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INCREASE THE OIL PRICES AND THE EFFECT OF REAL EXCHANGE RATE ON REGIONAL ECONOMIC GROWTH: THE CASE OF KAZAKHSTAN

An increase of oil prices will affect the Kazakhstan economy in various ways. However, in the world each country has regions with its economic structure, level of development, and system. There are differences between regions in terms of economic, physical, and social conditions, and these differences can affect their levels of economic development. This study examines 14 regions of Kazakhstan and two big cities with special status and the relations between Gross Regional Product (GRP) per Capita, Brent type crude oil prices, and real exchange rate. In this article: to study the short-term impact of changes in oil prices on regional growth in Kazakhstan and the real exchange rate, the ADF Unit Root Test and Granger causality test were used. The results showed that Aktobe, Almaty, West Kazakhstan, and Pavlodar Regions are affected by oil prices, while the oil price is not a Granger cause for other regions. In addition, it has been concluded that while the real exchange affects Akmola, Karaganda, Kyzylorda, and East Kazakhstan regions, it is not a Granger reason for the other regions.

This study investigated the reasons for the development of the Kazakhstan regions. Two variables were included in the model as external factors. These are oil prices and real exchange rates. It is also tested whether the real exchange rate is the Granger cause of the development of the regions.

Keywords: *gross regional product per capita, oil price, real effective exchange rate, regions, unit root test, Granger causality test, economic growth, theories of regional development, external growth factors, Kazakhstan.*

Кілт сөздер: *жан басына шаққандағы жалпы өңірлік өнім, мұнай бағасы, нақты тиімді айырбас бағамы, аймақтар, бірлік түбір сынағы, Гранджер себеп-салдар тесті, экономикалық өсу, аймақтық даму теориялары, сыртқы өсу факторлары, Қазақстан.*

Ключевые слова: *валовой региональный продукт на душу населения, цена на нефть, реальный эффективный обменный курс, регионы, тест на единичный корень, тест причинности по Грейнджеру, экономический рост, теории регионального развития, внешние факторы роста, Казахстан.*

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Introduction. The concept of development gained different meanings in different periods and even has been used in different meanings in the same period. The concept of regionalism, which is becoming increasingly important, is of interest in many ways; therefore, it requires serious attention. The concentration of production in some regions has increased the interest to these regions; and as a natural consequence, these regions began to receive intensive immigration. Just like the other concept, this concept also gained different meanings in different periods and even has been used in different meanings in the same period [1].

Unlike the increase in national income per capita, the development can be defined as an increase in people's living standards, the ease of access to products that will increase their quality of life, and the development of social and economic fields. The concept of regional development, on the other hand, is defined as a set of studies that takes the vision of the region formed by the mutual interaction with the surrounding regions, and the world into account, adopts participation and sustainability as its basic principles and aims to increase the welfare of the region through the development of human resources and the mobilization of economic and social potential [2].

Among the theories of development economics, the growth poles theory is a well-known theory and is used in regional planning studies. This the-

ory was first developed by the French economist François Perroux in his article titled «Economic Space: Theory and Applications» published in 1950. In addition, Gunnar Myrdal and Albert Hirschman contributed to the theory in their books published, respectively in 1952 and 1958.

Development economics theory is closely linked with social, cultural, political, and psychological factors as well as economic factors. Unlike growth, the development includes five elements, namely a change in production and consumption patterns; technological development; social, political, and institutional modernization; development in human capital, and sustainable growth [3].

The spatial development differences between countries and between regions within countries are not homogeneous. Some regions may become more attractive than others in terms of production factors, develop their production capacity by attracting more capital and more qualified human resources, and as a result, may develop faster. In terms of production factors and dynamics, development differences between regions widen in time to the detriment of underdeveloped regions; thus, the developed, developing and underdeveloped categories that emerge between countries in the world also emerge between regions within a country [4].

Regional development aims to break this «vicious circle of poverty» at the regional level; this requires revealing the potential of the region, activating this potential, attracting foreign capital, and using them as a driving force. To be an economic planning and analysis unit, the region must be neither as small as a city nor as large as a country. In administrative terms, the region is defined as an administrative local government unit. The meaning of the region varies in time as a result of globalization, which causes the world to be perceived as a single space in terms of social, economic, technological, scientific, political, and cultural aspects [5].

The main purpose of the study is to study the short-term impact of Brent oil prices on the regional development of Kazakhstan and the real exchange rate on the basis of empirical analysis.

To achieve this goal, we must achieve the following objectives:

• Study of the dynamics of development of the regions of Kazakhstan;

• Use the unit root test to verify the stability of the data;

• Examining the Granger hypothesis of regional development of oil prices;

• Check the Granger hypothesis of the real exchange rate of oil prices.

