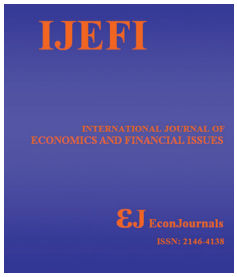

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The Analysis of Foreign Trade Activities of Russia and Asia-pacific Region

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ABSTRACT

The development of foreign trade policy, adequate to market principles of functioning of the Russian economy and its consecutive integration to the world economy poses a major challenge for the researchers: The potential identifying for the increasing of mutual trade flows and their further integration. To assess the dynamics of foreign economic relations, we used the indicators of economic openness and the importance of mutual trade. In order of modeling the trade and economic integration of Far Eastern Federal District and the countries of Asia-pacific region, we used gravity models in this study. Consequently, there have been built six gravity models that characterize the dependence of Russian Far Eastern export and import on countries of Asia-pacific region for each period of the study. Design and the analysis of gravity models have revealed patterns of Far Eastern Federal District with Asia-Pacific countries as well as with the individual partner countries of the district. The dynamics of gravitational interactions defining the factors' relations is determined.

Keywords: Foreign Trade Turnover, Gravity Models, Export, Import, Asia-pacific Region, Modeling, Trade and Economic Integration
JEL Classifications: F100, F130

1. INTRODUCTION

In modern conditions of intensive development of integration processes, the pace of growth in foreign trade is increasing in the world economy, and a growing number of business entities of all countries show interest and actively involved in it.

One of the major consequences of the reforming process of the Russian economy has become a noticeable participation and intensification of the Russian regions in the way of integration into the world economy. For many regions, foreign economic relations have become a major and dominant prerequisite of sustainable economic development and a factor that contributes to the mutual beneficial cooperation, the movement of capital, goods and services between the domestic and international markets, achievements of scientific and technological progress and employment of labor in the framework of an open economy. One of the crucial ways of solving this problem at the level of local government is the usage of foreign economic activity for the implementation of regional benefits (natural, industrial, transportation, human resources, etc.). Many of the territory advantages, the center cannot realize because they are always concrete and contradictory. The regions, potentially, have more opportunities for it. This is why the regions' development in the organization of foreign economic activity should be expanded.

The main task of the state in the modern conditions is the development of trade policy that is adequate to market principles of Russian economy functioning and its consecutive integration to the world economy.

The main task of the state in the field of foreign economic activity is to increase the volume of the exported products, to ensure the competitiveness of goods on the world market and import restrictions by creating conditions for the production of import-substituting goods. Therefore, a number of mechanisms of state regulation are aimed, firstly, to protect the domestic market from foreign competitors, and, secondly, to the formation of export. For Russia, this is particular importance, as through the development of export the trade surplus is possible without reducing the import of essential goods and thereby solving the problems of the strengthening of the ruble.

Asia-pacific region is one of the key regions in the system of international, foreign economic and foreign policy interests of Russian Federation. Moreover, now, Asia-pacific region is the fastest force in the world economy. The share of Asia-pacific countries, which includes the three largest national economies of the world (The United States, China, and Japan) accounted for about 42% of world gross domestic product (*GDP*) and 25% of foreign trade and a third of the world's population, according to the World Bank in 2014.

Thus, now the Russia's participation in the economic relations of Asia-pacific region is becoming the priority in the long term.

2. LITERATURE REVIEW

The features of national economies' development and its integration into the world economy are reflected in the theories of the classical doctrine of Olin (2004), Porter (1993), Ricardo, Smith, Heckscher, the issues of foreign economic relations, the improvement of foreign trade activities of Russian Federation are considered in the papers of Arhipov (2005), Akopova (2004), Basenko (2012), Vardomskii (2009b), Gogoleva (2010), Dyumulen (2008), Evchenko (2010), Ivanov (2008), Obolenskii (2008), Rodov (2004), Sitaryan (2008), Spartak (2008), Savin (2004), Savinov (2006), Savinov (2008), Vardomskii (2009a); Vardomskii (2009b), Popkova (2007), Taranov (2010).

The investigation of the Russian experience in the development of foreign trade activity relating to the period of existence of government monopoly on foreign trade implementation is presented in the papers of Burenin (1983), Voronov (1970).

