The Effect of Export and Imports on National Income in Kazakhstan: Econometric Analysis

El efecto de las exportaciones e importaciones sobre el ingreso nacional en Kazajstán: análisis econométrico

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ABSTRACT:

Foreign trade has an impact on the economy through both exports and imports. Exports are considered as a contribution to national income and economy, while imports are considered as an exit from the economy. In the literature, it is generally argued that exports have positive direct and indirect effects on the economy, while imports have a negative direct impact on national income. The aim of this study is to analyze the effect of exports and imports on national income with the quarterly data of 2000: 2017 period in Kazakhstan. The autoregressive distributed lag (ARDL) model was used for this purpose. According to the analysis results, the increase in both exports and imports in Kazakhstan increases the country's gross domestic product (GDP). While the 1% increase in exports in the long term leads to a 0.38% increase in gross domestic product, the increase in imports by 1% leads to an increase of 0.42% of gross domestic product. The long-term effect of exports is stronger than the short-term effect. Imports have a negative impact on economic growth in the short term and have a positive effect on the long term. Likewise, income elasticity of imports was statistically significant and positive. An increase of 1% in economic growth causes imports to increase by

RESUMEN:

El comercio exterior tiene un impacto en la economía a través de las exportaciones y las importaciones. Las exportaciones se consideran una contribución al ingreso y la economía nacionales, mientras que las importaciones se consideran una salida de la economía. En la literatura, generalmente se argumenta que las exportaciones tienen efectos directos e indirectos positivos en la economía, mientras que las importaciones tienen un impacto directo negativo en el ingreso nacional. El objetivo de este estudio es analizar el efecto de las exportaciones e importaciones en el ingreso nacional con los datos trimestrales del período 2000: 2017 en Kazajstán. Se usó el método de prueba de límites ARDL para este propósito. Según los resultados del análisis, el aumento de las exportaciones e importaciones en Kazajstán aumenta el PIB del país. Mientras que el aumento del 1% en las exportaciones a largo plazo conduce a un aumento del 0,38% en el PIB, el aumento de las importaciones en un 1% conduce a un aumento del 0,42% del PIB. El efecto a largo plazo de las exportaciones es más fuerte que el efecto a corto plazo. Las importaciones tienen un impacto negativo en el crecimiento económico a corto plazo y tienen un efecto positivo en el largo plazo.

0.60%.
Keywords: effects, export. import, national income, Kazakhstan

Asimismo, la elasticidad del ingreso de las importaciones fue estadísticamente significativa y positiva. Un aumento del 1% en el crecimiento económico hace que las importaciones aumenten en un 0,60%.
Palabras clave: efectos, exportación. importación, ingreso nacional, Kazajstán

1. Introduction

The relationship between exports, imports and economic growth is one of the issues discussed in the economic literature. The most common evidence among economists is that exports have a positive impact on economic growth. In the last 40 years, many developing countries have abandoned their growth policies based on their import substitution, and have shifted to export-oriented growth policy (Zang and Baimbridge, 2012).

After the collapse of the Soviet Union, a new restructuring process started in Kazakhstan. In the beginning of the 1990s, the transition from the central planned and outward-facing model to an open model dominated by the market mechanism began. Kazakhstan has undergone various reforms in foreign trade within the framework of reforms aimed at establishing a multifaceted economy and moving to a free market. These, liberalization of foreign trade prices, restructuring of the foreign trade system, diversification of the market and changing the exchange system (Larsson, 2010).

The foreign trade reforms implemented by Kazakhstan started in terms of liberalization in foreign trade. In the liberalization of foreign trade, all import quotas were terminated, tariffs were reduced, all quotas and licenses applied, central export structure of strategic goods were canceled and barter trade was prohibited. With these measures, Kazakhstan has largely liberalized its foreign trade system, which has positively affected the country's foreign trade.

Today, the foreign trade reform in Kazakhstan is largely completed. In this process, the structure of foreign trade has been largely liberalized by being not centralized, and foreign trade has turned to countries outside the former Soviet countries.

Kazakhstan has made an effort to enter the World Trade Organization (WTO) in order to ensure continuity in trade relations and to carry out its trade with developed countries, which are important in terms of foreign trade, on a more solid basis and on the 30th of November 2015 it became the 162th member of WTO.

In this study, the relationship between export, import and economic growth in Kazakhstan was investigated with ARDL cointegration test approach. Following this introductory chapter, the economy of Kazakhstan was evaluated in general. In the second part, the foreign trade structure of Kazakhstan was evaluated. In the third chapter, theoretical and empirical literature related to the subject are given. In the fourth chapter, data set, model and econometric method are explained. In the last section, the results of the application were evaluated and the study with the result section was completed.

1.1. Overview of the Economy of Kazakhstan

The Republic of Kazakhstan was governed by the central planning economy of the USSR for approximately 70 years. After independence, it has been trying to develop its economy in a way that it can stand on its own feet in a new economic system - free market economy for 28 years (Syzdykova, 2018). This process, with the efforts to strengthen the economy; a troubled period that was not easy at all Özdil T., Turdaliyeva A., (2015). Two years after the independence, the hyperinflation period in Kazakhstan (1660%) has begun, but since 1996, it has achieved a steady growth trend, albeit at a low level (Figure 1).

