



Sheikin Dmitriy
d.sheikin@halykfinance.kz
+7 (727) 357 31 79 (3319)

Transport Industry of Kazakhstan

Summary

The unique location of Kazakhstan endowed the country with a high transport and transit potential. Traffic flows from the PRC to Europe and back across the territory of the republic facilitate to unlock this potential. According to different estimates, the republic can host to 20% of these transcontinental flows. Aware of it, the country's management focused its attention at the development of the transport industry since 2000 to facilitate the large-scale processes of the republic's economic integration into the global and regional economies. To unlock the potential of the industry the government has introduced a number of respective sectoral programs since that time. The most significant inter-sectoral programs aimed at the realization of the transport and transit potential of Kazakhstan was the State Program for the Development and Integration of the Transport System Infrastructure of the Republic of Kazakhstan until 2020. The Program for the Development of the Transit Transport Capacity of the Republic of Kazakhstan for 2004-2006 and the Program for the Development of Transport Infrastructure in the Republic of Kazakhstan for 2010-2014 preceded the above-mentioned program. Presently the government implements the State Infrastructure Development Program for 2015-2019 Nuryly Zhol in the republic. Under the state programs of transport and transit potential development were directed circa KZT7,930bn. Under the Nuryly Zhol program, the funding amounted to KZT7,676 bn. According to the Minister of Transport and Communications of the Republic of Kazakhstan, this year the concept of the program Nuryly Zhol until 2025 will be developed and presented.

Over the past few years, the transport industry of Kazakhstan has not shown serious structural changes, maintaining its share in GDP at the level of averages of just over 7% (2015-2018). As of the end of 2018, according to our estimates, the share of the industry was 7.5% (7.4% in 2017). The gross output of transport services in January-December 2018, according to preliminary data, amounted to KZT7,240bn (+ 11.8% yoy or KZT6,474bn in 2017). The growth of the industry in real terms was 4.6% yoy versus 4.8% yoy a year earlier.

Revenue structure of the transport industry is at 81% (78.7% in 2018) in 2007-2018 formed by railway (railway) and pipeline transportation on average in the period. The share of urban transport (bus, taxi, trolleybus, and tramway) in the revenue structure for the advising period was 3.8% (3.5% in 2018). The average share of maritime transport (inland and sea) is 0.5% (0.2% in 2018). Changes in freight traffic in Kazakhstan in 1991-2018 were irregular. The most noticeable freight was observed at the beginning of the period and amounted to 2,513.4mn tons or 437.2bn tons/ km with a subsequent reduction of freight to 1,065.9mn tons or 149.7 bn tons/km in 1999. Cargo freight by all types of transport in 2018 increased by 4.0% yoy and amounted to 4,130.6mn tons of cargo, baggage and cargo luggage (5.8% yoy in 2017). Cargo turnover growth in 2018 was 5.7% yoy to 596.1 t/km (8.7% yoy in 2017).

Bus transportation had the largest load of all passenger transportation in the Republic of Kazakhstan. In the period from 1998 to 2008, the share of traffic by this type of transport averaged 69% or 6,327 on average over the period. Starting from 2009, the share of this transport significantly increases from 74% (8,692mn. people) to 82% (18,314 mn. people) in 2016. In 2017, there was a decrease in the share of bus traffic and at the end year, the share of passengers transported by this type of transport was 80% (18,237mn. people), and in 2018 72% (16,541mn. people).

In the structure of the revenue of the industry from transportation by types of transport, the average share of railway (railway) and pipeline transport was 81% (78.7% in 2018) in 2007-2018. Structurally, the shares of these two industries have undergone noticeable changes. The share of railway transport in the revenue generation structure decreased from 55.3% in 2006 to 31.1% in 2018, and the share of pipeline transport increased from 26.2% to 47.5%.

The dynamics of investment in the transport industry (excluding store housing) was extremely irregular. Thus, from 2004-2009 there was a positive increase in investment in the industry from KZT87bn to KZT570bn per year. In 2010, investments in fixed assets amounted to KZT310bn in 2013, reaching their historic maximum of KZT964 bn. Consequently, there is a decrease in investment in the industry to KZT405bn in 2016. In 2017, investments in fixed capital amounted to T492bn in current prices or KZT157bn in 2003 prices. A significant inflow of investments (64% on average for the period) in the period 2003-2017 went to transportation by pipeline. The gross inflow of foreign direct investment (FDI) showed that in the structure of all foreign investment the share of investment in the transport industry (excl. storage) averaged circa 1.4% in 2005-2018.

In 2003-2018, fixed assets (FA) of the industry increased by 13.1 times and as of the beginning of 2018 and amounted to KZT7,042bn. The FA adjusted for inflation (2003 = 100) increased by 4.2 times and amounted to KZT2,248bn. In the structure of fixed assets of the transport industry, a significant share of 60% (on average from 2008-2017) falls on fixed assets (FA) of transportation by pipeline. The share of automobile and urban electric transport in the structure of fixed assets of the industry from 2004-2017 averaged 7%.

The share of the FA of air transport in the structure of the industry averaged about 4.1% over the analyzed period. As of the end of 2017, the depreciation of the fixed assets of the transport and storage industry accounted for 24.2%. The depreciation level of fixed assets in the industry from 2003 to 2010 was higher and averaged 30%, from 2011 to 2017 this figure averaged 25%. This trend is typical for all types of transport.

Evaluation of the effectiveness of fixed assets utilization of the transport industry (gross output of transport services to fixed assets at initial cost) showed that capital productivity from 2006 continuously decreased from 1.21 to 1.10 tenge in 2008. In 2009-2012, a decrease in the capital productivity index occurred from 0.97 to 0.71 tenge. In 2015, 1 tenge of fixed assets of the transport industry created only 0.62 tenge of gross output in 2006 prices. The observed decrease in the capital productivity ratio shows that the industry is accumulating capital, the utilization of which is inefficient so far. He fact is confirmed by the growth dynamics of the gross output of the transport industry (at current prices 13.4% and in prices of 2006 7.4%), yielding to the rate of growth of capital accumulation in the industry (in current prices 20.7% and in 2006 prices 15%).

Accumulated price inflation (2005 = 100) in the transport industry amounted to 445%, while the inflation rate indicator for consumer prices was 287% and the IPI of manufacturers of industrial products - 318%. Other sectors that demonstrate substantial cumulated inflation are the price index for the purchase of industrial and technical products 333%, and the producer price index for agricultural products 303%. The main reasons for the observed level of price inflation in the industry are its high monopolization, technologically and physically obsolete equipment, as well as high operating costs associated with the infrastructure and maintenance of old equipment. In addition, the maintenance of an aging railway fleet using non-original spare parts makes maintenance of transport equipment unreliable and short lived in post-repair period and increases the company's operating costs, which reflect in the growth of tariffs.

Labor resources employed in the transportation and storage in 2006-2018 increased from 437.4 thousand to 624.7 thousand people. The inflow of labor resources in the industry in the period occurred at an average annual rate of 3.1%. The share of people employed in the transport and warehousing industry increased from 5.9% in 2006 to 7.2% in 2018. The structure of the employed population in the industry in 2006 was 74.5% represented by employees. Since 2011, there has been a decrease in the share of hired workers from 72.8% to 67.5% in 2018. In 2018, the number of employed people in the transportation and storage amounted to 625 thousand people. Industry statistics also have information on the number of employees, i.e. the number of persons accepted under an employment contract, which is on average 62.4% less than the total labor force of the industry.

On average, wages per employee in the transportation and storage were 29% higher than the average monthly nominal wages in the economy as a whole. The established nominal wage per employee in the industry in 2018 at the level of KZT223.7 thousand was commensurate with the size of the nominal wage in the construction industry (KZT227.5 thousand) and industry as a whole (KZT255.5 thousand).

The two-factor analysis showed that a positive contribution to the growth of the transport industry is made by increasing of the capital of the industry, while the elasticity ratio of this factor was 0.65 in the first model and 0.59 in the second. Thus, the increase in the FA by 1-percentage point results in growth of gross output in the industry will be 0.65 pp. Since the labor factor in those models has a negative elasticity (-0.70) within a model confidence level of 90%, it becomes obvious that the industry is actually growing due to a quantitative increase in capital than in labor.

Taking into account that the revenue structure of the industry in the republic is formed by more than 70% by capital-intensive transport sub-sectors such as railway transport (cargo transportation) and transportation of cargo by pipeline (gas and oil), it becomes obvious that the output of the industry will be largely determined by its capital and capital productivity.

Transport sector in the economy of Kazakhstan

The transport industry of Kazakhstan over the past few years, according to the annual reports on the industry of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan (CS MNE), did not show serious structural changes, maintaining its share in GDP at the level of 7.3% (2015- 2018). As of the end of 2018, according to our estimates, the industry's share in GDP was 7.5% (7.4% in 2017). In current prices, the gross value added (GVA) of the transport industry in the republic's GDP, according to our estimates, was KZT4,043bn (+ 11.8% yoy). For comparison, the GVA of the transport sector in the Russian Federation is 6.9% of GDP in 2016 and 7.0% in 2017. In Belarus, this figure is 5.7% and 5.8%, respectively.

