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ANALISIS OF INDICATORS OF ECONOMIC CONTENT OF SUSTAINABLE DEVELOPMENT OF THE REPUBLIC OF KAZAKHSTAN AND ITS REGIONS

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Purpose: estimation the level of economic development of the Republic of Kazakhstan as a whole and in the regional context, on the basis of the system of economic indicators. *Discussion*: the economic development of society is a multifaceted process involving economic growth, the creation of innovative sector of economy and business, structural changes in the economy, productivity growth and quality of life. The authors believe that a fundamental condition for the successful implementation of sustainable development is the region's economic development, which particular importance in times of crisis. *Results*: this article assesses the current state of economic development of the Republic of Kazakhstan as a whole and by regions. Based on these studies we developed a model which allows identifying the factors of successful development of the regions.

Keywords: regional economic development, the system of indicators.

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1. Introduction

Economic development – expanded reproduction and gradual qualitative and structural changes in the economy are positive, productive forces, the factors of growth and development, education, science, culture, the level and quality of life, human capital. Economic growth is – a quantitative change – an increase in production and consumption of the same goods and services over time.

Briefly: growth – quantitative changes; development – qualitative positive changes aimed at growth. For the prosperity of the country is needed, both quantitative and qualitative changes aimed at growth, with particularly active at the regional level.

2. Methodology

«A fundamental principle of the methodology of economic theory is a system» [4], the implementation of the approach has defined logic of these

studies. The subject of study is the system of indicators characterizing the level of economic and social development of the country and its regions. We have used methods of economic and statistical analysis, mathematical analysis in this work. Information base of research is builds on official data obtained by studying the reports of international organizations, the Committee on Statistics of the Republic of Kazakhstan, information-analytical system «Taldau» and the Department of Statistics the East Kazakhstan region (EKR).

3. Discussion

The main indicators of economic development are: (i) indicators of quality of life, competitiveness of the economy, (ii) GDP per capita and the index of economic freedom (EFI EFC) [8].

The countries in the Ratings EFI are distributed to positions which based on the following factors: (i) financial and investment freedom, (ii) freedom of trade, labor and entrepreneurship, (iii) government involvement, monetary and fiscal freedom, (iiii) freedom from corruption and property rights. Results of these indicators which taken into account are ten.

The maximum number of points that a country can get in the ranking of EFI is 100. In this rating Kazakhstan has got 63,3 points, beating countries such as China, India, Portugal, Italy, France, Belarus, Russia. The drafters of this rating ranked Kazakhstan among the countries that have a «moderately free economy.» Many EU countries have similar economies. In the Asia-Pacific region, Kazakhstan is in the 11th position. Kazakhstan participates in the rating of the PEC for 17 years, during this time the state was able to climb up to 22 positions.

The index of global competitiveness the WEF (World Economic Forum), 2014-2015, Kazakhstan, like the previous two years, took 50th place, and is in the group of countries with higher levels of development, in which a key role is played by factors of efficiency and innovative development [7].

All countries participating in the rating allocated to stages of economic development. The criterion for the distribution is a measure of GDP per capita. However, to determine the stage of development of the countries with a high dependence on mineral resources including Kazakhstan, is applied the second criterion, which measures the degree of dependence of the country on the main factors. This criterion is determined by the share of commodity exports in total exports (goods and services) for the last five years. Countries, in which the share of commodity exports in total exports is 70% or more, belong to the first category of development (factor development stage).

In the IGC 2014-2015 Kazakhstan is located in the transition stage from 2 (stage of effective development) to stage 3 (stage of innovation development). According to the methodology of IGC greater proportion is gradually given to the components that play an increasingly important role in the competitiveness of the country as the economy develops. Components are grouped into three sub-indices, each of which plays a role at a certain stage of economic development: sub index «Basic requirements» – 37,7% (37,8% in the IGC 2013-2014), sub

index «Effectiveness factors» – 50,0% (50,0% in the IGC 2013 – 2014), the sub index «Innovation and sophistication factors» – 12,3% (12,2% in the IGC 2013-2014).

The competitive advantages of Kazakhstan, according to experts WEF, are labor market efficiency (15, in 2013 – 15) and the macroeconomic environment (27th place, in 2013 – 23).

The weakest position of Kazakhstan demonstrated by such factors as health and primary education (96, in 2013 – 97). financial market development (98, in 2013 – 103), the competitiveness of companies (91 in 2013 – 94) and innovation (85, in 2013 – 84).

For the rest of the six factors estimated by WEF Kazakhstan's competitiveness is average:

- institutions 57th (2013 – 55);
- Infrastructure – 62 (2013 – 62);
- higher education and vocational training – 62 (2013 – 54);
- efficiency of goods market – 54 (2013 – 56);
- technological readiness – 61 (2013 – 57);
- Market size – 52 (2013 – 54).