Figure 1
GDP growth rate in Kazakhstan (1991-2017)
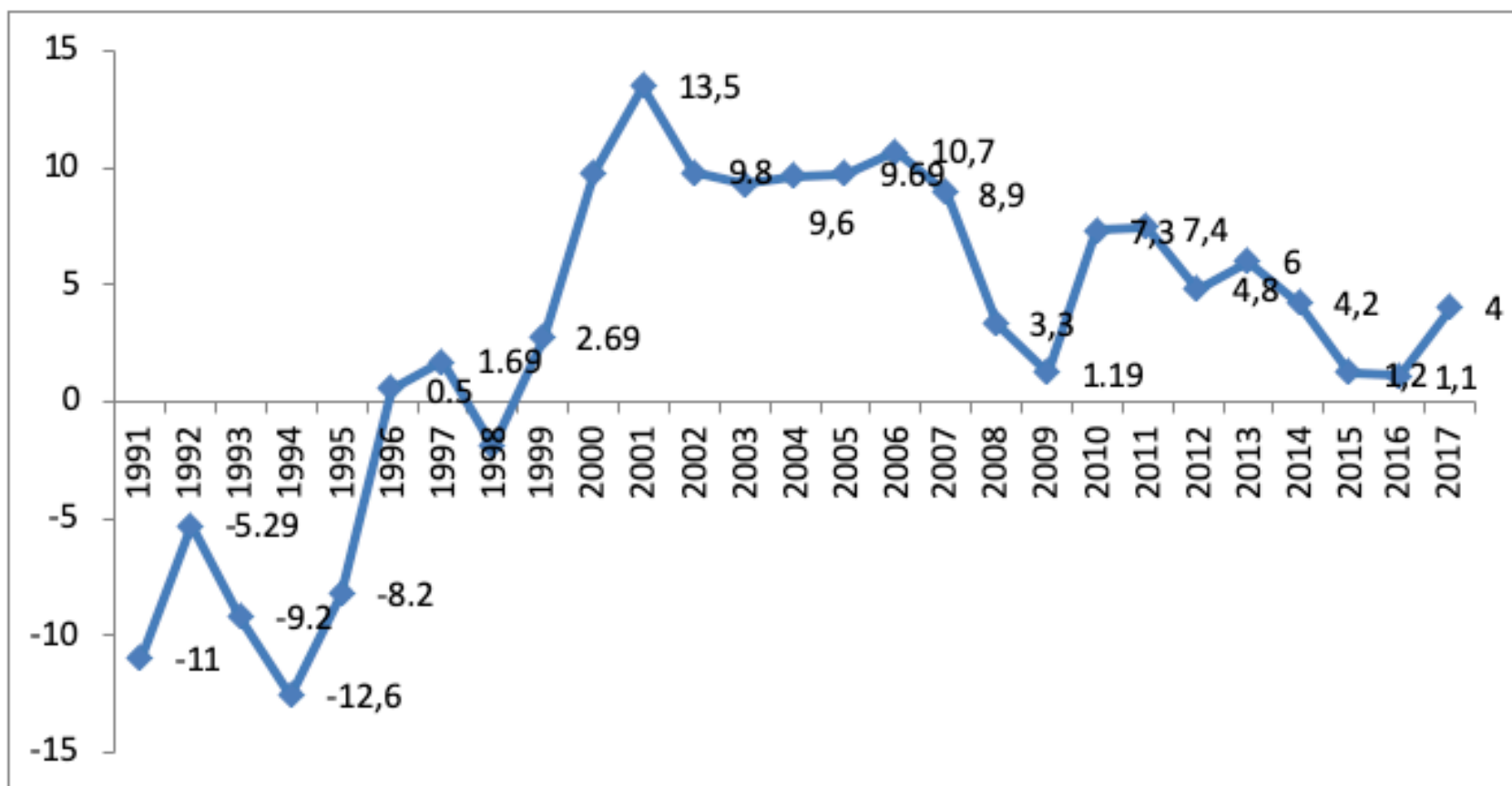
As can be seen from Figure 1, Kazakhstan's economy grew by 6.5% on average in the years 1999-2017. If we do not count the decrease due to the global crisis in 2009, gross domestic product increased from approximately USD 18 billion to USD 159 billion during the period. On the other hand, gross domestic product, which was 184.3 billion dollars in 2015, decreased significantly in 2016 and was 137 billion dollars. This is due to the decline in world oil prices (Table 1).

Table 1
Basic Macroeconomic Indicators
of Kazakhstan (1995-2017)

	1995	2000	2005	2010	2015	2016	2017
Population, total (million people)	15,8	14,8	15,1	16,3	17,5	17,7	18,1
GDP (bln dollars)	20,3	18,2	57,1	148	184,3	137,2	159,4
GDP per capita (dollar)	1288	1229	3771	9070	10510	7714	8837
GDP growth (annual%)	-8,2	9,8	9,7	7,3	1,2	1,1	4
Inflation, consumer prices (annual%)	176,1	13,1	7,5	7,4	6,6	14,3	7,4
Exports (bln dollars)	5,9	10,2	30,4	65,5	52,9	43,6	55,7
Imports (bln dollars)	8,9	8,9	25,4	44,2	45,2	39,1	40,3
Current account balance (% of GDP)	-1,0	2,0	-1,8	0,9	-2,8	-6,5	-3,4
Total reserves (bln dollars)	1,6	2,09	7,06	28,2	27,8	29,6	30,8
Foreign direct investment (bln dollars)	0.964	13,7	25,4	7,4	6,3	16,7	4,5
Portfolio investments (million dollars)	...	19,3	149,7	133,9	5,7	-24,9	21,9