Figure 1. Gross output of transportation industry

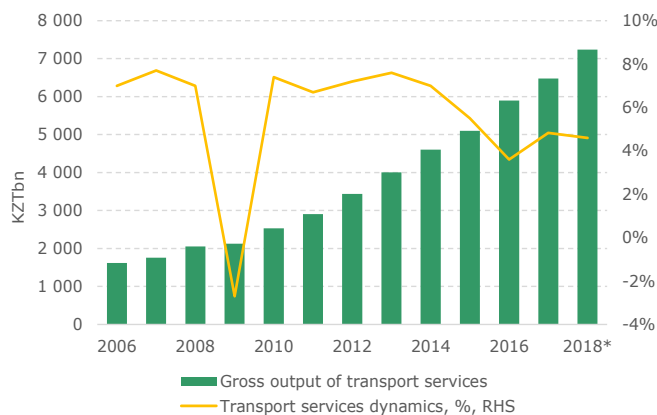
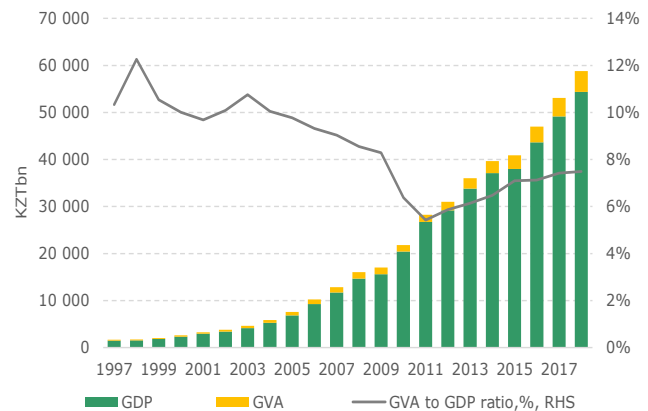


Figure 2. Industry's share in the economy



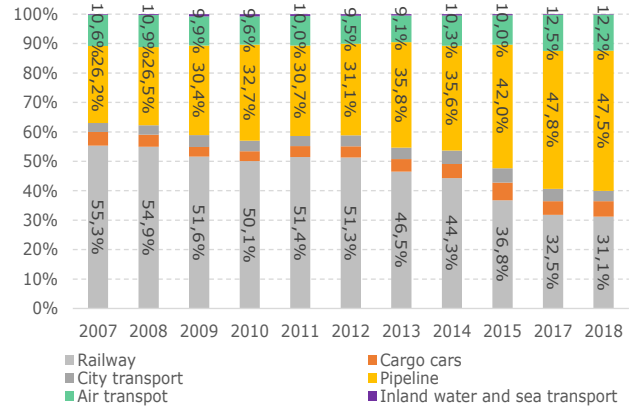
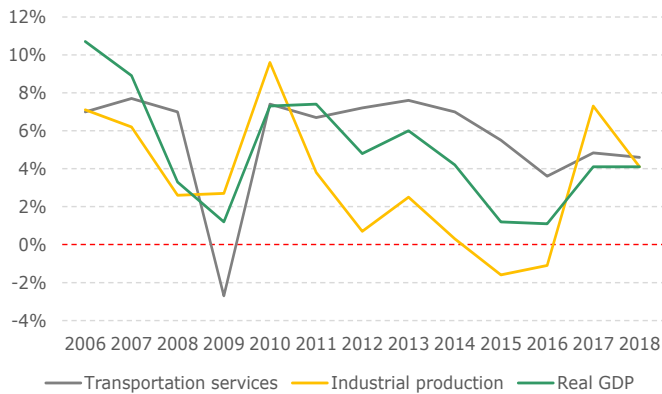
Source: KS MNE, Halyk Finance *estimate

Source: KS MNE, Halyk Finance *estimate

The gross output of transport services in January-December 2018, according to preliminary data, amounted to T7 240 bn (+ 11.8% yoy or T6 474 bn in 2017). The growth of the industry in real terms was 4.6% yoy against 4.8% yoy a year earlier. The growth dynamics of the industry is largely correlated with the growth dynamics of the entire economy, since the economic essence of the transport industry is to serve other sectors of the economy and to support inter-sectoral industrial relations (the economy grows - the transportation volume increases (Figure 3.)). Analysis of the structure of GDP by production method showed that as part of the production of services, the transport and storage averages 7.9% in the period 2010–2018 (8.3% in 2018). As part of the production of services, this industry ranks third after wholesale and retail trade, auto repair, etc. (15.3% is the average for 2010-2018) and real estate transactions (8.4% for the same period).

In the revenue structure of the industry from transportation by types of transport, the average share of railway (railway) and pipeline transport was 81% (78.7% in 2018) in 2007-2018. (Figure 3.). Structurally, the shares of these two industries have undergone noticeable changes. The share of railway transport in the revenue generation structure decreased from 55.3% in 2006 to 31.1% in 2018, and the share of pipeline transport increased from 26.2% to 47.5%. The average value of air transport in the revenues of the transport industry in 2007-2018 accounted for 10.4% (12.2% in 2018). The share of road freight accounted for 4.4% on average for the same period (5.3% in 2018). The share of urban transport (bus, taxi, trolleybus, tramways) in the revenue structure of the industry during the advising period was 3.8% (3.5% in 2018). The average share of maritime transport (inland and sea) is 0.5% (0.2% in 2018).

Figure 4. Transportation services and GDP growth Figure 5. Industry revenue structure



Source: KS MNE, Halyk Finance

Source: KS MNE, Halyk Finance

Changes in freight in Kazakhstan in 1991-2018 were irregular. At the beginning of the period, the most noticeable freight volume were observed and amounted to 2,513.4mn tons or 437.2bn tons / km with a subsequent reduction of volumes to 1 065.9mn tons or 149.7bn tons / km in 1999 (Figure 6.). Decline of freight volume in the period 1991-1999 is explained by the deepening gap of inter-republican ties and the disintegration of the single economic space of the USSR. In 2000, we observe a significant increase in freight by 38.3% yoy to 1,293.1mn tons. This happened due to the increase in transportation of coal and metal ores and concentrates. Thus, coal exports to the Russian Federation (RF) in 2000 increased by 51.5% to 24.5mn tons. Exports of copper ore mainly in Russia increased by 8.1 times and amounted to 101.5 thousand tons. The expansion of raw materials exports to the Russian Federation coincided with the recovery of the Russian economy, whose real GDP increased in 2000 by 10% yoy. Exports of zinc ores and concentrates increased by 23% yoy and amounted to 113.2 thousand tons, with predominant exports to Uzbekistan. At the turn of 1999-2000, foreign trade turnover grew by 45.4% yoy and amounted to 13.9bn US dollars. Subsequently, a significant increase in freight turnover was observed in 2010-2011, when the volume of freight transportation increased by 16% and 22% yoy. In this period, a significant increase in transportation observed in the export of wheat, zinc ores and concentrates, chrome concentrates, coal, and liquid fuel (fuel oil). Foreign trade turnover in 2011 increased by 27.6% yoy and amounted to 91.4bn US dollars. Negative dynamics in freight in 2015-2016 -0.4% and -0.1% coincides with the crisis in energy prices caused by oversupply in global markets. The volume of cargo transportation by all types of transport in 2018 increased by 4.0% yoy and amounted to 4,130.6mn tons of cargo, baggage and cargo luggage (5.8% yoy in 2017). Cargo turnover growth in 2018 increased by 5.7% yo y and amounted to 596.1 t / km (8.7% yoy in 2017). Foreign trade turnover in 2018 increased by 19.7% yoy and amounted to 93.5bn US dollars.

It is possible to distinguish three periods in passenger transportation of the republic (Figure 7.). The first period of 1991-1994, marked by a decline in traffic, when the number of passengers decreased from 3 592mn to 1 986mn people. The reduction in the number of passenger traffic in this period can be explained by the high rate of decline in the population of the republic by an average of -1.2% from 16,452 thousand to 15 676 thousand people. In the second period 1995-2009, passenger traffic grew by an average of 6.7%, and from 1995-2003 the growth rates were two-digit about 13% (except for 1995 +2.5 times yoy, 2000 -13.2% yoy and 2003 -1.7% yoy), and from 2004-2009, the growth rate was 4.8%. In the period 2010-2012, there is a significant increase in passenger traffic from 13,187mn people (+ 11.7% yoy) to 18,485mn people (+ 11.0% yoy). In

2011, the increase in passenger traffic amounted to 26.2% yoy or 16,647mn people. Since 2013, there has been a decrease in traffic dynamics from 8.2% yoy to 1.2% in 2018 (an average of 3.8% yoy).

