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DOI 10.31483/r-97136

ДЕМОГРАФИЧЕСКАЯ ПРОБЛЕМА В СОВРЕМЕННОЙ МИРОВОЙ ЭКОНОМИКЕ

Аннотация: актуальность исследования обусловлена тем, что современный этап развития мировой экономики характеризуется глубоким структурным сдвигом, приводящим к усилению различий между промышленно развитыми и развивающимися странами. Необходимость анализа процессов, происходящих в современной мировой экономике, а также возможного сценария ее развития под влиянием демографического фактора еще раз подтверждает актуальность данного исследования. В исследовании поднимается проблема глобальной экономической безопасности – изменение структуры распределения населения мира по странам и регионам, старение населения в одних государствах, формирование молодой возрастной структуры и ускоренный рост населения в других.

Ключевые слова: мировая экономика, демография, демографическая проблема, структура распределения населения мира.

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DEMOGRAPHIC PROBLEM IN THE MODERN WORLD ECONOMY

Abstract: *the relevance of the study is due to the fact that the current stage of development of the world economy is characterized by a deep structural adjustment, leading to increased differences between industrialized and developing countries. The need to analyze the processes taking place in the modern world economy, as well as the possible scenario of its development under the influence of the demographic factor, further confirms the relevance of this study. The study raises the problem of global economic security – the changing structure of the distribution of the world's population by country and region, the aging of the population in some states, and the formation of a young age structure and accelerated population growth in others.*

Keywords: *world economy, demography, demographic problem, distribution structure of the world population.*

It is widely known that the world economy is a multi-level global economic system that unites the national economies of the world on the basis of the international division of labor through the system of international economic relations. The current stage of development of the world economy is characterized by a deep structural adjustment, leading to increased differences between industrialized and developing countries. This problem has many components, one of which is the global demographic problem associated with a significant increase in population that outstrips the growth of economic well-being, resulting in problems of food, medical care, education, territorial problems, and so on [2].

The global demographic problem can be divided into two main components (figure 1):

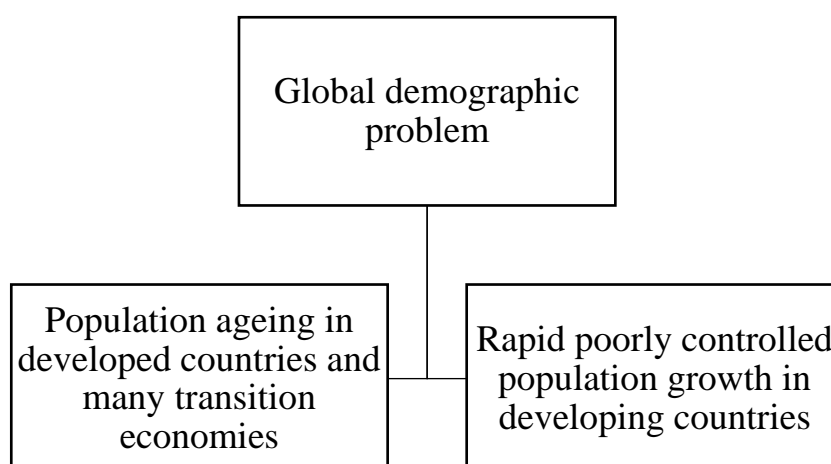


Figure 1. Components of the global demographic problem

A source: Compiled by the author.