Three factors stand out as the determinants of economic growth. The first is capital accumulation, which is accepted as the basic dynamic of economic growth. Investment is the basic condition for the development of a region. Investment, on the other hand, depends on the savings that only high income can provide. Therefore, the low income of underdeveloped areas is an important barrier, and this vicious circle can be overcome by increasing capital accumulation. The second factor is technological development. Technological development provides the possibility of producing more with the same input, as well as saving labor and capital. The third and last factor is population and labor force growth, and the most important factor that accelerates economic growth is labor force growth [6].

Theoretical explanations. Large capitals earning lower returns in rich regions migrate to poorer regions where they will receive higher returns. This migration creates upward pressure on the interest rates in the rich regions where the capital exits, and downward pressure on the interest rates in the poor regions where the capital enters. To put it more succinctly, interest rates start to rise in the rich regions where the capital factor decreases, and interest rates start to decrease in the poor regions where the capital factor increases. This capital factor migration between the rich region and the poor region continues until the interest rates are equal. The same is true for labor. Labor migration from regions with low wages to regions with high wages will continue until wages are equal. The neoclassical model predicts that the inequality between regions will disappear in competitive markets where the free movement of production factors between regions is not prevented and the economy is not interfered with. In this assumption that there are no structural differences between regions and the disappearance of inequality between regions is called absolute convergence [7].

In his work, Özel (2012) assumed that growth occurs within the dynamics of the economic system and technology develops internally through the interaction of some factors, and thus they departed significantly from the neoclassical growth approach, which links growth to factors outside

the economic system. The difference between the Internal Growth Theory and the Neoclassical Model, which provides a more satisfactory explanation about the differences in development rates between countries and regions of a country, can be grouped under two headings. First, if the technological development in a region, unlike the neoclassical model, depends on the level of technology that was previously available, in other words, if technology develops more rapidly in regions with high technological knowledge, this will result in an income disparity. Because regions with high technology will increase the rate of economic growth by increasing the necessary investments to further develop technologies. In this case, the poor region, which is technologically backward due to the past conditions, will never catch up with the advanced technology of the rich region, unless the necessary precautions are taken, and the interregional income differences will not converge over time, but will diverge, in other words, will increase over time [8].

While the export-based development model explains the development differences between regions with exporting capacity, it is expected to reveal the conditions under which the regional economies will grow or decline and the reasons for the specialization of the exporting region. The fact that some regions specialize in exports and therefore export more than other regions in a country is explained by the theory of comparative advantage. The region, which has a comparative advantage, grows by exporting goods and services to other regions due to its initial advantages. As incomes increase due to exports, local demand also starts to increase. While the increase in the demand causes the production (to meet both export and local needs) to grow exponentially, the development differences between regions gradually increase with the involvement of external economies. This approach assumes that there is no fluidity of factors of production between regions. If there is factor fluidity between regions, production factor prices will be equalized according to the "Hecksher-Ohlin Model" and the development differences between the exporting region or regions and the non-exporting region or regions will disappear over time [9].

Literary review. In the research of Kose and Baimaganbetov (2015), using the monthly data covering 2000-2013 periods, the effects of asymmetric shocks in real Brent oil prices on Kazakhstan's production, inflation and real exchange rate were analyzed empirically in the framework of SVAR model. In this study, they try to show that, the positive shock in oil prices is positive and negative shocks negatively affect Kazakhstan's industrial production. It was also determined that, the response of industrial production to negative shocks was greater than the response in positive shocks[10].

In this study examines the effect of Brent oil prices on the regional real per capita income in Kazakhstan by a panel data analysis of sixteen states and a quarterly time series between the years of 2008 and 2015. The long-term relationship between the series was examined with the help of Westerlund (2007) cointegration test. In this context, a positive and significant relationship was found between long-term oil price changes and per capita regional real income growth. In addition, causal relations between variables were investigated by Dumitrescu and Hurlin (2012) using panel Granger causality test. Empirical findings from both the co-integration and the Granger causality test show that the increase in oil prices has an important positive effect on the real income of the Kazakhstan regions [11].

This study explores the connection between oil price, stock prices, and exchange rate in Kazakhstan employing a monthly data from October 2007 to December 2017. Time series data were collected from National Bank of Kazakhstan, Kazakhstan Stock Exchange, and Energy Information Administration. Both bivariate and multivariate cases were employed. At the same time, the Johansen and Juselius cointegration procedures were employed in the study. The analysis was conducted for bivariate as well as multivariate cases. Empirical tests demonstrate that all the series are nonstationary in levels but stationary in differences. Results of this analysis do not find long-run correlation between the variables in a bivariate model; however, detect one in a multivariable model. Results demonstrate that stock prices and exchange rate are affected by oil price in Kazakhstan based on Granger causality test. Our findings imply that policy wise, monetary authorities in Kazakhstan in attaining their exchange rate policy objective should be considering the implications for financial market. These results are important to regulatory exchange authorities when deciding on policy to improve the market conditions [12].