Figure 8. Cargo freight and cargo turnover

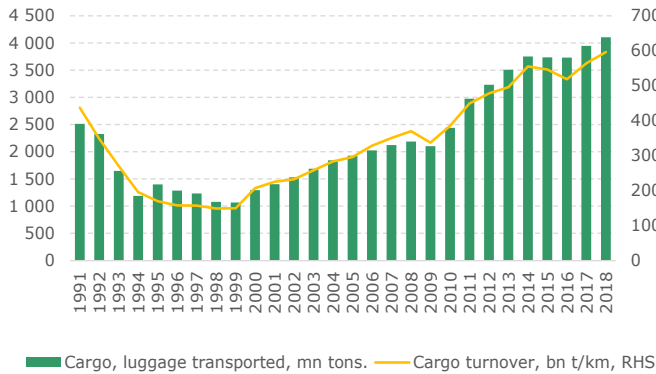
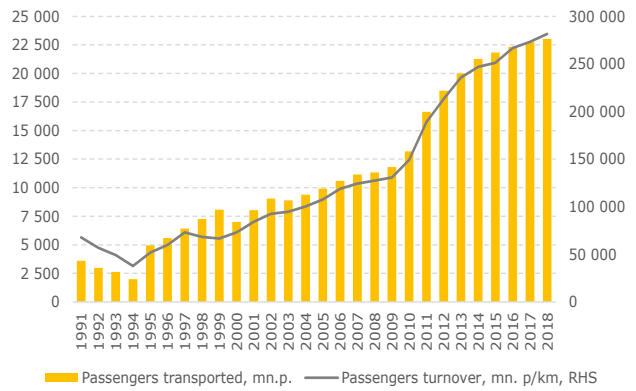


Figure 9. Passengers freight and passengers turnover



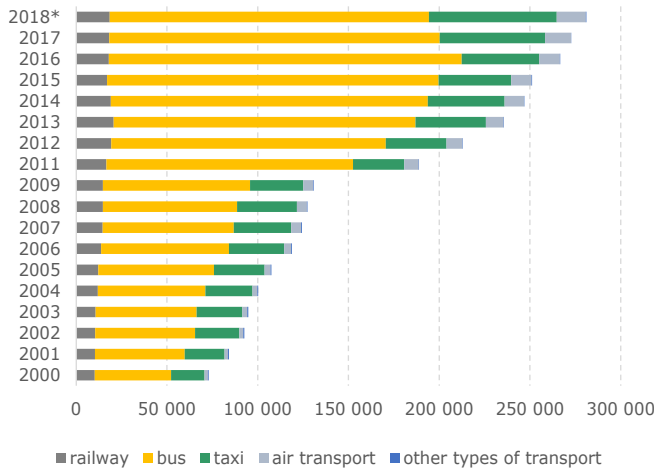
Source: KS MNE, Halyk Finance

Source: KS MNE, Halyk Finance

The analysis of transportation showed that the main load of passenger’s transportation in the Republic of Kazakhstan was on the bus transportation (Figure 7.). Thus, in 1998-2008 the share of traffic by this type of transport averaged 69% (6,327mn people on average over the period). Starting from 2009, the share of this transport significantly increases from 74% (8,692 mn. People) to 82% (18,314 mn. People) in 2016. In 2017, there was a decrease in the share of bus traffic and at the end year, the share of passengers transported by this type of transport was 80% (18,237mn people), and in 2018 72% (16,541mn people). The change in the share of bus traffic occurred due to an increase in the share of taxi passengers. So, from 1998-2008 the share of traffic by this type of transport averaged 29% (2,669mn people on average over the period). Since 2009, the share of taxi passenger traffic has decreased and averaged 20%. Since 2017, there has been an increase in the share of taxi traffic from 19% or 4,406mn people up to 28% or 6,373mn people in 2018. We find an explanation for this, on the one hand, in the fact that Internet taxi services such as Uber, Yandex taxi and the like appeared in the major cities of the republic, and, on the other hand, the load on other types of transport (buses) in major cities increased. In addition, the well-being of citizens has increased, which in general creates a prerequisite for the growth of transportation by this type of transport. The share of passenger traffic by other modes of transport is less than 1%. Thus, the share of rail transportation in the period from 1998-2008 averaged 0.2% of the total passenger traffic, and in the period from 2009-2018 its average size was 0.1%. The reduction in rail transport is partly due to the increase in the number of private and commercial road carriers, as well as the growth in private transport. The number of vehicles in Kazakhstan in 1998 amounted to 1,286 thousand units, and as of 2017 it increased to 1,968 thousand units. In addition, the increase in the length and quality of paved roads contributes to the growing popularity of motor transport among the population. Analysis of passenger traffic confirms this. Thus, if passenger traffic by bus in 1998 was 38,554mn passengers per km (pkm), by 2018 it increased almost 4.6 times and amounted to 175,862mn p/km. There is more than four time increase in passenger turnover of a taxi from 16,064mn p/km up to 70,384mn p/km over the same period. Since 1998, passenger turnover by railway has increased by 73% and amounted to 18,510mn p/km. A significant increase in passenger turnover by 7.7 times over the same period is observed in air transportation up to 16,069mn km.

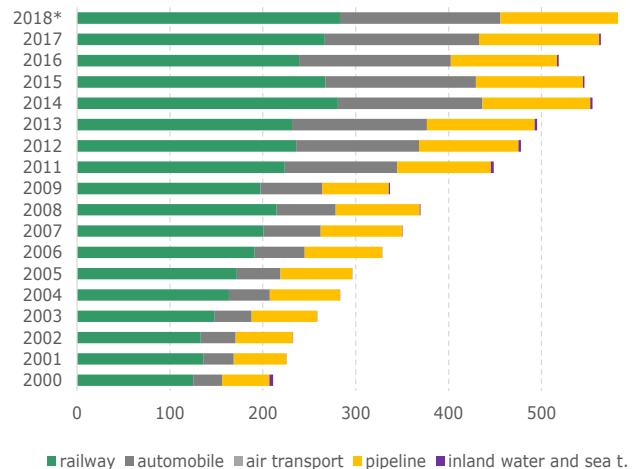
On the contrary, passenger transportation by urban electric transport (trolley buses and trams) suffers reduction due to decrease in the length of operating routes, for trams 28% to 87.5 km and for trolley buses 69% to 114.6 km in the country. Thus, passenger transport by trams decreased by 63.9% since 2003 and in 2017 amounted to 29mn people. Passenger transportation by trolleybus decreased by 62.2% and amounted to 27mn people in the same period.

Figure 10. Passengers' turnover as per transport type, mn. p/km



Source: KS MNE, Halyk Finance

Figure 11. Cargo turnover structure as per transport type, bn. t/km



Source: KS MNE, Halyk Finance

For comparison, in the Russian Federation there is an opposite trend in the road infrastructure of electric urban transport, but comparable in terms of passenger traffic. Thus, if the length of the operational routes of tram transport was reduced from 2.8 thousand km in 2005 to 2.5 thousand km in 2017, the length of the operational routes of the trolleybus mode of transport, on the contrary, increased from 4.9 thousand km. up to 5.2 thousand km. However, the number of passengers transported by tram and trolleybus mode of transport in the Russian Federation, as well as in Kazakhstan, decreased by quite comparable values by 67.8% and 70.4% in the period 2005-2017. The number of passengers transported by tram and trolleybus mode of transport in the Republic of Belarus as well as in Kazakhstan decreased by 32.2% and 39.7% in the period from 2005-2017. Reducing the number of passengers transported by this type of transport will occur in the Republic of Kazakhstan and further due to significant wear and tear and the lack of renewal of fixed assets of this type of transport, yielding to other types of electric transport, such as electric buses, metro, as well as the passenger mode of transport.

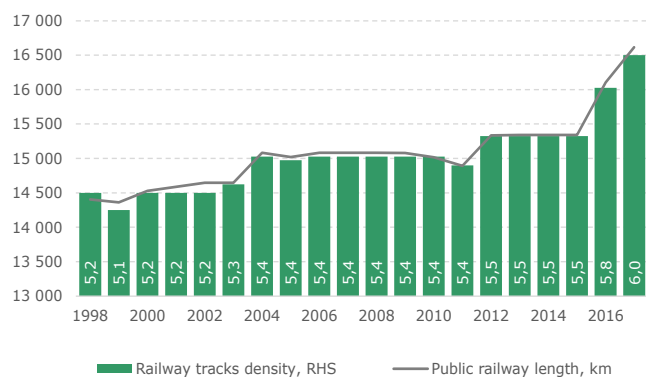
Cargo turnover in the Republic of Kazakhstan in 1998-2018 for all types of transport increased from 149bn tons km (t/km) (1,078mn tons of cargo, baggage and cargo luggage) in 1998 to 596bn t/km (4 104mn tons of cargo, luggage and cargo luggage) in 2018. Analysis of the turnover by mode of transport showed that most of the turnover in 1998-2018 accounted for rail transport, and until 2009, the share of this type of transport was 57-69% of the total freight turnover in the country (Figure 12.). From 2010, the steady decline in the share of rail traffic from 55% to 47% in 2018 begins. The freight turnover in the period 1998-2018 increased from 103bn t/km (170mn tons of cargo) to 283bn t/km (398mn tons).

The share of road freight traffic until 2009 varied from 13% to 17% of the total freight turnover. Starting from 2010, the share of freight turnover by this type of transport began to increase from 21% and reached 32% in 2016. As of 2018, according to preliminary estimates, the share was 29%. In the period 1998-2018, the freight turnover of motor transport increased from 19bn t/km (831mn tons of cargo) to 173bn t/km (3 422mn tons). Comparative analysis of freight and cargo turnover by these two types of transport showed that the growth of freight turnover and freight traffic by rail grew by 2.7 and 2.3 times, while the growth of freight traffic and freight by road increased by 9.2 and 4.1 times respectively.

The difference in growth rates is primarily due to the fact that transportation of commercial goods by rail transport is limited by relatively high tariffs (due to the monopolization of the industry) and low margins for companies that contract rail transport compared to road transport, where margins can be around 15%. In addition, the limited railway infrastructure and the lack of multimodal logistics transport centers, single-track railway lines of about 31% (2017) and as a result low throughput does not contribute to the development of transportation of this type. The density of railways did not favor railway transportation, which in Kazakhstan was about 5.8-6.0 km per 1000 sq. km of territory in 2016-2017, whereas the density of automobile roads was 30-32 km per 1000 sq. km. of territory. In Europe, the density of railways ranges from 50-110 km per 1000 sq. km of territory. In the Russian Federation, the density of railways, according to the data of the Economic Commission for Europe, was 5.0-5.1 in 2006-2017. In Belarus, this metrics was 26.3-26.4 kilometers per 1000 square meters.

