

ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE

EXPORT AND CULTURAL AFFINITY RELATIONSHIP: THE EXAMPLE OF RUSSIA (2001-2018)

İHRACAT VE KÜLTÜREL YAKINLIK İLİŞKİSİ: RUSYA ÖRNEĞİ (2001-2018)

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ABSTRACT

The aim of the study is to investigate the export of Russia to Lithuania, Latvia, Estonia, Georgia, and Ukraine in the context of cultural affinity. Lithuania, Latvia, Estonia, Ukraine, and Georgia are the former USSR (Union of Soviet Socialist Republics) countries. Besides, a quarter of the population is Russian origin in Latvia and Estonia, this rate is 6% in Lithuania, and 1.5% in Georgia. Therefore, there is a cultural affinity among Lithuania, Latvia, Estonia, Ukraine, Georgia, and Russia. In the study, the panel data analysis method and panel gravity model are applied. This analysis involves the years from 2001 to 2018. As a result, it is determined that if the populations and GDPs of Lithuania, Latvia, Estonia, Ukraine, and Georgia increase, they prefer not to trade with Russia. In other words, the cultural and historical relationships of Lithuania, Latvia, Estonia, Ukraine, and Georgia with Russia does not affect commercial relations positively.

Keywords: Russia, Export, USSR, Panel Data Analysis, Panel Gravity Model.

JEL Classification Codes: F14, F43, F53, F54.

ÖZ


Bu çalışmanın amacı Rusya'nın Litvanya, Letonya, Estonya, Gürcistan ve Ukrayna'ya ihracatını kültürel yakınlık bağlamında incelemektir. Litvanya, Letonya, Estonya, Ukrayna ve Gürcistan eski SSCB (Sovyet Sosyalist Cumhuriyetler Birliği) ülkeleridir. Ayrıca, nüfusun dörtte biri Letonya ve Estonya'da Rus kökenlidir. Bu oran Litvanya'da yüzde 6, Gürcistan'da yüzde 1,5'tir. Bu nedenle Litvanya, Letonya, Estonya, Gürcistan ve Ukrayna ile Rusya arasında kültürel ilişki bulunmaktadır. Çalışmada panel veri analizi yöntemi ve panel yerçekimi modeli uygulanmıştır. Bu analiz 2001'den 2018'e kadar olan yılları kapsamaktadır. Sonuç olarak, Litvanya, Letonya, Estonya, Ukrayna ve Gürcistan'ın nüfusları ve GSYH'leri arttıkça, Rusya ile ticaret yapmamayı tercih ettikleri belirlenmiştir. Başka bir ifadeyle, Litvanya, Letonya, Estonya, Ukrayna ve Gürcistan'ın Rusya ile olan kültürel ve tarihi ilişkileri ticari ilişkileri olumlu etkilememektedir.

Anahtar Kelimeler: Rusya, İhracat, SSCB, Panel Data Analizi, Panel Çekim Modeli.

JEL Sınıflandırma Kodları: F14, F43, F53, F54.

1. INTRODUCTION

It is possible to define the goods and services sold by a country as export (Eğilmez, 2013). It is essential to produce and export products with high added value to ensure sustainable growth in the economy. When an increase in exports occurs, factor productivity in the economy increases, economies of scale and positive externality are provided, the current account deficit is reduced, and the import of investment goods becomes easy. Besides, export

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provides technology transfer to other countries (Medina-Smith, 2001; Herzer, Danzinger and Siliverstovs, 2006; Kasahara and Lapham, 2008; Wolff, 2014; Aghion, Bergeaud, Lequien and Melitz, 2017; Bakari and Mabrouki, 2017; Sultanuzzaman, Fan, Abdulahi, Hossain and Islam, 2019). On the other hand, exports ensure the efficient use of world resources by providing international division of labour among countries. Thus, the level of welfare increases both in the exporting country and in the world.

The export-based growth hypothesis states that economic growth resulted from an increase in exports. Labour and capital markets will be impressed positively when increases the total exports of a country. In other words, according to the export-based growth approach, total exports should be increased to improve the economic growth rate.