The paper aims to assess the relationship between Azerbaijani and Kazakhstani exchange rates

and crude oil prices volatility. The study applies the structural vector autoregressive (SVAR) model. The impulse response functions suggest that the rise of crude oil prices is associated with the exchange rates decrease and thus with an Azerbaijani manat and Kazakhstani tenge appreciation against the U.S. dollar. Moreover, the results suggest that an oil price increase leads to the rise of Azerbaijani international reserves. However, the results are insignificant for the Kazakhstani foreign exchange reserves. Additionally, the study reveals a negative and significant relationship between crude oil prices and USD/KZT in both pre-crisis and the COVID-19 crisis periods. We reveal that the correlation has been stronger during the COVID-19 pandemic. However, the relationship is not significant in the case of the Azerbaijani manat. The USD/AZN exchange rate has been stable since 2017, and the first phase of the COVID-19 pandemic has not caused a change in the exchange rate and a weakening of the Azerbaijani currency, despite significant drops in crude oil prices[13].

In this study, the relationship between KASE stock market closing prices and oil prices is analyzed using ADF and Zivot-Andrews' (1992) unit root tests and monthly data for the period of 2016-2021. First, the variables are tested for causality. Results show that there is a causal relationship between the real exchange rate and closing prices and between oil prices and the real exchange rate. The short-term effects of the variables are investigated using the VAR method. Results show that Brent crude oil prices have a positive effect on KASE closing prices, while the real exchange rate has a negative effect. In conclusion, changes in oil prices affect the formation of stock prices[14].

Due to the restrictions introduced as part of the fight against the spread of the new coronavirus infection, entrepreneurs of Russia found themselves in a difficult economic situation: many of them forced to switch to online mode of work or suspend their activities. The aim of the research is diagnostics of the consequences of the crisis phenomena in social and economic life in the Russian Federation in certain risky spheres of economic activity taking Samara region as the case study. The main result of the research is the analysis of opportunities and development of targeted proposals for effective measures to bring enterprises out of the crisis [15].

Economic overview of Kazakhstan regions. The administrative organization of Kazakhstan consists of three cities with special status and 14 states. These are regions of Akmola, Aktobe, Almaty, Atyrau, East Kazakhstan, Jambyl, Karagandy, Kostanay, Kyzylorda, Mangystau, North Kazakhstan, Pavlodar, Turkistan (formerly South Kazakhstan), West Kazakhstan, and cities of Astana Almaty and Shymkent. Geographically, it consists of five regions. These are Central Kazakhstan, North Kazakhstan, East Kazakhstan, South Kazakhstan and Western Kazakhstan, respectively. As in the rest of the world, the level of economic development and living standards vary among the regions of Kazakhstan. The reasons for this difference can be listed as the investments in the regions, the regional development potential and the regions distance from the centers of commercial or strategic importance.

Table 1

Gross regional product per capita in Kazakshtan 2020 year*

№	Gross regional product per capita	thousand tenge
1	2	3
1.	Akmola Region	3 102,5
2.	Aktobe Region	3 329,8
3.	Almaty	6 913,0
4.	Almaty Region	1 805,2
5.	Atyrau Region	11 883,2
6.	West Kazakhstan Region	4 151,2
7.	Jambyl Region	1 675,8
8.	Karaganda Region	4 431,7
9.	Kostanay Region	3 314,5
10.	Kyzylorda Region	2 033,3
11.	Mangystau Region	4 335,1
12.	Nur-Sultan	6 873,6

1	2	3
13.	Pavlodar Region	4 151,4
14.	North Kazakhstan Region	2 877,7
15.	Turkistan Region	1 174,2
16.	East Kazakhstan Region	3 369,8
Kazakhstan		3 766,8

** Calculated by the authors based on sources [16]*

The per capita income of the Kazakhstan regions is given in Table 1 above. According to this table, we can divide the regions into different income groups. The first group is wealthy regions with incomes that are twice the national average. These are Almaty, Atyrau, and Nur-Sultan regions. The second group is the regions whose income is equal to or more than the national average income. These are West Kazakhstan, Karaganda, Mangystau, and Pavlodar regions. The third group is the regions below the national average income. These are Akmola, Aktobe, Almaty, Jambyl, Kostanay, Kyzylorda, North Kazakhstan, Turkistan, and East Kazakhstan regions. The underlying reason of this difference between regions is the level of development of the regions. Regions in the first group are Kazakhstan's capital, financial centers, and oil-producing regions. The second group is the high-level metal-exporting and oil-producing regions. While the Karaganda region produces metal, West Kazakhstan Region and Mangystau Region produce oil.

Methods and discussion.

The study used data from 16 regions of Kazakhstan regional product per capita (thousand tenge), Brent oil prices (US dollars) and the Real Exchange Rate Index (2013 = 100).

