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### World economic growth: trends, country factors, social progress

**Abstract.** The state and prospects of world economy are analyzed. Country factors, effecting on the GDP figures and changes of GDP in the trend were revealed. World economic problems, expressed in dynamic's decline, started to appear in the pre-crisis period. Despite the lower rates of economic growth than previously in the developed countries, world economy has positive dynamics due to large fast-growing economy. In this connection, it was important to do the analysis and forecast of the impact of individual countries on world economic growth, on the one hand, and the impact of fast-growing economy on social progress in their own countries.

**Key words:** world economy, GDP, GDP per capita, trends in countries' development, linear extrapolation, social progress.

#### Introduction

World economic development is one of the actual contemporary problem, for which solution research institutes, different international and national funds, famous scientists and specialists are making efforts. Changes in world economy are influenced by processes of globalization and introduction of new technologies, and due to significant potential of fast-growing economies. Scrutiny of such facet of problem assumes quantitative analysis of the impact of large economies and development trend determination, a reflection of the progressive development to improve the social circumstances of people's lives.

#### Methods

Issues of world economic development reflected in the materials of World Economic Forum and other international forums, organized by many countries, where authoritative world scientists and politicians participates in discussion of considered problem. Number of important questions, involving development trends both world economy and separate regions and countries, is raised in Russian scholarly writings: V. Klinov, V. Varnavskii, E. Andreeva and A.Ratner, V. Myheev, S. Lukonin,

S. Chje and others [1-6]. Variety of authoritative international funds and organizations publishes rating of countries by GDP figures, GDP per capita, level of social progress, which gives full material for in-depth research of world economy problems.

This offered article focuses on quantitative analysis of world and national economic increasing trends, country factors of impact and necessity of tacking account of economic growth at social development in large countries. Kazakhstan's inclusion in the object of research is explained with scientific interests of authors. From the perspective of the subject of the study, the situation of each country in the world is analyzed by using methods of comparative analysis, grouping, system approach, linear extrapolation and other methods. During the analysis, the authors used mainly data from The World Factbook [7].

#### Main body

##### Trends of growth of world economy and national economy

Before the crisis of 2008-2009 years the world economy developed quiet fast: at the beginning of the analyzed decade GDP growth ranged 4,7-5,3%. Economic crisis became deep and lasting

in phase ensuring rise, economic dynamics significantly weakened. The recovery period was marked by relatively low rate of growth of gross domestic products, which reached 3,0% in 2015 year, high unemployment (the maximum rate of

unemployment in 2011 was 8,5%), a significant increase in government debt (up to 64,7% of GDP). Serious exposure to the USA economy and the impact of the EU crisis played a large role in this situation (see table 1).

**Table 1** – World GDP growth as a whole and individual countries, %

Years	Countries						
	The world	USA	EU	China	India	Russia	Kazakhstan
2005	4.7	3.1	1.7	11.3	9.0	6.4	9.7
2006	5.3	2.7	3.1	12.7	9.5	8.2	10.7
2007	5.2	1.9	3.0	14.2	10.0	8.5	8.9
2008	3.1	-0.3	0.8	9.6	6.2	5.2	3.2
2009	-0.8	-3.5	-4.1	9.2	6.8	-7.8	1.2
2010	5.1	2.4	2.1	10.4	10.1	4.3	7.3
2011	3.8	1.8	1.7	9.3	6.3	4.3	7.5
2012	3.1	2.3	-0.3	7.7	4.7	3.4	5.0
2013	3.3	1.5	0.2	7.7	6.9	1.3	6.0
2014	3.5	2.4	1.4	7.3	7.3	0.6	4.3
2015	3.0	2.6	1.8	6.8	7.3	-3.9	1.5

For the USA the period between 1983 and 2008 years was characterized by a long period of forward movement of the economy. In this period there was a computer revolution, through which industrial, technological, organizational, managerial, and business processes in economy were converted. The emergence of new branches and markets caused significant shifts in structure of labor force and employment. The shape of modern world economy was changed, information and communication technologies became the most important integral part of daily life.

The first serious economic shock was the crisis in 2008-2009 years. In 2009 year GDP of the USA decreased by 0,8%. The growth of economy in the post-crisis phase turned out to be weakened compared with rates of growth in pre-crisis years. Nevertheless, in comparison with other countries, the USA could overcome difficulties to economic development, adapt to unfavorable conditions and circumstances, emerging in national and world economy. The USA remained the most high-performance and effective country, which has balanced and competitive economy.

EU is characterized with lower trajectories of economic development, their economic

growth is much weaker than American. So, according to our estimation, based on dates from the Table 1, in 2010-2015 years the GDP of the EU was increasing with an average annual rate, not exceeding 1,1% per year. For comparison: in the world economy an average annual growth for the period amounted to 3,6%, in the USA -2,2%.