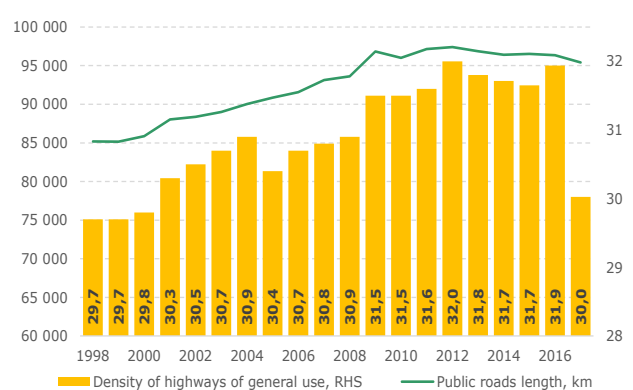
Cargo turnover by the pipeline until 2009 shared 21% -27% of the total. Subsequently, the share of freight turnover changed insignificantly and amounted to 21% -23% of the total freight turnover. In 2018, freight turnover by pipeline was 23%. Cargo turnover in the period 1998-2018 increased from 27bn t/km (76.8mn tons) to 139bn t/km (281mn tons). The expansion of transportation by this type is primarily due to the increase in crude oil production in the Republic of Kazakhstan from 25.9mn tons in 1998 (oil and gas condensate) to 90.3mn tons in 2018, natural gas from 7.9mn cubic meters in 1998 to 55.6mn cubic meters in 2018. The increase in the length of pipelines from 17.1 thousand km. up to 23.3 thousand km also contributed to it. The share of cargo turnover by other types of transport (air, sea and inland shipment) is less than one percent within the analyzed period.

Figure 13. Length and railway density, thousands of km per 1000 sq.km



Source: KS MNE, Halyk Finance

Figure 14. Length and automobile road density (hard surface) km per 1000 sq.km



Source: KS MNE, Halyk Finance

The average annual dynamics of the increase in the length of general-purpose railways in 1998-2012 amounted to 0.4%, and automobile roads 0.7%. In this period, the length of general-purpose

railways increased from 14,403 km to 15,333 km, and that of automobile roads from 80,945 km to 87,140 km. In 2013-2017, the average annual dynamics of increase in the length of general-purpose railway tracks was 1.6%, while the dynamics of automobile roads was negative and amounted to -1.2%. Thus, the length of general-purpose railways increased from 15 341 km in 2013 to 16 614 km in 2017, while the length of roads in the same period decreased from 86 581 km to 81 814 km. The extension of railways we attribute largely to the implementation of the Nurlı Zhol state program.

Under the program, there was the construction of second rail tracks on the Shu-Almaty section with a length of 112 km. In addition to the construction of new and reconstruction of old railways, other construction projects were implemented under the program. Thus, in 2012-2015, was implemented Zhezkazgan-Beyneu project with a length of 1063 km and was the longest railway track section. At the same time, the construction of the Arkalyk-Shubarkol railway with a length of 214 km was completed. At the same time, construction of the 14 km long section of Bokzhart-Ersai railway tracks takes place. As part of the construction of new highways under the Nurlı Zhol program in 2015-2016 circa 1.3 thousand km were put in exploitation and 2 thousand km of roads were reconstructed.

As a part of improving the transport and logistics infrastructure and further realizing the transit potential of the republic, the projects of the ICBC "Khorgos", the FEZ "Khorgos-Eastern Gate" were implemented, projects for the further development of the port of Aktau and the new port of Kuryk were implemented. Under the program in 2019, it is planned to cover 4.4 thousand km of roads with reconstruction and construction. According to the results of the year, it is supposed to repair 1,600 km and open traffic to 654 km.

Fixed capital investments

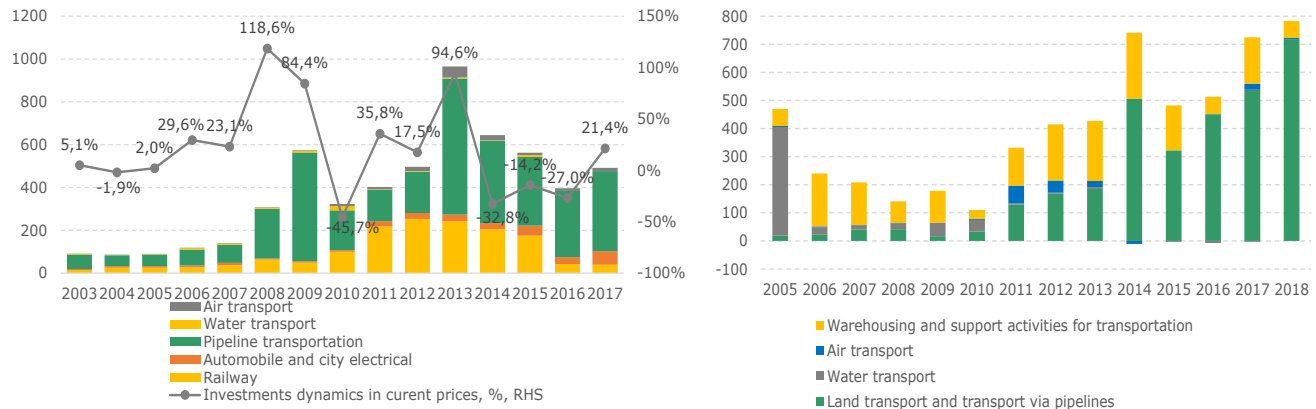
Investments in the transport industry was extremely irregular. Thus, in 2004-2009 there was a positive increase in the volume of investment in the industry from KZT87bn to KZT570bn (Figure 15.) In 2010, investments in fixed assets of the industry amounted to KZT310bn and in 2013 reached their historic maximum of KZT964bn reduction of investment in the industry to KZT405bn in 2016. In 2017, investments in the fixed capital of the industry from all sources of financing amounted to T492bn in current prices or KZT157bn in 2003 prices. A significant flow of investments (64% on average over the period) in the period 2003-2017 went to the transportation sector by pipeline. The volume of investments from 2003 to 2017 increased from KZT68bn to KZT374bn in current prices. In some years (2009 and 2013) investments in this type of transport reached T509bn and T636bn, respectively. Such significant investments in this type of transport have led to an increase in the FA of this type of transport and its profitability.

Investment in the railway mode of transport in the republic shared 26.2% in the analyzed period. Investments in this type of transport demonstrated a relatively even dynamics until 2010 from KZT14bn to T99bn. In 2011-2017, investments in this type of transport increased significantly to KZT253bn (2013) and subsequently showed significant reduction to KZT39.2bn in 2017. The average share of investment in the automotive and urban electric mode of transport in the republic in the period under review was about 6.1%. The dynamics of investment growth in the period from 2003 to 2010 was relatively regular and averaged T7bn. In 2011-2015, there had been a significant increase in annual investment volumes from KZT24bn to KZT47bn in 2015. As of the end of 2017, investments in this type of transport reached historical maximum and amounted to KZT63bn.

Analysis of the gross inflow of foreign direct investment (FDI) showed that in the structure of all foreign investment, the share of investment in the transport industry (minus storage) on average in 2005-2018 amounted to about 1.4% (Figure 12.). Thus, if in 2005 investments in the transport

sector in the total volume shared 5.2% of the total volume of all investments, then in 2006-2013 investments in this industry shared 0.3% -0.9%.

Figure 16. FA investments per sub-sector, KZTbn Figure 17. Gross FDI inflow in the industry, \$bn



Source: KS MNE, Halyk Finance

Source: KS MNE, Halyk Finance

Investments in the industry in 2005 amounted to \$386mn and were channeled into water transport (they ensured a substantial increase in the share to 5.2%). We associate such a significant spike in investment in water transport with the expansion of fleet stock of the republic that belonged to Kazmortransflot JSC. In the period 2014-2017 as well as in 2018, the FDI inflow in the transport sector shared 2.1%-2.7% and 3.0%, respectively. Investment inflows in the transportation sector by pipeline supported such a share size in total structure of the FDIs. Thus, in 2010, FDIs in this sector was \$26.3mn (\$11.7mn in 2005), then in 2011, FDIs in this sector reached \$104.2mn. Subsequently, investments doubled in size and in 2017 amounted to \$507.3mn, and in 2018 reached \$640.7mn. The volume of gross FDIs in air transport was relatively small within total investments in the transportation and storage and from 2005 to 2010 was \$2.9-3.7mn. In 2011, there has been a significant increase in the size of investments to \$62.8mn, followed by a reduction to \$ 21.6mn. In 2017, investments in this sector amounted to \$21.7mn. In 2018, the volume of foreign direct investment in this sector of the industry amounted to \$5.6mn.