External debt stock, total (bln dollars)	3,7	12,8	43,8	119,2	153,4	164,1	167,6
External debt stocks (% of GDP)	18,5	75,7	84,7	92,6	88,5	131,7	118,4
Industry (% of GDP)	29,9	37,7	37,6	40,6	30,9	32,0	32,0
Service (% of GDP)	54,0	48,4	52,0	51,7	59,3	57,9	57,4
Manufacturing (% of GDP)	14,6	16,5	12,0	11,3	10,3	11,3	11,2
Agriculture (% of GDP)	12,3	8,1	6,4	4,5	4,7	4,6	4,4

Source: Created from World Bank data

As seen from the Table 1, the rate of inflation in Kazakhstan was 13.1% in 2000 and it has been able to reduce it to a single digit number since 2005. The country's total exports are well above the import figures, and the country continues to provide foreign trade surplus. In 2017, Kazakhstan realized approximately 56 billion dollars of exports and 40 billion dollars of imports.

Looking at the sectoral distribution of gross domestic product, the service sector is the sector with the highest share with 50% shares. Industrial sector is in second place. The share of industry decreased from 40.6% in 2010 to 32% in 2017. The share of manufacturing and agricultural sector in gross domestic product is 11.2% and 4.4% respectively. The largest share in the industrial sector belongs to the mining and quarrying sub-sector (National Bank of Kazakhstan, 2018).

Immediately after gaining its independence, Kazakhstan applied various incentives to attract foreign investments in order to ensure its economic development. As a result, it has become the country that attracts the most foreign direct investment among the Central Asian countries. In 2017, Kazakhstan's total foreign direct investment inflows were 147 billion dollars. In Kazakhstan, foreign direct investments, which have reached 5-6% of gross domestic product, are mainly concentrated in the oil and natural gas sector. 50-70% of the total foreign investments coming to Kazakhstan come to the energy sector.

Kazakhstan's external debt stock has increased year on year, with total external debt stock amounting to 167.6 billion dollars in 2017. When the structure of external debt stock is examined; the share of public sector within the external debt stock is 8.4% and the share of the private sector is 91.6%. Moreover, 95.8% of Kazakhstan's total external debt is composed of long-term debt. The share of inter-company debts arising from foreign direct investments made by foreign countries in long-term debts is very high. In addition, Kazakhstan owes approximately 120 countries, while 85% of its external debts belong to only 11 countries. These countries respectively; Netherlands, USA, France, Japan, Bermuda Islands, England, Russia, Virgin Islands, South Korea, China, Hong Kong and Switzerland (National Bank of Kazakhstan, 2018).

1.2. The Structure of Foreign Trade in Kazakhstan

After Kazakhstan gained its independence, the reforms it had made in foreign trade and the foreign trade policy mentioned, on the other hand, Kazakhstan's high import-export potential, significant developments in the field of foreign trade of the national economy emerged. According to Trade Map data, Kazakhstan is ranked 50th in the world in terms of total exports and it is in the 62th place in terms of imports (Trade Map, 2019).

Kazakhstan's foreign trade volume amounted to 98 billion 429 million dollars in 2017, of which 55.7 billion dollars was for export and 42.6 billion dollars for import. Kazakhstan's foreign trade volume increased 15-fold compared to the first years of independence (Figure 2).

Until 1998, Kazakhstan gave significant deficits in foreign trade. In 1995, the country's foreign trade deficit was 126 million dollars, while in 1998 it was approximately $ 1 billion. However, after 2001, foreign trade started to give a surplus in oil prices which is the most important export item in Kazakhstan. Due to the fact that oil and gas are the main components of the country's exports, the changes in the prices of these products in the world markets cause the foreign trade balance of Kazakhstan to continuously fluctuate. Since production in Kazakhstan is mostly concentrated in the oil and gas sectors, the demand for capital and consumer goods in the country cannot be met. The insufficiency of capital and consumer goods in Kazakhstan causes the country's economy to be an economy based on imports. For this reason, the country's large and open boundaries in the country, cheap, illegal and even in terms of quality is very high in the inflow of goods (Yücememiş et al., 2017). The ratio of exports to imports in Kazakhstan is around 130%.