Table 1

Kazakhstan's positions in the Index of Global Competitiveness in 2014-2015 [9]

Estimating factors of competitiveness	2014-2015 (among 144 countries)	2013-2014 (among 148 countries)	Dynamics
Index of Global Competitiveness	50	50	-
Basic requirements	51	48	▼-3
Institutes	57	55	▼-2
Infrastructure	62	62	-
Macroeconomical environment	27	23	▼-4
Health and primary education	96	97	▲+1
Efficiency factors	48	53	▲+5
High prof .education	62	54	▼-8
Efficiency of goods market	54	56	▲+2
Efficiency of labour market	15	15	-
Maturity of financial market	98	103	▲+5
Technological readiness	61	57	▼-4
Market size	52	54	▲+2
Factors of innovations and complication	89	87	▼-2
Competitiveness of the companies	91	94	▲+3
Innovations	85	84	▼-1

The most dramatic jump occurred on the following parameters: the nature of competitive advantage (84th place against 118 in 2013), the availability of venture capital (47th place against 72), favoritism in decisions of government officials (53 place against 77), the number of days to start a business (62 place against 82), the ease of getting credit (43 place against 61), infant mortality (81 place against 98), the effectiveness of taxation for investment (37th to 54), the quality of port infrastructure (123 place against 135).

The sharp deterioration marked by indicators such as informal payments and bribes (80 place against 65 in 2013), inflation (107 place against 93), the coverage of secondary education (42 place against 29), transparency of decisions (40 th to 29) the value of trade barriers (63 to 48 place), FDI and technology transfer (107th place against 93), government procurement of high technology products (74th place against 58).

Highly evaluated these indicators of competitiveness of Kazakhstan, as the AIDS prevalence among the adult population (1st place), the number of mobile subscribers (4th place), government surplus-deficit (9th), public debt (11th place), wages and productivity (16 place), investor protection (22 place).

In today's competitive environment takes into account not only macro-economic factors, but also the quality of the workforce and its ability to innovate practically. High level of education – an important engine of the national economy, which (together with other factors) should be widely used in the process of transition of the domestic economy to an innovative way and to increase its competitiveness.

However, it should be noted that in Kazakhstan there are a number of reasons, because of which economic development is constrained. Among them are the following: the poor quality of political institutions, high levels of corruption, poor protection of property rights, as well as the strong dependence of the economy of Kazakhstan from the commodity sector. Naturally, these factors are systemic in nature, and hamper the process of sustainable development not only of country as a whole, but also all its regions.

Another indicator of economic development of the country and regions is the gross domestic product (GDP) – one of the most important macroeconomic indicators, reflecting the final outcome of economic activity in the whole country or region.

To analyze the changes in gross domestic product for a certain period (firstly – a year) calculated the rate of real GDP. At the same time the rate of real GDP relative to the previous period (year) is calculated at comparable prices of the previous period (year).

Besides, for the analysis and forecasting of macroeconomic processes for an extended period time were used dynamic series of GDP by method of production, which is calculated by adding the gross value added of all resident producing units grouped by industry or sector. Gross value added – is the difference between the value of goods produced and services rendered (release) and the value of goods and services, completely consumed in the production process (intermediate consumption).

It should be noted that GDP is taken into account, not only nationally, but also in the regional perspective. This makes it possible to carry out in-depth, dynamic and comparative analysis of official statistics. To conduct comparative analysis we used the following methods: a comparison with the average level; comparison of the values of sustainable development indicators of EKR on all

components with the same indicators in other regions of Kazakhstan; ranking regions of Kazakhstan on certain sustainable development indicators (Table 2).

Table 2

Gross Domestic Product by method of production. mln. tengue [10]

Region	2009	2010	2011	2012	2013	2014
The Republic of Kazakhstan	17007647	21815517	27571889	30346958	35275153	39040898
1 Akmola region	524837,0	585965,4	809400,6	803896,3	959809,4	1 054 074,4
2 Aktobe region	853646,0	1173592,9	1477682,0	1674697,9	1760590,9	1 876 500,5
3 Almaty region	773227,8	997712,0	1246208,6	1454293,6	1749373,9	1 914 746,6
4 Atyrau region	1969923,8	2843649,2	3447336,7	3292532,2	3590140,7	3 981 227,9
5 West Kazakhstan region	822977,9	1048779,5	1323537,6	1711408,0	1734369,2	1 911 912,3
6 Jambyl region	348916,4	446399,3	634251,9	763861,8	880659,3	982 240,6
7 Karagandy region	1515792,0	1872842,3	2397919,6	2458966,9	2634259,8	2 908 696,8
8 Kostanay region	723859,8	856747,4	1135574,0	1156230,9	1354477,4	1 398 676,5
9 Kyzylorda region	641575,7	859148,2	1034819,0	1176555,0	1332732,6	1 318 201,2
10 Mangystau region	1108520,5	1484848,4	1751142,2	1640136,5	1907134,8	2 278 679,2
11 South Kazakhstan region	925498,6	1205298,2	1507227,9	1870589,5	2142445,9	2 399 860,9
12 Pavlodar region	862840,7	1031878,6	1527256,2	1528366,5	1766029,4	1 751 851,0
13 North Kazakhstan region	403921,1	466955,2	667893,3	683013,8	753510,3	797 924,0
14 East Kazakhstan region	983663,6	1244102,6	1624341,0	1819547,8	2072410,8	2 288 551,2
15 Astana city	1373186,9	1774185,2	2090987,4	2582855,9	3484792,9	4 023 771,6
16 Almaty city	3175259,2	3923412,6	4896311,0	5730005,6	7152416,0	8 153 984,2