Demographic problems have been raised for hundreds of years. Thomas Robert Malthus in his book «Experience on the law of population in relation to the future improvement of society» [6], published in 1798, formulated the theory of population, the concept of which is as follows: the population grows exponentially, and the means of subsistence necessary for it – in arithmetic progression, i.e. the population tends to increase faster than the means of its existence. According to this theory, if the population growth is not restrained by anything, it will double every 25 years. Followers of Malthus explain the poverty of the population not by the level of productive forces, but by the «natural law of nature», and the socio-economic backwardness of developing countries is not due to the economic situation in the country and the world, but solely to excessive population growth [5]. An opponent of the Malthus theory, economist Julian L. Simon argued that human ingenuity and its brainchild-scientific and technological progress-can compensate for any increase in the world's population and provide its inhabitants with an increasingly high standard of living [3]. In a bet with the theorist

Paul R. Ehrlich, who was imprisoned for ten years, adopted the sales criteria for Malthus' forecasts for the prices of five metals: copper, nickel, tin, tungsten, and chromium. Ehrlich believed that in 10 years the prices of these metals should increase due to the continuous growth of the world's population and the depletion of mineral reserves. However, Simon was right: despite the growth of the World's population by 800 million people in 10 years of dispute, the prices of all five metals fell [3]. The Malthus theory has had both its adherents and its opponents from the beginning of its creation to the present. For example, Karl Marx argued that this theory does not exist at all. He argued that population growth is a relative phenomenon, it is a specific feature of the capitalist system and occurs under the law of accumulation.

Currently, the Malthus theory has more and more followers, many scientists consider the degree of influence of the demographic factor on the development of the modern world economy from the point of view of population theory. Many scientists, trying to find in population growth the key to understanding the driving forces of social development, argue that population, together with the geographical environment and the way of production of material goods, more and more determines the development of society. For the normal development of production and the development of natural resources, a certain minimum of population is necessary, and its overabundance can negatively affect not only the level of material life, but also the environment [7].

Thus, we determine that the Malthus theory of population is not fundamental, the demographic problem in the modern world economy can be considered in different aspects. However, the opinion of the scientific community and trends in the development of the modern world economy suggest that the interdependence of population and means of subsistence has become particularly relevant today.

The population has been growing steadily throughout world history. According to the UN forecast, the world population will increase by 2 billion over the next 30 years,

reaching 8.5 billion by 2030, 9.7 billion by 2050, and 11.2 billion by 2100 [9] (figure 2).

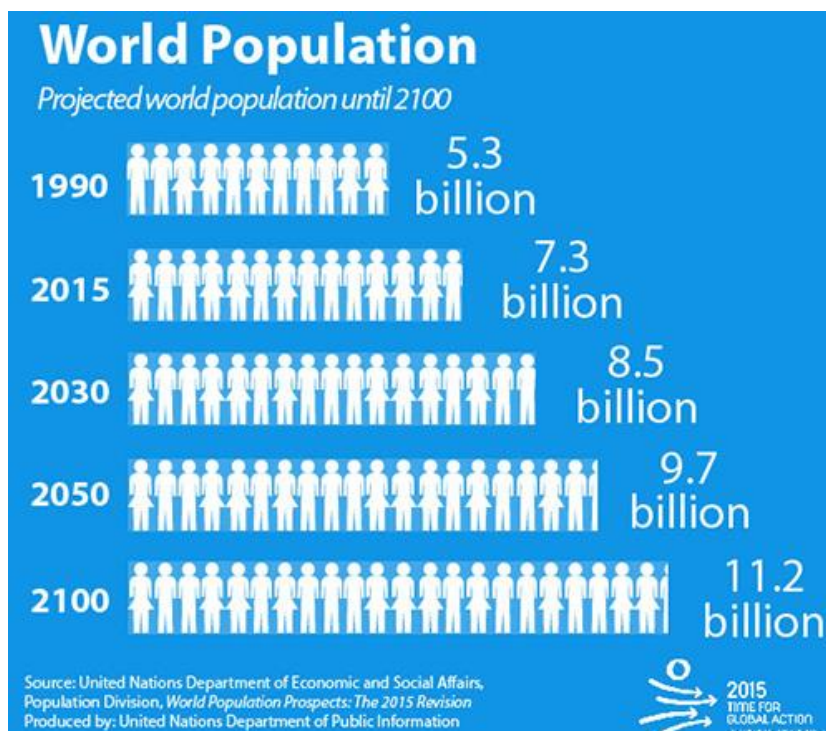


Figure 2. Projected population up to 2100

A source: United Nations [9].