The first method we used is the unit root test. Unit root tests are the basis of co-integration tests, which help to determine whether there is a long-term relationship between time series. The power of unit root tests in rejecting the null hypothesis is very important in terms of co- integration. Therefore, it is necessary to investigate the effect of temporal aggregation on the power of unit root tests. The disappearance of features such as seasonality and general trend, which were previously in the series, after the aggregation may lead to different findings in unit root testing.

Augmented Dickey-Fuller (ADF) test the hypothesis:

H_0: $\beta = 0$ (equivalent to $\varphi = 1$)

H_1: $\beta < 0$ (equivalent to $\varphi < 1$)

If $|\varphi| = 1$, we have what is called a unit root (i.e. the time series is not stationary).

It is noteworthy that there are a limited number of studies focusing on the effect of temporal aggregation on unit root tests in the empirical literature. To fill this gap, this study examines the differences revealed by the temporal aggregation on the findings of traditional unit root tests over a few selected time series from Kazakhstan [17]. It is seen that the variables in the time series analysis tend to either increase or decrease. If there is only a stochastic trend in the process, it is made stationary by taking the difference, and if there is a deterministic one, transformation is made. The degree of difference is determined with the help of unit root tests. If the studied series is not stationary, the results are often not significant. Therefore, to make predictions and obtain some statistical results, first of all, the stationarity of the series should be tested. Statistically inaccurate results may occur if the possibility of stationarity is ignored. In addition, unit root tests are also used to determine how stationary the difference is in the time series [18].

One of the most preferred unit root tests in practice is the Augmented Dickey-Fuller (ADF) test. If the ADF approach developed to prevent autocorrelation is arranged by considering the time series processes, the lagged values of the dependent variable can be added to the model and the equation can be written as follows:

$$\Delta Y_t = \delta Y_{t-1} + \sum_{i=1}^{p} \beta_i \Delta Y_{t-i} + \epsilon_t$$

$$\Delta Y_t = a + \delta Y_{t-1} + \sum_{i=2}^{p} \beta_i \Delta Y_{t-i} + \epsilon_t$$

$$\Delta Y_t = a + \delta Y_{t-1} + \sum_{i=2}^{p} \beta_i \Delta Y_{t-i} + \gamma T + \epsilon_t$$

While the stationarity of the series is examined with the ADF test, the test statistic value

calculated according to the H_0:$\delta = 0$ hypothesis is compared with the tau critical value. If the H_0 hypothesis is not rejected, the ΔY series is not stationary, that is, it contains a unit root. Otherwise, that is, if the H_0 hypothesis is rejected, the ΔY series is stationary. This series is called the first-order integrated series and is expressed as I(1) in the literature [19].

Table 2

Unit root test analysis

Regions	Level		First difference	
	t- Statistics	P-value	t- Statistics	P-value
Akmola Region	-0,016108	0,9484	-7,516777	0,0000
Aktobe Region	-1,161749	0,6742	-5,872239	0,0001
Almaty	-2,453204	0,1384	-5,670170	0,0001
Almaty Region	1,924590	0,9997	-3,765750	0,0094
Atyrau Region	-1,244036	0,6386	-5,101947	0,0004
West Kazakhstan Region	-1,448921	0,5422	-8,227356	0,0000
Jambyl Region	0,041157	0,9540	-4,846565	0,0008
Karaganda Region	-0,875141	0,7791	-4,821518	0,0008
Kostanay Region	0,749703	0,9909	-3,346354	0,0262
Kyzylorda Region	-2,026734	0,2742	-10,00081	0,0000
Mangystau Region	-1,868380	0,3408	-5,725191	0,0001
Nur-Sultan	-3,671916	0,0113	-8,991653	0,0000
Pavlodar Region	-1,937348	0,3108	-3,396673	0,0213
North Kazakhstan Region	-6,250828	0,0000	-	-
Turkistan Region	-1,009621	0,7337	-6,385439	0,0000
East Kazakhstan Region	-6,385439	0,0000	-	-

Table 2 above shows the unit root test analyzes of the regions. In the Augmented Dickey-Fuller (ADF) test, the error terms are assumed to be independent and homogeneous. According to these results, the integration order of North Kazakhstan and East Kazakhstan regions is 0 and stationary. It is seen that the other regions become stationary with the order of integration I(1) and the first-order difference.

Today, determining and testing the relationships between variables primarily depends on the internal or external separation of the variables. However, since economic relations are complex, it is very difficult to determine which variable is internal and which variable is external. The most cited test in examining the causality relationship between variables is the Granger Causality Test [20].