Figure 2
Import and export of Kazakhstan
(million dollars)
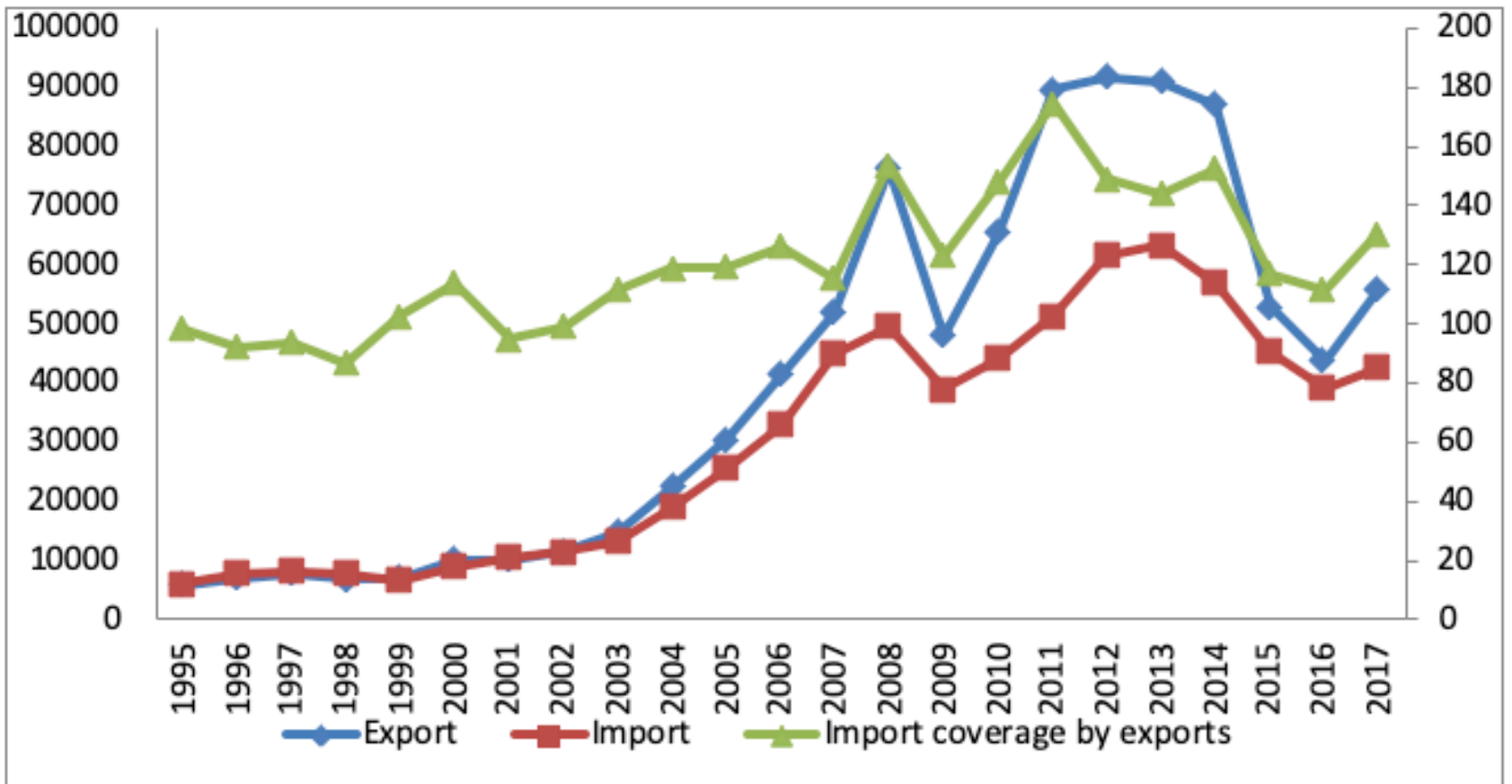
Source: World Bank data

Crude oil accounts for 67.7% of Kazakhstan's total exports in 2017. Natural gas, iron and steel, copper and ore, slag (coal crumbs) and ash follow respectively. This shows that the energy and iron and steel industry is dominant in production in Kazakhstan (Table 2).

Table 2
Major Export Products of Kazakhstan (Million Dollars)

Product Label	2001	2005	2010	2011	2012	2013	2014	2015	2016	2017	%
Mineral fuels, mineral oils	4757	19525	41032	63456	64485	64621	60700	31119	22334	30679	63.5
Iron and steel	1008	2244	3683	6122	5890	3252	3383	2500	2750	4186	8.7
Copper and articles thereof	704	1507	2153	3294	3770	2921	1830	2008	1918	2526	5.2
Inorganic chemicals	271	846	2609	3011	3533	3129	2839	3105	2413	2168	4.5

Product Label	2001	2005	2010	2011	2012	2013	2014	2015	2016	2017	%
Ores, slag and ash	221	925	2185	4428	3994	2729	2603	1084	1193	2102	4.3
Zinc and articles thereof	157	312	555	768	1031	487	588	577	553	837	1.7
Cereals	343	240	988	759	1694	1338	1135	832	816	829	1.7
Precious stones, precious metals	236	399	1213	1649	1893	1119	754	747	649	594	1.2
Aluminium and articles thereof	48	25	372	557	492	489	380	419	382	533	1.1
Products of the milling industry	28	147	556	565	619	587	574	499	518	487	1.0
Salt; sulphur; earths and stone	49	102	298	711	742	521	586	549	359	363	0.8
Various grains, seeds and fruits	2	5	31	91	253	187	273	230	203	279	0.6
Lead and articles thereof	56	89	179	359	324	159	209	190	222	256	0.5
Other	605	1480	1390	2337	3561	3159	3604	2095	2465	2503	5.2
All products	8485	27846	57244	88107	92281	84698	79458	45954	36775	48342	100

Source: Trade Map, 2019

In the importation of Kazakhstan; in 2017, the most important import items were electrical machines with a share of 18.3% and 10% with machinery-mechanical devices (Table 3). However, the high volume of unregistered trade in the country makes the attempts to follow the course of imports difficult. Kazakhstan's large, easy-to-pass borders with Russia, Kyrgyzstan and Uzbekistan allow for small-scale border trade, but the volume of border trade cannot be reflected in foreign trade date (Anessov, 2015: 29).