Rapid uncontrolled population growth leads to overpopulation of the planet, and lack of resources to support the population can lead to starvation. Due to the increasing consumption of non-renewable resources, it is important to search for new types of raw materials, fuel, and energy.

However, global economic security in the long term will be associated not so much with overpopulation, but with the problem of population distribution across countries and regions, as well as aging and population decline in some States with the formation of a young age structure and accelerated growth in the number of inhabitants in others [1].

The twentieth century was marked by the greatest demographic changes compared to all previous centuries. The peculiarity of these changes was that in Asia, Africa

and Latin America, the population growth rate was significantly higher than in developed countries. This fact significantly affects the global distribution of the population by country and region. And in the twenty-first century, trends in the transformation of the demographic picture are only getting worse.

The world's population is distributed by region as follows: 60% is in Asia (4.7 billion people), 17% in Africa (1.3 billion people), 10% in Europe (750 million people), 8% in Latin America and the Caribbean (650 million people), 5% in North America (370 million people) and Oceania (43 million people) [9] (figure 3).

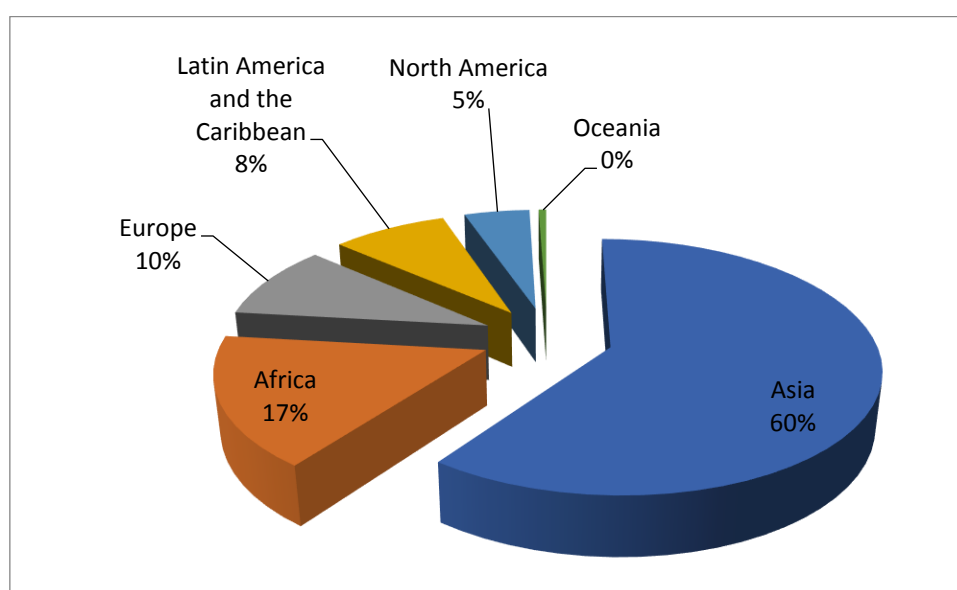


Figure 3. Distribution of the world's population by region

A source: Compiled by the author according to the UN [9].

The chart shows that the largest population is concentrated in Asia – 60%, while Africa accounts for 17%.

The countries with the largest populations are China (1.44 billion people) and India (1.39 billion people); their populations make up 19% and 18% of the world's population, respectively [9].

Based on the data published on the official website of the Federal state statistics service of the Russian Federation, we will consider the dynamics of natural population growth.