Fixed assets of the transportation industry and its estimation

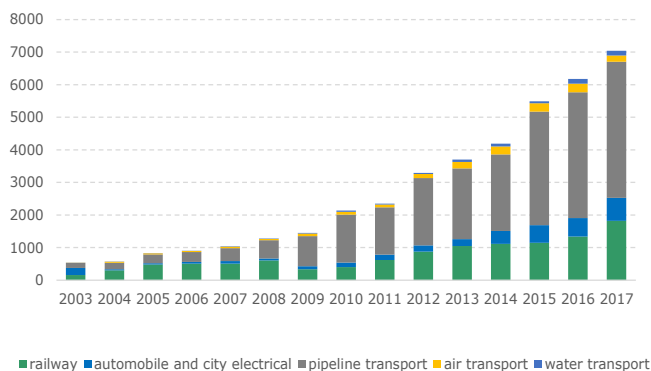
In 2003-2017, fixed assets (FA) of the industry increased by 13.1 times and amounted to KZT7,042 bn as of the beginning of 2018. FA, adjusted for inflation (2003 = 100), increased 4.2 times and amounted to KZT2,248bn. In the structure of fixed assets of the industry, the assets of pipeline transport shared 60% on average of the total assets for 2008-2017. In 2003-2007, the FA of this type of transport averaged 33%. The increase in the share of fixed assets of this type of transport contributed to an increase in the length of mainstream pipelines by 37.7% from 2003 to 2017. As of the beginning of 2018, fixed assets of pipeline transport at the initial cost amounted to KZT4,175 bn or KZT1,333bn in prices in 2003, the FA of railway transport in the FA structure of the industry in the period from 2009 to 2017 averaged 24.3%. In the period 2003-2008. The FX share of this type of transport averaged 49%. As of the beginning of 2018, the FA of railway transport at initial cost amounted to KZT1,818bn or KZT580bn in prices in 2003. The increase in the FA of this type of transport resulted from the quantitative growth of the stock. Thus, in 2003, the number of locomotives was 1,770 units, the number of passenger cars was 2,559 units, and freight cars was 70,366 units. In 2003, the number of locomotives was 1,732 units, the number of passenger cars was 2,661 units, and freight cars was 75,496 units. The maximum number of locomotives in the

period under review in the amount of 1,896 units accounted for 2013 (in 1995, the locomotive fleet was 3,045 units).

The share of automobile and urban electric transport in the structure of fixed assets of the industry from 2004-2017 averaged 7%. In the period from 2014 to 2017, its share was 9-10%. In current prices, the cost of the FA of this type of transport was KZTT709.5bn (KZT227bn. 2003 = 100). The total number of vehicles in the Republic of Kazakhstan at the end of 2017 amounted to 4.4mn units. Of these, 87.9% (80.2% in 2003) accounted for passenger cars (vehicle fleet grew 3.4 times since 2003), 2.1% (4.3% in 2003) accounted for bus car fleet (car fleet growth 1.5 times since 2003) and 10.1% (15.6% in 2003) accounted for freight transport (car fleet growth 2 times since 2003).

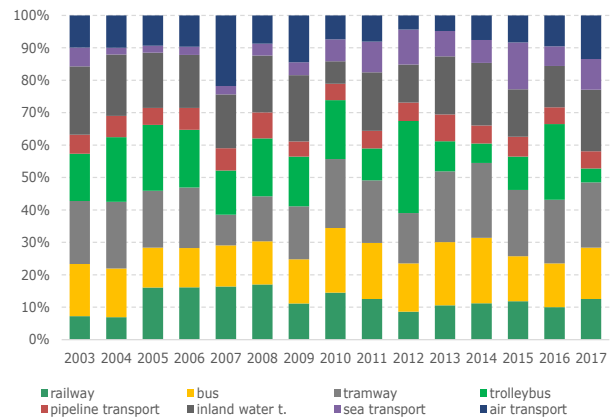
The growth of the mobile fleet of electric urban transport shows a negative trend. Data on the number of units of trolleybus and tram transport as of 2017 are not presented due to confidentiality. In 2003-2016, the rolling stock of the tram fleet decreased by 34% and amounted to 170 rolling stock units. The maximum number of units of the tram fleet was in the Pavlodar region and for the entire observation period changed slightly from 114 units in 2003 to 111 units in 2016 (107 units in 2017). In 2003-2015, the rolling stock of the trolleybus fleet decreased by 47% and amounted to 228 rolling stock units. Data on the number of trolleybus and tram transport units as of 2016-2017 classified because are confidential. The maximum number of trolleybus fleet units accounted for the city of Almaty and for the entire observation period changed slightly from 219 units in 2003 to 212 units in 2015.

Figure 18. Industry fixed assets, KZTbn



Source: KS MNE, Halyk Finance

Figure 19. Fixed assets depreciation, %



Source: KS MNE, Halyk Finance

The share of FA of air transport in the structure of the industry averaged about 4.1% over the analyzed period. In current prices, the FA of this type of transport amounted to T190bn (KZT61bn. 2003 = 100). Air fleet of the republic in 2003-2017 increased by 32.6% and amounted to 895 units. The share of fixed revenues of water transport (inland waterways and marine) in the structure of the industry averaged 1.3% over the analyzed period. In current prices, the water transport type of transport amounted to KZT150bn (KZT48bn 2003 = 100). The number of units of rolling stock of inland waterway (river) transport increased by 16% and amounted to 171 units. The number of marine rolling stock units at the end of 2017 was 66 vessels.

There are no data for 2003 by the number of units of sea transport, since the starting point for the creation of merchant shipping in the republic was 2004, when the program for the creation of the national navy was launched. In 2004, the republic's merchant navy had only four dry-cargo ships. According to the NMSC Kazmortransflot LLP, the number of vessels in the company was three units.

As of the end of 2017, the depreciation of the transport and storage industry amounted to 24.2% (in the Russian Federation, the industry indicator for 2017 is 42.1% and 50.8% in the Republic of Belarus in 2017). Statistical data on the depreciation of the operating system of the transport industry in Kazakhstan until 2016 related only to the transport industry, since 2016 these data go together with storage (Figure 14.). The depreciation level of fixed assets in the industry from 2003 to 2010 was higher and averaged 30%, from 2011 to 2017 this figure averaged 25%. This trend is typical for all types of transport.

Depreciation of fixed assets of railway transport in 2017 amounted to 30.1% (36.5% in the Russian Federation according to data for 2016), with an average value for the last 7 years of 28.2% (2003-2010 36.5%). Analysis of the age structure of railway transport showed that 78% of electric locomotives, 61.2% of diesel locomotives, 44.5% of passenger cars, 71.4% of baggage cars and 25.7% of freight cars have an operating age of over 25 years.

Depreciation of road and city electric transport was 30.5% in 2017, with an average value in 2011-2017 in 32.7% (2003-2010, 40.5%). The lowest values for fixed asset depreciation are observed for transportation by pipeline and as of the end of 2017, they make up 12.7% (50.9% in the Russian Federation in 2016), with an average value from 2011-2017 of 15.1% (2003-2010 16.9%).

The highest FA depreciation values are observed in inland water transport, where depreciation at the end of 2017 is 45.6% (in the Russian Federation in 2017, the depreciation of the FA of inland water passenger transport is 33% and 55.4% of inland water cargo), with an average from 2011-2017, at 41.0% (2003-2010, 47.1%). The explanation for this we find in the analysis of the age structure of the rolling stock of this type of transport. Thus, self-propelled cargo ships in 2017, which were in operation until 1970, accounted for 22.2%, from 1970-1979 - 22.2% of all ships. Cargo ships (barges) in 2017 had the following age structure: 12.1% are vessels operating from 1970-1979, 48.5% from 1980-1989 and only 22.7% in operation since 2000 and later. Tugboats by 68% consisted of vessels that were commissioned from 1970 and earlier and until 1989. As of the end of 2017, the depreciation of sea-going water transport is 22.8% (in the Russian Federation, passenger sea depreciation 52.3% and 41.3% of sea freight in 2017), with an average value from 2011-2017 at 24.0% (2003-2010 10.2%). Depreciation of the marine fleet operating system is increasing in recent years and is primarily due to the fact that the formation of rolling stock of this type of transport began relatively recently after 2004. The depreciation of the fixed-wing air transport in 2017 was 32.3% (41.8% in the Russian Federation in 2016 g), while the average depreciation in 2011-2017 amounted to 20.4% (2003-2010, 32.0%).

The depreciation of bus transport was 38.1% in 2017 (58.3-69.5% in the Russian Federation in 2017 depending on the means of communication), with an average depreciation value of 2003-2017 at 40.7%. There is no data on the age structure of bus transport, as well as the details on depreciation of trucks. Analysis of the data of the car fleet by year of manufacture in 2017 showed that over 61% of the rolling stock of the republic's fleet has over 10 years of operation (47.5% in the Russian Federation in 2017). Since trucks belong to 61.1% of individual owners, one can assume that the life of this type of transport is also at least 10-15 years.

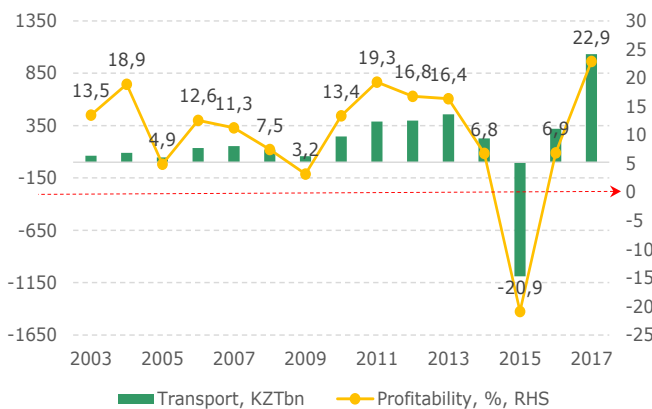
Profitability analysis (Figure 15.) defined two periods. In 2003-2010, the average profitability rate was 10.7%, while in 2011-2017, it was 9.7%. The minimum rate of profitability in the first period falls on 2009 and is 3.2%. In 2011-2017, the minimum profitability of the industry in 2015 was at the level of -20.9%. This is the only negative indicator for the analyzed period.

In 2015, the profitability of all transport sub-sectors was negative. Significant deterioration of the indicator was observed in the most profitable transport sub-sector - transportation by pipeline (average profitability index 2003-2017 -35.5%) to -35.4%, while the loss was at the level of KZT678.4 billion. the pipeline in 2016-2017 amounted to 93% and 86%, with revenues of KZT587 and KZT674 billion, respectively. Compared to 2003, the industry's profit has increased by 22 times and w/o cumulated inflation by 7 times.

