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## Transport Support of Europe-Asia Trade: Structural Shifts

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**Abstract**

This article is devoted to assessing structural changes in the transport support of foreign trade in the direction of Europe-Asia as a result of the active strengthening of the positions of Asian countries in world markets. The relevance of the topic is determined by the following key trends that affect the choice of assessment methods. A reflection of economic globalization as a characteristic of the development of the world economic system is the rate of change in international trade and global gross product. Over the past few years, international trade in terms of speed not only equals the rate of change in the world product, but also begins to yield to it. Against this background, developing countries are expanding and strengthening their positions, especially the developing countries of Asia. The expansion and deepening of export and import flows of Asian countries intensifies the load on the transport support of foreign trade. The traditional way of cargo transportation in the direction of Europe-Asia is the use of maritime transport. Recently, however, an increasing number of countries have raised the need for the development of railway routes, which can significantly reduce transportation time. In this regard, it is of interest not just to identify current trends and long-term trends in the Europe-Asia system of transport support for international trade, but to calculate the structural changes that have occurred. The results of this assessment, which allow to qualitatively characterize the transport support of Europe-Asia trade, are presented in this article.

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**Keywords:** Europe-Asia; Transport Support; Transport Structural Shifts.

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**1. Introduction**

The development of the world economic system, of course, manifested itself and is manifested through economic globalization, a characteristic feature of which is the rate of change in the volume of international trade relative to the dynamics of real GDP (table 1). Lead coefficient in 2001-2010 as an indicator of this ratio was at the level of 1.3, in 2011 it was equal to 1.6, and then it was able to get as close as possible only according to the results of 2017,

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amounting to 1.5. A decrease in this coefficient and even finding it at a level less than unity, which indicates the superiority of real world GDP growth over international trade, confirms the inflated nature of international trade indicators (according to International Trade and Market Access Data). The forecast for 2020 was made before the COVID-19 pandemic.

Table 1. Comparison of Global GDP Growth and International Trade.

	2001- 2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020 (forecast)
World GDP	3.9	4.3	3.5	3.5	3.6	3.5	3.4	3.8	3.6	3.0	3.4
World trade	5.0	7.0	3.1	3.6	3.9	2.8	2.3	5.7	3.6	1.1	3.2
Lead Index	1.3	1.6	0.9	1.0	1.1	0.8	0.7	1.5	1.0	0.4	0.9

At the end of the second decade of the 21st century, the following new phenomena and long-term trends characteristic of international trade can be noted:

- expanding the list of “super-trader countries” whose foreign trade quota exceeds 100% (including due to individual countries and territories of Pacific Asia);
- the development of processes for the international separation of production and the formation of international value chains, systems of offshore production and outsourcing;
- increasing the role of intra-industry and intra-company trade;
- an increase of the importance of product diversification (companies entering foreign markets provided about ¼ of the overall increase of international trade in goods);
- the widespread inclusion of developing countries in global value chains and an increase of the contribution to the global export of ICT products;
- an increase of the share of micro, small and medium enterprises in the export of goods and services (including through the active creation of specialized export support institutions in countries);
- a stable outstripping of the growth of physical volumes of international trade in goods and services compared with the dynamics of real GDP and a change in trend in recent years;
- stability of the macrostructure of international trade (80% - goods, 20% - services);
- the presence of pronounced service economies (for example, Singapore, India);
- an increase of the aggregate share of developing countries and markets, an increase of the role of developing countries in Asia, led by China, in the world trade (primarily due to the transfer of TNCs capacities), the definition of these countries as a driving force for changes in the geography of world exports;
- a decrease in the elasticity of international trade relative to the development of the world economy.

Globalization processes also affect the geographical structure of international trade. This fact, together with some redistribution of world forces within the framework of international economic relations, is clearly manifested in the expansion and strengthening of its positions by developing countries, primarily developing countries in Asia. Over the past decades, changes have occurred in the framework of the Europe-Asia trade: the importance of specific countries and their aggregates in the export and import operations of this continental system is changing, and the indicators of their transport supply are changing too.