If the share of export revenues in a country's economy is large, any fluctuation in export income will affect total production. Countries need stable and sustainable exports to solve this problem. To realize a sustainable export, companies in the country need to produce continuously, improve the quality (Manova, 2020) of the product, and offer products at affordable prices to selected markets (ITA, 2020). Also, countries should diversify their export products and export markets to ensure economic stability and an increase in exports.

In recent years, culture-based explanations have increased to explain to foreign trade. The understanding started in the 1960s and extended to the present day. According to this understanding, cultural factors may affect or even determine economic activities. Culture has different definitions, but these different definitions emphasize similar points. Boyd and Richardson (1985: 2) define culture as values that affect knowledge and behaviour transmitted through generation to generation and imitation. Hofstede (1980: 225) explained that culture is a jointly programmed intelligence that distinguishes one group from another.

Also, it can be said that cultural differences affect foreign trade negatively, and cultural similarities affect foreign trade more positively. Felbermayer and Taubal (2010: 279) state that cultural affinity is the degree of sharing a collective identity, a sense of belonging to the same group, and similarity between the two countries. Cultural similarity zooms the preferences of consumers in different countries. Thus, foreign trade relations develop among countries (Combes, Lafourcade and Mayer, 2004: 3). Linder (1961) stated that commercial relations develop among economies with similar tastes and preferences in "Preferences Similarity Hypothesis". Henrich (2000) explained that cultural similarities enable people to make similar economic decisions. Frankel, Stein and Wei (1997: 74) argued that countries with similar colonial backgrounds have 55% more trade volume among themselves than countries without these features. Hou (2010) argued that ethnic ties between China and Southeast Asian countries facilitate the flow of information so that mutual trade is increased among countries.

This issue is chosen to determine the effect of cultural affinity among Russia and Lithuania, Latvia, Estonia [members of the EU (European Union)], Ukraine, and Georgia (have been adopted the EU culture). Relations with the EU of these countries is expected to affect the trade of Lithuania, Latvia, Estonia, Georgia, and Ukraine with Russia negatively, because of Lithuania, Latvia, and Estonia are EU custom union members, Ukraine and Georgia have in military conflict with Russia. Besides, Lithuania, Latvia, Estonia, Georgia, and Ukraine were selected for the analysis because they are former USSR countries and have the Russian population; therefore, these countries have a cultural affinity with Russia.

Russia, which is the largest country in the World with an area of 17.075.389 km², has an essential place in world trade. The most exported products of Russia are crude petroleum, petroleum oils, iron-steel, pearls, precious stones. China, Netherlands, Belarus, Germany, and Turkey are the countries where most exports of Russia. Imported products of Russia: Medicines, telephone parts, cars, parts of land vehicles. China, Germany, USA (the United States of America), Belarus, and Italy are the countries where most imports of Russia (ITC, 2020).

Also, Estonia, Latvia, Lithuania, Ukraine, and Georgia import aircraft parts, chemical products, cinema and photography products, textile products, petroleum products from EU countries, while import nickel, lead, zinc, ceramics products, musical instruments, antique parts, and watch products from Russia. Moreover, in 2004 the shares of Estonia, Latvia, Lithuania, Ukraine, and Georgia respectively were 0.86%, 0.74%, 1.61%, 5.93%, and 0.12% in Russia's total export. In 2018, Estonia's, Lithuania's, and Ukraine's shares decreased respectively to 0.54%, to 0.94%, and to 2.11%, while Latvia's share increased to 1.04%, and Georgia's share increased to 0.26% (ITC, 2020). In general, the shares of the countries did not increase, even decreased in Russia's total export. The reasons for this decrease are that Estonia, Latvia, and Lithuania are members of the EU customs union. Besides,

Ukraine and Georgia want to improve their commercial and political relations with the EU, because the countries intend to become a member of the EU.

This study aims to examine the changes in the exports of Russia to Lithuania, Latvia, Estonia, Georgia, and Ukraine. The study hypothesizes that as Lithuania, Latvia, Estonia, Georgia, Ukraine's GDP and populations increase, Russia's exports to these countries will decrease. The method used in the study is panel data analysis. Panel data analysis is applied using the panel gravity model. The unique value of this article is to study Russia's cultural affinity and export relationship with its former colonies in the European continent.