3. METHODS

To assess the dynamics of foreign economic relations, we used the indicators of economic openness (Formula 1) and the importance of mutual trade (Formula 2).

$$OE = \frac{EX + IM}{GDP} \quad (1)$$

$$IT = \frac{EX + IM}{EX^{all} + IM^{all}} \quad (2)$$

EX - Exports to the integration association
IM - Imports from the integration association
GDP - *GDP* of a country
EX^{all}- Exports from the country, totally
IM^{all} - Imports from the country, totally.

In order to simulate the trade and economic integration of Far-Eastern Federal District and countries of Asia-pacific region, the present study suggests using gravity models.

Domestic and foreign scientists have proved the importance of gravity models in practice. Currently, the number of models that describe the foreign-trade relations among countries is developed. It is worth noticing that the statistical data of trade balances and international trade is used in gravity modeling.

In this study, the gravity models of export and import between Far Eastern Federal District and Asia-pacific countries as well as with the individual partner countries of the district are built.

As an indicator of the economy size, there have been used *GDP* of Asia-pacific countries in PPP (US $), for the Russian Far East it has been used GRP also recalculated to PPP (in US dollars). The distances between the capitals of the countries were used as the distance between the exporter and the importer (Vladivostok - For the Far-Eastern Federal District due to the territorial proximity, high foreign trade turnovers between Primorskii region and Asia-pacific countries, as well as the presence of a great number of customs checkpoints in the region's territory).

The main hypothesis in the using of gravity models is that the foreign trade flows positively depend on countries' *GDP* and negatively depend on thedistance between the partner countries that related to potential transport costs. According to the above data, the gravitation model is in the form for export (Formula 3) and import (Formula 4):

$$EX_{ij} = A\frac{GDP_i^{\alpha} \cdot GDP_j^{\beta}}{D_{ij}^{\gamma}} \cdot \xi \quad (3)$$

где - EX_{ij} - The export volume of country *i* to the country *j*
D^{γ}_{ij} - Distance between capitals, km
A - Constant, free term of the equation
GDP_i, GDP_j - *GDP* of importer and exporter, respectively
α, β, γ - Factors of elasticity (the parameters of gravity models)
ξ - Random error.

$$IM_{ij} = A\frac{GDP_i^{\alpha} \cdot GDP_j^{\beta}}{D_{ij}^{\gamma}} \cdot \xi \quad (4)$$

где - IM_{ij} - The import volume of country *i* to the country *j*
D^{γ}_{ij} - Distance between capitals, km
A - Constant, free term of the equation
GDP_i, GDP_j - *GDP* of importer and exporter, respectively
α, β, γ - Factors of elasticity (the parameters of gravity models)
ξ - Random error.

To calculate the unknown parameters of the gravity model, we transform a hybrid form of models for export and import in additive one by taking the logarithm (Formula 5):

$$\ln(EX_{ij}) = \ln(A) + \alpha \ln(GDP_i) + \beta \ln(GDP_j) - \gamma \ln(D_{ij}) + \xi$$

$$\ln(IM_{ij}) = \ln(A) + \alpha \ln(GDP_i) + \beta \ln(GDP_j) - \gamma \ln(D_{ij}) + \xi \quad (5)$$

This gravitational model was proposed for the analysis of export and import flows in the Asia-pacific countries. It is crucial to note that due to the imperfections of the gravity model, the calculation of which is based on the calculation of the logarithms of the values, countries that did not have the import-export operations, are excluded from the analysis in view of the fact that the logarithm of zero does not exist. Therefore, the number of countries in the analysis of each year will vary.

Using the regression analysis, we estimate the parameters of the gravitational equation on spatial data of foreign trade turnovers of the Far Eastern Federal District and the Asia-pacific countries for 2012-2014.

4. RESULTS

4.1. Analysis of Russia's Foreign Trade with Major Partners in Asia-pacific Region

In general, it should be noted that the Asian vector of Russian foreign policy is not important only from a political point of view and the interests of safety, but also in terms of economic prospects. Currently, the volume of Russia's foreign trade with Asia-pacific countries is not large enough. According to the results of the I quarter (data from Russian customs statistics) (Official Website of Federal Customs Service of Russian Federation, 2016) exports to the Asia-pacific region was 17% of total exports while imports from Asia-pacific countries - 12% (in 2014, exports to the Asia-pacific region was 16% and imports 14%). The rapid growth of the economies of the Asia-pacific region, their interest in natural and energy resources of Russia, scientific and technological capabilities, transport and communication capabilities - make possible the development of large-scale economic cooperation between them.