The standard Granger causality test is a general approach used to determine the existence of a causal relationship between two (or more) variables. The Standard Granger causality test is widely used because of its simplicity of implementation. Using Monte Carlo simulations, Guilkey-Salemi and Geweke-Meese-Dent determined that the Granger causality test is appropriate, especially in empirical studies using small samples. The standard Granger causality test for two variables is as follows:

$$Y_t = a_{10} + \sum_{i=1}^{L_{11}} a_{11i}\, Y_{t-1} + \sum_{j=1}^{L_{12}} a_{12j} X_{t-j} + u_{1t}$$

$$X_t = a_{20} + \sum_{i=1}^{L_{21}} a_{21i}\, Y_{t-i} + \sum_{j=1}^{L_{12}} a_{22j} X_{t-j} + u_{2t}$$

$$H_0{:}a_{12j} = 0 \;\; j = 1.....L_{12}$$

$$H_1{:}a_{12j} \neq 0$$

If α10 is a constant parameter and the error term is (u_{1t}) in equation (1), it has zero mean and constant variance [$u_t \sim ND\ (0, \sigma_u^2]$ and it is a white noise process. L_{11}, L_{12}, L_{21}, and L_{22} are optimal lag lengths determined according to one or more of the criteria such as Akaike Information Criterion (AIC),

Schwarz Information Criterion (SC), Log-likelihood Ratio (LR). If the basic hypothesis that the vector of coefficients of the lagged values of variable X (α_{12j}) is equal to zero is rejected, then variable X is the Granger cause of variable Y. Likewise, it is tested whether the Y variable is also the Granger cause of the X variable using equation (2). If the basic hypothesis is rejected for both equations (1) and (2), then it is possible to talk about bidirectional causality. According to the hypothesis test results, other possible situations are one-way causality and no causal relationship [21].

If the basic hypothesis H_0 is rejected, as in the Standard Granger causality test, then variable X is the cause of variable Y. Similarly, if the basic hypothesis that the coefficients vector ($\lambda 21$) of ΔY is equal to zero for equation (2) is rejected, then the variable Y is the Granger cause of the variable X.

Table 3

Causality test analysis

Regions	Oil price does not Granger Cause		Does not Granger Cause Oil price		Real effective exchange rate does not Granger Cause		Does not Granger Cause Real effective exchange rate	
	F Statistics	P value	F Statistics	P value	F Statistics	P value	F Statistics	P value
Akmola Region	0,8176	0,4572	0,5369	0,5936	23,2120	1,E-05	3,0943	0,0700
Aktobe Region	6,9189	0,0059	1,9424	0,1723	0,4936	0,6184	0,1731	0,8424
Almaty	5,0091	0,0186	0,1956	0,8240	2,5495	0,1059	0,1415	0,8690
Almaty Region	0,0036	0,9964	0,1749	0,8409	0,7293	0,4960	0,4725	0,6309
Atyrau Region	3,2494	0,0624	0,1877	0,8305	1,5117	0,2472	0,4465	0,6467
West Kazakhstan Region	5,3344	0,0152	0,4602	0,6383	0,9115	0,4197	0,0917	0,9127
Jambyl Region	1,7857	0,1961	2,9234	0,0795	3,0622	0,0717	0,6009	0,5590
Karaganda Region	2,1919	0,1406	1,0472	0,3713	4,0426	0,0355	0,4350	0,6539
Kostanay Region	1,8051	0,1930	1,1517	0,3383	0,2917	0,7504	0,0360	0,9647
Kyzylorda Region	2,9283	0,0792	0,5566	0,5827	3,5975	0,0485	0,2608	0,7733
Mangystau Region	2,2697	0,1321	0,0105	0,9895	0,1829	0,8343	0,8965	0,4254
Nur-Sultan	0,3261	0,7259	0,2811	0,7582	0,0030	0,9970	0,5279	0,5987
Pavlodar Region	5,5102	0,0136	7,2046	0,0050	0,6968	0,5111	0,7342	0,4937
North Kazakhstan Region	0,3685	0,6969	0,2578	0,7755	0,2471	0,7836	1,9284	0,1742
Turkistan Region	0,1377	0,8722	1,1037	0,3530	0,2969	0,7467	1,3292	0,2894
East Kazakhstan Region	3,6320	0,0473	1,1460	0,3400	4,1173	0,0337	0,4693	0,6329

The results of the analysis showed that at the first lag level, oil prices are not the cause of the regions and the null hypothesis is analyzed at the 5% significance level (See Table 3). While the null hypothesis is rejected for Aktobe, Almaty, West Kazakhstan, and Pavlodar regions, it is not rejected for other regions. On the other hand, it is tested whether the real exchange rate is the Granger cause of the regions. The results showed that regions such as Akmola, Karaganda, Kyzylorda, and East Kazakhstan are more affected by exchange rate fluctuations.