2. LITERATURE

Many economists have tested the relationship between international trade and cultural affinity for different countries. Some of these studies as:

Table 1. Literature Review

Author(s)	Year	Country	Result
Alagöz and Yapar	2004	Azerbaijan	The study examined commercial relations between Turkey and the Turkish Republics. As a result of this review, it is understood that some structural arrangements should be made in order to reach the desired level of commercial relationships. Azerbaijan has a cultural affinity with Turkey.
Binh et al.	2011	Vietnamese	The cultural and market size of Vietnam affects its trade with neighbouring countries positively. Vietnam has a cultural affinity with its neighbours.
Tatlıcı and Kızıltan	2011	Turkey	EU Customs Union, has not a significant impact on Turkey's exports to the EU.
Ata	2012	Turkey	There are significant cultural ties between Turkey and the Balkans and Middle East countries. If Turkey persists in foreign trade with these countries, <u>Turkey's economy will be affected by this situation positively.</u>
Josheski and Apostolov	2013	Macedonia	The trade of Macedonia with Balkan countries, where it has a common culture, affects Macedonian exports positively.
Bardaççı	2014	Azerbaijan	In the study, the demand of the people of Azerbaijan to Turkish goods was examined via survey. As a result of this review, factors affecting foreign trade negatively were determined between the two countries. Azerbaijan has a cultural affinity with Turkey.
Prasai	2014	Nepal	As long as Nepal continues to trade with its neighbours, where China and India, its exports are will increase. Nepal has a cultural affinity with China and India.
Suresh	2014	India	As long as India increases its trade with its southern neighbours, its exports will increase. India has a cultural affinity with south neighbours.
Elshehawy et al.	2014	Egypt	Shipping costs affect Egypt's relationship with its trading partners that are Muslim countries negatively. The panel gravity model was applied in the study.
Arslan	2014	Asian Countries	Panel cointegration analysis was carried out using data from Asian countries covering 1970-2009. As a result of the analysis, it was concluded that cultural affinity among Asian countries affects international trade positively.
Waheed and Abbas	2015	Bahrain	The foreign exchange reserves owned trading partners of Bahrain have an impact on exports of Bahrain positively.
Wang and Badman	2016	Peru	The distance between Peru's trade partners and with Peru affect foreign trade of Peru negatively, while Peru's export and GDP size affect its positively. Also, the panel gravity model was applied in the study.

Author(s)	Year	Country	Result
Şahin	2016	Côte d'Ivoire	The distance between the Côte d'Ivoire and WAEMU countries affects the export of Côte d'Ivoire positively, while the population, common border, and common coastal of Côte d'Ivoire's trade partners affect the export of Côte d'Ivoire negatively. Côte d'Ivoire has a cultural affinity with WAEMU countries.
Şahin	2017	Azerbaijan	While the GDP of the CIS (Commonwealth of Independent States) countries positively affects the exports of the Republic of Azerbaijan, while their distances and population sizes affect the export of Azerbaijan negatively. Azerbaijan is a member of CIS. Therefore, Azerbaijan has a cultural affinity with CIS.
Metin and İspiroğlu	2017	The MENA Countries	The MENA (The Middle East and North Africa) countries have common specifications such as cultural, geographical, and religious beliefs with Turkey. However, Turkey and MENA countries have less than was expected foreign trade relationships.
Özsoy	2018	The USA, China, Europe and Middle East Countries, Japan,	Cultural differences affect foreign trade positively. Management of cultural differences gives companies a privilege and an advantage in international trade. The management of cultural differences positively affects the country's economic development process as it improves the foreign trade volume of companies.
Xie	2018	A Belt and Road Countries	Cultural affinity affects international trade positively.

As a result, there are studies in the literature claiming that cultural affinity affects international trade positively, as well as some studies claiming that cultural differences affect international trade positively. As countries with cultural affinity consume similar goods, trade is increased between them. Such a trade relationship is seen frequently between the colonial state and its former colonies (Frankel et al., 1997: 74). This study seeks answers about how it affected relationships with the EU of Estonia, Lithuania, Latvia, Georgia, and Ukraine, the former colonies of the USSR, and cultural-commercial relations with Russia of these countries.