In contrast to transportation by pipeline, the rail transport sub-sector for the first time showed negative profitability during the crisis of 2005 at a level of -0.6% with a loss of KZT2.1bn. In 2015, the rail transport sub-sector also showed negative profitability at the level of (-9.8% with an average profitability ratio of the sub-sector of 7.8%), recording a loss at KZT94.3bn. However, in contrast to transportation by pipeline (KZT220bn of profit and 42.9% of profitability), the rail transport began to show a loss of KZT48.3bn since 2014. At the same time, the level of profitability of rail transportation was at the level of -4.6%. The profitability of transportation by railways in 2016-2017 amounted to 1.6 and 8%, with revenues in KZT21bn and KZT118bn, respectively. Compared to 2003, the industry's profit increased without taking into account inflation by 5.6 times or 1.8 times in 2003 prices.

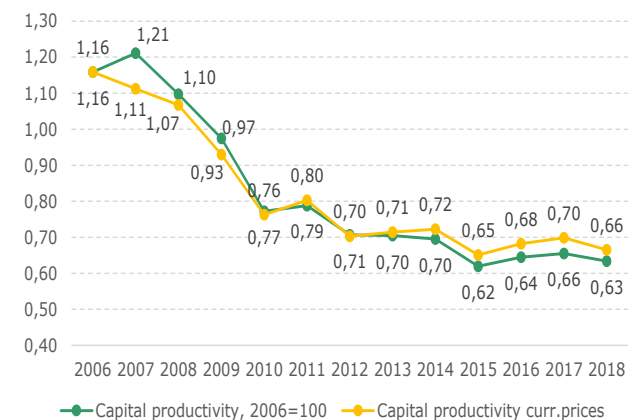
Approximately the same financial results in the automobile transport sub-sector of the industry, which in 2015 recorded a loss of KZT24.3bn (profitability -7%, with an average of 1.8% in the sub-sector during the analyzed period). However, just like the railway transportation sub-sector, the motor transport sector began to show negative financial results in 2014, registering a loss of KZT3.6bn since 2014. The profitability of transportation by automobile road (including urban electricity transport) in 2016-2017 amounted to 1.6 and 2.6%, with revenue in the sub-sectors of KZT6.4 and KZT14.5bn, respectively.

Figure 15. Industry profitability ratio, %



Source: KS MNE, Halyk Finance

Figure 16. Capital productivity is on decline, tenge



Source: KS MNE, Halyk Finance

Compared to 2003, the industry's profit increased at current prices by 16 times or 5.1 times at 2003 prices. The transport sub-sectors described above form the structure of the industry's profit at the level of 72-75% within the analyzed period. Thus, in 2017, the profits of these three industries amounted to KZT806.4bn out of KZT1.031bn in the industry or 78% (84% in 2003).

Evaluation of fixed assets (capital productivity) of the transport industry (gross output of transport services to fixed assets at primary cost) showed that capital productivity has continuously decreased since 2006 from KZT 1.21 to KZT 1.10 in 2008 (Figure 16.) From 2009-2012 there is a decrease in capital productivity from 0.97 tenge to 0.71 tenge. In 2015, 1 tenge of fixed assets of the transport industry created only 0.62 tenge of gross output in 2006 prices. At the time of the analysis as of 2018, of the fixed assets of the industry were not available, therefore we applied second-degree polynomial regression for extrapolation of missing data with one period step forward. The econometric estimation of the FA (capital), the transportation and storage output amounted to about KZT10.889bn in current prices or KZT6.010bn in 2006 prices. The observed decrease in capital productivity indicates that the industry is accumulating capital, application of which suffers

inefficiency. The fact finds confirmation in the dynamics of the gross output of the transport sector (13.4% in current prices and 7.4% in 2006 prices) that yield to the growth rates of capital accumulation in the industry (20.7% in current prices and 15% in 2006 prices). The industry is becoming capital-intensive (fixed capital intensive) and this is primarily due to the FA structure contains rolling stock of foreign production, as well as technologically complex assets, the costs of which maintain and operate lead to an increase in costs, especially as its physical and moral depreciation. Modeling the dynamics of the gross output of the industry by the two-factor function of Cobb-Douglas showed that capital formation and accumulation serve as a production driver for the growth of the gross output of the industry. Thus, capital elasticity in the model with deflated data (2006 = 100) was 0.65 (the first model, taking into account all the labor resources of the industry) and 0.59 (the second model, taking into account the listed number of labor resources of the industry), which indicates a positive return of this factor of production in the transport and storage industry. It turns out that the increase in the FA (capital) by 1 percentage point will effect gross output in the industry by 0.65 pp. It follows that the industry is actually growing due to a quantitative increase in capital. The same analysis in the period 2010-2018 showed that the elasticity of fixed capital is only on an increase (0.85 coefficient of elasticity), which indicates a further deepening of dependence of the growth from the positive impact of this factor of production.

Since such capital-intensive sectors of the industry as rail transport (cargo transportation) and transportation of goods by pipeline (gas and oil) yield 70% of the industry's revenue it becomes obvious that the capital of these sub-sectors will determine the output of the industry and its capital intensity.

Labor resources of the industry

Labor resources employed in the transport and storage in 2006-2018 increased from 437.4 thousand people to 624.7 thousand people (Figure 17.). The growth of labor resources in the industry in the period occurred at an average annual rate of 3.1%. The share of people employed in the transport and storage increased from 5.9% in 2006 to 7.2% in 2018.

Figure 17. Industry labor structure, k people



Source: KS MNE, Halyk Finance

Figure 18. Monthly average nominal wage, tenge



Source: KS MNE, Halyk Finance

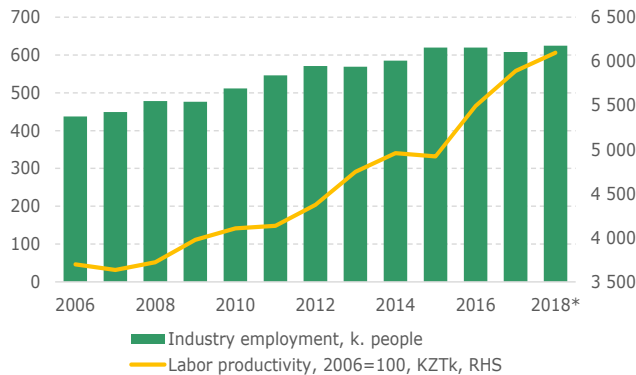
The structure of the employed population of the industry in 2006 consisted of 74.5% of hired employees. Since 2011, there has been a decrease in the share of hired workers from 72.8% to 67.5% in 2018. In 2018, the number of employed people in the transport and storage was 625 thousand. Industry statistics also have information on the number of employees, i.e. the number of

persons accepted under an employment contract, which is on average 62.4% less than the total labor force of the industry. Thus, the listed number of workers in the industry in 2006 was 189 thousand people, and in 2017 accounted to 212.1 thousand people, (data for 2018 are not yet available). The average monthly nominal wage per employee in 2010 was KZT97.3 thousand and increased to KZT223.7 thousand in 4Q2018 (prelim data).

On average, wage per employee in the transport and storage is 29% higher than the average monthly nominal wage in the economy as a whole. The nominal wage per employee in the transport and storage in 2018 was at the level of KZT223.7 thousand and was commensurate with the size of nominal wage in building industry (KZT227.5 thousand) and industrial production sector as a whole (KZT255.5 thousand) (Figure 18.).

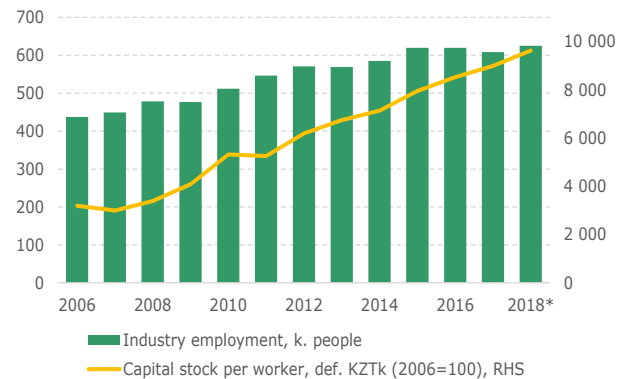
The statistical data used in the analysis of labor resources with the recalculation of 2006-2009 due to changes in the GCEA (General Classification of Economic Activity) RK 03-2007, as well as updated data from the 2009 census. In addition, within the period there was a change in the accounting standards for employment in accordance with the new standards (the 19th International Conference of Statistics of Labor of the ILO) certain changes in the statistics.

Figure 19. Labor productivity



Source: KS MNE, Halyk Finance

Figure 20. Capital stock per worker



Source: KS MNE, Halyk Finance

The efficiency of labor as a factor of production in the transport and storage has increased by 68% since 2006 and in 2018 amounted to KZT6,097 thousand (in current prices KZT11,589 thousand). We believe that such an increase in labor productivity is not associated with a change in the structure of labor resources in the industry. Thus, the share of self-employed in 2006-2011 averaged 25.4%, and in 2012-2018 increased to 33.1%. Most likely, the outpacing growth dynamics in the gross output of services of the transport and storage by 2.4 times (2006 = 100) with a 43% increase in the number of people employed in the industry during the analyzed period contributed to an increase in labor productivity from KZT3,699 to KZT6,097 thousand. Along with the growth of labor productivity, we observe an increase in the capital per worker. Thus, if capital per worker in 2006 accounted for KZT3,193 thousand of fixed assets of the industry, in 2018 this size amounted to KZT9,621 thousand. The growth of the industry's capital-labor ratio was not due to the optimization of the labor resources of the industry, but due to a significant increase in the fixed assets, especially in the field of transportation by pipeline and on railway transport, where the cost of the assets is quite high due to the technological complexity.