On the base of dynamic series of GDP average annual indexes have been counted, which characterize the intensity of GDP changes during analyzed period. In the Table 3 we perform the results of ranging the regions according to this indicator.

Table 3

Ranging the regions of RK by average annual GDP index

Region	Average annual	Range
The Republic of Kazakhstan	1,160	-
Astana city	1,321	1
Jambyl region	1,217	2
Almaty city	1,202	3
South Kazakhstan region	1,189	4
Almaty region	1,176	5
East Kazakhstan region	1,165	6
West Kazakhstan region	1,159	7
Akmola region	1,154	8
Pavlodar region	1,142	9
North Kazakhstan region	1,139	10
Kostanay region	1,131	11

Table 3

Region	Average annual	Range
Aktobe region	1,122	12
Karaganda region	1,116	13
Mangystau region	1,112	14
Kyzylorda region	1,112	15
Atyrau region	1,089	16

According to the data of Table 3 we can see that during the period from 2009 to 2014 years on the republican level as well as on the regions there is an increase of GDP. Graphical ranging of regions is performed on the Figure 1.

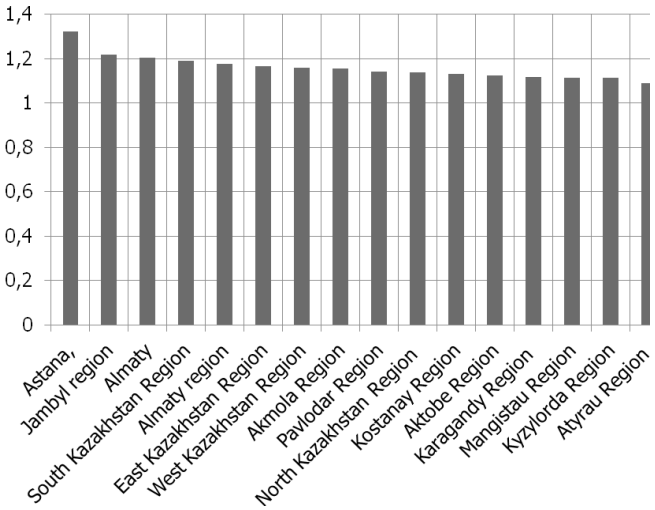

Fig. 1. Ranking the regions of RK by average annual GDP index

East Kazakhstan region on the growth rate of GDP in 6th place with an index value – 1,165, which is 0,4% higher than the value of the index in the country. East Kazakhstan region is one of the industrialized regions of the Republic of Kazakhstan. Basic industries are non-ferrous metallurgy, which accounts for 55% of the GRP. East Kazakhstan – one of the main producers in the country of lead, zinc, copper in concentrates, refined gold and silver, and the only one – of titanium, magnesium, tantalum, fuel for nuclear power plants. Among the industry's largest joint-stock company «Kazzinc», «Ust-Kamenogorsk TMK», «UMZ»; Association «Vostokkazmed» – a branch of «Kazakhmys» corporation. In our region, machine building and metalworking are well developed. Machine-building complex of the region is represented by large enterprises, such as: JSC «Asia Auto» JSC «Vostokmashzavod», JSC «Ust-Kamenogorsk Valve Plant», JSC «Ust-Kamenogorsk Condenser Plant», JSC «Semipalatinsk machine-building plant», JSC «Irtyshtsvetmetremont» , «Mashzavod» LLP, «Kazelektromash» Ltd, «Georgievski factory of pumping equipment». These enterprises produce cars «Niva», «Skoda», mining, mineral processing equipment, oil and gas fittings, household electric motors and pumps of various modifications, capacitors and other electrical and cable production [2, 3, 6].

The evaluation of the level of economic development of East Kazakhstan

region and results of operations of all businesses in the region can be carried out with the help of the gross regional product, which can also be to determine the contribution of each region in the country's economy and to assess the level of uneven economic development of certain regions in the dynamics.