Table 1

Birth rates, death rates and natural increase of population per 1000 population

Countries	Birth rate				Death rate				Natural increase (decrease) of population			
	2010	2016	2017	2018	2010	2016	2017	2018	2010	2016	2017	2018
Russia	12,5	12,9	11,5	10,9	14,2	12,9	12,4	12,5	-1,7	-0,01	-0,9	-1,6
CIS countries												
of which:												
Azerbaijan	18,5	16,5	14,8	14,2	6,0	5,9	5,9	5,8	12,5	10,6	8,9	8,4
Armenia	13,8	13,5	12,6	12,3	8,6	9,4	9,1	8,7	5,2	4,1	3,5	3,6
Belarus	11,4	12,4	10,8	9,9	14,4	12,6	12,6	12,7	-3,0	-0,2	-1,8	-2,8
Kazakhstan	22,5	22,5	21,6	21,8	8,9	7,4	7,1	7,2	13,6	15,1	14,5	14,6
Kyrgyzstan	26,8	26,0	24,8	27,1	6,6	6,5	5,4	5,2	20,2	20,5	19,4	21,9
Republic of Mol- dova	11,4	14,3	13,3	12,8	12,3	13,7	13,4	13,9	-0,9	-0,6	-0,1	-1,1
Tajikistan	31,9	26,6	25,3	...	4,4	3,9	3,6	...	27,5	22,7	21,7	...
Uzbekistan	21,9	22,8	22,1	23,3	4,6	4,9	5,0	4,7	17,3	17,9	17,1	18,6
Ukraine	10,8	10,3	9,4	8,7	15,2	14,7	14,5	14,8	-4,4	-4,4	-5,1	-6,1
BRICS countries												
of which:												
Brazil	15,9	13,9	13,6	...	6,0	6,1	6,2	...	9,9	7,8	7,4	...
India	22,1	20,4	...	...	7,2	6,4	...	...	14,9	14,0	...	...
China	11,9	13,0	12,4	...	7,1	7,1	7,1	...	4,8	5,9	5,3	...
South Africa	23,6	21,6	21,3	...	10,5	9,2	9,0	...	13,1	11,9	12,3	...
EU countries												
of which:												
Austria	9,4	10,0	10,0	9,7	9,2	9,2	9,5	9,5	0,2	0,8	0,5	0,2
Belgium	11,9	10,8	10,5	...	9,7	9,5	9,6	...	2,3	1,2	0,9	...
Bulgaria	10,0	9,1	9,0	...	14,6	15,1	15,5	...	-4,6	-6,0	-6,5	...
Hungary	9,0	9,7	9,7	9,2	13,0	13,0	13,5	13,2	-4,0	-3,2	-3,8	-4,0
Germany	8,3	9,6	9,5	9,5	10,5	11,1	11,3	11,5	-2,2	-1,4	-1,8	-2,0
Denmark	11,4	10,8	10,7	...	9,8	9,2	9,2	...	1,6	1,5	1,4	...
Italy	9,5	7,8	7,6	...	9,9	10,1	10,7	...	-0,4	-2,3	-3,2	...
Lithuania	9,9	10,7	10,1	10,2	13,6	14,3	14,2	14,2	-3,7	-3,7	-4,0	-4,0
Netherlands	11,1	10,2	9,9	9,8	8,2	8,7	8,8	8,9	2,9	1,4	1,1	0,9