Table 3
Main Imported Products of Kazakhstan
(Million Dollars)

Product Label	2001	2005	2010	2011	2012	2013	2014	2015	2016	2017	%
Machinery, mechanical appliances	1322	3381	4326	5561	6806	7497	6852	5600	4397	4719	16.1
Electrical machinery and equipment	529	1521	2527	3815	3940	3997	3976	3068	2428	3017	10.3
Mineral fuels, mineral oils and products of their distillation	793	2062	2379	4878	4814	5472	2319	1681	1516	1768	6.0

	2001	2005	2010	2011	2012	2013	2014	2015	2016	2017	%
Vehicles and parts	519	1697	1038	1871	3309	4511	4401	2021	1108	1750	6.0
Articles of iron or steel	588	1565	1770	2005	3514	4416	2524	2584	1958	1706	5.8
Plastics and articles thereof	125	431	783	1245	1397	1594	1485	1093	980	1121	3.8
Pharmaceutical products	120	415	924	985	1298	1614	1420	1222	961	1093	3.7
Iron and steel	142	658	498	1082	1204	1148	1049	875	656	1033	3.5
Medical or pharmaceutical products	156	343	757	1972	1066	1231	1120	794	748	904	3.1
Ores, slag and ash	60	124	111	195	634	373	532	525	694	857	2.9
Miscellaneous chemical products	106	230	360	449	524	591	566	455	434	642	2.2
Furniture	102	275	650	792	725	786	789	594	440	571	1.9
Other	1718	4631	7900	13160	15307	15574	14262	10055	8854	10164	34.6
All products	6280	17333	24023	38010	44538	48804	41295	30567	25174	29345	100

Source: Trade Map, 2019

In 2017, the first three places in Kazakhstan's exports were Italy (17.93%), China (11.95%) and the Netherlands (9.82%). Kazakhstan's total imports in 2017 decreased by 10.7 billion dollars to 30 billion dollars. According to 2017 date, Kazakhstan's imports were mostly from Russia with a share of 39.10%. Russia was followed by China (15,99%) and Germany (5,06%) (Table 4).

Table 4
Foreign Trade of Kazakhstan by Major Countries
(million dollars)

EXPORT

Importers	2001	2005	2010	2011	2012	2013	2014	2015	2016	2017	%
Italy	956	4190	9576	15045	15465	16480	16051	8136	7474	8669	17.93
China	646	2422	10122	16291	16484	14373	9799	5480	4214	5777	11.95
Netherlands	141	877	4160	6637	7479	9888	8724	4980	3255	4748	9.82
Russia	1733	2926	3006	7514	6747	5875	6388	4547	3509	4515	9.34
Switzerland	378	5509	1234	4952	4965	4313	4539	2659	2687	3100	6.41
France	7	2665	4433	5414	5632	5460	4690	2681	1798	2861	5.92

Spain	6	464	921	1135	768	1846	2363	1219	992	1444	2.99
Uzbekistan	150	242	1101	1179	1343	1145	1083	942	922	1250	2.59
Turkey	74	156	1234	2574	3229	2603	2272	1275	851	1145	2.37
Ukraine	490	200	665	2670	2549	2041	1672	1173	911	1138	2.35
Other	3904	8195	20792	24696	27620	20674	21877	12862	10162	13695	28.33
Total	8485	27846	57244	88107	92281	84698	79458	45954	36775	48342	100

IMPORT

Exporters	2001	2005	2010	2011	2012	2013	2014	2015	2016	2017	%
Russia	2751	6581	5475	16269	17110	17971	13807	10529	9129	11472	39.10
China	171	1251	3964	5021	7497	8364	7357	5087	3665	4692	15.99
Germany	485	1298	1828	2082	2270	2455	2314	1985	1443	1484	5.06
USA	347	1204	1315	1716	2119	2155	1993	1484	1276	1253	4.27
Italy	268	679	1581	1145	960	1036	1039	1176	835	946	3.22
Uzbekistan	81	254	473	770	817	970	1017	725	587	735	2.51
Turkey	136	399	616	729	786	926	1019	741	618	730	2.49
South Korea	110	256	527	622	956	1265	1066	607	453	567	1.93
France	141	291	501	687	584	1032	1085	670	660	535	1.82
Belarus	46	207	251	623	675	698	773	488	332	508	1.73
Other	1744	4913	7492	8346	10764	11932	9825	7075	6176	6423	21.88
Total	6280	17333	24023	38010	44538	48804	41295	30567	25174	29345	100

Source: Trade Map, 2019

2. Literature Review

The relationships between export, import and economic growth have been a subject of much interest in the development and growth literature. The neoclassical view argues that there is a strong relationship between export expansion and economic growth, and that export expansion is one of the main determinants of growth. This causality from export to economic growth has been labeled in the literature as the export-led growth hypothesis (Çetintaş and Barişik, 2009). The number of studies on the economy of Kazakhstan is quite low. This is a situation that will increase the importance of this study.

