree of the Government of Kazakhstan No. 1358 of 8 September 2000 on the establishment of a unified state control system for road transport on the territory of Kazakhstan (as amended on 27 February 2004).

The Transport Control Inspectorate of the Transport Committee of the Ministry of Investment and Development is responsible for control and enforcement of legislation in the field of road, inland waterways and maritime transport. Its competence includes control of weight and dimensions, driving times of vehicles, etc. In addition, it operates a licensing system for road transport (issue of permits) and licensing of transport activities established by law.

However, there is insufficient coordination between the Committee and other monitoring bodies and primarily with the traffic police. Hence, the large number of inspections on the roads and the lack of improvement in the quality of traffic and road safety. In addition, this facilitates corruption in the system of state control, which is one of the main non-physical barriers to a country's integration into the international transport system.

In the process of improving national transport legislation, it is necessary to use the experience of the European Union in developing procedures for the control and enforcement of legislation in road transport. To this end, special attention should be paid to the unification of control procedures on highways and at border crossing points.

It is also necessary to refine the Code on Administrative Offenses in terms of delineating responsibility for violation of the rules.

7.2 PROPOSALS FOR HARMONIZATION OF THE LEGISLATIVE FRAMEWORK IN THE FIELD OF INTERNATIONAL FREIGHT TRANSPORT

Harmonization of legislation in the field of transport activities is one of the most important conditions for the development of the transport infrastructure of Kazakhstan and of the CIS as a whole. Harmonization should also be considered from the perspective of the EEU and the CIS, since the decisions Kazakhstan takes in this sphere also depend on the policies of these entities.

In recent years, integration processes have been taking place all over the world. Such regional associations as the European Union, the CIS, the Customs Union and the EEU have made the most tangible progress.

The European Union is actively developing a single internal market based on the four freedoms of movement of goods, services, investments and people.

The challenge of the economic integration of the CIS member States is using the historically accumulated potential and the existing advantages of the division of labour for the realization of the interests of member countries.

The basic principles of the CIS are:

- Creation of a free trade zone oriented to international standards in the field of interstate relations;
- Creation of an effective mechanism for implementing decisions and arrangements;

- Increasing the responsibility of member States to fulfil their obligations; and
- Systematic elimination of barriers in mutual trade, ensuring fair competition in national markets.

These principles are directly related to transport activities. An efficient transport system is the key to the successful development of the economy of the CIS.

Studies have made it possible to identify the following systemic problems, which currently have a serious detrimental effect on the development of transport and logistics activities in the CIS region as a whole and, by consequence, have an effect on Kazakhstan.[39]

1. Lack of harmonization of the basic legislation in the sphere of transport activities with neighbouring countries and CIS countries.

The statutes, codes and laws in the field of transport adopted in the member States of the CIS and the EEU have national specificities on certain issues. In a number of countries there is no legislation on a whole range of important issues, or regulations are sometimes based on old laws that do not meet modern realities.

There is no regulation on many issues that are extremely relevant at present, such as payment for the use of infrastructure or the transport of special cargoes. Clearly all States of the region are interested in creating a new legislative and regulatory framework on a unified basis that meets both the interests of trade and the interests of carriers.

2. Weakly unified technical and technological standards in the field of cargo transport.

Work on the harmonization of standards and technical norms is carried out through accession to international agreements and conventions, their ratification and harmonization of national legislation and regulations. Analysis of the accession of CIS member States to the basic multilateral legal instruments in the field of road transport has shown that none of the agreements is fully effective throughout the Community. The level of applicability and adaptation of European norms is also relatively low. Of the 40 UNECE agreements and conventions affecting road transport and border crossing procedures, 11 have not been signed by any of the CIS member States.

Only the Customs Convention on the International Transport of Goods under the TIR Carnet (1975) has been adhered to by all CIS member States, but carriers in the Central Asian countries do not sufficiently use this procedure.

3. Absence of an effective licensing system in the CIS. The transport permit system has been abolished within the framework of the EEU. Transport to/from third countries is still carried out on the basis of special permits. Bilateral agreements concluded between individual countries presuppose different approaches in respect of taxes, road tolls and transit. The diverse legal regimes created by the existing bilateral agreements contradict the principles of free trade and the common economic and transport space.

[39] www.ingruz.ru/poleznoe/zakonyi-i-pravila.

4. Various barriers of a technical, administrative, fiscal and transboundary nature. It should be noted that there have been significant changes in this sphere lately. The CIS adopted a declaration on countering unfair competition in road transport. It should now develop a mechanism for implementing the provisions of the declaration, which should include the removal of administrative barriers to transport.

7.3 RECOMMENDATIONS FOR LEGISLATION

The efficiency of transit traffic is largely determined by the capacity of border checkpoints. Currently, there are long waiting times for vehicles at customs clearance points on the borders with Uzbekistan, Tajikistan, Kyrgyzstan and China. Reducing the downtime of vehicles associated with waiting for customs controls is one of the main ways of improving the efficiency of transport. To solve this problem, it is necessary to continue work on improving customs legislation, introducing modern information technologies for customs control and developing transport infrastructure.

To this end it is recommended to:

- Combine all control functions under the supervision of customs and implement a one-stop system;
- Maintain a continuous flow of goods 24 hours a day, 7 days a week;
- Divide passenger and cargo flows to reduce queues and delays;
- Manage queues and improve the queuing culture;
- Introduce a separate accelerated corridor for trucks with perishable goods under the TIR regime at major international border crossings;
- Increase the capacity of major border crossings by creating additional lanes and increasing the number of personnel during peak hours;
- Introduce electronic seals;
- Install inspection systems;
- Reduce the number of required documents; and
- Introduce a system of preliminary applications for border crossings.