Conclusion. This study investigated the reasons for the development of the Kazakhstan regions. Two variables were included in the model as external factors. These are oil prices and real exchange rates. These two variables are determined as the most influential external factors. Since Kazakhstan is rich in oil reserves, most of its export revenues come from the foreign exchange from oil exports. In the first part, we have given the theoretical content of the reasons for growth. The main source of regional growth is investigated by discussing classical and neoclassical endogenous growth theories. When the current situation of the Kazakhstan regions is analyzed, it is seen that one is developing, while the others are underdeveloped. This proves that the income distribution is very unequal. The main reason for this inequality is that the income level of the Atyrau region, which is rich in oil reserves, is almost three times the average national income. On the other hand, we can see that the city of Almaty has an income level higher than the average national income. The reason for this is that most of the banks have their head of-

fice in Almaty and the big wholesale markets are in this city. In addition, the city with the highest growth is Nur-Sultan. Because most of the head offices of national companies are located in this city. Jambyl and Turkistan are the least developed regions. These regions are underdeveloped because they have high populations and are very far from the big markets (Russia and China). After the analysis is completed, the effect of external factors on the growth of the regions is examined with the help of the Granger causality test. The results showed that Aktobe, Almaty, West Kazakhstan, and Pavlodar regions are affected by oil prices. Although the only oil-producing region among these regions is the Aktobe region, other regions are also affected by the oil price. We can list the main reasons why other regions are affected by external factors as follows: Almaty is the most developed city in Kazakhstan and is the old capital. Therefore, the change in oil prices is important in the development of this big city. In the second part of the analysis, it is tested whether the real exchange rate is the Granger cause of the development of the regions. While it is effective in regions such as Akmola, Karaganda, Kyzylorda, East Kazakhstan, it has been concluded that there is no Granger reason for other regions.

REFERENCES

1. Kaya A.A. İçsel Büyüme Kuramları içinde Erol Kutlu // İktisadi Kalkınma ve Büyüme, Eskişehir: Anadolu Üniversitesi. – 2004. – Vol. 1575. – P. 291-307.

2. Ildırar M. Bölgesel Kalkınma ve Gelişme Stratejileri // İstanbul: Nobel Akademik Yayıncılık. – 2004. – P. 250.

3. Erbay E.R., Özden M. İktisadi kalkınma kuramlarına eleştirel yaklaşım // Sosyal Bilimler Metinleri. – 2013. – Vol. 1. – P. 1-27.

4. Şahin M.T., Altuğ F. Yerel ve bölgesel kalkinmada değişen dinamikler-teori, politikalar ve uygulamalar // İstanbul: Nobel Akademik Yayıncılık. 2021. – P. 460.

5. Kırankabeş M.C. Yeni bölgesel kalkınma politikasının yerel aktörleri olarak kalkınma ajanslarının etkiliğinin değerlendirilmesi: Türkiye örneği // Dumlupınar Üniversitesi Sosyal Bilimler Dergisi. – 2013. – Vol. 35. – P. 253-268.

6. Alper F.O. Ekonomik Büyümenin Belirleyicileri: Yapısal Kırılmalar Altında Türkiye Örneği // Fiscaoeconomia. – 2019. – Vol. 3(1). – P. 202-227.

7. Dinler Z. Bölgesel İktisat // Bursa. – Ekin Yayınevi. – 2014. – P. 499.

8. Özel H.A. Ekonomik büyümenin teorik temelleri // Çankırı Karatekin Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi. – 2012. – Vol. 2(1). – P. 63-72.

9. Deviren N.V., Yıldız O. Bölgesel Kalkınma Teorileri ve Yeni Bölgeselcilik Yaklaşımının Türkiye'deki Bölgesel Kalkınma Politikalarına Etkileri // Akademik Bakış Uluslararası Hakemli Sosyal Bilimler Dergisi. – 2014. – Vol. 44. – P. 1-35.

10. Köse N., Baimaganbetov S. The asymmetric impact of oil price shocks on Kazakhstan macroeconomic dynamics: A structural vector autoregression approach // International Journal of Energy Economics and Policy. – 2015. – Vol. 5(4). – P. 1058-1064.

11. Baimaganbetov S., Kelesbayev D., Yermankulova R., Izzatullaeva B., Almukhambetova B. Effects of oil price changes on regional real ıncome per capita in Kazakhstan: Panel data analysis // International Journal of Energy Economics and Policy. – 2019. – Vol. 9(4). – P. 356-362.

12. Nurmakhanova M., Katenova M. Are stock market and exchange rate affected by oil price in Kazakhstan? // International Journal of Engineering Business Management. – 2019. – Vol. 11. – P. 1-9.

13. Czech K., Niftiyev I. The Impact of Oil Price Shocks on Oil-Dependent Countries' Currencies: The Case of Azerbaijan and Kazakhstan // Journal of Risk and Financial Management. – 2021. – Vol. 14(9). – P. 431.

14. Kelesbayev D., Myrzabekkyzy K., Bolganbayev A., Baimaganbetov S. The Impact of Oil Prices on the Stock Market and Real Exchange Rate: The Case of Kazakhstan // International Journal of Energy Economics and Policy. – 2022. – Vol. 12(1). – P. 163-168.