The two-factor econometric analysis of the transport and storage by the Cobb-Douglas function on deflated statistical data (2006 = 100) evidenced that labor elasticity has a negative ratio (-0.42), which indicates a negative contribution of this factor to the total industry output. However, the coefficient of elasticity in labor is statistically insignificant and we find an explanation for this in the

methodological changes in labor accounting by statistical bodies that we have mentioned above. In order to obtain a statistically significant indicator of labor in the industry, we used the indicator of the number of listed hired employees in the industry as a labor factor. The model acquired statistical significance for labor, while the negative value of elasticity increased to (-0.70) with a model confidence of 90%. The analysis evidences that an increase of this production factor by 1 percentage point will contribute to a decrease in the gross output of the industry by 0.42 or 0.70 pp. respectively.

Thus, econometric analysis showed a negative return on this factor of production, despite the growth in productivity and capital-labor ratio, whose indicators in the medium and long term will begin to decrease, and the industry will become more labor-intensive.

Price formation

Cumulative price inflation (2005 = 100) in the transport industry amounted to 445%, while the consumer prices inflation was 287% and the industrial producer's price inflation index was 318%. Price inflation in the transport and storage, i.e. the index of prices and tariffs for the carriage of goods by all types of transport (Transport Services Price Inflation TS PI) was matched with inflation of consumer prices (CPI) and industrial producer price index (IPI). Data on the inflation of prices for warehousing services is not available. Other sectors that demonstrate substantial cumulative inflation are the price index for the industrial and technical products acquisition 333%, and the producer price index for agricultural products 303%.

High tariffs for the transportation of goods, especially in the transportation of goods by railways and pipelines contributed the most to high price inflation in the industry. On average, the annual increase in tariffs for railway transportation in the period 2005-2017 amounted to 8.9% while the tariffs in the pipeline it increased by 8.1% on average in the period. Increase in tariffs for transportation of goods by road transport averaged 3.9%, by air transport 1.7% and by inland waterway (64.9%) 3.2% over the same period. A two-digit increase in tariffs for passengers' transportation was in the sector of railway transport in 2005-2017 by 10.5%.

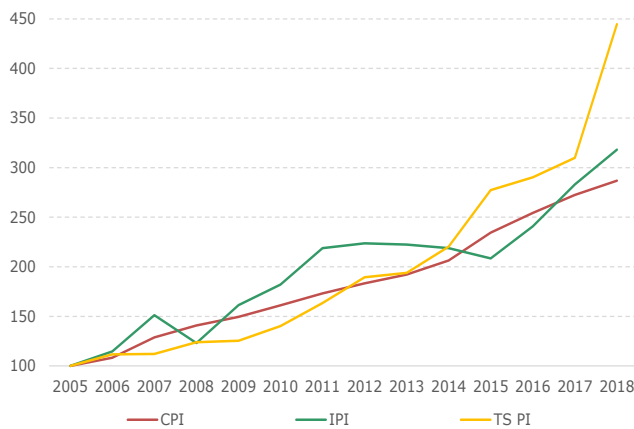
We believe that high operating expenses translated into the high tariffs in these sub-sectors of transport. Thus, the analysis of the electricity consumption of the industry in 2017 showed that it amounted to 2.943bn kWh, while railway transport enterprises consumed 1.333 bn kWh (45.6% of the total energy consumption), transportation companies consumed 465 mn kWh (15.8%).

The consumption of solid and gaseous fuel in rail transport and transportation by pipeline is also higher than in the industry as a whole. Thus, in 2017, railway enterprises consumed 27.7% out of 119 thousand tons of coal, while transportation companies through the pipeline consumed 273 thousand cubic meters out of 286 thousand cubic meters of natural gas. Railway transport enterprises consumed 33.6% out of 104 thousand tons of motor gasoline and 37.6% and out of 683 thousand tons of diesel.

Analysis of changes in the average cost of energy in the country showed that the cost of coal from 2005-2017 increased by 4.8 times and amounted to KZT5.804 per ton. The cost of natural gas increased by 3.9 times and as of the end of 2017 amounted to KZT23,312 per thousand cubic meters. The cost of motor gasoline increased 2.8 times and amounted to KZT176,410 per ton, while the cost of diesel fuel increased 4.5 times to KZT183,486 per ton. The cost of electricity in the country increased 6.3 times and reached KZT16,720 thousand per thousand kWh. Thus, the high-energy intensity (68% of the rolling stock of railway transport are diesel locomotives) of these two sub-sectors is directly dependent on the cost of energy carriers in the country, which are taken into account by transport enterprises in the tariffs for their services.

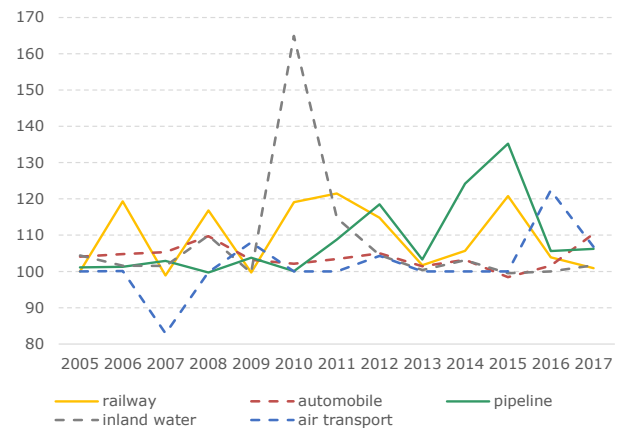
The second factor that contributes to the growth of tariffs is relatively high capital costs that result from the obsolescent rolling stock whose service life now is dated over 25 years (electric locomotives are 78%, diesel locomotives are 61.2% as of 2017) as well as from the fact that the rolling stock itself is technologically outdated. Analysis of the dynamics of changes in the structure of the rolling stock of railway transport shows an increase in the number of diesel locomotives from 1,071 in 2005 to 1,183 units in 2017, with a slight decrease in electric locomotives from 552 to 549 units in the same period. In European countries, there is a process of stocking up electric locomotives. Thus, in the Czech Republic, the number of diesel locomotives decreased from 1,212 in 2005 to 934 units in 2017, and the number of electric locomotives, on the contrary, increased from 2,050 to 2,611 units. During the same period, Finland reduced the number of diesel locomotives from 283 to 226 units and increased the number of electric locomotives from 637 to 697 units in the same period. Poland also reduced its diesel rolling stock from 2.143 to 1.999 units, while the amount of electric rolling stock decreased from 5.246 to 5.181 units in 2005-2017. Turkey is increasing its railway rolling stock with a preference to electric locomotives. Thus, the number of electric locomotives increased from 2005 to 2017 by 302 units and reached 543 units, while the number of diesel locomotives increased by 198 units and amounted to 868 units of rolling stock. We believe that in the European countries the share of diesel-powered rolling stock will decrease, since the cost of diesel fuel in European countries will only grow. In addition, the EU Environmental and Climate Strategy until 2030 provides for a gradual departure from the use of those types of energy carriers that prevent the reduction of harmful emissions. Therefore, the process of reducing diesel locomotives will only accelerate in the EU countries. This also applies to road transport, especially after the 2015 “dieselgate”, which involved the Volkswagen automobile concern. In addition, this is also happening because the technological advantages of electric locomotives are indisputable - this is both the speed of movement, and ease of maintenance, and higher fault tolerance due to the simplicity of the design. Electric locomotives can reach speeds of up to 300-350 km / h, while diesel locomotives can reach 160-200 km / h at the most. The speed train “Tulpar-Talgo”, which runs along the route from Astana to Almaty, does not exceed the speed limit of 140 km / h.

Figure 21. Industry cumulative inflation, %



Source: KS MNE, Halyk Finance

Figure 22. Tariff indices of cargo transportation, %



Source: KS MNE, Halyk Finance

In addition, the electric locomotive KZ4AT, KTZ-Freight transportation JSC has a speed limit of 200 km. However, it is necessary to take into account that the availability of high-speed rolling stock is not the main condition for the acceleration of transportation. For high-speed railway transport, railway infrastructure is required, as well as the infrastructure that serves and ensures high-speed transportation (high-speed lines have a special engineering structure, current collectors, railway

tracks has specially welded joints, special services and personnel are needed to maintain such tracks).

However, one thing is indisputable - an increase in the average speed of traffic in railway transport translates to economic growth. In addition, the maintenance of an aging railway fleet is complicated by the fact that many non-original spare parts are used, which makes the maintenance of transport equipment unreliable and short in time in post-maintenance operation.

One aspect that also determines inflexible pricing for industry services is the high monopolization of the industry. Thus, in 2017, 1,719 (99.2%) out of 1,732 industry locomotives belonged to the NC Kazakhstan Temir Zholy JSC (KTZ JSC). The company owns 2,089 cars (78.5%) out of 2,661 passenger cars and 53 thousand wagons (97.6%) of the 54,295 freight wagons belong to the company. With such a share of JSC "KTZ" in the industry, there is no need to talk about market competition, hence the price elasticity in the railway transportation market. According to the annual report of JSC "NC" KTZ", the number of employees of the company amounted to 130 thousand employees. The list number of employees in the industry in 2017 was 212.1 thousand people, and the number of employees in the industry according to statistics of the CS MNE was 422 thousand people. If we take data only for land transport and transportation by pipeline, then the payroll number is 115.1 thousand people. Concentration of labor in the industry belonging to the company is 61.3% of the total list of payroll number of employees. Circa 112.9%, (there is a discrepancy with the data of statistics authorities) in the land transport and pipeline transport sectors and 30.8% of the number of employees in the industry, (there is no decoding of aggregated data for the railway or land transport sub-sector). On this basis, the variable costs of the industry related to wages, which is 28.3% higher than in the economy, generally depend on its monopolization.