To reduce the downtime of vehicles during customs controls it is recommended to:

- Introduce special scanning devices at the main checkpoints. The use of such devices would allow not more than 0.5% of vehicles in transit to be inspected;

- Implement the experience of Belarus and the Russian Federation of single window customs checks. In these countries, all the functions of state control at the border with regard to companies, individuals, vehicles, cargo, goods and animals are distributed between the two services: passport control is carried out by the border service, and all other types of control are under customs services. Customs officers are given responsibility for verification of documents for imported goods subject to veterinary, quarantine and sanitary and phytosanitary control. The introduction of this technology has shown that the downtime of vehicles at border crossings can be reduced by approximately two times;
- Introduce an automated system of electronic preliminary information of goods transported by road and rail through the borders of Kazakhstan. This will reduce the time spent at border checkpoints by about 1.5 times;
- Set up a special simplified procedure for customs clearance of goods in logistics centres at the legislative level;
- Use automation and unification of transport documents to simplify the document flow in the provision of logistics services;
- Develop the carriage of transit cargo in containers and the national infrastructure of customs clearance points;
- Provide customs and information services and the services of a customs representative to accredited freight forwarding and logistics companies;
- Continue work on the unification of the legislation of Kazakhstan and neighbouring countries in the field of logistics and transport and forwarding activities, taking into account the national interests of freight forwarders and logistics experts;
- Abolish the mandatory transshipment of goods from foreign carriers to national carriers in terminals; and
- Eradicate corruption at border checkpoints.

The introduction of these measures would increase the attractiveness of Kazakhstan for transit traffic through its territory.

Furthermore, the following plan for the harmonization of legislative and regulatory activities in the field of transport and logistics can be proposed:

- Conduct analysis of existing regulatory and legal acts. Identify inconsistencies with international provisions and the provisions of neighbouring States and develop proposals for their elimination. Develop new legislative acts (on toll roads, on the transport of dangerous goods, on concessions in the road sector, etc.) based on successful models in these areas.
- Unify technical norms and standards in transport with the norms of the European Union and neighbouring countries to promote Kazakhstan's integration into the world transport system. An important aspect of this unification is the introduction of the practice of mutual recognition of diplomas, certificates and other documents issued in CIS member States and officially certifying the qualification of freight transport operator.

- Ensure an effective system for implementing international transport between the States of the Central Asian region by eliminating administrative barriers. To do this, it is necessary to remove barriers such as transit fees and other charges on free roads and introduce a permit system for bilateral transport and delivery of heavy, oversized and dangerous goods.

The contradictory provisions of numerous existing rules and regulations makes it difficult to interpret and appeal various procedures. As a result, the rates and volumes of cargo deliveries is decreasing, which in turn leads to direct financial losses.

Various mechanisms for implementing these changes are possible. Firstly the revision of all existing bilateral agreements and second the introduction of appropriate amendments and additions to them. The most effective would be the development and adoption of a multilateral agreement on international transport, which would bring together all the different modes of transport.

Responsible ministries should be encouraged to accede to international agreements and conventions. The harmonization of the legislation of Kazakhstan with the current rules in the European Union, CIS, EEU and neighboring countries has become an important task, and the development of international cargo transportation in Europe and Asia depends on the success of its solution.

8. PROSPECTS FOR THE DEVELOPMENT OF TRANSIT AND TRANSPORT LOGISTICS IN KAZAKHSTAN

8.1 DEVELOPMENT OF TRANSIT AND LOGISTICS IN EURO-ASIAN TRANSPORT

As mentioned previously, sea transport is dominant in the transport of goods between Europe and Asia due to the following factors:

- Flexible tariff policy;
- Absence of borders between States;
- Well-functioning logistics;
- Simplification and digitization of procedures in ports;
- Low cost of transport; and
- The effectiveness of associations of carriers and various operators; etc.

Euro-Asian inland transport routes will never be able to compete with the volume of transport by sea. However, they can prove themselves as a valuable addition to sea transport by ensuring high reliability of delivery of expensive and/or time-sensitive good.

The inland Euro-Asian transport links are continuing to evolve. State and private carriers and logistics operators carrying out container transport along Eurasian land routes are continuing to prove themselves as an alternative to sea transport.

The competition of transport corridors on the Euro-Asian continent is not a choice between transport routes or modes of transport. It is a competition of logistics solutions based on intermodal transport and logistics services, focused on specific supply chains. At the same time, the basic requirements for the supply chain are regular services, a high degree of reliability, flexible tariffs, and the required speed of delivery for the different types of cargoes. These requirements are applicable to the logistics of the entire transport chain.

Decision making in supply chains with regard to the choice of routes and modes of transport is usually not made by consignors or consignees, but by logistics operators, who, with information on the transport market, are able to take into account the interests of the numerous market players (carriers, terminal operators, infrastructure owners etc.) and effectively meet the requirements for a particular supply chain.

In this regard, a transport route will attract freight flows only when it is competitive in the context of supply chains. No political decisions or investment projects developed outside this context can be successful from an economic point of view. Therefore, attempts to link cargo flows to certain routes or modes of transport will not be effective.

It is necessary to consider the effectiveness of the functioning of Euro-Asian transport routes taking into account the level of development of economies and the state of transport and logistics capabilities of individual regions throughout the supply chain.

Rapidly developing China-Europe trade, China's economic growth and China's political and economic reorientation towards intra-Asian cooperation is creating the opportunity for Central Asian countries to become a transport and trade bridge between the west and the east.

Recent years have also seen rapid growth in the Turkish economy, Iran's growing interest in Asia, the renewal of the Russian Federation's interest in trade and economic integration with a number of Central Asian States and the ever-growing trade relations between the Arabian Peninsula and East Africa on the one hand and the Asia-Pacific region and India on the other hand. These trends can help to identify deeper and longer-term geopolitical and geo-economic areas for cooperation.