In this regard, the formation of commodity flows in this direction is of fundamental importance. Analytical issues of trade relations between Europe and Asia are considered in a significant number of studies. For example, the Asian vector of export and import operations was considered in the studies of Imbruno (2019), Chaudhary et al. (2016), Halaszovich and Kinra (2018), based on an analysis of the results of Asian global value chains, Hayakawa and Kimura (2009), based on the impact of exchange rate fluctuations on international trade in East Asia, Obashi (2010) – on the example of the stability of production networks in East Asia. Surugiu (2015) consider the international trade of European countries, as well as economic interdependence between them. Vahalik (2014) devoted his study to trade analysis within the European Union (EU) -China-ASEAN. Priede and Pereira (2015) analyze the export performance of the EU, as well as the export competitiveness of the Union as a whole. Speaking about the foreign trade between Europe and Asia, it is necessary to note the importance of transport support issues. Among domestic (Russia) authors, for example, Nekhoroshkov (2018) is engaged in research of scenario approaches to predicting the

effectiveness of infrastructure projects for transport support of international trade. Among foreign authors, the transport support of foreign trade activities is studied, in particular, Moura et al. (2018), who studies the influence of the geographical structure of foreign trade on the distribution of shipping within the country, Gani (2017), who studies the impact of logistics on international trade, Foo et al. (2019), who studies the impact of China's one belt one road initiative on international trade, ext.

In contrast to the studies presented, in this article, based on data from the European Commission, we propose to analyze the cost and physical volumes of freight traffic serving trade between the EU (EU-28) and the key partners of European countries in Asia and Asia-6 - China and the Republic of Korea. In addition, we propose to carry out calculations reflecting structural changes in transport support of Europe-Asia foreign trade with their subsequent qualitative characteristics. We assume that it is the assessment of structural changes that will give the greatest idea of the real situation of modes of transport in the structure of transportation, and will also reveal the gradually growing role of rail transport.

## 2. Materials and Methods

The methodological basis of the study is the general scientific methods of cognition that predetermine the study of socio-economic phenomena, processes and patterns in their constant development and relationship. To solve the set tasks, general scientific methods were used: analysis, synthesis, grouping and comparison; special methods: problem decomposition, as well as tabular data visualization techniques.

To assess the structural changes that have occurred within the framework of the Europe-Asia system of transport support for international trade, we suggest using the Ryabtsev index. To qualitatively characterize the obtained index values, the following gradation is used:

- from 0.000 to 0.030 - no structural differences, i.e. identity of structures;
- 0.031 to 0.070 - very low level of differences;
- from 0.071 to 0.150 - low level of differences;
- from 0.151 to 0.300 - significant level of differences;
- 0.301 to 0.500 – important level of differences;
- from 0.501 to 0.700 - very important level of differences;
- 0.701 to 0.900 - opposite;
- from 0.901 - the exact opposite of structures.

The formula for calculating the index is as follows:

$$R = \sqrt{\frac{\sum_{i=1}^n (s_1 - s_0)^2}{\sum_{i=1}^n (s_1 + s_0)^2}} \quad (1)$$

where R – the index of structural shifts,  
 $s_1$  – the actual share of the structural unit,  
 $s_2$  – the basic fraction of a structural unit,  
 $n$  – the number of structural units.

## 3. Results

According to UNCTAD database, the total container turnover between Europe and Asia in both directions in 2018 amounted to 24.7 million TEU, which is 12.3% more than in 2014. The dynamics of this indicator throughout the entire period under review, with the exception of 2015, was positive with an average growth rate of 103.0%. The freight traffic of Northern Europe and the Mediterranean to East Asia increased from 2014 to 2018 by 14.7% to 7.8 million TEU. The dynamics of the indicator was positive with an average growth rate exceeding the general rate of 103.5%. Cargo flows in the opposite direction, i.e. from East Asia to Northern Europe and the Mediterranean, as well as the overall indicator, declined in 2015 and then increased steadily. The average growth rate over the entire

period was 102.7%, an increase by 2018 compared to 2014 - 11.2% to 16.9 million TEU. It should be noted that freight flows of the eastern direction showed the largest increase.