To assess the spread of the values of GDP by region let's calculate the coefficient of variation using the following formula:

$$V = \frac{\sigma}{X_{av}}, \quad (1)$$

where σ – standard deviation; X_{av} – average arithmetical of variation series.

If this measure is not more than 0,333 or 33,3% the variation is week, if it is more than 0,333 – strong. In case of strong variation studied statistical totality is dissimilar. We have counted using PPP EXCEL and summed the Table 4.

Table 4

Percentage of regions in GDP, %

Regions	2009 y.	2010 y.	2011 y.	2012 y.	2013 y.	2014 .
The Republic of Kazakhstan	100,0	100,0	100,0	100,0	100,0	100,0
Akmola region	3,1	2,7	2,9	2,6	2,7	2,7
Aktobe region	5	5,4	5,4	5,5	5	4,8
Almaty region	4,5	4,6	4,5	4,8	5	4,9
Atyrau region	11,6	13	12,5	10,8	10,2	10,2
West Kazakhstan region	4,8	4,8	4,8	5,6	4,9	4,9
Jambyl region	2	2,1	2,3	2,5	2,5	2,5
Karagandy region	8,9	8,6	8,7	8,1	7,5	7,5
Kostanay region	4,3	3,9	4,1	3,8	3,8	3,6
Kyzylorda region	3,8	3,9	3,8	3,9	3,8	3,4
Mangystau region	6,5	6,8	6,3	5,4	5,4	5,8
South Kazakhstan region	5,4	5,5	5,5	6,2	6,1	6,1
Pavlodar region	5,1	4,7	5,5	5	5	4,5
North Kazakhstan region	2,4	2,2	2,4	2,3	2,1	2,0
East Kazakhstan region	5,8	5,7	5,9	6	5,9	5,9
Astana city	8,1	8,1	7,6	8,5	9,9	10,3
Almaty city	18,7	18	17,8	18,9	20,2	20,9
Dispersion	17,048	17,264	15,98	16,610	19,224	21,148
Average	6,25	6,25	6,25	6,25	6,25	6,25
Maximum	18,7	18	17,8	18,9	20,2	20,9
Minimum	2	2,1	2,3	2,3	2,1	2,0
Average quadratic deviation	4,13	4,15	4,00	4,08	4,38	4,59
Coefficient of variation	0,661	0,665	0,640	0,652	0,702	0,734

Analyzing the data of Table 4 we can say that the size of differentiation of contribution to country's GDP of the regions is very big, and coefficient of variation shows it clearly. The dynamics of coefficient of variation is shown on the Figure 2.

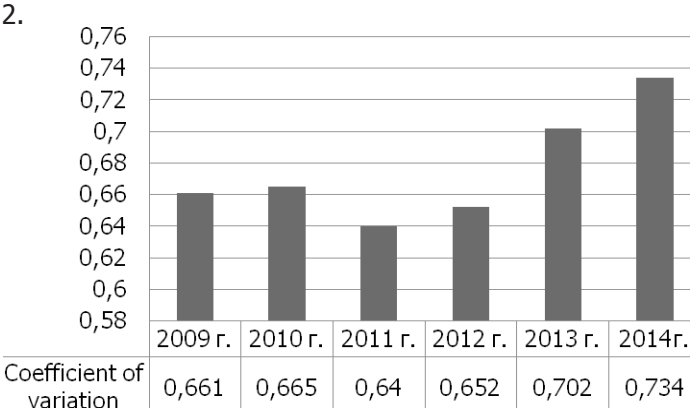

Fig. 2. The dynamic of coefficient of variation by region shares of GDP in RK

Obviously, for the entire analyzed period there is a high level of differences in the economic development of the regions of Kazakhstan, while the value of the difference exceeds the permissible level, equal to 0,333. Besides, the last three years the level of difference increases, which is contrary to the principles of sustainable development of the country as a whole and its individual regions.

The contribution of EKR to GDP has remained virtually unchanged and is in the range 5,8-6,0 %% (Table 5).

Table 5

The place of EKR in the national economy of RK

Indexes	2009	2010	2011	2012	2013	2014	average (geometrical) for 5 years
Percentage of EKR in GDP, %	5,8	5,7	5,9	6	5,9	5,9	5,86
The place of EKR	6	6	6	6	6	6	6

According to the rating of contribution to GDP of the country our region is always on the 6th place, which means that the GDP of the region changes analogically to the changes of the GDP of the republic as a whole.

It should be noted, that in the Republic of Kazakhstan since independence, one of the main the task of convergence of regional economic development, leveling and quality of life, however, as shown by calculations in the last three years in the uneven development of regions is only increasing.