The economic crisis of 2008-2009 affected at a substantial reduction of growth rate in rapidly developing economies of China and India, respectively to 9,2% (in 2009) in China and to 6,2% (in 2008) in India. In the post-crisis period in China the trend to decline was remained, and in India till 2012 the trend to decline was reversed. High economic growth rates in the two countries defined their growing importance to the world economy as a whole. So, in 2014, China surpassed the US in terms of gross domestic product, calculated on purchasing power parity, and, accordingly, the share of the world economy. For the period under review weight of the Indian economy increased by 1.76 times (see. Table 2). Currently, the share of the three countries – the US, China, India – and EU together account for almost 57% of the GDP of the world economy as a whole, and they determine the prospects for the global economy.

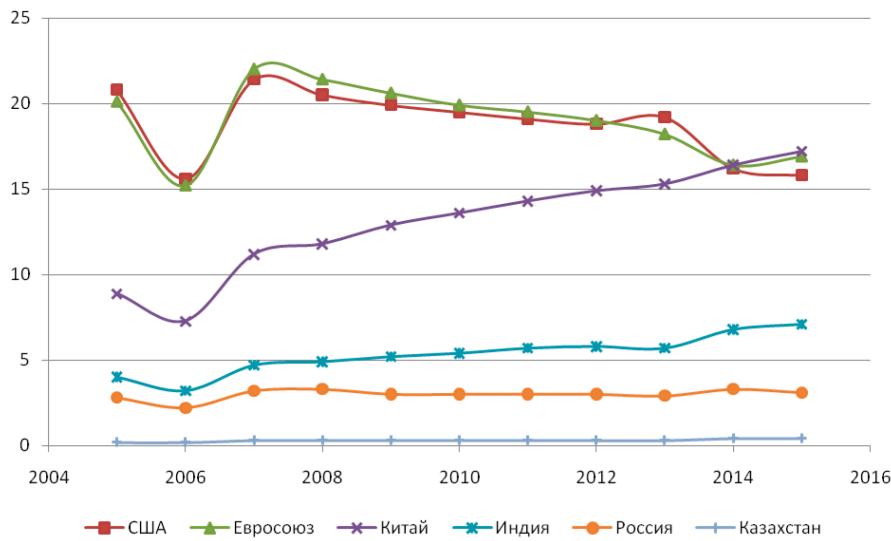


Figure 1 – The share of countries in world GDP at PPP as a whole, %

If GDP determines the economic power of the country, the rate of GDP per capita at PPP characterizes the level of economic development of each country. The economy of developing countries is changing very rapidly, in terms of GDP per capita at PPP is significantly superior to the United States

and the European Union. For example, the average annual growth rate of China’s GDP over the last decade were 3.83 times higher than in the US and 3 times higher than in the European Union; India and Kazakhstan – respectively 3.5 and 2.7 times (see Table 2.).

Table 2 – Average annual growth of GDP at PPP and population in the period from 2005 to 2015

	Countries						
	The world	USA	EU	China	India	Russia	Kazakhstan
GDP at PPP	6,5	3,6	4,6	13,8	12,7	7,4	12,6
Population	1,2	0,8	1,2	0,5	1,5	-0,1	1,8

Population growth in the world took place at an average annual rate of 1.2%. The ever-increasing population is an important factor in the extensive growth of production and GDP. The rate of population growth can be regarded as the low limit of economic growth, but as shown by the data in Table 2, for the analyzed period the average annual rate of GDP growth per capita significantly outpaced population growth. This was due to the influence of other factors of production, labor productivity, capital investment, technological improvements, and others.

Russia and Kazakhstan are two important states of the Eurasian Economic Union, which are included in the top 50 countries in world GDP. Both countries have set themselves ambitious goals:

Russia seeks to acquire the status of a great power, Kazakhstan plans to become one of the 30 most developed countries in the world [8]. The extent to which these objectives are feasible, can be judged by the dynamics of development of their economies during the decade.

The Russian economy experienced the hardest hit during the crisis of 2008-2009: the decline in GDP was 7.8% in 2009. Post-crisis development of the economy could not provide the previous growth rate, moreover it has shown a clear tendency to reduce the rate of growth. In 2014, GDP growth was only 0.6% and in 2015 the decline in the economy was 3.9%. The reasons for this situation are various, including political nature. But the main reason is, according to many, in a backward economic

structure, its inability to diversify and to focus on the creation of an innovative economy.

Kazakhstan economy development has similar problems. The economic crisis of 2008-2009 the country experienced quite easily, although GDP growth slowed to 1.2% in 2009. Quickly established a favorable situation on the market of hydrocarbons allowed in the future to achieve high rates of GDP, which were still significantly below pre-crisis growth rates. Moreover, as in Russia, a trend to a decrease in the rate of economic growth was clearly showed, and thus conclusion that the roots of the problem lie in the economy heavily dependent on external factors was confirmed. Taking a variety of energetic measures, the authorities did not allow a fall in GDP, but the threat of such a development remains.

The changes occurring under the influence of globalization and the introduction of the latest technologies, concern not only trends and country growth factors of the global economy, but also the potential and prospects of their development. The role of the leading countries are still high, they determine to a great extent the direction of development of the world economy. However, many problems of the economy are highly country. Causes of the difficulties experienced by the slowdown associated not only with the crisis, but also economic, social and political processes within individual countries.