Çetintaş and Barişik (2009) examined the relationship between export, import and economic growth for the 13 transition economies, including Kazakhstan. The result of the

study shows that there is a one-way causality from economic growth to exports in these countries. It has been determined that the export hypothesis based on growth in transition economies is valid and that growth is more shaped by the increase in import demand.

In the study Sarı et al. (2010), investigated the relationship between economic growth and export in 5 Turkish Republics with data 1990-2008. In the short term, the authors stated that there is a one-way causality relationship from economic growth to exports and found that there is a bidirectional causality relationship between economic growth and exports in the long term.

Safdari et al. (2011) studied the relationship between export and economic growth in their work on 13 Asian countries and found a one-way causality relationship from exports to economic growth.

In his study Ağayev (2011), the panel of former Soviet Union (in 12 transition economies) conducted panel cointegration and panel causality analysis to show the relationship between export and economic growth in the country. The results of the research show that the increase in exports does not cause economic growth, in other words, the export-based growth hypothesis is not valid for these countries. The findings show the existence of a one-way relationship between growth and exports in both short and long term.

In their study Gül et al. (2013), gained independence with the collapse of the Eastern Bloc 6 investigated the growth of Turkey's foreign trade and relations with the Turkish Republic. As a result of the analyzes, while there is a bilateral causality between export and growth in the long run, a unilateral causality relation from import to growth has been determined. However, this result was not reached in the short term. As a result of the study, the authors emphasize that Turkish Republics cannot achieve growth without reaching a certain level of industrialization and without macroeconomic transformations.

In the study Yardimcioglu and Gulmez (2013), the relationship between export and economic growth in the six Turkish Republics for the period 1995-2011 is to investigate. Panel cointegration tests, Pedroni FMOLS, Panel VECM and Pedroni Panel Causality methods were used in this study. As a result it was observed that the export and economic growth variables in the said countries had a cointegration relationship in the long term and the long term coefficient was 0.40. This means that an increase of 100 dollars in exports across the 6 Turkish Republics results in an increase of approximately 40 dollars in the long run over economic growth. However, according to the results of short-term causality analysis using Vector error correction model, bilateral and causality between export and economic growth have been determined both in the short term and in the long term.

In the study Ganiyev (2016) comparatively analyze the relationships between exchange rate, import, export and GDP in Kyrgyzstan and Kazakhstan, with ARDL cointegration approach. The results showed that foreign trade has positive impact on economic growth in Kyrgyzstan, both in the short and in the long term, whereas Kazakhstan imports play a greater role in economic growth. On the other hand, it revealed that export in Kyrgyzstan in the short term depends on the GDP and imports; in the long term re-export is coming to the fore. Also, it turned out that volatility of exchange rates in Kyrgyzstan, increasing uncertainties and risks, have a negative impact on economic growth, while devaluation in Kazakhstan reduce imports in the short and long run.

3. Methodology

In this study, the gross domestic product (GDP), export (X) and import (M) data of 2000Q1-2017Q4 period were used. All data were seasonally adjusted and the logarithm was taken with Tramo Seats method. All data were obtained from Central Bank of the Republic of Kazakhstan. The general course of the variables used in graphical analysis is presented. According to this, the gross domestic product in Kazakhstan, exports and imports are constantly growing.

For the time series analyses, unit root testing can be assumed as first step because of non-stationary macroeconomic series in nature. Therefore, Augmented Dickey Fuller (ADF) test might be utilized. The ADF equation can be displayed as:

$$\Delta z_t = \gamma_0 + \gamma_1 z_{t-1} + \sum_{i=o}^{k} \gamma_{2i}\Delta z_{t-1} + \omega_t \tag{1}$$

z_t can utilize all of our proposed variables one by one in the equation 1 to test the unit root. The negative and significant γ_1 can be claimed for a stationary series. We can proceed for the cointegration analyses once we verify this. For the further analyses, we are employing auto-regressive distributive lag (ARDL) with the following equation.

$$\Delta lnGDP_t = \alpha_0 + \sum_{i=1}^{q} \beta_i \Delta lnGDP_{t-1} + \sum_{i=0}^{p} \gamma_i \Delta lnX_{t-i} + \sum_{i=0}^{r} \delta_i \Delta lnM_{t-i} + \sigma_1 lnGDP_{t-1} +$$

$$+ \sigma_2 lnX_{t-1} + \sigma_3 lnM_{t-1} + \varepsilon_t \tag{2}$$

Where is the Δ sign first difference, q,p,r and s show the optimal delay lengths.