15. Zotova A.S., Chudaeva A.A., Svetkina I.A. Russian Economy in Risk Zone: The Most Affected Industries (Regional Analysis Case Study). In Business Under Crisis. – 2022. – Vol. III. – P. 181-203. Palgrave Macmillan, Cham.

16. Gross regional product per capita in Kazakshtan, Bureau of national statistics Of the Agency for strategic planning and reforms of the Republic of Kazakhstan, available at: https://stat.gov.kz/ official/ industry/11/statistic/8 (Accessed: 10.06.2021).

17. Eyüboğlu S., Abdioğlu Z. Zamansal Toplulaştırmanın Birim Kök Testleri Üzerindeki Etkisi // Uluslararası İktisadi ve İdari İncelemeler Dergisi. – 2019. – Vol. 24. – P. 233-258.

18. Yamak R., Erdem H.F. Uygulamalı Zaman Serisi Analizleri // 1. Baskı Trabzon: Celepler Matbaacılık. – 2017. – P. 496.

19. Zhang X., Liu Y., Zhang R., Lu Z. Exponential tilted likelihood for stationary time series models // Statistical Theory and Related Fields. – 2021. – Vol. 2. – P. 1-10.

20. Bozkurt H.Y. Zaman Serileri Analizi, Genişletilmiş // Bursa: Ekin Yayınevi. – 2013. – 2. Baskı. – P 261.

21. Çınar M., Sevüktekin M. Ekonometrik Zaman Serileri Analizi // Bursa: Dora Yayıncılık. – 2014. – P. 667.

ЛИТЕРАТУРА

1. Kaya A.A. İçsel Büyüme Kuramları" içinde Erol Kutlu // İktisadi Kalkınma ve Büyüme, Eskişehir: Anadolu Üniversitesi. – 2004. – Vol. 1575. – P. 291-307.

2. Ildırar M. Bölgesel Kalkınma ve Gelişme Stratejileri // İstanbul: Nobel Akademik Yayıncılık. – 2004. – P. 250.

3. Erbay E.R., Özden M. İktisadi kalkınma kuramlarına eleştirel yaklaşım // Sosyal Bilimler Metinleri. – 2013. – Vol. 1. – P. 1-27.

4. Şahin M.T., Altuğ F. Yerel ve bölgesel kalkinmada değişen dinamikler-teori, politikalar ve uygulamalar // İstanbul: Nobel Akademik Yayıncılık. – 2021. – P. 460.

5. Kırankabeş M.C. Yeni bölgesel kalkınma politikasının yerel aktörleri olarak kalkınma ajanslarının etkiliğinin değerlendirilmesi: Türkiye örneği // Dumlupınar Üniversitesi Sosyal Bilimler Dergisi. – 2013. – Vol. 35. – P. 253-268.

6. Alper F.O. Ekonomik Büyümenin Belirleyicileri: Yapısal Kırılmalar Altında Türkiye Örneği // Fiscaoeconomia. – 2019. – Vol. 3(1). – P. 202-227.

7. Dinler Z. Bölgesel İktisat // Bursa. – Ekin Yayınevi. – 2014. – P. 499.

8. Özel H.A. Ekonomik büyümenin teorik temelleri // Çankırı Karatekin Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi. – 2012. – Vol. 2(1). – P. 63-72.

9. Deviren N.V., Yıldız O. Bölgesel Kalkınma Teorileri ve Yeni Bölgeselcilik Yaklaşımının Türkiye'deki Bölgesel Kalkınma Politikalarına Etkileri // Akademik Bakış Uluslararası Hakemli Sosyal Bilimler Dergisi. – 2014. – Vol. 44. – P. 1-35.

10. Köse N., Baimaganbetov S. The asymmetric impact of oil price shocks on Kazakhstan macroeconomic dynamics: A structural vector autoregression approach // International Journal of Energy Economics and Policy. – 2015. – Vol. 5(4). – P. 1058-1064.

11. Baimaganbetov S., Kelesbayev D., Yermankulova R., Izzatullaeva B., Almukhambetova B. Effects of oil price changes on regional real ıncome per capita in Kazakhstan: Panel data analysis // International Journal of Energy Economics and Policy. – 2019. – Vol. 9(4). – P. 356-362.

12. Nurmakhanova M., Katenova M. Are stock market and exchange rate affected by oil price in Kazakhstan? // International Journal of Engineering Business Management. – 2019. – Vol. 11. – P. 1-9.

13. Czech K., Niftiyev I. The Impact of Oil Price Shocks on Oil-Dependent Countries' Currencies: The Case of Azerbaijan and Kazakhstan // Journal of Risk and Financial Management. – 2021. – Vol. 14(9). – P. 431.

14. Kelesbayev D., Myrzabekkyzy K., Bolganbayev A., Baimaganbetov S. The Impact of Oil Prices on the Stock Market and Real Exchange Rate: The Case of Kazakhstan // International Journal of Energy Economics and Policy. – 2022. – Vol. 12(1). – P. 163-168.