According to the conceptual issues relating to the prospects of macroeconomic dynamics, there is a great diversity of opinion. Without the emergence of a new set of pervasive, breakthrough technologies that can scale influence the production and social life, for the world economy as a whole and individual countries are likely to be characterized by moderate growth. Developed countries have a large scientific-

technical and financial capacity, are able to attract creative people to conduct scientific research, capable of generating new ideas and innovations. In this sense, they will retain their leadership and leading position in the global economy.

Most of people suppose that The main cause of the current economic slowdown is in ICTs, which have penetrated into all sectors and spheres of economy and social life. Basically they have exhausted their potential as the main driver of economic growth in recent years. As shown by the above data, in the last decade, the global economy and the economy of the leading countries have entered a period of relatively low growth rate of GDP.

### The forecast with linear extrapolation

As is known, linear extrapolation is a special case of the method of least squares, wherein the approximating function is taken straight. The study value should be close to a linear relationship, and for this purpose correlation coefficient was used in a given dynamic range. If this ratio exceeds 0.75 in absolute value, it is possible to apply a linear extrapolation.

It should also be noted that the implementation of the forecast, which is based on this simple method, is possible using a simple extrapolation of the rate of GDP growth and other macroeconomic indicators in the range of short-term period. During the next period, apparently, environmental conditions will remain stable. As it's shown in Table 1, the rate of performance VVR world growth as a whole and in individual countries have a fairly narrow range of trait variation. With this in mind, we have attempted to forecast GDP growth for 2016, the results of which are shown in Table 3.

**Table 3** – Forecast of GDP growth rates of linear extrapolation for 2016.

	The world	China	Russia	Kazakhstan
Correlation coefficient	-0,77	-0,94	-0,92	-0,9
Linear extrapolation equation	$Y = -0,32 * T + 4,75$	$Y = -0,69 * T + 10,6$	$Y = -1,55 * T + 7,09$	$Y = -0,7 * T + 9,03$
GDP growth forecast for 2016	2,51	5,8	-3,75	1,51

The coefficients for the United States and India equal to 0.25 and -0.27 respectively, so the use of linear extrapolation was impossible for these countries.

### The impact of economic growth on social progress

In recent years, there are expressed doubts about the desirability of economic growth for countries

with a high level of welfare. The idea of “zero” growth was even appeared due to the aggravation of environmental problems. The rapid economic growth due to the introduction of new technology is always accompanied by a decrease in employment. In addition, it's fair to say that the level of poverty in the country is heavily dependent on the prevailing national income distribution mechanisms.

In developing countries, where the standard of living of the population is relatively low, quantitative indicators of economic growth remain important for achieving social equality, improving working conditions and personal development. In general, the validity of this thesis can be seen in

the dynamics of the index of social progress, which was developed and proposed by Professor M. Porter in 2013 [9]. Table 4 shows the calculations of this index for 5 countries, the results of which reflect the progress of each of them in the field of social progress (see Table 4).

**Table 4** – Index of Social Progress (ISP)

Country	Years					
	2014 (132 countries)		2015 (133 countries)		2016 (133 countries)	
	ISP	Position	ISP	Position	ISP	Position
USA	82,77	16	82,85	16	84,62	19
China	58,67	90	59,07	92	62,10	84
India	50,24	102	53,06	101	53,92	98
Russia	60,79	80	63,64	71	64,19	75
Kazakhstan	59,47	86	61,38	83	63,86	76

If we compare the data of Tables 1, 2 and 4, then it is easy to see that GDP growth has a certain positive impact on social progress in developing countries.

Of course, one should not ignore the mechanism of distribution of national income in countries. In particular, this is illustrated by the data in Table 5.

**Table 5** – Indicators of income inequality

	According to the UN [10]		According to the CIA [11]	
	The richest 10% to poorest 10%	The Gini coefficient	The richest 10% to poorest 10%	The Gini coefficient
USA	15.9	40.8	15.0	45
China	21.6	46.9	17.6	46.9
India	8.6	36.8	8.6	33.6
Russia	12.7	39.9	7.4	42
Kazakhstan	8.5	33.9	6.0	28.9
Kazakhstan (2015 year) [12]	5,6	27,8		

As it can be seen from the data in Table 5, among the countries we compare, a high degree of inequality is observed in China and the US, and relatively low in Kazakhstan. Moreover, according to official statistics, in Kazakhstan there is a tendency to reduce the degree of inequality.

### Conclusion

The study of the dynamics of the world economy shows a slowdown in the economy of developed countries. Without the emergence of a new breakthrough source of economic development, developed countries are likely to evolve with the

growth rates characteristic of the post-crisis period. At the same time, the large fast-growing economies, which are characterized by positive dynamics of economic growth, will continue to realize the available potential for their development. Russia and Kazakhstan, due to the orientation of their economy to the export of raw materials, which puts them in a strong dependence on the situation on the world market of hydrocarbon raw materials, will not in the near future have a significant impact on the growth of the world economy. Economic growth has a generally positive impact on the level of social development in the countries in question.

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