Central to these trends is the further integration of national transport systems and logistics into Euro-Asian transport links. Despite the high transport costs, which are a decisive barrier to trade and commercial integration, the growth of continental trade provides an opportunity for the development of the economies of the Central Asian countries.

In this process Kazakhstan is the most active and successful partner. After the President’s speech on the new economic policy, investments in infrastructure are a top priority for the economic development and diversification of the country.

Kazakhstan is pursuing a multi-pronged foreign policy, balanced between the Russian Federation, the United States and China, while deepening relations with Germany, India, Turkey, Iran and countries in the Middle East. Transport cooperation can become a catalyst bringing together various initiatives, such as the Eurasian Economic Union, the Silk Road Economic Zone and the New Silk Road Strategy.

Eurasian economic development and continuing geopolitical challenges determine the need for Kazakhstan to open new transport routes that will complement the northern corridor through the Russian Federation. Kazakhstan should not be afraid of competition on transport corridors.

China has identified three main routes, which will be given priority in the development of the One-Belt-One-Road Initiative. These are the northern corridor through the Russian Federation and the central and southern corridors. The northern corridor through the Russian Federation and the central corridor are the most direct.

Kazakhstan was one of the first initiators of the idea of the southern route. Its active role in the development of the southern corridor is determined by the fact that the distance from Astana to Beijing is more than 4,000 km, while from New Delhi it is only 1,500 km.

At this stage, the southern corridors seem to be the most difficult. These corridors include India, Kyrgyzstan, Tajikistan, Turkmenistan, Afghanistan, Iran, Turkey, Georgia and, and partly the Russian Federation.

Turkey is making significant efforts to improve the country's position as a transport bridge and logistics hub. It has invested almost US$ 190 billion over the past 11 years in transport and logistics. In the railway sector, 1,466 km of new tracks have been laid and 3,400 km are under construction. Among them are such key projects as the national part of the Baku – Tbilisi – Kars line and the completed mega project, the Marmarin Tunnel. In addition, 19 logistics centres will be completed by 2020. In the eastern part of Turkey logistics centres are being established in Kars, Mardin and Habur. They are important for improving cross-border transport.

Georgia is also modernizing its transport and logistics sector.

The further relationship of the region with Afghanistan is of interest. Afghanistan is taking steps to open up trade and interact with international projects. A joint Chamber of Commerce and Industry of Central Asia and Afghanistan has been established. A draft agreement between Turkey, Azerbaijan, Turkmenistan and Afghanistan (TATA) on the new south-central corridor has been drawn up. However, in terms of cost, the Afghan route is still restrictive: the cost for moving a 20-foot container from Mazari-Sharif to the border with Uzbekistan (75 km) is about US$ 3,000, which is higher than the rate for moving the same container from Uzbekistan to the Russian Federation.

India could become the next powerhouse on the continent in terms of economy and demography. At the same time, the Republic of Korea and Japan are trying to bypass China and use India as a bridge.

The southern corridor could include the Caspian-Caucasus route as an alternative to the trans-Iranian route. The Caspian-Caucasus route will become a serious alternative once the necessary infrastructure is created. Despite the fact that the One-Belt-One-Road investment is not currently planned on this route, it will become a viable option as soon as all links along the route are completed.

Modernization of the port infrastructure in the Caspian Sea, unification of transit and customs procedures and construction of new transport highways in Kazakhstan, Turkmenistan and the Caucasus are making the Caspian Sea and Caucasus corridor the fastest growing. The Baku – Tbilisi - Kars railway project is strategic for the entire Caucasus in this regard.

The KTZh and Kazlogistics projects, which aim to improve Kazakhstan's position in Eurasian transport markets, offer integrated logistics products, improvements in the quality of transit and supply chains using 5S-Principles and the single window principle and are investing in terminals in China and Dubai.

At the same time, there are restrictions and bottlenecks along the route, including tensions at borders. Nevertheless, trade between India and Pakistan has already reached US$ 5 billion. This figure is likely to be nearer US$ 10 billion if unofficial trade is taken into account. Afghanistan and Pakistan have signed an Agreement on transport and trade. In addition, investments along the route by Turkmenistan, Azerbaijan, India, Japan and Turkey have amounted to almost US$ 100 billion in recent years.

Despite the improvement of the business climate in Afghanistan and in cross-border trade, TRACECA still does not consider Afghanistan as part of its route but there are close ties between the TRACECA countries and Afghanistan.

The Central Asian countries should understand that the southern corridor may be an important next step in Eurasian transport, economic and cultural integration, despite the high cost, delays and risks along the route.

Businesses and experts are more sceptical about the transit potential across all corridors and have pointed to technical and economic restrictions, including the Eurasian Economic Union itself. The EEU is viewed more as a project for integration within the union than with the rest of the continent. Nevertheless, the Eurasian Economic Union could become a valuable tool for creating an open common transport and transit space.

In spite of the huge problems, transport and trade integration in Eurasia and especially in the Central Eurasian zone will be one of the most challenging but important issues of the 21st century.

8.2 KAZAKHSTAN PERSPECTIVE OF THE DEVELOPMENT OF TRANSIT AND LOGISTICS

The export/import and transit potential of Kazakhstan from the point of view of the location of external markets, as well as foreign economic relations in the Eurasian sphere, should be considered from regional and transboundary perspectives.

The regional perspective determines cargo transport between Kazakhstan and the countries bordering it. The transboundary perspective concerns transport between countries that do not have common borders with Kazakhstan.

The determining factors of regional trade flows are the close interconnection and interdependence of the economies of the Central Asian countries, as well as the existing transport and communication infrastructure of the countries of the region.