The main foreign trade partners of Russia in the east direction are China, US, Japan and Republic of Korea. The share of Russian exports to these countries according to customs statistics, in 2014 amounted to 82.1% of Russia's exports to Asia-pacific countries, the share of imports - 83.7% of total imports from the Asia-pacific region in Russia. In more details, the structure of foreign trade is presented in Figure 1.

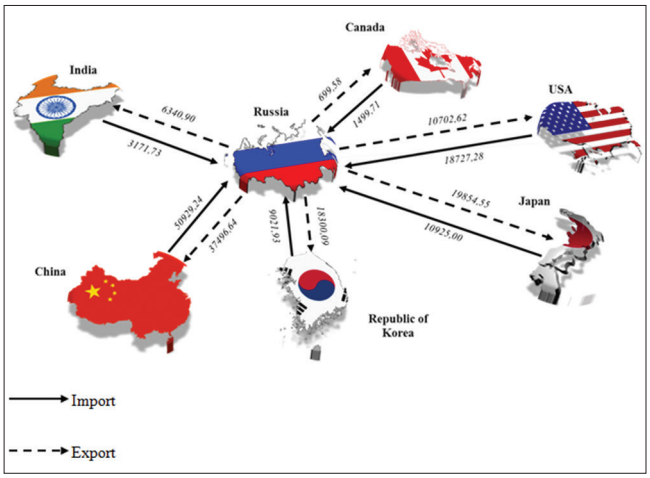
Let's calculate these indicators for Russia and its major partners among countries of the Asia-pacific region (Figure 2).

Figure 2 shows that the highest rate of economic openness is observed in Canada, the US and Japan. This suggests that all economic actors are free to make transactions in the international market of goods, services, capital and other factors of production. Here there is freedom of trade transactions, set free the exchange rate, and regulation takes place through foreign exchange reserves and regulations. An open economy means that countries actively participate in international division of labor, export and import a large share of manufactured goods and services, export factors of production (labor, capital, technology) and are free for their imports, while countries receive and provide loans in the world financial markets and included in the system of international financial and economic relations.

The analysis of the importance of mutual trade shows that the largest share of turnover of mutual trade is observed in South Korea (53.8%) and Canada (46.9%). The middle position in the ranking on this indicator occupied by China and Japan (26.4 and 24.0%, respectively).

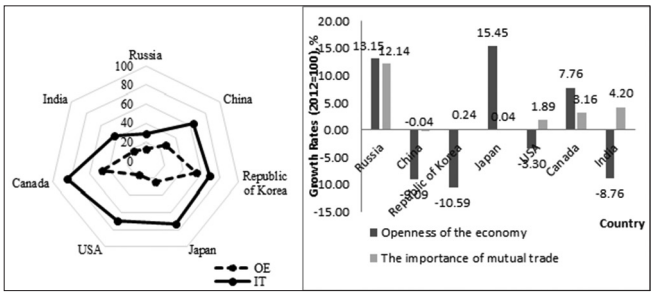
At the end of 2014 Russia, according to the index, is among the outsiders, but it is worth noting that in compared to 2012 there is

Figure 1: The structure of Russia's foreign trade with major partners in Asia-pacific region in 2014, million USD



Source: Compiled by authors

Figure 2: Distribution of countries in terms of openness of the economy and the importance of mutual trade in 2014, and the growth rates of these indicators compared with 2012 (calculated by: 20)



Source: Compiled by authors

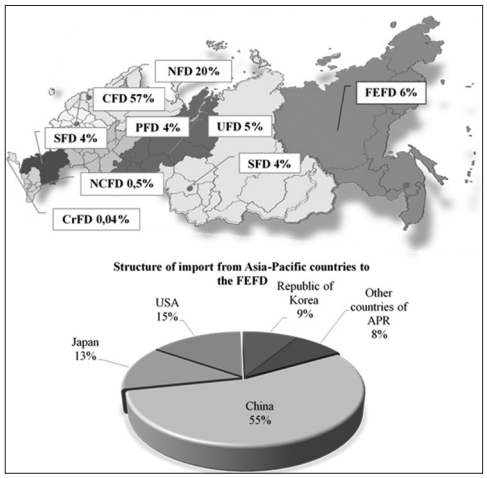
seen an intense growth rate in the context of the openness of the economy and the importance of mutual trade of the country with its major partner countries in Asia -Tihookeanskii region. Thus, it is possible to note the strengthening of Russia's position and capacity of integration processes embedded in the economies of the Asia-pacific region.