3. DATA TYPE AND SOURCES

The data belong to the period of 2001-2018. Data of Lithuania, Latvia, Estonia, Georgia, and Ukraine are used in the study, which is available for the relevant period. All observations are constant and annual. Data on GDP (gross domestic product), the population were achieved from the "World Development Indicators" database of the World Bank. GDP data are in constant 2010 the USA Dollars. Total exports are measured in billion the USA Dollars. Data for export were taken from the ITC (International Trade Centre). Also, distance data indicating the distances of Lithuania, Latvia, Estonia, Georgia, and Ukraine to Moscow, the capital of Russia, were obtained from the website "<http://www.distancefromto.net/>".

4. METHODOLOGY AND MODEL

The gravity equation in international trade is used in the study. According to the gravity model in physics science, the larger of the two masses at the same distance has strong gravity. The commercial value of the country, which has greater economic power, is high. Also, as long as geographically close countries have good relations, their commercial relations will strengthen over the years. It is also possible to add variables such as common shore, land border, population to the gravity model to obtain real-life results (Wang and Badman, 2016: 566-567). The gravity equation in international trade was used for the first time in 1962 by Tinbergen clarify trade trends around the world (Tinbergen, 1962). Today, the gravity equation in international trade is widely used by scientists to study foreign trade empirically (Wang and Badman, 2016: 5). In the study, the gravity equation in international trade is used to determine the factors affecting Russia's exports to Lithuania, Latvia, Estonia, Georgia, and Ukraine. However, in the gravity equation in international trade, we can show the commercial interaction between the countries (i) and (j) as follows (Anderson, 2010).

$$T_{ij} = c \times \frac{GDP_i \times GDP_j}{D_{ij}} \quad (1)$$

When the logarithm of both sides is taken, the following equation is obtained.

$$\ln(T_{ij}) = \ln(c) + \ln(GDP_i) + \ln(GDP_j) - \ln(D_{ij}) \quad (2)$$

where T_{ij} : Trade between (i) and (j) countries, GDP_i and GDP_j : GDP of (i) ve (j) countries, D_{ij} : Distance between (i) and (j) countries, C: Constant.

One of the most critical points to be considered in order to reach the correct result while conducting econometric analysis is that the series are stationary. If the series is not stationary, it cannot maintain its average in the long run. As the time approaches infinity, the variance value goes to infinity. Thus, the model estimates obtained in the long term cannot give correct results, and the false regression model emerges. In order not to fall into the false regression trap, the series should be made stationary (Kutlar, 2000: 43). There are some tests to see if the series are stationary. The unit root test is one of the methods that test the stability of the series by looking at whether the time series contains a unit root. Since the number of observations has increased, panel unit root tests are considered to be statistically more reliable than unit root tests of time series. The autoregressive coefficient is homogeneous for all units in Levin, Lin, and Chu test (Levin, Lin and Chu, 2002). Maddala, Wu, and Choi propose an alternative Fisher-type test based on combining unit root test statistics for each nonparametric horizontal section (Maddala and Wu, 1999; Choi, 2001).

In panel data analysis, the fixed effects model is a model that is frequently used and has features that are desired in terms of statistical properties. However, if the random effects model gives more effective results than the fixed effects model, the random effects model should be used. Therefore, it is become necessary to identify the more effective between the two models, both of which are consistent but have different effects. In the literature, the Hausman test, which fits the k-square distribution with k degrees of freedom, is used to choose between the fixed effects model and the random effects model (Baltagi, 2001: 20).

Panel data method; it is the collection of horizontal cross-sectional observations of units such as countries, individuals, companies, households within a specified period (Baltagi, 1995). In statistical analysis, data can divide into three categories as time, horizontal section, and mixed data. These mixed data are called panel data if the same segment unit is tracked over time (Gujarati, 1999). Knowing the dynamic responses of the units is essential in understanding economic events. Panel data can eliminate the need for a very long time series, provided that the available information uses dynamic reactions from different units (Kennedy, 2006). In panel data analysis, we often encounter situations where the number of horizontal section units (N) is more than the number of periods (T). In general, the panel data model is shown as follows (Hsiao, 2007):

$$Y_{it} = \alpha_{it} + \beta_{kit} + X_{kit} + \mu_{it}, \quad i=1, \dots, N; t=1, \dots, T \quad (3)$$

where Y is the dependent variable, X_k is the independent variable, α is the fixed-parameter, β is the slope parameter, and μ is the error term. The subscript "i" indicates units, and the subscript "t" indicates time. If variables, parameters, and error terms have a panel dataset, they must carry the indices "i" and "t" (Hsiao, 2003).