In the regional plan for exports-imports and cargo transport, the potential of Kazakhstan can be seen as sufficiently high and stable. This is due to the long-term economic ties between the countries of the region, a similar level of development of their economies, and the fact that almost all trade between the Central Asian countries and the Russian Federation passes through Kazakhstan. Total international cargo transport in 2017 amounted to 150.0 million tonnes, including 17.6 million tonnes of transit. The volume of transit cargo in 2017 was only 0.4%. Moreover, there is no stable growth of these shipments.

The main competitors to Kazakhstan's routes in Eurasian trade are the network of roads in the Russian Federation and sea carriers, which offer more attractive transport conditions, especially with regard to tariffs and logistics.

Transport of goods along the Europe-Kazakhstan-China railway line has significant economic advantages, as the transport distances are approximately 30% less than on the Trans-Siberian Railway. Nevertheless, the Russian Federation is working intensively on improving its international transport corridors, especially the Trans-Siberian, both technically and organizationally.

The distance for Chinese transit cargo through Kazakhstan to the countries of Central and Northern Europe is 8,000-10,000 km. For comparison, the average transit distance is 1,700-1,800 km. Consequently, goods are shipped mainly to countries neighboring Kazakhstan. Therefore, at this stage regional transport can be considered the main type of rail transport.

In 2016, only 1.1% of the total volume of cargo was transported by road in international traffic, while transit amounted to 0.02%. From this, it follows that goods are transported by road mainly within the country itself.

Since no countries in the Central Asian region have access to the sea, access to world markets is carried out mainly through the Russian Federation. The western, southern and southeastern links of these countries with world markets through the Caucasus, Iran, Afghanistan and China are limited by difficult transport conditions in the mountains, a high degree of risk in certain regions and political restrictions. It is assumed that the situation with these corridors will change only after the creation of a modern infrastructure within the framework of China's One-Belt-One-Road initiative mentioned above and the normalization of the political situation in the region.

At present, the main transit flows pass through Kazakhstan to the Russian Federation and to European countries, as well as to Central Asia and China. Transit from China through Kazakhstan is insignificant.

In recent years, the Russian Federation has been developing direct transport to/from China, thereby reducing the transit flows through Kazakhstan. Consequently, in the long term, an increase in transit through Kazakhstan to the Russian Federation and China should not be expected.

In 2017 transit through Kazakhstan as a whole amounted to 17.6 million tonnes. The main volumes of transit were carried from north to south: Russian Federation, Iran, Turkmenistan, Uzbekistan, Tajikistan and Kyrgyzstan, as well from east to west: China, Uzbekistan, Turkmenistan, Iran, Turkey, Azerbaijan and Georgia.

In this regard, transit may increase from China through Kazakhstan in the direction of the Russian Federation and Europe and in the opposite direction on the road transport corridor "Western Europe - Western China". However, a significant increase in transit by road cannot be expected.

9. CONCLUSIONS

This study has identified a number of good practices and recommendations going forward for Kazakhstan's transport network. This conclusding chapter provides a summary of the main areas of the study, the individual, detailed, sectoral recommendations are included in the sectoral chapters.

It is extremely important for Kazakhstan to create a modern transport infrastructure network as the country does not have access to transcontinental sea routes. International transport corridors on the territory of Kazakhstan provide one of the only ways for the country to access regional markets for goods and services and play a significant role in ensuring communication between the main economic centres within the country.

Kazakhstan has an underdeveloped network of roads. Their length is 138,700 km, including 95,409 km of public roads. The density of public roads is 35.4 km per 1,000 km^2 of territory of the country. Of this, 85.7% of the roads are paved, but the quality of these roads is low.

The national "Nurly Zhol" programme envisages the creation of an extensive network of roads for transit and for domestic transport. The implementation of the programme will lead to the creation of a network of roads connecting Kazakhstan with neighbouring States, as well as the capital of the country with Kazakhstan's largest cities.

To complete the network of public roads, it is necessary to build and reconstruct a number of sections of the six major international transport routes connecting Kazakhstan with neighbouring States. These international corridors are the foundations for East-West transport and, in particular, a a key component of Euro-Asian Transport Links through the provision of access to major ports, transport hubs and terminals.

A modern transport network will be created after completion of the planned works for the construction and reconstruction of the road network in Kazakhstan in 2021. This also needs to be accompanied by the improvement of the existing network of regional and local roads.

Road transport in Kazakhstan is the most important mode of transport in terms of the volume of transport of goods and passengers. It is predicted that road transport will develop more rapidly than other modes of transport, primarily compared to rail.

Over the past seven years, the road vehicle fleet has increased by 10.5%, however, investments in road transport remain at a low level of 4-7% of the total volume of investments in transport and storage. Increasing investment flows to the industry could be facilitated by tightening environmental requirements for vehicles.

In 2017, 84.2% of the total volume of cargo was transported by road. The volumes of road transport in international traffic are negligible and amount 0.1%. The small amount of cargo carried in containers makes it difficult to use intermodal transport. However, figures show that over the past five years container transport by road has grown 29 fold.

Imports are brought into the country mainly by foreign carriers. These carriers do not however work in the domestic market. By 2020, it is planned to increase the share of Kazakh carriers in the national market for international freight to 50%. This could be facilitated by the removal of the permit system within the EEU and later, from 2025, the introduction of cabotage provisions.

Since independence, a number of infrastructure projects have been completed in the country that have made it possible to offer competitive rail transport routes which has also increased the transit potential of Trans-Asian and Euro-Asian transport corridors. The main drawback of the railway sector is the high proportion of single-track rail lines that limits the ability to introduce additional freight flows and reduces the speed of trains. Also, an insufficient number of wagons for the transport of goods by rail has also lead to increases in the competitiveness of road transport.