Currently, foreign economic activity has become one of the major determinants of the economic development of the Russian Federation and its regions. Participation of actors in international and foreign economic cooperation with foreign countries is becoming the most important factor of expansion of international and foreign economic relations of Russia.

The main regional foreign economic relations of the Russian Federation with the countries of Asia-pacific region are shown in Figures 3 and 4.

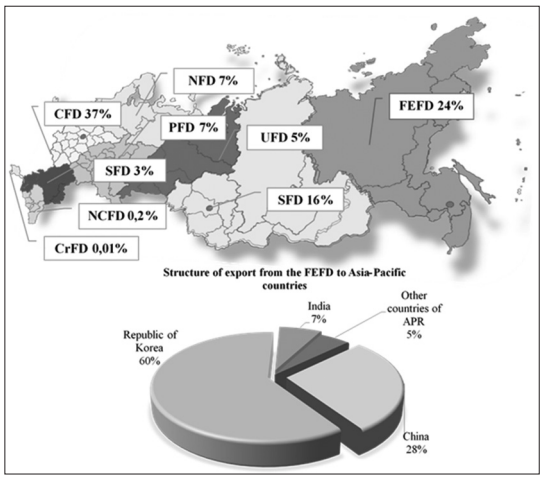
Analysis of the territorial distribution of economic and trade relations between the regions of the Russian Federation with the countries of Asia-pacific region showed a relatively high degree of differentiation, mainly, due to the level of socio-economic development of regions and the degree of their remoteness from the Asia-pacific region.

Figure 3: The structure of imports from Asia-pacific countries into the regions of Russia for I quarter of 2015 (calculated by: 20)



Source: Compiled by authors

Figure 4: The structure of exports to the Asia-pacific region from Russia for I quarter of 2015 (calculated by: 20)



Source: Compiled by authors

For the western part of the Russia, foreign trade relations with the Asia-pacific region based on its predominant (by Central and North-Western Federal District), in comparison with other regions of the country's economic potential. Despite the relatively high volume of foreign trade turnover of these regions in the total trade between Russia and Asia-pacific countries, it should be noted that among its major trading partners there are still European countries due to the geographical proximity.

Foreign trade relations with the Asia-pacific countries are based mainly in areas such as cooperation in the development of high-tech and scientific and technical potential, education, and health.

Regions of the central part of the Russian Federation (The Urals and Siberian Federal Districts) are equidistant from both the European countries and the countries of the Asia-pacific region. The basis of the economy of these regions is their resource potential. Regarding to the Siberian Federal District, it is worth noting that during the period under review there have been positive changes in the structure of the region's exports into Asia-pacific countries: In 2014, compared with 2012 the share of Siberian FD export increased by 6% and amounted to 15% of the entire Russia's level. The sharp jumps are not observed in the structure of import.

A perspective direction between regions in this group with the countries of Asia-pacific region is the attraction of investments in the development of high-tech industries and the development of natural resources.

4.2. Evaluation of Gravity Models of Far Eastern FD Import and Export with all Asia-pacific Countries

Let's analyze the results and assess the trends in changing the coefficients' values of the gravitational models (Table 1).

According to the calculation results, six gravity models have been built that describe the dependence of export and import of the Russian Far East and Asia-pacific for each period of the study. The coefficients' assessments of gravity models are sufficiently homogeneous because there are no sharp fluctuations in time. During the observing period, models of export and import have high coefficients of determination from 0.813 to 0.887. This fact indicates about the reasonable and accurate assessments of the parameters of the equations due to the fact that exactly the coefficient of determination shows the proportion of explained change of Far Eastern FD import and export with Asia Pacific countries, due to the influence of the *GDP* and the distance between them. Positive values of the *GDP* coefficients indicate the existence of a direct link between the considered indicators and export-import supplies. Assessments of the coefficients in the model parameter that characterizes the distance, are negative - so it can be concluded that if countries are more removed from each other, then they have less intensity of trade volume between them. It is worth noting that both coefficients of export and import models are declining in dynamics; therefore, the factor of distance is gradually losing its significance. On the one hand, this may be due to the reduction in costs for the transport of goods; on the other - due to the raw material orientation of the economy of the Far East region, it imports from Asia-pacific countries products of high demand, eliminating dependence on the value of their

Table 1: Evaluation of gravity models of Far Eastern FD import and export with all Asia-pacific countries in 2012-2014

Years	Constant	Evaluation of the coefficient of *GDP*, α	Evaluation of the coefficient of the distance, γ	The coefficient of determination, R^2
Models for import				
2012	−19.321	1.774	−1.645	0.887
2013	−21.958	1.709	−1.068	0.813
2014	−14.774	1.372	−0.834	0.859
Models for export				
2012	24.781	0.714	−3.547	0.886
2013	25.009	0.559	−2.867	0.835
2014	22.824	0.838	−0.857	0.829

Source: Compiled by authors

transportation. The situation is similar, and similar conclusions can be drawn on models characterizing the export, mainly in the form of raw materials.