Poland	10,7	10,1	10,6	10,1	9,8	10,2	10,6	10,8	0,9	-0,2	0,0	-0,7
Romania	10,5	10,1	9,7	9,5	12,8	13,1	13,3	13,5	-2,3	-2,9	-3,6	-4,0
United Kingdom	12,9	11,8	11,4	...	8,9	9,1	9,2	...	3,9	2,7	2,2	...
Finland	11,4	9,6	9,1	8,6	9,5	9,8	9,8	9,8	1,9	-0,2	-0,6	-1,2
France	12,8	11,5	11,3	11,1	8,6	9,0	9,1	9,2	4,2	2,5	2,1	1,9
Sweden	12,3	11,8	11,5	11,7	9,6	9,2	9,1	9,1	2,7	2,7	2,3	2,6
Other countries												
of which:												
Australia	13,8	12,8	12,6	...	6,5	6,5	6,5	...	7,3	6,3	6,1	...
Argentina	18,5	16,7	16,0	...	7,8	8,1	...	...	10,7	8,6	...	...
Canada	11,1	10,6	10,3	...	7,2	7,4	...	...	3,9	3,2	...	...
Mexico	...	18,8	18,1	...	5,2	5,6	5,6	...	...	13,2	12,5	...
Norway	12,6	11,3	10,7	10,4	8,5	7,8	7,7	7,7	4,1	3,5	3,0	2,7
Switzerland	10,3	10,5	10,3	9,8	8,0	7,8	7,9	7,7	2,3	2,7	2,4	2,1
USA	12,9	...	...	...	8,0	...	...	...	4,9	...	...	...
Japan	8,4	7,7	7,5	7,3	9,3	10,3	10,6	10,8	-1,0	-2,6	-3,1	-3,5

A source: Federal state statistics service of the Russian Federation [4].

The table shows that the largest population growth is observed in the «periphery» countries. Thus, in 2018, the population growth rate in Azerbaijan was 8.4%, in Kazakhstan – 14.6%, in Kyrgyzstan – 21.9%, in Uzbekistan – 18.6%. According to 2017 data, in Tajikistan – 21.7%, in Brazil – 7.4%, in South Africa – 12.3%. And, in accordance with the data of 2016, in India is 14.0%.

While in the «center» countries, population growth is negative or very insignificant, according to 2018 data, for example, in Austria it was 0.2%, in Germany -2.0%, in Finland -1.2%, in Japan -3.5%. And according to 2017 data, in Belgium -6.5%, in Italy -3.2%.

According to the UN forecast, the dynamics of world population growth is as follows (Fig. 4):

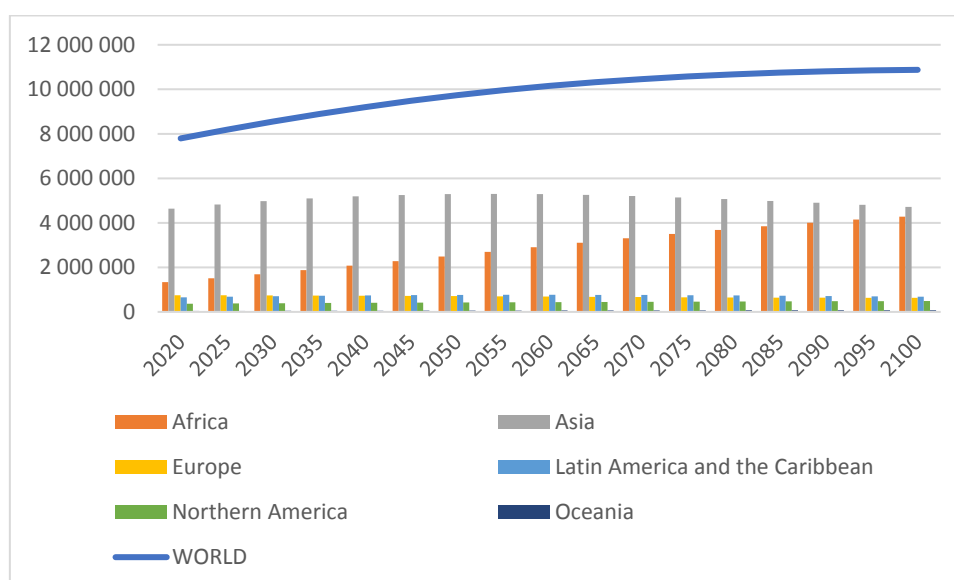


Figure 4. Forecast distribution of the world's population by region

A source: Compiled by the author according to the UN [10].