According to the results of 2019, the value of the EU export flows to China (table 2), transported by sea, increased by 71.4% compared to 2010. At the same time, a decrease in absolute indicator was observed only in 2015 (by about 5.0%). Exports carried out by other modes of transport also increased, with more substantial amounts. Thus, the export of European countries transported by air at the end of 2019 increased by 154.5% compared to 2010, while showing a stable positive trend. The greatest increase was shown by rail transport - from 1.0 to 6.6 billion euros, i.e. 6.6 times. After unstable dynamics, road transport still increased compared with the beginning of the period by 1.1% (for comparison, a decrease of almost 12.0% was observed in 2018 compared with 2010). The dynamics of the tonnage of export cargo transported by sea to China has consistently increased, with the exception of 2018, according to the results of the period, the level exceeded the 2010 figure by 81.3%. The unstable dynamics was characteristic of export transportation by air. Despite the fact that the range of changes ranged from 0.5 to 0.9 million tons, in relative terms, the level positively changed by 40.7% compared to 2010. As in cost terms, rail transport showed the largest increase in tonnage - by 2, 6 times, although the dynamics was unstable, and the range of changes was from 0.1 to 0.6 million tons. A decrease in tonnage was observed in road transport, amounting to 38.3% compared to 2010 to 0.6 million tons.

In the structure of EU export transport to China by mode of transport, the undisputed leader, despite the reduction in the share from 63.9% to 55.2%, was sea transport. The second position is also traditionally occupied by air transport, whose share in 2019 amounted to 35.7%, which is 7.9 percentage points more than in 2010. In the structure under consideration, there was a change in the positions occupied by rail and road transport. Since 2016, the share of railway transport exceeded the same indicator for road transport and, according to the results of 2019, amounted to 2.9% (an increase of 2.1 percentage points) versus 1.8% (a decrease of 1.7 percentage points) in its competitor. The absolute leader in the tonnage structure was maritime transport, whose share increased by 2.2 percentage points to 96.8%. The shares of other modes of transport are comparable to each other - 0.9% (an increase of 0.3 percentage points) for railway transport, 1.4% (a decrease of 0.4 percentage points) for air transport, 1.0% (a decrease of 1.9 percentage points) in road transport.

EU import operations from China (table 2), served by sea mode of transport during 2010-2019. Cost were multidirectional in nature. However, comparing the levels of 2010 and 2019, the absolute indicator increased by 55.2% to 266.6 billion euros. A more significant increase in the cost of transportation was observed in road transport, the dynamics of which was consistently positive until 2019 - by 61.0% to 94.6 billion euros. The maximum growth was observed in import deliveries by rail. Since 2013, the cost of transportation has consistently increased and reached the final figure of 10.6 billion euros, which is 5.9 times higher than the level of the beginning of the study period. Unstable dynamics was recorded in road transport, the transportation of which reduced its cost by 2.9% by 2018, but by the next year, growth compared to 2010 was 2.0%. Similar results are observed for the tonnage of EU import operations from China. For all types of transport, with the exception of automobile transport, an increase in absolute indicators was recorded. Thus, the tonnage of shipping by sea increased by 25.4% to 59.9 million tons, by rail - by 3.7 times to 1.1 million tons, by air - by 29.6% to 1.4 million tons, tonnage road transport decreased by 5.4% to 3.0 million tons. In the structure of the value volumes of EU imports from China by type of transport, no changes in ranks were compared in 2010 and 2019. The largest share stably belongs to maritime transport - at the end of 2019, 63.5% (an increase of 2.9 percentage points), followed by air transport with a share of 22.5% and an increase of 1.8 percentage points, road transport with a share of 7, 8% and a decrease of 3.5 percentage points, closes the four main types of railway transport with a share of 2.5% and an increase of 1.9 percentage points. In the tonnage structure of EU imports from China by mode of transport with an insignificant positive change of 1.2 percentage points, the leadership belonged to maritime transport, whose share was 89.9% in 2019. Despite a decrease in the share by 1.4 percentage points to 4.5 %, the second place in the structure was occupied by road transport. The third place was held by air transport with a share of 2.1% and an increase of 0.1 percentage points. The share of railway transport in the tonnage structure of imports increased by 1.0 percentage point to 1.7%.