One of the indicators of productivity of the national economy is the amount of GDP per one employed in the economy.

Table 6 presents data characterizing the GDP per employed person in regions of Kazakhstan

Table 6

GDP per one employed, mln. tengue

Regions	2009	2010	2011	2012	2013	2014	Average annual index
The republic of Kazakhstan	2,15	2,69	3,32	3,57	4,12	4,59	1,164
Akmola region	1,29	1,42	1,93	1,93	2,29	2,49	1,141
Aktobe region	2,29	3,10	3,74	4,08	4,27	4,58	1,149
Almaty region	0,96	1,18	1,39	1,50	1,76	1,89	1,145
Atyrau region	8,14	11,10	12,81	11,87	12,85	13,91	1,113
West Kazakhstan region	2,63	3,32	4,19	5,43	5,48	6,04	1,181
Jambyl region	0,65	0,81	1,14	1,36	1,60	1,85	1,232
Karaganda region	2,18	2,66	3,42	3,50	3,72	4,26	1,143
Kostanay region	1,42	1,67	2,21	2,26	2,69	2,83	1,148
Kyzylorda region	2,24	2,88	3,24	3,58	3,99	4,24	1,136
Mangystau region	5,71	7,23	7,69	6,40	7,36	9,16	1,099
South Kazakhstan region	0,88	1,10	1,33	1,59	1,81	2,06	1,185
Pavlodar region	2,13	2,48	3,65	3,66	4,23	4,17	1,143
North Kazakhstan region	1,13	1,30	1,93	2,06	2,29	2,54	1,175
East Kazakhstan region	1,38	1,71	2,26	2,56	2,93	3,24	1,186
Astana city	3,96	4,84	5,57	6,56	8,49	9,32	1,186
Almaty city	4,87	5,80	7,00	7,84	9,63	10,66	1,169
Average arithmetical of variation series	2,61	3,29	3,97	4,14	4,71	5,2	
Dispersion	4,28	7,63	9,39	8,23	10,66	13,21	
Average quadratic deviation,	2,07	2,76	3,06	2,87	3,27	3,63	
Coefficient of variation	0,791	0,840	0,772	0,694	0,693	0,699	

According to the calculations in Table 6:

– GDP per person employed in the whole of Kazakhstan is growing by an average of 16,4%;

– For EKR average annual growth rate higher than the average republican rate and up 18,6%;

– Productivity growth has been uneven across regions of the country. The highest growth rate has Jambyl region – 23% minimum growth rate of – 9,9% Mangystau, East Kazakhstan region with an index of 1,186 shares the second place with Astana.

– There is a big gap between the levels of labor productivity in regions of Kazakhstan. The values of the coefficient of variation is very large and statistically significantly higher than the permissible level, equal to 0,333 (Figure 3).

The qualitative characteristic of economical development of the regions and the country as a whole is the correlation of growth temps of average per capita GDP and of average income per capita.

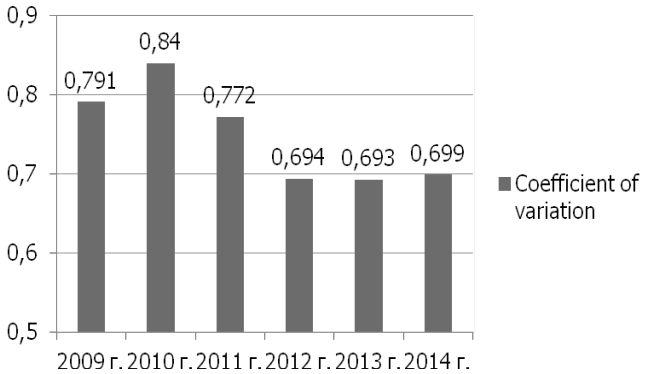

Fig. 3. Coefficient of GDP variation per one employed

Data characterizing the average income per capita by the regions of RK is shown in the Table 7.

Table 7

Financial average income per capita, tengue per month [5]