The implementation of dependencies that form the basis of the gravity model is typical for Far Eastern FD because of the import from Asia-pacific countries. So, in 2014, with an increase of exporters' *GDP* by 1%, the Far East Federal District imports from Asia Pacific increased by an average of 1.372%. Herewith, the connection of the import volume from the Far East Asia-pacific countries with country partners' *GDP* is weakened over time: The value of factors in the dynamics declines. This trend is partly caused by the reduction in the rate of *GDP* growth, as well as import substitution policy of Russia in light of the prevailing unstable geopolitical situation.

As for the models of the goods export from the Far East Federal District into Asia-pacific countries, there is also seen the implementation of gravitational dependency. It is worth noting that during the observing period the dependence of the Far Eastern exports to Asia-pacific *GDP* is less intense than in the same period for the importation into the region; however, there is an increase in the coefficient α in exports in dynamics, which indicates the increasing dependence of exports from the importers' *GDP*. At the same time in 2014, with an increase in importers' *GDP* by 1%, the volume of Far Eastern FD exports increased by 0.838%.

For visualization of identified dependencies, we should build the distribution diagrams of Asia-pacific countries on import-export deliveries in the context of their remoteness from the Far Eastern FD and the size of the economy (Figure 5).

Note that the logarithm of the distance between Vladivostok and capitals of Asia-pacific countries is displayed on the horizontal axis while, the vertical axis is filled by the logarithm of the export/import of Far East Federal District and the Pacific Rim countries; and the size of the "bubbles" characterizes the size of the economy (*GDP*). For more concise analysis of dependency graph by the results of 2012, we are constructing an analytical table of countries' distribution by export/import indicators and distance (Tables 2-4).

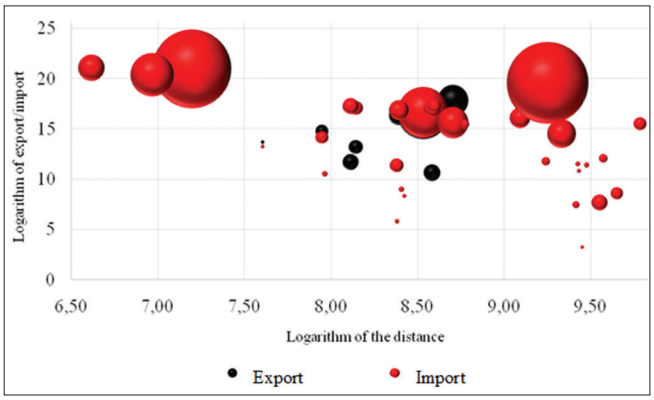
Thus, an analysis of the distribution of the Pacific-Asian countries, depending on the export-import operations with Far-Eastern FD and their degree of remoteness is presented in Table 2. Similarly, we will present the visualization of the analyzed data in the form of distribution diagrams and crosstabs for 2013 (Figure 6 and Table 3) and 2014 (Figure 7 and Table 4) years.

The analysis results of Figure 6 are presented in Table 3.

The results of data visualization are presented on Figure 7.

The results of analysis of Figure 7 are presented in Table 4.