Figure 3
Graphic representation of the variables
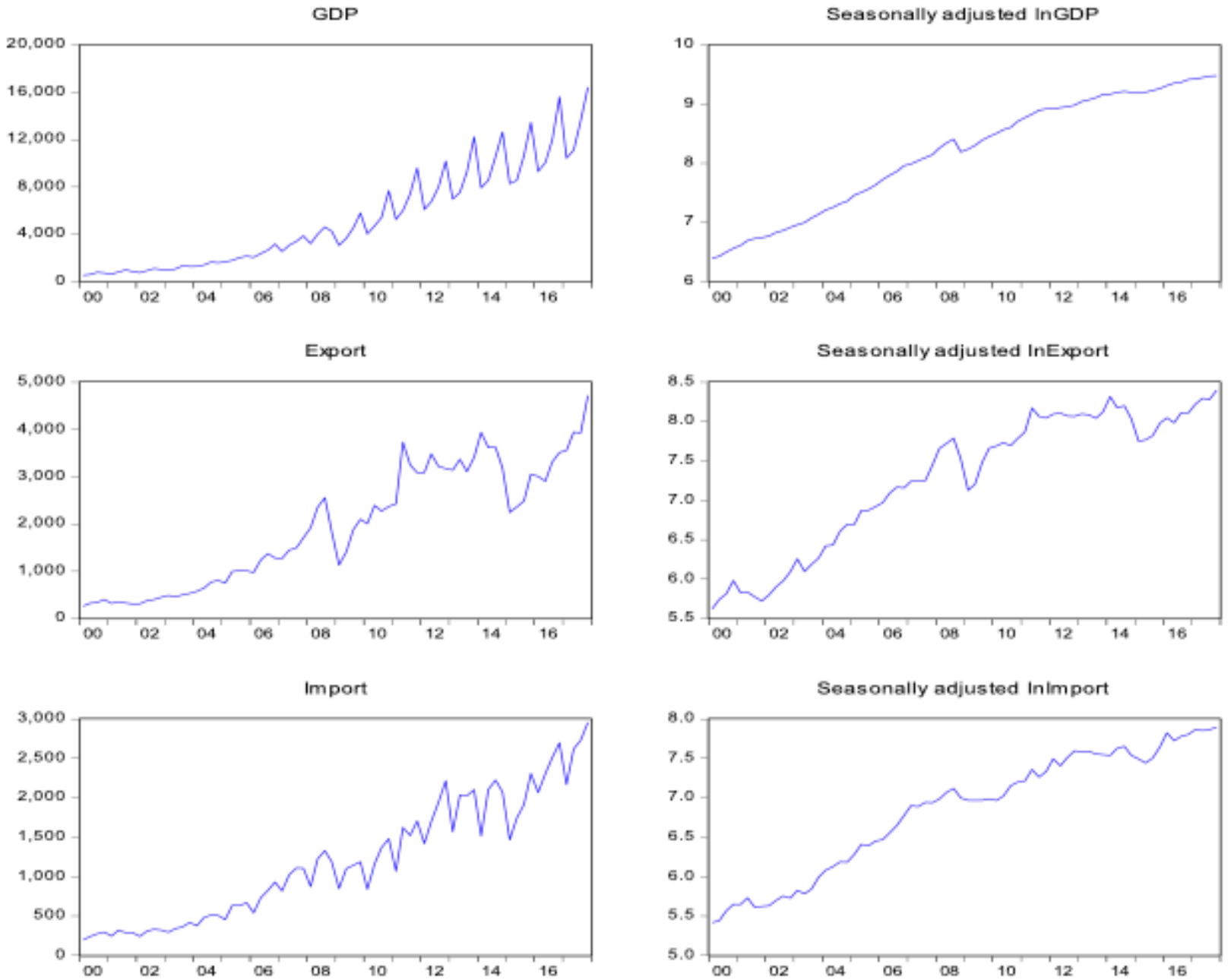
At first, $H_0: \sigma_1 = \sigma_2 = \sigma_3 = 0$ of no-cointegration will be tested for an evidence of cointegration. Then, long run effects can be calculated through normalizing. After that, we can proceed for the short run effects by the following error correction model:

$$\Delta lnGDP_t = \alpha_0 + \sum_{i=1}^{q} \beta_{2i}\Delta lnGDP_{t-i} + \sum_{i=0}^{p} \gamma_{2i}\Delta lnX_{t-i} + \sum_{i=0}^{r} \delta_{2i}\Delta lnM_{t-i} + \rho ECT_{t-1} + \varepsilon_t \tag{3}$$

Where; ECT_{t-1} is the error correction term that can be displayed as:

$$ECT_t = lnGDP_t - (\alpha_0 + \alpha_1 * lnX_t + \alpha_2 * lnM_t \tag{4}$$

The coefficient of the error correction term (ρ) in the short term equation shows the rotation speed of the series to equilibrium. In the same way, the individual models are estimated for cases where the export (lnX) and import (lnM) data are dependent variables.

4. Results and discussion

In order to test whether the series has a unit root, augmented Dickey–Fuller (ADF, Dickey and Fuller, 1981) a unit root test is used. The results for the ADF unit root test are reported in Table 5.

Table 5
ADF unit root test results

Variables	Level			First order difference			
	Lag	t-statistic	p-value	Variables	Lag	t-statistic	p-value
$lnGDP$	0	-0.193602	0.9921	$\Delta lnGDP$	0	-7.675829	0.0000
lnX	1	-2.095745	0.5389	ΔlnX	3	-5.830135	0.0000
lnM	0	-1.614620	0.7774	ΔlnM	0	-8.498228	0.0000

The appropriate lag length is determined through AIC. ADF regression equation includes only intercept term. Δ is the first order difference operator. AIC: Akaike information criteria, ADF: Augmented Dickey–Fuller

The results show in Table 5 that all variables (lnGDP, lnX and lnM) are not stationary at levels but stationary after first differences. A mix order of integration can be claimed after the unit root analyses. But, it is sufficient for the further cointegration analyses as ARDL is valid technique in this case.