Regions	2009	2010	2011	2012	2013	2014	Average annual index
The Republic of Kazakhstan	416832	465348	551232	619128	674820	744084	1,123
Akmola region	379008	378744	486384	540024	569256	634428	1,109
Aktobe region	394224	465132	539148	634164	684756	729456	1,131
Almaty region	328056	327276	420036	482916	535884	583824	1,122
Atyrau region	916332	1071144	1283520	1372956	1396296	1576440	1,114
West Kazakhstan region	448644	545064	599292	676128	712968	773280	1,115
Jambyl region	320880	346416	371328	419688	444480	475212	1,082
Karaganda region	413232	504816	619056	690780	753720	810504	1,144
Kostanay region	339084	376908	475248	537984	587208	633000	1,133
Kyzylorda region	393900	434196	485412	541956	578400	627696	1,097
Mangystau region	734376	756708	878256	986436	1069884	1281084	1,118
South Kazakhstan region	273012	290352	335664	397824	424692	447744	1,104
Pavlodar region	436332	471324	589392	670404	733596	801336	1,129
North Kazakhstan region	348372	385932	484728	522972	562920	605364	1,118
East Kazakhstan region	370692	409596	494856	564408	622644	672276	1,126
Astana city	770220	836832	965940	1084908	1183980	1394988	1,126
Almaty city	733836	846516	1030584	1142208	1259100	1389156	1,136
Average	475012	527924	624122	704109	757486	839736	-
Maximum	916332	1071144	1283520	1372956	1396296	1576440	-
Minimum	273012	290352	335664	397824	424692	447744	-
Average quadratic deviation	195968	226495	259229	286096	300872	358887	-
Coefficient of variation	0,412	0,429	0,415	0,406	0,397	0,427	-

The data in Table 7 show, that the amount of per capita income for the analyzed period is increasing in all regions of the republic, including the EKR. The index is 1,126, which is higher than the average national index, which amounted to 1,123.

We estimate the ratio of per capita GDP and calculated per capita income by the equation:

$$Ratio = \frac{I_{gdp}}{I_{inc}}. \quad (2)$$

I_{gdp} – average annual index of GDP per capita; I_{inc} – average annual index of income per capita.

This ratio calculated for RK as a whole and for separate regions (Table 8).

Table 8

Ratio by regions of RK in 2014

Regions	Average annual index (GDP per capita)	Average annual index (income per capita)	Ratio
The Republic of Kazakhstan	1,164	1,123	1,036
Akmola region	1,141	1,109	1,029
Aktobe region	1,149	1,131	1,016
Almaty region	1,145	1,122	1,020
Atyrau region	1,113	1,114	0,999
West Kazakhstan region	1,181	1,115	1,059
Jambyl region	1,232	1,082	1,139
Karagandy region	1,143	1,144	0,999
Kostanay region	1,148	1,133	1,013
Kyzylorda region	1,136	1,097	1,035
Mangystau region	1,099	1,118	0,983
South Kazakhstan region	1,185	1,104	1,073
Pavlodar region	1,143	1,129	1,012
North Kazakhstan region	1,175	1,118	1,051
East Kazakhstan region	1,186	1,126	1,053
Astana city	1,186	1,126	1,053
Almaty city	1,169	1,136	1,029

According to the economic sense this ratio should be more than one, in this case economic growth is reasonable. On diagram 4 the results of ratio analysis are performed.

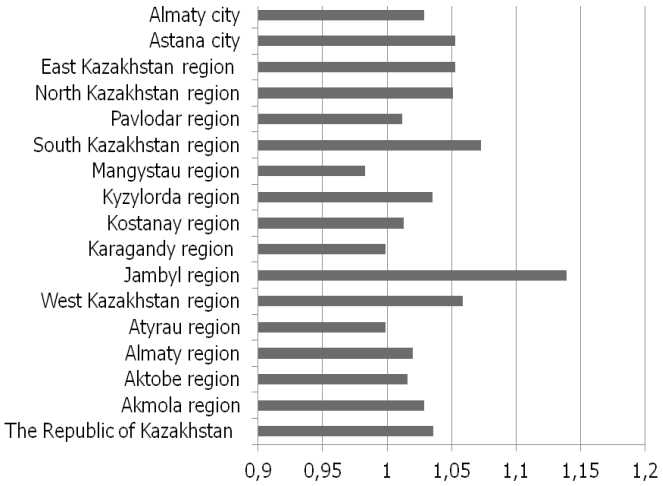

Fig. 4. The ratio by the regions of RK

Basing on the analysis data of Table 8, we can make the following conclusions:

– In the whole country observed the required ratio of the growth rate of per capita income and the average annual growth rate of GDP per capita (ratio = 1,036, that is greater than one).

– In East Kazakhstan region the value of ratio = 1,053, which is higher than average for the country.

The analysis made above of the economic component of the development of East Kazakhstan region revealed that during the analyzed period in the region, there is a fairly stable economic growth.

However, for the implementation of the sustainable development of any region it is necessary to evaluate the innovation processes which take place in the economy and describe the qualitative aspect of the development process.

Signs of innovative and creative economy can be considered as a continuous innovative development of the country, an important role of human capital in innovative development; investment in new products, services, technologies, a larger share of high-tech products in the GDP; competition based on innovation; specialization and cooperation in the field of innovative activity of economic entities; creation of production complex with interdisciplinary and global; high high-tech industry and a high level of vocational training of workers; protection of intellectual property.

One of the indicators of innovation development of the state and its regions is the share of innovative products produced in relation to GDP.