Figure 5: The dependence of Far Eastern FD export/import and Asia-pacific countries from the distance between them and *GDP* in 2012



Source: Compiled by authors

Table 2: The dependency of Far Eastern export/import and Asia-pacific countries from the distance between them by the end of 2012

Export/Import	Distance		
	Until 7.5[1]	7.5-9.0[1]	9.0[1] and more
	Until 1808[2]	1808-8103[2]	8103[2] and more
Export			
Until 10[3] Until 22026[4]	-	Cambodia	Colombia, Peru, Chile
10-20[3] 22026-485165195[4]	-	Bangladesh, Vietnam, Hong Kong, India, Indonesia, Malaysia, Marshall Islands, Mongolia, Singapore, Thailand, Philippines	Australia, Canada, Mexico, Panama, United States of America
20[3] and more 485165195[4] and more	China, South Korea, Japan	-	-
Import			
Until 10[3] Until 22026[4]	-	Brunei, Cambodia, Nepal	Guatemala, Colombia, Nicaragua, Peru
10-20[3] 22026-485165195[4]	-	Bangladesh, Vietnam, Hong Kong, India, Indonesia, Macao, Malaysia, Mongolia, Singapore, Thailand, Philippines, Sri Lanka	Australia, Honduras, Canada, Costa Rica, Mexico, New Zealand, USA, Chile, Ecuador, El Salvador
20[3] and more 485165195[4] and more	China, South Korea, Japan	-	-

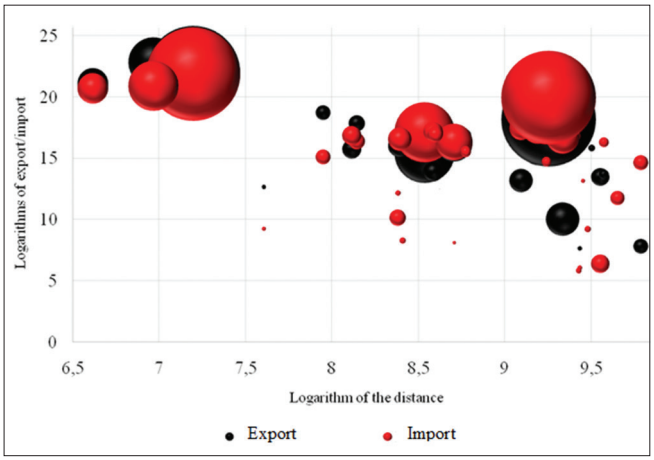
[1]Logarithm of the distance, [2]Distanceinkm, [3]Logarithm of export, [4]Export/import thousand U.S. Source: Compiled by authors

Table 3: The dependency of Far Eastern export/import and Asia-pacific countries from the distance between them by the end of 2013

Export / Import	Distance		
	Until 7.5[1]	7.5-9.0[1]	9.0[1] and more
	Until 1808[2]	1808-8103[2]	8103[2] and more
Export			
Until 10[3] Until 22026[4]	-	-	Honduras, Chile
10-20[3] 22026-485165195[4]	-	Vietnam, Hong Kong, India, Indonesia, Malaysia, Marshall Islands, Mongolia, Singapore, Thailand, Philippines, Sri Lanka	Australia, Canada, Colombia, Mexico, New Zealand, Panama, the United States, Ecuador
20[3] and more 485165195[4] and more	China, South Korea, Japan	-	-
Import			
Until 10[3] Until 22026[4]	-	Mongolia, Nepal, Papua - New Guinea	Honduras, Colombia, Costa Rica, El Salvador
10-20[3] 22026-485165195[4]	-	Bangladesh, Vietnam, Hong Kong, India, Indonesia, Cambodia, Malaysia, Singapore, Thailand, Philippines, Sri Lanka	Australia, Canada, Guatemala, Mexico, Nicaragua, New Zealand, Peru, the United States, Chile, Ecuador
20[3] and more 485165195[4] and more	China, South Korea, Japan	-	-

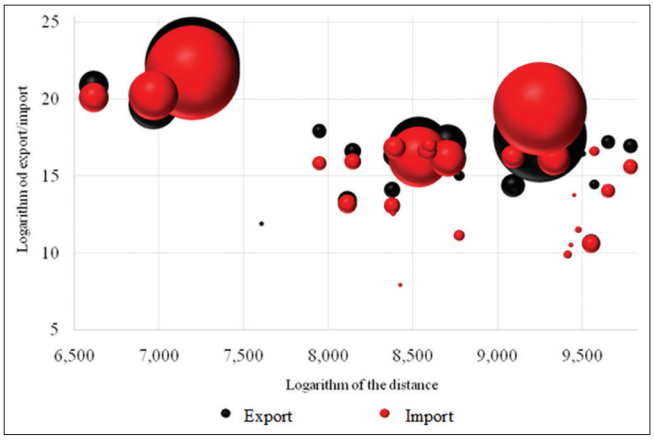
[1]Logarithm of the distance, [2]Distanceinkm, [3]Logarithm of export, [4]Export/import thousand U.S. Source: Compiled by authors

