

BRICS COUNTRIES IN THE DEVELOPMENT OF THE MODERN SYSTEM OF WORLD ECONOMY – A RETROSPECTIVE ANALYSIS

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ABSTRACT

The new polycentric format of the interstate association, which is BRICS, serves as the centre of gravity for the dynamically developing world economies. Over the past thirty years, the countries included in the group have gradually increased their economic weight on a global scale, concentrating an increasing part of the world's industrial, infrastructure, trade, agricultural and other structures.

Estimated from 1990 to 2021, BRICS has approximately doubled its economic and political weight on the world stage, mainly due to the growth of the real manufacturing sector. To date, on average, eleven BRICS countries concentrate about half of the world's socio-economic and resource potential. Moreover, this share has a positive growth trend. It is not surprising that more and more countries are striving to join this association to strengthen their own economic and political position on a global scale.



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1. INTRODUCTION

In 2006, the world policy entered a new phase of development with the emergence of a new interstate entity – BRIC, and in 2011, South Africa joined this organisation, which became BRICS. Since the leading development countries entered this organisation, the new entity quickly acquired a significant political and economic weight in the world arena (Alekhine, 2019; Balykhin et al., 2020; Lissovnikov, 2023). The emergence of a new centre of formation of a multipolar world drew the attention of many developing countries, which showed a desire to join the new political and economic system, which became sort of counterweight to the unipolar Western-centred model of world development, which formed after the dissolution of the Soviet bloc.

(Abyshov et al., 2023; Burganova, 2023; Efremova, 2015; Medushevsky & Penzin, 2023; Kruchinsky et al., 2023). BRICS could even be the sole alternative for political and economic integration for certain developing countries (Makazhanov, 2015).

The first large expansion of the bloc is expected in 2024, which will see its increase by six countries, in addition to the existing five countries (Glebov & Agonnude, 2023). This will raise the number of the population of BRICS by 400 million people, and the total GDP of new participants accounts for almost 5% (GDP PPP), which will lead to the growth of the BRICS population up to almost 50 % of the world population, and GNI – up to 36%. However, the key result of the expansion will be the growth of the concentration of oil reserves in BRICS countries from 8%

to 40%, and natural gas – from 25% to 50%. In other words, the energy base will equal almost half of the world's energy base, which will approximately conform to the share in the population and exceed the economic weight of BRICS in the world community – while before the expansion, there was a deficit of energy resources on the whole (except of Russia, of course) (Ugrin et al., 2019). An increase in the level of self-sufficiency in the most important mineral resources will be the basis for the further rapid progress of the bloc on the global scale since free access to energy resources is the key factor in the political and economic development (Rodionova & Shuvalova, 2023; Sinchuk, 2022). At that, countries of BRICS also demonstrated significant progress in the sphere of renewable energy, concentrating more than 40% of the generation of renewable sources and almost 50% hydro energy, which strengthens the energy independence of the union in the world arena (Gusarova, 2023).

Special attention should be paid to the low value of debt obligations in most of the countries of BRICS and BRICS-2, compared to Western countries (except for Argentina) (Zharikov, 2023). This is a sign of the financial and economic competitiveness of the new interstate association, the concentration of the global sector of the world economy in its territory, and a large reserve of growth of personal consumption and state expenditures due to the proper use of debt tools.

2. MATERIALS AND METHODS

To assess the share of BRICS and BRICS+ in the world resource base (apart from fuel and energy fossils), we used the data from the US Geological Survey (n.d.1), including individual profiles for countries (n.d.2).

Statistical information on disposable resources, production of energy resources, and energy consumption for countries was acquired from the information base of British Petroleum (n.d.). The data on the dynamics of population and GNI of countries were taken from the indicators of the World Bank(n.d.). Time rows on steelmaking were built based on the information from the World Steel Association (n.d.).

Analysis of the presented data was performed with the help of such methods of general scientific cognition as analysis and synthesis. The processing and visual presentation of the research results were ensured by the use of the table and graphical methods.

For the retrospective research, we selected ten basic statistical indicators, which characterise – most completely and comprehensively – the position of BRICS countries in the global economic sphere. These are such indicators as population, GNI, energy consumption, reserves and extraction of oil and other mineral resources, as well as production of grain, electric energy, steel, meat, and cement. These indicators can be considered key ones for international comparisons.

3. MAIN PART

The most important indicator that reflects the volume of labour resources and human capital of BRICS is the number of population of countries in the interstate grouping. As shown in Table 1, the share of BRICS in the world population for the last thirty years is around 41-44%, and taking into account new members of the bloc from 2024, this indicator will be stable within 46-48%.