Over the last 10 years, 8.4%-12.3% of the total volume of transported goods was transported by rail, however this has been accompanied by a gradual decrease in the share of rail transport in the total volume of transport. The volume of goods transported at the national level is 61.5% and at the international level 38.5% with only 11% of total volumes being transit traffic. Going forward, a key area of focus for the railways will be container traffic.

Water transport in Kazakhstan is comprised of sea and inland water transport. River transport is possible in the Irtysh basin, in the Ural-Caspian basin and in the Balkhash-Ili basin.

Inland water transport accounts for 0.04% of the total volume of transport. Over the past 10 years, the volume of transport of goods by inland waterway transport has remained largely unchanged. But in 2017 it increased by 33% compared to the previous year. Virtually the entire volume of cargo is transported in regional transport – 92.8%.

Maritime transport is concentrated through the three major seaports of Aktau, Bautino and Kuryk. Cargo transport volumes and cargo turnover by maritime transport for 2012-2017 have fallen. During the period, the volume of cargo transport decreased by 48.5%, and cargo turnover by 40.8%. The volume of cargo transported by sea in 2017 was 0.05% of the total volume of all types of transport. Sea transport is only used in international traffic.

In order to increase the volume of cargo transport by sea, it is planned to increase the dry cargo fleet to 20 vessels by 2020 and purchase two ferries. In the future, it is planned to occupy a dominant position in the Caspian Sea and ensure the transport of goods using intermodal transport.

There are 23 airports operating in Kazakhstan, 17 of which comply with ICAO standards and can service international flights and 54 airlines operating in Kazakhstan, four of which carry out cargo transport. To improve the financial condition of a number of unprofitable airports, it has been decided to develop air cargo transport services, primarily with neighbouring States also because at the moment it is underdeveloped.

Almost twice as much cargo is transported by air to countries outside the CIS as compared to destinations within the CIS countries with the transport of goods being carried out mainly to/from Almaty (more than 93%).

Kazakhstan in terms of logistics development is ranked 71st in the LPI, ahead of all other CIS countries. Kazakhstan is pursuing policies to move to 40th position in the ranking.

In accordance with the State Programme for Infrastructure Development "Nurly Zhol" for 2015-2019, it is planned to continue the development of the transport and logistics infrastructure by creating international logistics hubs or dry ports in large urban agglomerations. This needs to be accompanied by an internal transport and logistics network to be connected through a hub and spoke network.

In accordance with the "Kazakhstan 2050" strategy to expand the country's presence in key logistic centres of other countries, a terminal has been created in the port of Lianyungang on the east coast of China, which is connected with Kazakhstan by a road and rail corridor. The logistics terminal in Lianyungang port is also connected by railway lines to a number of major Chinese ports, as well as by sea with the Japanese port of Osaka and the port of Busan in the Republic of Korea. Terminals are planned to be established in other Chinese cities to facilitate transport to and through Kazakhstan. This, along with the ongoing activities of the United Transport and Logistics Company (UTLC) should further help the growth of transit traffic.

Harmonization of legislation in the field of transport activities is one of the most important conditions for the development of the transport infrastructure of Kazakhstan and the other countries in the region. The deepening of Kazakhstan's integration into the Eurasian transport and logistics system should be based on the harmonization of the country's legislation with the legislation of the European Union, the EAEU, the CIS and neighboring countries. In addition, these transport related challenges can be further addressed with additional accession to UN inland transport Conventions and Legal Agreements and with participation in UNECE projects such as the Euro-Asian Transport Links. The development of international cargo transportation in Europe and Asia also depends on a modern legislation framework.

ANNEX

1. THE REGULATORY AND LEGAL FRAMEWORK FOR TRANSPORT

As a transit state, Kazakhstan has to have legislation in the field of transport which is regulated both by acts of national legislation and supranational regulations.

Now all existing documents can be consolidated in the following main groups:

- Transport infrastructure:
- Traffic and traffic signs and signals;
- Road vehicles;
- Other legal documents in the field of road transport;
- Facilitation of transport conditions;
- Internal shipping;
- Transport of dangerous goods; and
- Transport of perishable foodstuffs.

1.1 TRANSPORT INFRASTRUCTURE

- Declaration on the construction of international traffic arteries dated 16 September 1950;
- European Agreement on Main International Traffic Arteries (AGR) dated 15 November 1975;
- European Agreement on Main International Railway Lines (AGC) dated 31 May 1985;
- European Agreement on Important International Combined Transport Lines and Related Installations (AGTC) of 1 February 1991;
- Protocol on Combined Transport on Inland Waterways to the European Agreement on Important International Combined Transport Lines and Related Installations (AGTC) of 1991, of 17 January 1997;
- European Agreement on Main Inland Waterways of International Importance (AGN), of 19 January 1996.

1.2 ROAD TRAFFIC AND ROAD SIGNS AND SIGNALS

- Convention on Road Traffic, of 19 September 1949;
- Protocol on Road Signs and Signals of 19 November 1949;
- European Agreement on the Application of Article 23 of the 1949 Convention on Road Traffic concerning the Dimensions and Weights of Vehicles Permitted to Travel on Certain Roads of the Contracting Parties, of 16 September 1950;
- European Agreement supplementing the 1949 Convention on Road Traffic and the 1949 Protocol on Road Signs and Signals of 16 September 1950;

- European Agreement on Road Markings of 13 December 1957;
- European Agreement supplementing the Convention on Road Traffic of 1968 of 1 May 1971;
- Convention on Road Traffic of 8 November 1968;
- Convention on Road Signs and Signals of 8 November 1968;
- Protocol on Road Markings, Additional to the European Agreement supplementing the Convention on Road Signs and Signals, of 1 March 1973;
- Agreement on Minimum Requirements for the Issue and Validity of Driving Permits (APC) of 1 April 1975.