Figure 6: The dependence of Far Eastern FD export/import and Asia-pacific countries from the distance between them and *GDP* in 2013



Source: Compiled by authors

Figure 7: The dependence of Far Eastern FD export/import and Asia-pacific countries from the distance between them and *GDP* in 2014



Source: Compiled by authors

According to the results of the analysis, it can be stated that in the gravity models suggest that with the *GDP* growth the country's (that is a partner) trade flows are increasing while the distance has the opposite effect on them. The economic processes most of the Asia-pacific region in relation to the Russian Far Eastern subjected to this rule. However, there is also an inverse relationship, the so-called antigravity law when imports/exports volumes increase regardless of the remoteness of the partner, such as the US, Canada, and India. Products of these countries have high demand and a competitive advantage over similar products from other countries, and, thus, the distance does not play a key role in the foreign trade operations. Hence, it can be concluded that the medium-term growth of the foreign trade turnover between the Far Eastern Federal District and Asia-pacific countries is possible if the positive trend of economic growth occurs.

4.3. Gravity Models of the Main Partners of the Russian Far East

Despite the versatile foreign and economic relations of Far Eastern FD with Asia-pacific countries, its main trading partners are China, South Korea, Japan, Canada, and India over years. It is worth noting that these countries are characterized by high volumes of *GDP* that determine their benefits compared to other countries. Thus, it is advisable to consider the gravity relation (dependence) of not only Far Eastern FD concerning all Asia-pacific countries but also separately for its key partners. In this regard, the gravitational models of foreign trade flows between mentioned partners were built. We emphasize that not only the export-import relationship between the Far Eastern FD and these countries but also their mutual relation to each other were examined in this study. The results of modelling are presented in Table 5.

Table 5 shows how the assessments of export and import models distributed for all combinations of Far Eastern FD and presented countries in 2012-2014. The assessments were derived by the method of least squares using the Statistica software statistical package. The adequacy of the constructed models is characterized by the coefficient of determination R^2.

5. DISCUSSION

However, the perspectives of development of the Asia-pacific regional economies are disputable, and they are discussed by a great number of researchers worldwide. Some authors say that the East-Asian Community operates not in the interests of the whole East Asian identity creation, but it pursues the interests of individual group of the countries (Jones, 2007).

Asia-pacific Economic Cooperation is outlined as one of the most successful one among the various regional groupings (Higgott, 1998; Aggarwal, 2000; Aggarwal, 2001).

A majority of researchers consider that the East (the embodiment of Asian regionalism) illustrates the ineffective integration. They

Table 4: The dependency of Far Eastern export/import and Asia-pacific countries from the distance between them by the end of 2014

Export / Import	Distance		
	Until 7.5[1]	7.5-9.0[1]	9.0[1] and more
	Until 1808[2]	1808-8103[2]	8103[2] and more
Export			
Until 10[3]	-	-	-
Until 22026[4]			
10-20[3]	Japan	Bangladesh, Vietnam, Hong Kong, India, Indonesia, Malaysia, Mongolia, Singapore, Thailand, Philippines, Sri Lanka	Australia, Canada, Guatemala, Colombia, Mexico, Panama, Peru, United States, Chile, Ecuador
22026-485165195[4]			
20[3] and more	China,	-	-
485165195[4] and more	South Korea		
Import			
Until 10[3]	-	Brunei	Guatemala
Until 22026[4]			
10-20[3]	-	Bangladesh, Vietnam, Hong Kong, India, Indonesia, Cambodia, Malaysia, Singapore, Thailand, Philippines, Sri Lanka	Australia, Honduras, Canada, Colombia, Costa Rica, Mexico, Nicaragua, Peru, the United States, Chile, Ecuador
22026-485165195[4]			
20[3] and more	China,	-	-
485165195[4] and more	South Korea, Japan		

[1]Logarithm of the distance, [2]Distanceinkm, [3]Logarithm of export, [4]Export/import in thousand U.S. Source: Compiled by authors

Table 5: Evaluation of import and export gravity models between the main partners of Far Eastern Federal district in 2012-2014