The chart below shows that the highest forecast values relate to countries in Asia and Africa, with significant growth in Africa's indicators and a decline in Asia's indicators after 2055. According to the UN forecast, this will be influenced by the fact that by 2027, India will overtake China and take the first place in the world in terms of population [9].

So, having considered the statistical indicators regarding the demographic situation, we can conclude that the world population is steadily growing and consists of an accelerated growth in the number of inhabitants and the formation of a young age structure in the «periphery» countries, while the population is shrinking and aging in the «center» countries, which will inevitably affect the distribution of the population across countries and regions and will have an impact on the world economy, which is the main problem of economic security in the XXI century.

The negative demographic situation is a big threat to the economies of the «center» countries. So, by 2050. the share of the population of developed countries in the

world population is expected to decrease to 14%, and the number of people over 60 years of age in these countries will increase significantly [1].

Let's look at the data compiled on the basis of monitoring carried out by the UN Department of economic and social Affairs.

Table 2

Forecast of the average age and compare with the retirement age

Country	Dimension	Unit	1995	2015	2050	Link: retirement age	
						Man	Woman
China	Average age	Year	27,0	37,0	45,0	60	50–55
United States	Average age	Year	30,7	38,0	41,1	65	65
India	Average age	Year	21,8	26,6	38,6	60	60
Japan	Average age	Year	39,6	46,5	54,9	65	65
Germany	Average age	Year	38,4	46,2	49,4	65–67	65–67
Russia	Average age	Year	35,0	38,7	45,3	61,5	56,5
Brazil	Average age	Year	23,8	31,3	40,4	65	60
Indonesia	Average age	Year	22,8	28,4	41,1	55	55
Ukraine	Average age	Year	36,4	40,0	43,5	65	60
France	Average age	Year	36,4	41,2	44,7	60	60

A source: Article «Demographic verdict on the world economy» [8].

This table shows that the population of the analyzed countries is noticeably aging and according to UN forecasts, the situation will worsen.

The absolute advantage of increasing the life expectancy of the population of developed countries is to improve the quality of life. But in terms of the impact of this factor on the economy, there are significant disadvantages. The aging of the population will lead to huge pension deficits, and transfers from state budgets will further increase the burden on public finances. The deterioration of the demographic situation may make the pension systems of a number of countries bankrupt. An increase in the retirement age, such as in Russia, leads to the fact that in order to remain active, employees of this age group will need expensive medical care. This means that a significant part

of the budget will be spent not on the development of science, education and innovation, but on so-called inefficient expenses. As a result of the reduction in the birth rate, the tax burden on the working-age population will increase in the future.

The decline in the birth rate and the trend of population aging lead to a decrease in labor productivity in developed countries. In this situation, extensive economic growth becomes impossible. There are few ways out of this situation: increasing the birth rate, encouraging migration, and intensive scientific and technological progress. However, the solution is quite complex, since any exit direction is associated with a number of adverse factors that prevent its implementation. For example, the promotion of fertility is directly related to socio-economic and cultural problems, which include the following:

- emancipation as a consequence of economic necessity;
- increase the time of marriage, in connection with the increased requirements for education;
- legalization and growth of same-sex marriage, due to the promotion of gender equality and freedom of choice of gender identity;
- development of the «Child free» ideology;
- increasing number of divorces, etc.

In the XX century, some factors that influence demographics, such as emancipation, improving the quality of education, and the introduction of new technologies, were stimulating the growth of labor productivity in industrial countries, but now they tend to weaken due to the fact that they are formed at the expense of young people.

Birth rates in developed countries do not ensure the reproduction of the population, and the indigenous population is declining accordingly. Realizing that the process of self-reproduction is objectively too slow, many Western countries deliberately encourage migration. However, the practice of the European Union shows that migration

brings much more problems than benefits: increased crime, ethnic conflicts, displacement of the indigenous population, etc. It should be noted that the main flow of migrants is low-skilled labor. For example, in Germany, where the unemployment benefit is 400 euros, you can see that migrants do not want to work, because this benefit is much more than the salary at home.