The dynamics of this indicator in the Republic of Kazakhstan as a whole and regions of the republic is presented in Table 9.

Table 9

Percentage of produced innovative products in GDP, %

Regions	2009	2010	2011	2012	2013	2014
The Republic of Kazakhstan	0,5	0,7	0,9	1,3	1,6	1,5
Akmola region	0,2	1,2	1,2	2,4	1,9	3,2
Aktobe region	0,5	0,9	1,2	0,4	0,5	0,3
Almaty region	0,1	0,1	0,4	0,9	0,8	0,9
Anyrau region	-	-	0,1	0,1	1,1	0,5
West Kazakhstan region	0,1	-	2	0,3	0,5	0,3
Jambyl region	0,6	0,2	1,8	2,5	2,3	2,6
Karaganda region	0,9	0,8	0,6	1,2	2,0	0,7
Kostanay region	0,3	0,2	1,1	2,7	2,7	4,1
Kyzylorda region	0	-	0,2	0,3	0,5	0,4
Mangystau region	0	-	0	0,2	0,07	0,07
South Kazakhstan region	0,5	0,4	1,1	1,3	1,6	1,9
Pavlodar region	4,1	6,7	5,3	6,7	4,7	4,7
North Kazakhstan region	0,7	0,6	0,2	0,9	2,1	2,1
East Kazakhstan region	0,7	1,1	2,2	5,6	5,2	4,3
Astana city	-	-	0,1	0,2	3,4	3,1
Almaty city	0,2	0,3	0,2	0,2	0,2	0,3

The data in Table 9 show that the production of innovative products in the country and regions is increasing, but its share in GDP is still very low. In developed countries, the economy is considered to be innovative, if the share of innovative products in the GDP is at least 50%.

In 2014, the greatest success in implementing innovations into production reached two industrialized regions, it is Pavlodar region with a share of 5,4% of innovative products and the East Kazakhstan region with a share of 5,2%, which is 3 times higher than the average for the country (Figure 5 and 6).

Figures 5, 6 show that the process of implementation of innovations into the production in EKR is more intensive than in the country.

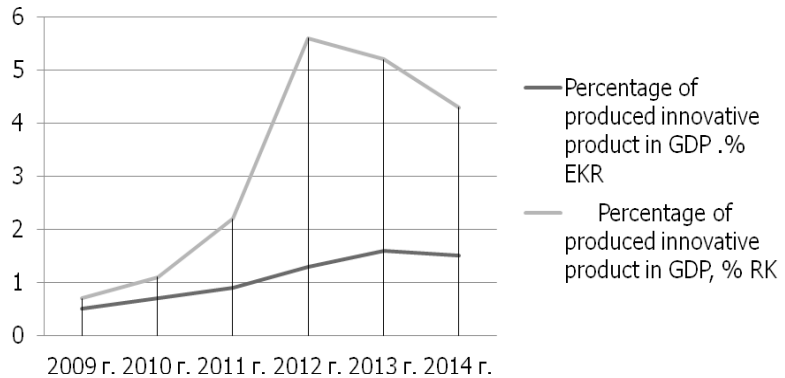

Fig. 5. The dynamic of innovative product percentage [12]

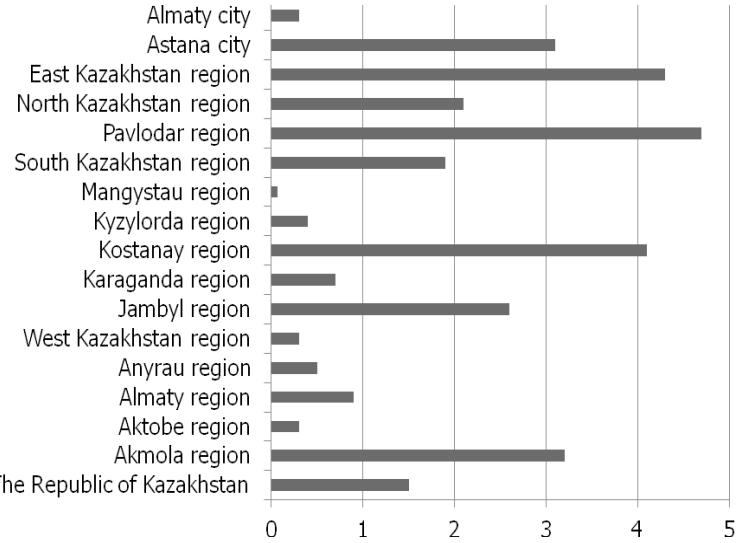

Fig. 6. The percentage of innovative product by regions in 2014

International business school INSEAD, Cornell University and World Intellectual Property Organization, WIPO presented analytical report «Global Innovation Index» 2014.

The Global Innovation Index is composed of 80 different variables that describe in detail the innovative development of countries at different levels of economic development.