The value volumes of EU export deliveries to the Republic of Korea (table 3) for the period 2010-2019 increased for all modes of transport. The highest increase in cost was shown by rail transport - by 7.7 times to 1.0 billion euros, but with unstable dynamics and air transport - by 83.3% to 20.1 billion euros with positive dynamics, except

for a slight decrease in 2018. The cost of shipping by sea was characterized by positive trends, with the exception of a decrease of 12.5% in 2016 and 11.0% in 2019. According to the results of the period, the absolute indicator amounted to 25.0 billion euros, which is 59.7% higher than the level 2010. The cost of road transport was at the level of 1.1 billion euros, which is higher than the 2010 figure by 34.7%. In terms of tonnage indicators of EU export deliveries to the Republic of Korea, an increase was also observed for all modes of transport. The dynamics of the tonnage of maritime transport showed a decrease in 2014, 2016, 2018–2019, but the final figure was 7.7 billion tons, which is 33.9% more than in 2010. Despite a small range of changes, they increased by 14, 2% indicators of the tonnage of road transport up to 0.2 million tons, respectively. The tonnage of air transport increased by more than 3 times, amounting to 0.5 million tons. An increase in the volume of EU export traffic to the Republic of Korea was observed at the level of hundredths and thousandths by rail - up to 0.003 million tons, by 45.1% compared to 2010. In the cost structure of EU exports to the Republic of Korea by mode of transport, the largest share is traditionally held by sea which at the end of 2019 amounted to 51.1%, which is 4.9 percentage points below the level of 2010. Air transport takes the second place with an increase in the share of 1.9 percentage points to 41.1%. The share of road transport decreased by 0.7 percentage points to 2.2%. The share of railway transport increased by 1.6 percentage points to 2.0%. In the tonnage structure of EU exports to the Republic of Korea, the leadership is characterized by maritime transport, whose share in 2019 amounted to 90.9% (a decrease of 2.6 percentage points). The share of railway transport did not change, air transport increased by 3.7 percentage points to 6.5%, road transport decreased to 1.9% from 2.3%.

Table 2. Transport Support of EU-China trade.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<i>EC-China, billion €</i>										
Total	113.5	136.4	144.2	148.1	164.7	170.4	169.7	197.6	209.8	225.1
Sea	72.5	88.9	96.3	97.2	105.4	100.0	101.7	115.2	119.0	124.2
Rail	1.0	0.3	0.3	1.1	1.4	1.8	4.5	6.0	6.6	6.6
Air	31.6	37.8	37.9	40.6	47.1	57.0	52.4	63.4	70.2	80.4
Road	4.0	4.8	3.8	3.8	3.8	3.8	3.5	3.9	3.6	4.1
<i>EC-China, million tons</i>										
Total	33.2	39.6	40.8	42.5	43.5	46.3	49.6	53.8	49.3	58.8
Sea	31.4	38.0	39.4	41.0	42.0	44.6	47.7	51.6	47.2	56.9
Rail	0.2	0.1	0.1	0.1	0.2	0.2	0.4	0.6	0.6	0.5
Air	0.6	0.6	0.5	0.7	0.6	0.7	0.7	0.9	0.8	0.8
Road	1.0	0.9	0.7	0.7	0.7	0.7	0.6	0.7	0.6	0.6
<i>China-EC, billion €</i>										
Total	283.3	294.8	292.0	279.9	302.3	351.0	352.2	375.3	394.6	419.8
Sea	171.7	182.3	171.9	162.4	183.3	218.2	216.3	228.4	244.4	266.6
Rail	1.8	1.4	1.3	1.4	2.3	3.9	5.6	8.9	9.2	10.6
Air	58.8	59.5	61.4	62.6	67.2	83.9	86.9	94.2	95.0	94.6
Road	32.0	34.4	27.7	24.7	25.7	30.7	29.0	30.1	31.0	32.6
<i>China-EC, million tons</i>										
Total	53.8	57.1	49.0	53.5	59.2	59.3	59.8	60.4	65.5	66.6
Sea	47.8	50.0	43.4	47.6	52.7	53.5	54.0	54.1	58.7	59.9
Rail	0.3	0.3	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.1
Air	1.1	1.0	0.9	1.1	1.3	1.1	1.2	1.3	1.4	1.4
Road	3.2	3.2	2.5	2.5	2.7	3.0	2.7	2.9	3.1	3.0