Simultaneously with the decline in the population of developed countries, in the future, the world population will increase at the expense of the least developed countries, where the proportion of young people under 25 years of age exceeds 50%, but there is a lack of financial resources, jobs and quality education [1]. If fertility rates in developing countries do not decline, their population could reach 2.8 billion by 2050. Thus, an increasing part of the world's population will live in countries experiencing a chronic shortage of all types of resources, which is fraught with serious socio-economic consequences for the whole world [1].

Globalization has significantly simplified the movement of labor between countries and continents, but the main feature of migration from the «periphery» countries, already mentioned above, is the low qualification of the labor force, which cannot but affect labor productivity.

The consequences of the global financial crisis have resulted in structural changes in the global economy. The GDP indicator is used to describe the dynamics of economic growth. Let's look at the data published on the official website of the Federal state statistics service of the Russian Federation:

Table 3

Dynamics of the real volume of gross domestic product in % to the previous period

Country	2016	2017	2018	2019	II quarter 2020 % as of the II quarter of 2019
<i>Russia</i>	0,2	1,8	2,5	1,3	-8,5 ²⁾
Brazil	-3,3	1,3	1,3	1,1	-0,2 ³⁾

Germany	2,2	2,6	1,3	0,6	-11,7
India	9,0	6,6	6,8	4,9	3,3 ³⁾
Italy	1,3	1,7	0,8	0,3	-17,3
Canada	1,0	3,2	2,0	1,7	-13,5
China	6,8	6,9	6,7	6,1	3,2
United Kingdom (UK)	1,9	1,9	1,3	1,5	-21,7
United States	1,7	2,3	3,0	2,2	-9,5
France	1,1	2,3	1,8	1,5	-19,0
South african	0,4	1,4	0,8	0,2	-0,3 ³⁾
Japan	0,5	2,2	0,3	0,7	-10,0
<i>1. The information is based on publications from the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), the Statistical Office of the European Union (Eurostat) and the operational data of the national statistical services.</i>					
<i>2. Preliminary assessment.</i>					
<i>3. I quarter of 2020 as a percentage of the I quarter of 2019.</i>					

A source: Federal state statistics service of the Russian Federation [4].

The data presented shows that in recent years, the economies of India, China and Brazil have played a significant role in the global economy, while the role of the economies of European countries tends to decrease.

Accordingly, we can conclude that in the near future there will be changes in the structure of world consumption. The world Bank forecasts that by 2030, the number of middle-class people in developing countries will reach 1.2 billion, which is more than the entire population of Europe, Japan and the United States combined. Thus, the locomotive of the world economy will not be traditional, but new centers of power emerging in Asia, Africa and Latin America, primarily China, India, South Korea, Brazil, Indonesia, Chile, Mexico and Turkey [1].

Thus, after studying and analyzing the information obtained from the bibliographic list below, as well as official statistics, we can draw a number of conclusions and generalizations. First, trends in the development of the modern world economy indicate that the interdependence of population and means of subsistence has become particularly relevant today. Second, the world population is steadily growing and consists of an accelerated growth in the number of inhabitants and the formation of a young

age structure in the «periphery» countries, while the population is shrinking and aging in the «center» countries, which will inevitably affect the distribution of the population across countries and regions and will have an impact on the world economy. Third, it is worth noting that in the foreseeable future, the leaders of the XXI century can become the countries with the largest population and high rates of economic growth.

At the same time, it should be noted that, despite the measures taken to stimulate the birth rate in some countries and reduce it in others, they are clearly not enough, the global demographic problem in the modern world economy is becoming increasingly relevant. The impact of demography on the economy is huge, and the global economic structure is waiting to change.

The article was written under the scientific supervision of Natalia Sokolova, PhD in Economics, associate Professor Of the Department of English and professional communication at the Financial University under the Government of the Russian Federation.

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