Country	Years	Import				Export			
		Constant	α^1	γ^2	R^2	Constant	α^1	γ^2	R^2
Russia (Far Eastern FD)	2012	20.641	0.233	−0.999	0.472	−1.594	1.434	−2.693	0.932
	2013	4.355	0.879	−1.312	0.728	11.896	0.920	−2.470	0.807
	2014	10.334	0.599	−1.080	0.495	18.721	0.435	−1.552	0.756
India	2012	−34.219	1.640	−0.495	0.839	−39.734	1.301	0.534	0.907
	2013	−40.991	1.801	−0.279	0.816	−37.190	1.394	0.598	0.919
	2014	−31.075	1.509	−0.426	0.831	−43.124	1.529	0.814	0.888
Canada	2012	−56.324	2.322	−0.271	0.883	−13.382	1.090	−1.059	0.933
	2013	−42.644	1.912	−0.455	0.884	−22.629	1.374	−0.968	0.932
	2014	−26.432	1.426	−0.668	0.896	−15.061	1.151	−1.082	0.935
China	2012	−11.026	0.963	−0.713	0.632	−23.381	1.295	−0.350	0.869
	2013	−10.875	0.945	−0.669	0.592	−17.572	1.087	−0.316	0.861
	2014	−9.217	0.897	−0.706	0.573	−18.599	1.126	−0.326	0.862
South Korea	2012	−19.683	1.173	−0.619	0.878	−19.071	1.125	−0.486	0.932
	2013	−15.929	1.040	−0.605	0.825	−20.890	1.187	−0.493	0.949
	2014	−17.064	1.082	−0.623	0.831	−24.586	1.295	−0.436	0.968
USA	2012	−34.141	2.000	−1.386	0.886	−15.164	1.295	−1.290	0.864
	2013	−30.917	1.875	−1.348	0.884	−12.609	1.198	−1.263	0.871
	2014	−33.360	1.979	−1.425	0.875	−15.194	1.309	−1.341	0.855
Japan	2012	−6.103	0.754	−0.655	0.659	−20.520	1.195	−0.467	0.789
	2013	−4.886	0.707	−0.646	0.649	−16.463	1.067	−0.520	0.726
	2014	−22.252	1.223	−0.408	0.801	−19.815	1.161	−0.468	0.773

[1]Evaluation of the coefficient of GDP, [2]Evaluation of the coefficient of the distance. Source: Compiled by authors

say about the possibility of replacing the formal processes of institutionalization of regional economic integration (Ernst, 1997; Encarnation, 1999), both inside and outside of the region (Dent, 2003).

During different periods of time many researchers said about the low level of economic integration in the Asia-pacific region, due to a lack of strong development of regional processes of institutionalization. The historical development of the institutionalization of the integration processes presents that the significant efforts have been made for creation of a strong institutional environment for the development of regional economic relations in the postwar East Asia, but these efforts have not been successful (Calder, 2004).

The subject of many economic debates is the issue that the integration in the Asia-pacific region will increase the potential benefits of the country because of many aspects - "economies of scale" on the costs of the expansion of export industries (Milner, 1997; Chase, 2003; Aggarwal, 2001), declining of the transaction costs between the contracting parties and reduction of the importance of political negotiations (Pempel, 2008).

However, above mentioned researches covered the issues of estimation of the industrial potential of the market, but the issues of a comprehensive assessment of the market potential are poorly explored, especially such complex of markets, as the Asia-pacific region. Uncertainty of integration processes interpretation in the Asia-pacific region was the impulse for assessing the potential and the actual conditions of integration processes in this region.

6. CONCLUSION

Based on calculations of the gravitational dependency on exports it is possible to note the significance of the obtained equations ($R^2 > 0.750$). For models of India's exports, the elasticity of dependence on both the *GDP* and the distance between the capital cities is positive; and besides, a pronounced upward trend of these indicators is observed. In this case, we can state the fact that the export of India possesses an antigravity law, i.e. the volume of exported goods and services increases with the *GDP* growth of the partner countries as well as with the growth of their remoteness.

As for the models of imports, the most significant ones are recognized for India, Canada, South Korea and the United States. Gravitational law for the import of considered countries and Far Eastern FD is performed in the case when partners' imports are decreasing (inverse relationship), and the upward trend of this indicator is observed with the growth of *GDP*.

Thus, the construction and analysis of gravity models enabled to reveal the patterns of the foreign relations of the Far Eastern Federal District with Asia-pacific countries, as well as with the large individual partners of the region. According to the calculations, it is possible to trace the dynamics of gravitational interactions totally defining this relationship (dependence) of the factors. The Russian Far East and the Asia-pacific countries certainly have a considerable potential to increase mutual trade flows and their further integration.

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