The cost of EU imports from the Republic of Korea (table 3) in the most significant way for the period 2010–2019 changed in railway transport - an increase of 5.3 times to 1.6 billion euros, while negative dynamics were noted only in 2018 (by 12.5%). Positive dynamics, with the exception of 2013, was observed in the cost of shipping by sea, the total figure for which amounted to 32.9 billion euros, which is 97.1% higher than in 2010. The cost of road transport was characterized by multidirectional dynamics, but at the end of 2019 increased to 3.4 billion euros against 3.1 billion euros in 2010. Also, unstable dynamics was typical for air transport, however, unlike automobile, their cost decreased from the beginning of the period - by 7.6% to 11, 1 billion e Ro. The natural volumes (tonnage) of EU imports from the Republic of Korea have positively changed by sea and rail. At the same time, the dynamics of the tonnage of shipping by sea was multidirectional, but the final figure exceeded the 2010 level by 2.2 times, amounting to 11.9 million tons. The dynamics of rail transportation was characterized by positive trends, with the

exception of 2013 and 2018, the indicator for the year 2018 amounted to 0.24 million tons with an increase of 3.4 times compared to 2010. The tonnage of imports from the Republic of Korea by air and road has declined, although changes in air transport are noticeable at the level of hundredths and thousandths. In 2019, 0.11 million tons were transported by air, which is 20.2% less than in 2010, and by road - 0.55 million tons, which is 22.7% less than in 2010. In the value structure of EU imports from the Republic of Korea, no changes in the ranks of modes of transport were observed. Thus, the share of sea transport in 2019 amounted to 63.5% (an increase of 20.1 percentage points), air transport - 21.4% (a decrease of 9.8 percentage points), road transport - 6.6% (a decrease of 1, 6 percentage points), railway - 3.1% (an increase of 2.3 percentage points). In 2019, the share of maritime transport in the tonnage structure of EU imports from the Republic of Korea amounted to 95.2%, i.e. 17.1 percentage points higher than in 2010. The second place, despite a reduction in the share of 6.0 percentage points relative to 2010, to 4.4%, remained in road transport. An increase in the share of railway transport by 1.0 percentage points to 1.9% determined it to the third position in the structure under consideration. Moreover, starting in 2014, rail transport has steadily surpassed air transport in terms of the share in the tonnage structure of imports from the Republic of Korea. At the end of 2019, the share of air transport amounted to 0.9%, thereby decreasing by 1.1 percentage points compared to the 2010 level.

It is worth noting that the calculation of the structural shift index in transport support is of greatest interest when compared with the structural shift index in foreign trade. In this regard to calculate the structural shift index, we examined the shares of Asia and Asia-6 countries in Europe's exports and imports by product groups: food, agricultural raw materials, ores and minerals, fuel, non-ferrous metals, iron and steel, chemicals, industrial semi-finished products, machinery and transport equipment, textiles, clothing, other goods. The following product groups were studied with respect to the shares of China and the Republic of Korea in EU exports and imports: food, beverages and tobacco, raw materials, mineral fuels, lubricants and related materials, chemicals and related products, other manufactured goods, machinery and transport equipment. To calculate the structural shifts in the transport component of the EU's foreign trade with China and the Republic of Korea, we examined the share of these Asian countries in the value and tonnage structure of EU exports and imports for such modes of transport as sea, rail, air, and automobile (table 4).