15. Zotova A.S., Chudaeva A.A., Svetkina I.A. Russian Economy in Risk Zone: The Most Affected Industries (Regional Analysis Case Study) // In Business Under Crisis. – 2022. – Vol. III. – P. 181-203. Palgrave Macmillan, Cham.

16. Валовой региональный продукт на душу населения, Bureau of national statistics Of the Agency for strategic planning and reforms of the Republic of Kazakhstan, available at: https://stat.gov.

kz/ official/industry/31/statistic/8 (Accessed: 10.06.2021).

17. Eyüboğlu S., Abdioğlu Z. Zamansal Toplulaştırmanın Birim Kök Testleri Üzerindeki Etkisi // Uluslararası İktisadi ve İdari İncelemeler Dergisi. – 2019. – Vol. 24. – P. 233-258.

18. Yamak R., Erdem H.F. Uygulamalı Zaman Serisi Analizleri // 1. Baskı Trabzon: Celepler Matbaacılık. – 2017. – P. 496.

19. Zhang X., Liu Y., Zhang R., Lu Z. Exponential tilted likelihood for stationary time series models // Statistical Theory and Related Fields. – 2021. – Vol. 2. – P. 1-10.

20. Bozkurt H.Y. Zaman Serileri Analizi, Genişletilmiş // Bursa: Ekin Yayınevi. – 2. Baskı. – 2013. – P 261.

21. Çınar M., Sevüktekin M. Ekonometrik Zaman Serileri Analizi // Bursa: Dora Yayıncılık. – 2014. – P. 667.

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МҰНАЙ БАҒАСЫ МЕН НАҚТЫ ВАЛЮТА БАҒАМЫНЫҢ АЙМАҚТЫҚ ЭКОНОМИКАЛЫҚ ӨСІМГЕ ӘСЕРІ: ҚАЗАҚСТАН МЫСАЛЫНДА

Аңдатпа

Әр елде өзіндік экономикалық құрылымы, даму деңгейі мен жүйесі бар аймақтар бар. Сондықтан экономикалық, физикалық және әлеуметтік жағдайлары бойынша аймақтар арасында айырмашылықтар болады. Ал осы өңіраралық даму айырмашылықтары экономикаларының дамуы мен даму деңгейіне әсер етуі мүмкін. Сол себепті бұл зерттеу жұмысында Қазақстанның 14 облысы мен республикалық маңызы бар екі үлкен қаланың айырмашылықтары жан басына шаққандағы жалпы өңірлік өнімі, брент маркалы мұнай бағасы және нақты валюта бағамы сияқты үш айнымалыларды қолданылды және мұнай бағасындағы өзгерістердің Қазақстанның аймақтық өсіміне және нақты валюта бағамына қысқа мерізімдегі әсерін зерттеу үшін – ADF Бірлік түбір тесті және Гренджер себеп салдар тесті пайдаланылды. Нәтижелерге сәйкес, Ақтөбе, Алматы, Павлодар және Батыс Қазақстан облыстары үшін мұнай бағасы әсерлі болғанымен, басқа өңірлер үшін мұнай бағасы өзгерістерге (Гранджерге) себепші емес екен. Сонымен қатар, Ақмола, Қарағанды, Қызылорда және Шығыс Қазақстан облысы сияқты аймақтарда нақты валюта бағамы әсерлі болғанымен, басқа өңірлер үшін өзгерістерге (Гранджерге) себепші емес екендігі анықталды.

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ВЛИЯНИЕ ЦЕН НА НЕФТЬ И РЕАЛЬНОГО ОБМЕННОГО КУРСА НА РЕГИОНАЛЬНЫЙ ЭКОНОМИЧЕСКИЙ РОСТ: НА ПРИМЕРЕ КАЗАХСТАНА

Аннотация

В каждой стране есть регионы со своей экономической структурой, уровнем развития и систематичностью. Между регионами существуют различия в экономических, физических и социальных условиях, и эти различия могут повлиять на их уровень экономического развития. В данной работе исследуются 14 регионов Казахстана и 2 города республиканского значения, а также отношения между 3 переменными валовым региональным продуктом (ВРП) на душу населения, ценами на сырую нефть марки Брент и реального обменного курс. Для изучения краткосрочного влияния изменения цен на нефть на региональный рост в Казахстане и на реальный обменный курс были использованы тест единичного корня ADF и тест причинно-следственных связей Грейнджера. Результаты показали, что Актюбинская, Алматинская, Западно-Казахстанская и Павлодарская области подвержены влиянию цен на нефть, в то время как цена на нефть не является причиной изменения (Грейнджера) для других регионов. Кроме того, был сделан вывод, что хотя реальный обмен курса валют затрагивает Акмолинскую, Карагандинскую, Кызылординскую и Восточно-Казахстанскую области, он не является причиной изменения (Грейнджера) для других регионов.