Table 1. The population of BRICS countries for 1990-2021, million people

Countries	1990	2000	2010	2020	2021	2022	2021 compared to 1990, %
Brazil	151	176	196	213	214	215	143
Russia	148	147	143	144	143	144	97
India	870	1,060	1,241	1,396	1,408	1,417	163
China	1,135	1,263	1,338	1,411	1,412	1,412	124
South Africa	40	47	52	59	59	60	150
BRICS-1 in total	2,344	2,692	2,969	3,224	3,237	3,248	139
Argentina	33	37	41	45	46	46	142
Iran	56	66	75	87	88	89	159
Saudi Arabia	16	22	29	36	36	36	227
Egypt	57	71	87	107	109	111	194
Ethiopia	48	67	89	117	120	123	258
UAE	2	3	8	9	9	9	497
BRICS-2 in total	211	266	331	403	409	415	196
World in total	5,293	6,144	6,970	7,821	7,888	7,951	150
Share of BRICS-1, %	44.3	43.8	42.6	41.2	41.0	40.9	92
Share of BRICS-2, %	4.0	4.3	4.7	5.1	5.2	5.2	131
Total share of BRICS in the new form, %	48.3	48.1	47.3	46.4	46.2	46.1	95

Source: Compiled by the authors based on the data of the World Bank.

As shown in Table 1, the share of BRICS in the world population, especially in the old form of five countries, is reducing gradually. This is connected with the stabilisation of the population of the main members – China, Russia, Brazil, and South Africa. High rates of natural growth remain only in India and new members. Perhaps, this was one of the reasons for accepting new countries into the union.

By gross national income (GNI - GNI) in purchasing power parity, countries of BRICS of the original form gradually increase their share in the total world indicator (Table 2), while BRICS-2, consisting primarily of the Middle Eastern countries, demonstrates, on the contrary, a decrease in the indicator.

Table 2. GNI of countries of BRICS for 1990-2021, billions \$ (PPP)

Country	1990	2000	2010	2020	2021	2021 compared to 1990, %
Brazil	971	1,536	2,712	3,110	3,394	350
Russia	1,185	975	2,837	4,292	4,849	409
India	1,035	2,188	5,174	8,979	10,163	982
China	1,117	3,639	12,327	24,090	27,269	2,441
South Africa	251	374	649	783	856	341
BRICS-1 in total	4,559	8,712	23,699	41,254	46,531	1,021
Argentina	224	417	712	919	1,066	476
Iran	423	714	1,383	1,334	1,461	345
Saudi Arabia	540	826	1,431	1,734	1,880	348
Egypt	203	400	772	1,320	1,426	703
Ethiopia	20	32	90	277	306	1,551
UAE	323	323	555	660	719	223
BRICS-2 in total	1,733	2,711	4,942	6,245	6,859	396
World in total	29,077	48,878	89,174	134,087	147,266	506
Share of BRICS-1, %	15.7	17.8	26.6	30.8	31.6	202
Share of BRICS-2, %	6.0	5.5	5.5	4.7	4.7	78
Total share of BRICS in the new form, %	21.6	23.4	32.1	35.4	36.3	168

Source: Compiled by the authors based on the data of the World Bank.

As shown in Table 2, the economic role of BRICS at the global scale is ensured mainly by the dynamics of the indicator of China, which significantly exceeds the rest of the world by the rate of economic growth – due to it, the share of countries that are members of BRICS-1 doubled from 1900 to 2021 (from 15.7 to 31.6%). In the same period, BRICS-2 reduced its specific weight – this is connected with the fact that Middle Eastern economies demonstrate rates of economic growth that are lower than world average rates, which are set, in turn, by the largest players: China and India.

We should also note the significant gap between India and Ethiopia and the world average dynamics, though absolute values of GNI for these countries are much lower compared to China.

Energy consumption is the most important indicator characterising the total share of the country in the global industrial production and real sector on the whole and indirectly reflecting the accessibility of energy resources for the economy and population on the whole. Let us reflect on this information in Table 3.

The data from Table 3 show that countries of BRICS, judging by energy consumption, increased their relative weight in the world real economy by more than 1.7

times over thirty years – from a quarter to approximately a half. This process of the growth of the relative indicator is continuing now. Certainly, the decisive factor in this is the contribution of the People's Republic of China, which consumes around 27% of the world's energy and which increased consumption in the absolute value by 5.5 times over thirty years. Only Russia is peculiar for the reduction of energy intensity of the economy due to the reduction of a range of energy-intensive production after the dissolution of the USSR (in particular, metallurgy and machine building). Unfortunately, there are no data on energy consumption in Ethiopia. But, obviously, due to its small volume, BP does not include the statistics for Ethiopia in its time rows. That's why the absence of this information is statistically unimportant for the total indicator of BRICS. Ethiopia's joining BRICS will facilitate the receipt of statistical data for this country in better quality than we have now.