Table 3. Transport Support of EU-Republic of Korea trade.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<i>EC-Republic of Korea, billion €</i>										
Total	28.0	32.5	37.8	39.9	43.2	47.8	44.1	50.1	49.6	48.9
Sea	15.7	17.9	23.3	24.4	26.0	28.8	25.2	28.0	28.1	25.0
Rail	0.13	0.05	0.10	0.07	0.05	0.06	0.07	0.06	0.06	1.0
Air	11.0	12.4	12.7	13.5	14.6	16.3	16.9	20.3	19.9	20.1
Road	0.8	0.9	1.0	0.9	1.1	1.3	1.0	1.0	1.0	1.1
<i>EC-Republic of Korea, million tons</i>										
Total	5.6	5.8	10.3	11.4	10.6	14.0	10.3	13.3	11.7	7.7
Sea	5.2	5.4	9.9	11.0	10.2	13.6	9.9	12.9	11.3	7.0
Rail	0.02	0.01	0.02	0.02	0.04	0.05	0.04	0.04	0.02	0.03
Air	0.15	0.17	0.16	0.17	0.16	0.18	0.20	0.23	0.21	0.5
Road	0.13	0.17	0.16	0.18	0.18	0.17	0.17	0.17	0.16	0.2
<i>Republic of Korea-EC, billion €</i>										
Total	38.5	35.8	36.7	35.0	37.6	41.3	40.2	49.5	50.4	51.8
Sea	16.7	18.9	19.5	18.6	20.0	22.8	25.2	28.4	31.3	32.9
Rail	0.3	0.8	1.2	1.4	1.5	1.5	1.5	1.6	1.4	1.6
Air	12.0	8.2	8.0	7.7	8.4	8.1	8.0	11.5	11.0	11.1
Road	3.1	3.1	2.9	2.5	2.6	3.7	3.2	3.5	3.7	3.4
<i>Republic of Korea-EC, million tons</i>										
Total	6.9	9.0	7.5	8.0	9.8	11.0	14.9	13.0	12.4	12.5
Sea	5.4	6.6	6.1	6.5	8.0	9.9	13.7	11.5	11.4	11.9
Rail	0.07	0.08	0.11	0.09	0.12	0.22	0.23	0.23	0.22	0.24
Air	0.14	0.10	0.10	0.10	0.11	0.10	0.10	0.10	0.11	0.11
Road	0.71	0.91	0.45	0.42	0.49	0.52	0.54	0.49	0.49	0.55

Table 4. Indices of structural changes in the distribution of shares of Asian countries in foreign trade of Europe from the perspective of transport support.

Direction and structure	Index value	Interpretation
EU-China, value	0.500	important level
EU-China, quantity	0.146	low level
China-EU, value	0.278	significant level
China-EU, quantity	0.182	significant level
EU-Republic of Korea, value	0.101	low level
EU-Republic of Korea, quantity	0.199	significant level
Republic of Korea-EU, value	0.305	important level
Republic of Korea-EU, quantity	0.266	significant level

Significant structural shifts were observed in the transport support of the EU foreign trade relative to China's positions in the tonnage and value structure of EU imports (indices were 0.278 and 0.182), and the Republic of Korea in the tonnage structure of EU exports and imports (indices were 0.199 and 0.266). It's necessary to mention that a significant level of structural shifts was observed relative to the position of Asia-6 countries in European exports, the index for which amounted to 0.153, and the Republic of Korea in EU export and import operations, the indices for which were 0.232 and 0.216, respectively. Significant structural shifts were observed regarding the position of the Republic of Korea in the value structure of EU imports, as evidenced by the index at the level of 0.305, and the position of China in the value structure of EU exports - the index at the level of 0.500.