1.3 ROAD VEHICLES

- Agreement Concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts dated 20 March 1958;
- Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles and the Reciprocal Recognition of Such Inspections, of 13 November 1997;
- Agreement concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts which can be fitted and/or be used on Wheeled Vehicles, of 25 June 1998.

1.4 OTHER LEGAL DOCUMENTS IN THE FIELD OF ROAD TRANSPORT

- General Agreement on Economic Regulations for International Road Transport, of 17 March 1954;
- Convention on the Taxation of Private Road Vehicles used in International Traffic of 18 May 1956;
- Convention on the Contract for the International Carriage of Goods by Road (CMR), of 19 May 1956;
- Protocol to the Convention on the Contract for the International Carriage of Goods by Road (CMR), of 5 July 1978;
- Convention on the Taxation of Road Vehicles engaged in International Goods Transport, of 14 December 1956;
- Convention on the Taxation of Road Vehicles Used for the International Carriage of Passengers of 14 December 1956;
- European Agreement on the Work of Crews of Vehicles Engaged in International Road Transport (AETR) of 1 July 1970;
- Convention on the Contract for the International Carriage of Passengers and Luggage by Road (CVR) of 1 March 1973;
- Protocol to the Convention on the Contract for the International Carriage of Goods by Road (CMR) of 5 July 1978.

1.5 FACILITATION OF TRANSPORT CONDITIONS

- International Convention to Facilitate the Crossing of Frontiers for Passengers and Baggage carried by Rail of 10 January 1952;
- International Convention to Facilitation the Crossing of Frontiers for the Carriage of Goods by Rail of 10 January 1952;
- Convention concerning Customs Facilities for Touring, signed in New York on 4 June 1954;
- Customs Convention on the Temporary Importation of Private Road Vehicles, signed in New York on 4 June 1954;
- Customs Convention on the Temporary Importation of Road Vehicles for commercial purposes on 18 May 1956;
- Customs Convention on Containers, of 18 May 1956;
- Customs Convention on the Temporary Importation for Private Use of Aircraft and Pleasure Boats of 18 May 1956;
- Customs Convention on Spare Parts Used for the Repair of ECCOR Wagons dated 15 January 1958;
- Customs Convention on the International Transport of Goods under Cover of TIR Carnets (TIR Convention), of 15 January 1959;
- European Convention on the Customs Regime Applicable to Pallets Used in International Transport of 9 December 1960;
- Customs Convention on Containers of 2 December 1972;
- International Convention on the Harmonization of Frontier Control of Goods of 21 October 1982;
- Convention on the Customs Regime Applicable to Containers Transferred to the Pool and Used for International Transport, dated 21 January 1994.

1.6 INLAND NAVIGATION (PRIVATE LAW)

- Convention on the Unification of Certain Rules Relating to Liability arising from the Collision of Inland Navigation Vessels of 15 March 1960;
- Convention on the Registration of Inland Navigation Vessels of 25 January 1965;
- Convention on the Measurement of Inland Navigation Vessels of 15 February 1966;
- Convention relating to the Limitation of the Liability of Owners of Inland Navigation Vessels (CLN), of 1 March 1973;
- Convention on the Contract for the International Carriage of Passengers and Luggage by Inland Waterway (CVN) of 6 February 1976;
- Convention on the Limitation of Liability of Owners of Inland Navigation Vessels (CLN) of 5 July 1978;

- Protocol to the Convention on the Contract for the International Carriage of Passengers and Luggage by Inland Waterway (CVN) of 5 July 1978.

1.7 TRANSPORT OF DANGEROUS GOODS

- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) of 30 September 1957;
- Protocol amending article 1 (a), article 14 (1) and article 14 (3) (b) of the European Agreement of 30 September 1957 concerning the International Carriage of Dangerous Goods by Road (ADR), of 28 October 1993;
- Convention on Civil Liability for Damage Caused by Carriage of Dangerous Goods by Road, Rail and Inland Navigation Vessels (CRTD), dated 10 October 1989;
- European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterway (ADN), of 25 May 2000.

1.8 TRANSPORT OF PERISHABLE FOODSTUFFS

- Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage (ATP) of 1 September 1970.

2. OTHER INTERNATIONAL AGREEMENTS AND CONVENTIONS

The following international agreements and conventions developed within the framework of the CIS apply in Kazakhstan:

- Agreement on the principles and conditions of relations in the field of transport of 30 December 1991. The agreement was concluded by the countries of the Commonwealth with an awareness of the benefits of economic integration and the need for concerted action in the context of the common economic space;
- Agreement on the implementation of the agreed policy on the definition of transport tariffs of 17 January 1997. It is aimed at developing a set of measures to regulate the tariff policy, aimed at ensuring the free movement of goods and passengers. In the field of rail transport, the concept of the establishment of an agreed tariff policy for rail transport in the CIS member States is in force;
- Convention on the International Carriage of Passengers and Luggage by Road dated 9 October 1997. The Convention regulates the conditions and rules of transport, the liability of carriers, and the procedure for making claims. Transport of passengers and baggage in international traffic can be carried out by private, collective, state or mixed ownership carriers, subject to an appropriate license;
- Agreement on the principles of the creation of a common transport space and the interaction of the CIS member States in the field of transport policy of 9 October 1997. This Agreement was concluded for a period of 10 years and may be extended for another 10-year period, unless the Parties decide otherwise. However, not all the States participants of the Agreement have actively fulfilled its conditions, as a result of which the effectiveness of the

provisions of this Agreement has declined year by year, and transport problems have not been solved;