The resource base allows assessing the independence and self-sufficiency of the union's countries and is no less important than other indicators of economic activities.

Table 3. Energy consumption by countries of BRICS, exajoules (EJ, 10¹⁸ J)

Country	1990	2000	2010	2020	2021	2021 compared to 1990, %
Brazil	5.5	8.3	11.3	12.0	12.6	228
Russia	36.3	26.0	28.1	28.9	31.3	86
India	8.3	13.4	22.6	32.2	35.4	428
China	29	42	105	148	158	552
South Africa	3.7	4.3	5.3	5.0	5.0	134
BRICS-1 in total	82	94	172	226	242	294
Argentina	1.8	2.5	3.2	3.2	3.4	186
Iran	2.9	5.0	8.7	12.0	12.2	417
Saudi Arabia	3.3	4.8	8.7	10.6	10.8	324
Egypt	1.4	2.0	3.2	3.5	3.8	269
Ethiopia	N/A	N/A	N/A	N/A	N/A	-
UAE	1.2	1.9	3.5	4.3	4.5	365
BRICS-2 in total	10.8	16.3	27.4	33.6	34.8	323
World in total	344	397	509	564	595	173
Share of BRICS-1, %	23.9	23.8	33.8	40.0	40.6	170
Share of BRICS-2, %	3.1	4.1	5.4	6.0	5.8	187
Total share of BRICS in the new form, %	27.1	27.9	39.2	46.0	46.5	172

Source: Compiled by the authors based on the data of BP.

In the conditions of sanctions, when international trade is an object of political pressure and trade, access to resources within BRICS, as a grouping of similar-minded states, acquires the largest importance for the stability of socioeconomic development. The political platform of BRICS may be the basis for creating interstate agreements in the trade of mineral resources and its mechanism of formation of prices for resources (Orlova, 2021). Here there lie positive prospects for the

development of international cooperation for Russia. As is shown in Table 4, it is by means of Russia and, partially, South Africa that countries of BRICS concentrate in their territory a large, and, in certain directions, overwhelming volume of resources. Table 4 presents proven reserves (BP) for energy resources, and economic reserves for other resources (e.g., which production is economically viable according to the USGS).

Table 4. The share of BRICS in reserves of certain types of mineral resources as of 2021.

Country	Oil	Natural gas*	Coal	Iron ore	Bauxites	Copper**	Nickel**	Gold**	PGM**	REM**
Brazil	1.7	0.3	6.6	15	2.7	11.2	16.0	2.4	0.0	21.0
Russia	14.8	37.4	162	14	0.5	62.0	7.5	6.8	5.5	21.0
India	0.6	1.3	111	3.4	0.66	2.7	0	0.1	0.0	6.9
China	3.5	8.4	143	6.9	0.71	27.0	2.1	1.9	0.3	44.0
South Africa	0.002	N/A	9.9	0.67	N/A	N/A	3.7	5.0	63.0	0.8
BRICS-1 in total	20.6	47.4	433	40.0	4.6	103	29.3	16.2	68.8	93.7
Argentina	0.3	0.4	0.1	0.4	0	11.7	N/A	0.7	0.0	0.0
Iran	21.7	32.1	2.0	1.5	0.0	15.6	N/A	0.1	0.0	0.0
Saudi Arabia	40.9	6.0	0	0.5	0.2	1.312	N/A	0.05	0.00	0.00
Egypt	0.4	2.1	0.05	0.5	0	N/A	N/A	0.1	0.0	0.0
Ethiopia	0.0001	N/A	0.06	0	0	N/A	N/A	0.1	0.0	0.0
UAE	13.0	5.9	0	0	0	0	N/A	0	0	0
BRICS-2 in total	76.3	46.5	2.2	2.8	0.2	28.61	0.0	1.0	0.0	0.0
World in total	244	188	1074	85.0	31	890	100	52.0	70.0	130.0
Share of BRICS-1, %	8.4	25.2	40.3	47.0	14.7	11.6	29.3	31.1	98.3	72.1
Share of BRICS-2, %	31.2	24.7	0.2	3.3	0.7	3.2	0.0	2.0	0.0	0.0
Total share of BRICS in the new form, %	39.6	49.9	40.5	50.3	15.4	14.8	29.3	33.1	98.3	72.1

Note: *trillion cubic meters; **million tons. Source: Compiled by the authors based on the data of BP and the USGS.

Table 4 characterises the share of BRICS in such important resources of the modern economy as rare earth metals (REM) and platinum group metals (PGM) as dominating. The formation of this share is almost fully predetermined by the presence of Russia and South Africa in BRICS. Rare earth metals are the basis of modern machine building, defence and industrial complex, renewable energy, oil refining, chemical industry, and others. PGM is an irreplaceable component in the automobile and electrical industry, as catalysts and alloys for chemical equipment. All the above spheres depend on the stability of supply from countries of BRICS. Any disruptions in logistics and accessibility of these materials lead to crises and quick growth of prices in the global market.