The index is calculated as a weighted sum of the scores of the two groups of indicators:

– Has the resources and facilities for Innovation (Innovation Input),

– Achieved practical results of the Innovation (Innovation Output),

Thus, the resulting index is the ratio of costs and effects, allowing you to objectively evaluate the effectiveness of efforts to develop innovations in one or another country.

Table 10 shows a fragment of the world rankings on the Global Innovation Index.

Table 10

Ranking the countries on the Global Innovation Index (2014) [11]

Ranking	Country	Index
1	Switzerland	64,8
2	Great Britain	62,4
3	Sweden	62,3
49	Russia	39,1
58	Belorussia	37,1
65	Armenia	36,1
79	Kazakhstan	32,8
112	Kyrgyzstan	27,08
143	Sudan	12,70

According to the survey in 2014 the Republic of Kazakhstan took the 79th place, improving the position by 5 points compared with last year, however, as can be seen from Table 10, Kazakhstan is in a position lower than in other countries – members of the Eurasian Union (with the exception of Kyrgyzstan).

In order to determine the impact of the economic indicators of sustainable development of Kazakhstan in the framework of this study involves the construction of economic and mathematical model.

To study the correlation and regression analysis in a more detailed section was taken a set of key indicators of the state of economic development for the period from 2009 to 2014. It should be noted that the indicators of economic development of the regional statistical departments of the Republic of Kazakhstan mentioned above is not calculated that certainly complicates the process of analysis and assessment of the level of economic development.

The aim of ongoing research is to identify and study the factors that influenced the most significantly on GDP.

Factors included in the correlation and regression model were selected in several stages: has been analyzed the matrix of pair of linear correlation coefficients; indicators used to measure the reliability of the correlation coefficients: by Student t-test, Fisher's F – criterion, the average error of approximation, multiple correlation and determination. When calculating multiple correlation applies degree of accuracy of 5%, which corresponds to a probability of P = 0,05. The calculation was based on the use of program resources package STATA10. The independent variables, the following factors: the volume of production in the regions of the gross domestic product, the coefficient of variation of GDP per person employed, the coefficient of variation in the average cash income per capita, the share of innovative products produced in GDP, average interest rate%. The table shows the results of calculations.

Table 11

The results of calculations of contact equation

Contact equation	R	D	F	E
$Y=112573,203-3,4239X_1 - 4,75221X_2 +14,450613X_4$	0,998	0,997	152,559	2999,218

For accuracy contact equation used the average error of approximation. In our example, it is 2999,218. Given that the economic calculations allowed error of 5-8%, it can be concluded that the test coupling equation describes quite accurately studied dependence.

Completeness of relation can also be judged by the value of multiple correlation coefficients and determination. In our study they are respectively 0,998 and 0,997. This means that 99,745% of GDP variation depends on changes in the studied factors, while the share of other factors account for 0,255% of the variation of a productive indicator. Hence, the correlation model failed to include the most significant factors.

As a result, contact equation is:

$$Y=112573,203+3,4239X_1 +4,75221X_2 +14,13911X_4.$$

The coefficients of the equation show the quantitative impact of each factor on a productive indicator at constant other. In this case, you can give the following interpretation of the equation: GDP increased by 3,4% with an increase in production at 1mln.tg.

4. Conclusion

Analysis of indicators of the economic component of the Republic of Kazakhstan, obtained on the basis of its economic and mathematical model allowed to confirm the hypothesized: to ensure the sustainable economic development of the Republic of Kazakhstan is necessary to intensify the regional growth factors, and mainly due to the innovative processes. Unfortunately, it should be noted that the weak development of the innovative characteristic of the entire economy of Kazakhstan and the reasons for this development are system-wide. In this regard, to implement the concept of sustainable development of separate regional formations, there is need for fundamental systemic change.

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АНАЛИЗ ПОКАЗАТЕЛЕЙ УСТОЙЧИВОГО РАЗВИТИЯ РЕСПУБЛИКИ КАЗАХСТАН И ЕЕ РЕГИОНОВ

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Цель: оценка уровня экономического развития Республики Казахстан в целом, а также в контексте регионов с использованием системы экономических показателей. *Обсуждение*: экономическое развитие общества представляет собой многоаспектный процесс, включающий экономический рост, создание инновационного сектора экономики, структурные изменения в экономике, рост производительности и увеличение качества жизни. Исследователи предполагают, что фундаментальным условием успешного развития является региональное развитие, что приобретает особенную актуальность в период кризиса. *Результаты*: оценка текущего уровня экономического развития Республики Казахстан в целом, а также в разрезе регионов. В рамках данного исследования мы разработали специальную модель для идентификации факторов успешного развития регионов.

Ключевые слова: региональное экономическое развитие, система показателей.

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