- Protocol on the international highways of the CIS of 11 September 1998;
- Agreement on compulsory passenger insurance for international road transport dated 13 January 1999;
- Agreement on the order of transit through the territories of the CIS member States of 4 June 1999;
- Agreement on the masses and dimensions of vehicles engaged in interstate transport along the roads of the CIS member States of 4 June 1999;
- Agreement of the CIS member States on the approximation of taxation in rail transport of 10 March 2000. The agreement is aimed at reducing transport costs for rail transport in international traffic between the CIS countries. It was noted that the Parties should implement measures to harmonize tax collection systems and state fees related to the use and maintenance of railways, and the ownership and use of railway vehicles. The parties agree not impose a value-added tax on railway transport services for the carriage of transit goods of CIS member States, including forwarding, loading, unloading and reloading services;
- Agreement on the use and development of a network of transport for economic, military and humanitarian transport of the CIS member States of 31 May 2001;
- Agreement of the CIS member States in the field of international road freight transport dated 18 September 2003;
- Declaration on Transport Security in the CIS member States of 18 September 2003. This document is related to the problems of preventing, detecting, intercepting and investigating criminal acts and terrorist acts that threaten the safety of transport;
- Agreement of the CIS member States in the field of international road freight transport dated 18 September 2003. The document provides for measures to ensure concerted actions in this area, fair competition and equal conditions for carriers and the removal of barriers in international road transport;
- Decision of the Council of Heads of State "On the Harmonization of National Air Traffic Management Systems of Member States of the Commonwealth of Independent States" dated 19 September 2003. The objectives are to harmonize national air navigation systems, increase the safety of civil aviation flights, enhance the economic and defense effectiveness of the use of CIS airspace and create favourable conditions for the implementation of the strategy of the International Civil Aviation Organization for the integration of European and global air navigation systems;
- Agreement on the introduction of an international certificate for weighing trucks in the CIS member States of 16 April 2004;
- Concept for a coordinated transport policy of the CIS member States of 15 September 2004. The concept reflects an agreed viewpoint on the prospects for the further development of the transport system, the most relevant areas for cooperation in shaping the common transport space of the CIS member

States and approaches for the creation of a market for transport and forwarding services. However, not all the goals set out have been achieved to date;

- Agreement on Cooperation of the CIS Member States on Combating Crime in Transport of 15 September 2004, according to which the parties agree to cooperate in the prevention, detection, suppression and disclosure of crimes committed in transport;
- The development of the market for international road transport services dated 29 June 2007;
- The development of civil aviation and measures to improve safety in the CIS member States of 22 November 2007;
- Priorities for cooperation of CIS member States in the transport sector for the period up to 2020 of 14 November 2008. This is the creation of a network of transit transport highways of continental importance, Euro-Asian transport corridors; increasing the level of interaction between various modes of transport in international transport; strategic development of railway transport of CIS member States; increasing the effectiveness of tariff policy; elimination of the negative impact of fiscal and administrative barriers in the implementation of international road freight transport; cooperation in the field of air traffic management of CIS member States; creation of conditions for effective development of air transport; improvement of the legal and regulatory framework for cooperation in the field of transport; and formulating a coherent policy in the field of transport security and environmental protection.

Factors constraining the development of a single transport space of the CIS

The analysis of international agreements and conventions developed within the framework of the CIS showed that there are many problems, which have a serious deterrent effect on the development of a common transport space in the CIS.

These problems are:

- Lack of harmonized legal norms in many areas of regulation of the transport services market;
- Non-unified technical and technological standards in the field of passenger and cargo transport;
- Lack of coordinated approaches on many issues of international cooperation and the future development of the transport system in the CIS;
- Various barriers of a technical, administrative, fiscal and transboundary nature, etc. [40]

[40] Resolution of the Interparliamentary Assembly of the Member Nations of the Commonwealth of Independent States No. 33-26 “On Recommendations on legislative support for the development of transport infrastructure in the CIS member States”. Text of the document with amendments and additions as of November 2013.

3. NATIONAL LEGISLATION

Kazakh legislation in the field of transport is represented by normative legal acts of various levels.

Chapter 34 on Transport of the Civil Code of Kazakhstan (a special part) the legal norms of which determine the general conditions concerning the conclusion of transport contracts is devoted to the transport of cargo, passengers and baggage. Legal relations between the carrier and the client are based on the contract of carriage. At the same time, taking into account the specificities of the transport sector, the will of the parties in determining the conditions of the contract of carriage may be limited in cases directly provided by the Civil Code and other legislative acts. This happens due to the special importance of transport, the need for a balanced social policy and security requirements. The basis for the legal regulation of relations related to the provision of carrier services is enshrined in the Civil Code in Chapter 35. It defines the form of the contract, the subject of the contract and provides the right for the freight forwarder to involve other persons in the performance of his duties, while not relieving him of responsibility to the client for the performance of the contract.

At present, the main legal act regulating transport activities is the Law of Kazakhstan "On Transport in Kazakhstan" No. 156-XIII dated 21 September 1994 (as amended on 25 December 2017). The law regulates the basic principles for economic activity in the market and determines the basis for the relationship of all participants in transport on the territory of Kazakhstan. The market of demand and supply of transport services forms the basis of economic relations. Transport companies and carriers operate on a commercial basis.

State bodies do not have the right to interfere in the economic activities of transport enterprises, and to distract the operating personnel of transport enterprises for other work, except in cases stipulated by the legislation of Kazakhstan.

The Law of Kazakhstan on Railway Transport No. 266-II dated 8 December 2001 (as amended on 1 January 2018) regulates the relations between carriers, participants in the transport process, state authorities, passengers, shippers, consignees, consignors, and other physical and legal persons in the course of transport of passengers, luggage, cargo and postal items by rail.