Panel data analysis is divided into two as unbalanced and balanced. In the unbalanced panel data analysis, the length of the time series was different in all sections, while in the balanced panel data analysis, the length of the time series is equal in all sections (Uncu, 2009: 30).

Besides, panel data analysis not only has the characteristics of horizontal and time-series analyses but also complements the shortcomings of these analyses. Because panel data analysis adds horizontal section observations to time series, while providing more freedom degree and efficiency between variables, it provides less linear correlation (Tari, 2010: 475). Also, panel data analysis causes fewer linear correlation problems between independent variables (Baltagi, 2005: 5). When the number of observations increases, it also increases the degree of freedom (Hsiao, 2003: 3). It besides can be applied analysis when the horizontal section observations are insufficient or when the time series are short (Matyas and Sevestre, 1996: 17). It provides a reduction of estimation deviations with problems caused by neglected variables (Pindyck and Rubinfeld, 1998: 251).

The commercial attraction model is used in the study, and this model is applied for the export of Russia to Lithuania, Latvia, Estonia, Georgia, and Ukraine. In the commercial attraction equation, Russia's export is the

dependent variable. In the equation, GDP belonging to Lithuania, Latvia, Estonia, Georgia, and Ukraine, population, and the distance of the capitals of these countries to Moscow are independent variables. The equation using in the commercial gravity model is shown in double logarithmic form as follows:

$$\log(E_{ij}) = \beta_0 + \beta_1 \log G_{ij} + \beta_2 \log P_{ij} - \beta_3 FDIS_{ij} + u_{ij} + \varepsilon_{ij} \quad (4)$$

where;

$\log E_{ij}$: Exports to Lithuania, Latvia, Estonia, Georgia, and Ukraine from Russia in the t year (\$),

$\log G_{ij}$: GDP of Lithuania, Latvia, Estonia, Georgia, and Ukraine in the t year (\$),

$\log P_{ij}$: Population of Lithuania, Latvia, Estonia, Georgia, and Ukraine in the t year,

$FDIS_{ij}$: Distances of the capitals of Lithuania, Latvia, Estonia, Georgia, and Ukraine to Moscow (km).

5. EMPIRICAL RESULTS

The purpose of the analysis is to determine the impact of Lithuania, Latvia, Estonia, Georgia, and Ukraine on total exports of Russia. The gravity model is used in the study. This model concerns Russia's exports to Lithuania, Latvia, Estonia, Georgia, and Ukraine. The panel data method is used in the study covering the years 2006-2018. Russia's export depend variable on the Gravity model. GDPs of Lithuania, Latvia, Estonia, Georgia, and Ukraine, the population of Lithuania, Latvia, Estonia, Georgia, and Ukraine, and distances of Lithuania, Latvia, Estonia, Georgia, and Ukraine to Moscow are independent variables.

Table 2. Unit Root Tests' Results

	LLC			Fisher	
	Statistic	p-value		Statistic	Values
lnG	-3.7016 **	0.0001	P	18.8094 **	0.0428
			Z	-1.9860 **	0.0235
lnE	-12.8672**	0.0000	P	63.1209 **	0.0000
			Z	-6.3798 **	0.0000
lnP	-2.1115 **	0.0174	P	139.1316 **	0.0000
			Z	-10.4897 **	0.0000
lnD	-2.0397 **	0.0207	P	11.5172	0.3187
			Z	-0.1935	0.4233
FDIS	-3.0538 **	0.0011	P	54.1174 **	0.0000
			Z	-5.7840 **	0.0000