To determine the internal structural shifts in the transport support system of Europe-Asia foreign trade, an assessment was made of the shifts in the positions of the modes of transport that they occupy in the foreign trade of the EU and China, the Republic of Korea in terms of value and tonnage (table 5). For a better understanding of the results, we note that structural shifts in export and import operations of European and Asian countries ranged from very low to low. A similar situation is typical for their transport support, with the exception of the value structure of EU imports from the Republic of Korea by mode of transport - the index was 0.194, which corresponds to a significant level.

Table 5. Indices of internal structural changes in foreign trade of Europe with Asian countries from the perspective of transport support.

Direction and structure	Index value	Interpretation
EU-China, value	0.071	low level
EU-China, quantity	0.011	no structural differences
China-EU, value	0.045	very low level
China-EU, quantity	0.010	no structural differences
EU-Republic of Korea, value	0.011	no structural differences
EU-Republic of Korea, quantity	0.019	no structural differences
Republic of Korea-EU, value	0.194	significant level
Republic of Korea-EU, quantity	0.099	low level

#### 4. Discussion

The above results are a reflection of the goal of this article, representing not only the quantitative indicators that various types of transport occupy in Europe-Asia freight transportation, but also interpret the shifts that have occurred in the transport structure. Of course, the most interesting is the comparison of the results of maritime and railway modes of transport. For example, the average growth rate of railway tonnage in the EU-Republic of Korea direction was 117.2% versus 108.6% for maritime transport and against the general growth rate of 108.2%. In the direction of the Republic of Korea-EU, the average growth rate also exceeded the general indicator and "marine" by 7-8 percentage points. The assessment made it possible to understand how this affected the structure of transport

support, given that the share of railway transport is still uncompetitive with respect to maritime transport. As a rule, as a result of the analysis of the transport structure of transportation in the context of international trade, a conclusion is drawn about the positions of various modes of transport, especially if any of them occupies an insignificant share, further studies are not carried out. An assessment of structural changes allowed us to identify emerging trends and understand the potential of rail transport for Europe-Asia international trade.

So, the presented method of analysis of the international trade transport support allows not only to consider its structure by mode of transport, but to study the changes that have occurred over a certain period. Moreover, the structural shift index also assumes a qualitative interpretation of changes with a clear gradation and correlation with quantitative results.

Therefore, such calculations in the context of the Europe-Asia trade transport support contribute not only to the analysis of time series and relative indicators, but to the identification of changes (shifts) in them. The key benefits that determine the appropriateness of using this method include:

- the ability to study processes in dynamics;
- high-quality interpretation of the results;
- further detailing (for example, a comparison of structural shifts in factors determining the development of specific processes, and shifts in these processes themselves).

## 5. Conclusion

By 2019, the share of exports to Asia in Europe's total exports increased, while exports to Europe in Asia's total exports decreased. The share of exports to Asia in Europe's total exports relative to 2010 increased by 1.9 percentage points to 11.2%. Moreover, there was an increase in shares for all product groups. In Asian exports, the share of European countries fell by 1.3 percentage points to 14.6%. At the same time, a comparable decrease was observed for all product groups. Based on the indicators of structural changes, we can conclude that that already in 2000 there was a significant transformation of the world economic system, which is manifested in the conquest of the positions of Asian countries in international trade. In subsequent years, the level of structural changes, which is especially pronounced in world exports, was not so significant that it speaks of the strengthening and smooth expansion of Asian influence in world markets. The conquest and strengthening of the positions of the countries of Asia, Asia-6, as well as China and the Republic of Korea as their key representatives was observed in the transport support of foreign trade in 2018-2010. At the same time, the internal structural shifts in transport provision were characterized as insignificant, which may be due to the Asian countries already winning positions on certain commodity markets in foreign trade with Europe, for which specific types of transport were used. Despite the insignificant indicators of the share of railway transport in ensuring Europe-Asia trade, it is precisely along it that the greatest structural changes are observed, which indicates a gradual strengthening of its position.

The results obtained are important for assessing the potential of railway transport and its positions, as well as the positions of maritime transport in the study of prospects for the implementation of infrastructure projects in the Europe-Asia direction. Among them, in particular, are projects for connecting the Trans-Korean and Trans-Siberian railways, «United Eurasia».

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