The Law of Kazakhstan on Merchant Shipping No. 284 dated 17 January 2002 (as amended on 10 June 2017) defines the legal, organizational, economic and international foundations of state administration in the sphere of commercial navigation and regulates issues related to the carriage of passengers, luggage and cargo, security for maritime transport and environmental protection.

The Law of Kazakhstan on Inland Water Transport No. 574-II of 6 July 2004 (as amended on 10 June 2017) regulates the relations between state bodies, individuals and legal entities in the field of inland waterway transport in the conduct of navigation, transport of passengers, luggage and cargo, and operation of small vessels, including those in water reservoirs, which are not related to inland waterways and sea waters; and determines their rights, duties and responsibilities.

The Law of Kazakhstan on the Use of the Airspace of Kazakhstan and Aviation Activities No. 339-IV of 15 July 2010 (as amended on 25 December 2017) regulates issues related to the use of the airspace of Kazakhstan and aviation activities. It determines procedures for the use of airspace and aviation activities for the protection of human life and health, the environment, the interests of the State, ensuring the safety of aircraft operations, individuals and legal entities in aviation services.

Kazakhstan has complete and exclusive sovereignty over the airspace above the land and water of Kazakhstan and its territorial waters. The airspace of Kazakhstan is part of its state territory.

The decree of the President of Kazakhstan on the use of airspace and aviation activities of Kazakhstan No. 2697 of 20 December 1995 was issued to protect the interests of the state and determine the place and role of aviation and other entities using the airspace of Kazakhstan.

The Law of Kazakhstan No. 202-V of 16 May 2014 On Permits and Notifications (as amended on 1 January 2018) regulates issues related to the introduction of a permit or notification procedure for the implementation of certain activities or actions by private business entities and others.

Order of the Chairman of the Customs Control Committee of the Ministry of Finance of Kazakhstan No. 33 dated 30 January 2013 On Approval of the Strategy for Development of the Customs Service of Kazakhstan to 2020. This document defines the goals and main directions for improving the customs administration in the short and medium term, as well as financial support and mechanisms for implementing the envisaged activities.

The following legislative acts regulating relations in the road transport sector have been adopted in Kazakhstan:

- The Law of Kazakhstan on Road Transport No. 476-II of 4 July 2003 (as amended on 1 January 2018) regulates relations between carriers, passengers, consignors, consignees, other physical and legal persons in the field of road transport. The law applies to all individuals and legal entities that carry out activities in the field of road transport in accordance with the legislation of Kazakhstan;
- The Law of Kazakhstan No. 245-II of 17 July 2001 On Roads (as amended on 3 July 2017) regulates the legal, organizational and economic foundations for state management of roads in Kazakhstan, their construction, operation and development in the interests of state and road users. The law determines the economic and legal basis; principles of road management by organizations and enterprises providing development, repair, maintenance of highways; types and legal regime of highways, territories and objects adjacent to roads; rights and duties, as well as the responsibility of owners, departments in charge of roads and users of roads; and the relationship between state and local authorities;

- The Law of Kazakhstan On Road Traffic No. 194-V of 17 April 2014 (as amended on 1 January 2018) establishes the legal framework and general conditions for the functioning of road traffic and ensuring its safety in Kazakhstan. The main principles are priority of life and health of road users over economic activity; responsibility of the state for ensuring road safety; respect for the interests of road users, society and the state while ensuring road safety; a systematic approach to road safety;
- Decree No. 2273 of the President of Kazakhstan of 12 May 1995 on the Accession of Kazakhstan to the Agreement on the International Transport of Perishable Foodstuffs and on the Special Equipment to be Used for such Transport (ATP) of 1970.

State control over the implementation of legislation

Ensuring state control over the current legislation, which is directly related to the issue of road transport, is carried out on the basis of and within the framework of the following legal acts:

- Resolution of the Government of Kazakhstan of 14 December 2006 On ratification of the Intergovernmental Agreement on the Asian Highway Network No. 1198;
- Decree No. 816 of the Government of Kazakhstan of 23 July 2014 On approval of the Rules for compliance with the procedures and requirements for inspection of passengers and persons visiting transport infrastructure facilities, and things in their possession, including hand luggage and luggage;
- Resolution of the Government of Kazakhstan No. 697 of 9 July 2013 On approval of the list of checkpoints across the State borders of Kazakhstan and stationary transport control posts in the territory of Kazakhstan;
- Order of the Acting Minister of Investment and Development of Kazakhstan No. 318 of 26 March 2015 On approval of the Rules for levying a fee for a public-sector toll road (section);
- Order of the Acting Minister for Investment and Development of Kazakhstan No. 1104 of 26 November 2015 On Approval of the Rules for Intermodal Transport.

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Logistics and Transport Competitiveness in Kazakhstan

Improving the competitiveness of Kazakhstan as a transport logistics centre at the crossroads of Europe and Asia could enable the country to unlock significant untapped benefits of growing cargo flows between the two continents.

This study identifies the transport infrastructure and services available in Kazakhstan, reviews the country's extensive recent and future transport investments, and sets out recommendations to ensure its transport network is ready to harness the growth in inland transport from rising East-West trade, particularly in the context of the Belt and Road Initiative, within which Kazakhstan could occupy a strategic geographical position.

To further capitalize on Kazakhstan's pivotal role in Euro-Asian transport logistics, this study also presents the benefits of adhering to and implementing the full spectrum of UN Transport Conventions and Legal Instruments administered by UNECE, and through its continued participation in UNECE initiatives such as the Euro-Asian Transport Links project.

The study also highlights strengthening the harmonization of legislation as one of the most important conditions for the development of the transport infrastructure of Kazakhstan and the broader region, of which Kazakhstan is a member.

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