LLC: Levin-Lin-Chu unit root test, Fisher: Fisher unit root test

** : Statistically significant at 5% level.

The LLC and Fisher unit root tests were performed to determine the stability of the variables. All variables were found to be stationary, except lnD. Therefore, the first difference of lnD is used, which is FDIS (Table 2). In the panel data method, it is necessary to decide whether the analysis will be studied with a fixed-effect model or random-effect model. Hausman test is performed for the selection of these models. However, due to the variable of "distance" that does not change over time, it has been decided to estimate with the random effect model. The reason for this is that the fixed effects model does not allow estimation of variables that do not change over time. Also, results of heteroskedasticity, autocorrelation, and correlation tests are positive. Therefore, the robust panel data test, Prais-Winsten, was applied.

Table 3. Panel Data Analysis (Prais-Winsten) Results

Dependent variable: lnE					
Variables	Coefficient	Std. Err.	P> z 	[95% Cof. Interval]	
lnG	-0.039711 **	0.009829	0.000	-0.0589768	-0.020446
lnP	-0.000011 **	1.98e-06	0.000	-0.0000153	-7.58e-06
FDIS	-9.42347	6.429632	0.143	-22.02532	3.178378
Cons	650.9618	117.522	0.000	420.6229	881.3007
Prob > chi2	0.0000		R-squared	0.2218	

** : Statistically significant at 5% level.

The gravity model of Russia's exports-equation above is estimated by taking all explanatory variables of Lithuania, Latvia, Estonia, Ukraine, and Georgia. Besides, lnG and lnP variables are found significant statistically. Only the distance variable is found insignificant statistically. Nevertheless, its sign is negative, too. This result is in line with the literature. According to the result, the independent variable lnG affects the dependent variable lnE, because if lnG increases by 1%, lnE decreases by 0.039%. Also, the independent variable lnP affects the dependent variable lnE negatively; it does not very more because if lnP increases 1%, lnE is decreased only "-0.000011". Besides, FDIS is insignificant statistically (Table 3).

6. CONCLUSION

Lithuania, Latvia, Estonia, Ukraine, and Georgia are the former USSR countries. The USSR governments ruled Lithuania, Latvia, Estonia for 50 years, Georgia, and Ukraine for about 70 years. Besides, a quarter of the population is Russian origin in Latvia and Estonia, this rate is 6 percent in Lithuania, and 1.5 percent in Georgia. Also, Latvia is the Baltic country where Russian is the most spoken (second language). Many Russians and Ukrainians speak the same language, and they have the same culture, religious belief, common historical past, and kinship relations. Therefore, there is a cultural relationship between Ukraine and Russia.

According to estimates of the gravity model, if the populations and GDPs of Lithuania, Latvia, Estonia, Ukraine, and Georgia increase, they prefer to not trade with Russia, because Lithuania, Latvia, and Estonia are EU countries. In other words, Lithuania, Latvia, and Estonia are members of the EU Customs Union. If a country member of the EU Customs Union, the country must meet all its needs from the customs union as much as possible. This is a rule of the customs union. Therefore, Lithuania, Latvia, and Estonia must meet their needs from EU countries when their GDPs increase. Ukraine and Georgia are at war with Russia. Therefore, Ukraine, Georgia, and Russia have not good commercial relationships. Results of the analysis show that Lithuania, Latvia, Estonia, Ukraine, and Georgia prefer to trade with other countries. Consequently, cultural and historical relationships of Lithuania, Latvia, Estonia, Ukraine, and Georgia with Russia does not affect commercial relations positively.

Lithuania, Latvia, Estonia, Ukraine, and Georgia are emerging markets that need more capital for industry. Also, the countries need quality semifinished and investment goods, but the countries can obtain the necessary capital and goods from the EU. Therefore, they should have good relationships with the EU. Consequently, the situation does not affect commercial relations with Russia positively. Russian policymakers should allocate more resources for R&D if they do not intend to lose their export values because the rate of Russia's high-tech export is 11% of total industrial exports. Besides, Lithuania, Latvia, Estonia, Ukraine, and Georgia import more aircraft, aircraft parts, and chemical products from the EU. If Russia raises education standards, it can produce qualified semifinished and investment goods. Also, Russian policymakers should find new export markets for qualified semifinished and investment goods.

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