State programs for the development of the transport industry in Kazakhstan

Since the 2000s, the leadership of Kazakhstan has begun to pay a special attention to the development of the transport industry for the furtherance of the large-scale processes of the republic's economic integration into the global and regional economies. The land situation of the republic creates a powerful potential for transport and transit traffic, the creation of regional transport and logistics hubs. Program documents for the development of the industry can be classified as programs aimed at the development of individual transport sectors (aviation, railway, sea, etc.), as well as industry-wide programs aimed at unlocking the transit-transport potential of the republic as a whole and at intensifying transport systems of other countries.

Related to the road industry, the republic's leadership first adopted the State Program for the Development of the Road Industry of the Republic of Kazakhstan for 2001–2005, which resulted in the adoption of the Road Industry Development Program for 2006–2012. The setup of the program provided for funding from the republican budget for the period from 2001-2005 amounted KZT234,952.9mn. Program for the period from 2006-2012 provided for funding for KZT1,283bn. Of these, 65% of funding went from the Republican budget, 21% from local budgets and targeted transfers to the republican budget and 14% of funding under the PPP (public private partnership).

Within this period, state programs for restructuring the railway transport of the Republic of Kazakhstan for 2001–2005 were adopted and the Railway Transport Restructuring Program of the Republic of Kazakhstan for 2004-2006. The railway transport restructuring programs were implemented at the expense of own funds of the National Company Kazakhstan Temir Zholy JSC, as well as at the expense of the budget, which were used to subsidize passenger transportation.

In 2003, the Government of the Republic of Kazakhstan adopted a program to create a national sea merchant fleet for 2004-2006. Within the framework of this program, expenditures in the amount of KZT34,750mn were planned. In continuation of this program, the government adopted the Program for the Development of Maritime Transport of the Republic of Kazakhstan for 2006-2012 and the action plan for implementing this program in the second stage. The total funding of the

program amounted to KZTT107.6bn. The sources of funding for the program were borrowed funds, direct investments and funds from the republican budget.

In 2003, the government adopted the Program for the Development of the Civil Aviation Sector for 2003-2005. The implementation of the program was planned at the expense of the republican budget in the amount of KZT38,187.3mn 2008 years. The amount of funding for the program was KZT121,471.5mn, of which 72% came from extra-budgetary funds.

Along with the development programs for individual sub-sectors of the industry, the government approved the Program for the development of transit-transport potential of the Republic of Kazakhstan for 2004-2006. Under the program, it was allocated T10,758mn of funds In 2010, the government adopted the Program for the Development of Transport Infrastructure in the Republic of Kazakhstan for 2010-2014. The amount of financing under the program amounted to T2,691,756.5mn, of which 36% came from the republican budget, 48% from borrowed funds, 15.6% from companies' own funds and 0.4% from the concession. In 2014, the government adopted the State Program for the Development and Integration of the Infrastructure of the Transport System of the Republic of Kazakhstan up to 2020. To fund of the program T5,220,000mn was allocated, of which the republican budget accounted for 52% of the total funding and 29% for the own funds of the group of companies.

All enumerated programs of development of the transport industry have been fulfilled or become invalid for now.

Currently, the Nurdy Zhol State Infrastructure Development Program for 2015-2019, approved in April 2015, is in effect, under which the main priority is the formation of a modern transport infrastructure in Kazakhstan, as well as ensuring its integration into the international transport system. It was planned to allocate KZT7,676.10bn to finance the program, of which 52% of the funds came from international financial institutions, 31% from the National Fund and 10% from the republican and local budgets.

The main objective of the Nurdy Zhol program is to provide formation of a single economic market by integrating the country's macro-regions based on building effective infrastructure on the hub principle, integrating transport infrastructure into the international transport system, realizing the transit potential to ensure long-term economic growth in Kazakhstan. In terms of the development of the transport industry, it was supposed to create an efficient transport and logistics infrastructure using the "ray" principle "Center-South" (Astana-Almaty), "Center-East" (Astana-Ust-Kamenogorsk), "Center-West" (Astana-Aktobe-Atyrau-Aktau).

As of the end of 2018, since the beginning of the program for the Center-South corridor, 275 km of 1,292 km have been commissioned, and 643 km have been commissioned along the Center-East corridor. In 2019, it is planned to cover 1017 km with repair works within the Center-South corridor and 262 km of roads within the Center-East corridor. As part of the construction in the Aktobe-Atyrau-Astrakhan section, work will continue for 120 km. In 2019, construction and reconstruction will cover 4.4 thousand km of highways of republican status.

The program also implements the Western Europe-Western China project with a length of 8,445 km of the transport corridor, of which 2,787 km are in Kazakhstan and 3,425 km in China, and the rest in the Russian Federation. The One Belt and One Road Initiative, voiced by PRC President Xi Jinping as early as 2013, is consistent with the Nurdy Zhol state program and is promoted on the principles of deepening political coordination as part of the development strategy the construction of the Silk Road economic belt and the Nurdy Zhol economic policy in 2016. Forming a joint transport and logistics infrastructure within these projects will allow Kazakhstan to have access to the Pacific Ocean, as well as to realize its transit potential. In the structure of cross-border and transcontinental trade, the FEZ "Khorgos-Eastern Gate" was formed, where the dry port of Khorgos was built as an infrastructure transport and logistics unit. The dry port is integrated in the structure of the Western

Europe-Western China highway via the Zhetygen-Korgas railway. Within the framework of the Nurly Zhol program itself, the target indicator of transit through the republic's rail and road modes of transport in 2019 should be 18.1 million tons, and revenue from transit should reach \$4bn by 2020. According to the Ministry of Investments and development of the Republic of Kazakhstan, the volume of transit transportation by rail transport in 2017 increased by 22.7% yoy and amounted to 16 million tons. According to publicly available media sources, the preliminary data of transit for 2018 increased by 6.2% yoy and amounted to 17 million tons. Data on transit freight by road of the Ministry of Investment and Development of the Republic of Kazakhstan is not available. The data of the State Revenue Committee differs noticeably from the data of the Ministry of Investment and Development of the Republic of Kazakhstan and amounts to 6 million tons (gross) for rail transport in 2017 (+ 14.4% yoy) and for road transport 120 thousand tons (gross) -48.4% yoy. As of 2018, data are not yet available.

One of the objectives within Nurly Zhol program for 2015-2019 is to upgrade the World Economic Forum (WEF) rating to 5757th place in terms of the quality of basic infrastructure. Analysis of the WEF report for 2018 - The Global Competitiveness Report showed that Kazakhstan ranked 69 out of 140 in the quality of infrastructure. In general, Kazakhstan ranks 59th in this rating from 140 countries in all 12 components of competitiveness. At the time development of Nurly Zhol program, Kazakhstan was in 62 of 140 countries in terms of infrastructure development rating. The efficiency of the transport industry development program can also be assessed by the dynamics of such an indicator of the World Bank as the LPI-Logistics Performance Index (Logistics Performance Index), which in the calculation structure contains an assessment of the quality of the country's transport infrastructure. Thus, according to the World Bank report, for 2018, the overall index of logistics efficiency was 2.81, while the position of Kazakhstan from 160 participating countries was 71. The assessment of the quality and development of infrastructure was 2.55. If we take the date of the development of the Nurly Zhol program (November 2014), then at that time, the overall index of logistics efficiency was 2.70, and the position in the general list of the participating countries was 88, while the assessment of the quality and development of infrastructure was 2.38. Based on the results of the evaluation of the logistics index, one can see positive dynamics in terms of infrastructure development, as well as the development of the logistics system in the country. The Ministry of Industry and Infrastructure Development, the State Revenue Committee of the Ministry of Finance and the Union of Transport Workers of Kazakhstan developed an Action Plan to improve the logistics system in the Republic of Kazakhstan in terms of the Logistics Performance Index (LPI) for 2019-2020.

According to the statement of the Minister of Transport and Communications of the Republic of Kazakhstan, this year the concept of the program Nurly Zhol until 2025 will be developed and presented.

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Research Department

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Assan Kurmanbekov	Macroeconomics
Dmitriy Sheikin	Macroeconomics
Altynay Ibraimova	Equity
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Sales Department

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Shynar Zhakanova	Institutional
Dariya Maneyeva	Retail
Aziza Ordabayeva	Retail
Alya Abdumazhitova	Retail

Address:

Halyk Finance
Avay av., 109 «B», 5th fl
A05A1B4, Almaty, Kazakhstan
Contact: +7 727 357 31 77
www.halykfinance.kz

E-mail

s.chuyev@halykfinance.kz
a.kurmanbekov@halykfinance.kz
d.sheikin@halykfinance.kz
a.ibraimova@halykfinance.kz
v.turkin@halykfinance.kz
a.assilbekova@halykfinance.kz

E-mail

m.pan@halykfinance.kz
a.moldakhmetova@halykfinance.kz
sh.zhakanova@halykfinance.kz
d.maneyeva@halykfinance.kz
a.ordabayeva@halykfinance.kz
a.abdumazhitova@halykfinance.kz

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