According to the ARDL cointegration test method, if the found F-statistic is higher than the upper limit I (1) created by Pesaran et al., (2001), it is concluded that these series are cointegrated.

Table 6 displays the cointegration results of our models. According to the critical values of Pesaran et al., (2001), it can be rejected the hypothesis which states that there is no cointegration in the models where the GDP is the dependent variable of imports in Kazakhstan; in cases where exports are dependent variables, it cannot be rejected.

Table 6
F-statistic of cointegration relationship

Dependent variable	Explanatory variables	F-statistic	Lower, I (0)	Upper, I (1)
$lnGDP$	lnX, lnM	10.609*	3.79	4.85
lnX	$lnGDP, lnM$	3.976	3.79	4.85
lnM	$lnGDP, lnX$	5.320*	3.79	4.85

Note: The critical values presented in the table were obtained from Case III, Peseran et al. (2001: 300). * indicates 1% significance level

According to the long-term coefficients (Table 7), the increase in both exports and imports increases the country's GDP, ie. foreign trade contributes significantly to the growth of the country's economy. 1% increase in exports in the long term leads to an increase of 0.38% in GDP, while the increase in imports by 1% leads to an increase of 0.42% in GDP. The long-term effect of exports is stronger than the short-term effect. Imports have a negative impact on economic growth in the short term and have a positive effect on the long term. Likewise, income elasticity of imports was statistically significant and positive. An increase of 1% in economic growth causes imports to increase by 0.60%.

Table 7
Long-Term Coefficients

Dependent variable: $lnGDP$			Dependent variable: lnM		
Explanatory variables	Coefficient	t-statistic	Explanatory variables	Coefficient	t-statistic
lnX	0.3820*	3.6566	$lnGDP$	0,6004**	2,0531
lnM	0.4221*	2.6137	lnX	0,1610	0,4962
c	0.5456	2.1774	c	1,0421	1,7223**

* and ** show 1% and 5% significance levels

Error citation models were estimated after cointegration relationships (Table 8).

Table 8
Error Correction Models

Dependent variable: $lnGDP$ ARDL (4.0.5)			Dependent variable: lnM ARDL (1.3.1)		
Explanatory variables	Coefficient	t-statistic	Explanatory variables	Coefficient	t-statistic
$\Delta lnGDP_{t-1}$	0.5002*	-4.4376	$lnGDP$	0.0487	-0.5256
$\Delta lnGDP_{t-2}$	0.3054*	-3.1609	$\Delta lnGDP_{t-1}$	0.2510*	-4.1801
$\Delta lnGDP_{t-3}$	0.1772**	-2.4361	$\Delta lnGDP_{t-2}$	0.1592*	-2.1603
lnX	0.1909*	-2.4704	lnX	0.1705	2.6345
lnM	0.0632	0.3857	ECT_{t-1}	-0.3591*	-3.2420
ΔlnM_{t-1}	0.1421	0.6901			
ΔlnM_{t-2}	-0.3509**	-2.7003			
ΔlnM_{t-3}	0.1723	0.9302			
ΔlnM_{t-4}	0.0310	0.1421			
ECT_{t-1}	-0.4101**	-3.6398			

* and ** show 1% and 5% significance levels

It is seen that there is a significant effect of both exports and imports with their own delays to the GDP of Kazakhstan. The effect of only 2nd delay on imports was statistically significant at 5% significance level and its coefficient was negative. In other words, the effect of imports on growth in the short term is more negative. On the other hand, both GDP and export variables affect imports in the short term. However, the fact that both the GDP and the error correction terms of imports are high (-0.41 and -0.36 respectively) indicate that their speed to return to equilibrium is high.

5. Conclusions

Studies in the literature have shown that exports have positive direct and indirect effects on the economy in general. It is observed that imports have a negative direct impact on national income. On the other hand, it is suggested that imports of raw materials, intermediate and capital goods provide domestic production increase, and productivity increases in production through technology imports and that imports may have positive indirect effects on economic growth. The existence and effectiveness of these impacts are generally attributed to the share of foreign trade in the national economy and the structure of foreign trade.

Developing countries generally adopt the import substitution policy of import goods with domestic goods, or export-oriented industrialization strategy integrated with the international economy. As in all transition economies, the economy of Kazakhstan is experiencing the troubles of the transition to free market economy, generally based on the export of low value-added raw materials foreign trade structure, consumption and the presence of economic structure based on imports of intermediate goods, high value-added products cannot be produced, technological developments sufficiently to follow, such as foreign dependency bears the basic problems.

In the application part of the study, ARDL test was used in Kazakhstan to examine the relationship between economic growth, export and import. In this context, long and short term relationships between variables were estimated. According to the results, imports are an important source of growth due to external dependency in technology and investment goods (machinery and equipment share in total imports exceed 30%). At the same time, this may explain the increase in growth triggering imports. Since exports consist of approximately minerals, exports are mostly affected by external demand and the situation of world mineral markets and GDP is not affected by import variables.

In this respect, macroeconomic policies should be implemented quickly in accordance with the 2050 strategy plan. In this context; It is necessary to establish an economic system in which high value added products are produced by using advanced technologies based on free market economy financed by foreign capital and more domestic savings.

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