Around 40-50% of energy resources (oil, natural gas, and coal) and iron ore are concentrated in the territory of BRICS. The main part of the oil and gas sector is located in countries of the Middle East, and the expansion of BRICS in 2024 will increase the share of BRICS in oil reserves by four times, and in natural gas reserves – by two times.

Iron ore reserves are located primarily in Brazil and Russia, with approximately equal shares in the world resources. Brazil, together with Australia, is the largest producer and supplier in the global market, while Russia's production volume is lower and mainly for its ferrous metallurgy. That is why Russian reserves of iron ore are depleted much slower than the main world deposits. According to the USGS, for five countries that concentrate 80 % of the world's production, iron ore in Australia and Brazil will last (with the current level of production) for fifty years, in China – for thirty years, and in India – for twenty years. Russia has iron ore deposits that will last for 200 years.

Around a third part of the world's reserves of nickel and gold are located in countries of BRICS – mainly in

Russia, Brazil, and South Africa. The largest gold deposits are located in Australia, while Russia and South Africa are ranked 2nd and 3rd. Indonesia and Australia have 20% of nickel deposits each; Brazil has 16%, and Russia has 8%. Indonesia is a very promising state for membership in BRICS, based on its rich mineral resources, good geographical position, and dynamic economic growth. However, Indonesia has not shown a vivid desire to become a member of BRICS. This could be connected with its participation in the Non-Aligned Movement. However, India, Ethiopia, and the countries of the Middle East are also participants in this movement, which did not prevent them from becoming full members of BRICS.

60 % of world bauxite resources are concentrated in Guinea, Vietnam, and Australia. Cooper resources are concentrated in Chile, Australia, and Peru (almost a half). That is why BRICS accounts for a rather moderate share of these resources. However it should be noted that at present, around 25% of copper smelted in the world is secondary production: 20% in China, and the share of copper smelting from scrap can exceed 50% in Europe. Recycled aluminium metallurgy accounts for 3/4 of steel smelting in the USA. Though the world average indicator is at the level of 15%.

On the whole, there is a trend that with time, secondary production from scrap and waste accounts for a larger share of production, reducing the necessity for ore production and import and moving the probable moment of full depletion of the world resource base. This is most relevant for non-ferrous metals, which secondary use and recycling became most widespread due to high cost.

The dynamics of the resource base of BRICS in the 2024 form is presented in Figure 1.

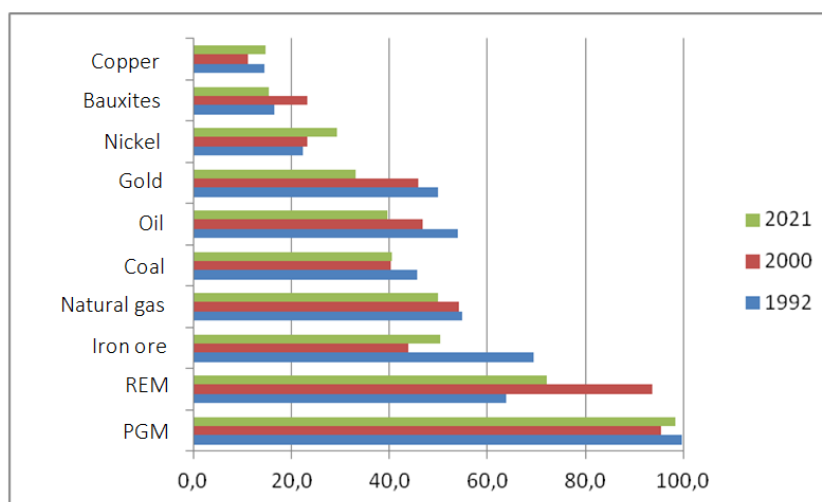


Figure 1. Share of BRICS (in the new 2024 form) in mineral reserves in 1990-2021, %
Source: Compiled by the authors based on BP and the USGS.

Based on the main information in Figure 1, we can see the reduction of the share of BRICS in world reserves of gold, oil, coal, natural gas, iron ores, and PGM. This is connected with the rapid level of production of these types of mineral resources on the territory of BRICS. The share in reserves of rare earth metals and nickel somewhat increased, which was caused by the discovery of new deposits in Brazil. Expansion of the resource base of BRICS by means of Brazil levelled – in the case of nickel and PGM – the decrease in the relative share

of other participating countries in these types of resources. Perhaps, the development of geological exploration on the territories of developing countries in the future could substantially change the distribution of mineral reserves, as was observed by the example of Brazil over the last thirty years.

The dynamics of the relative share of BRICS in the mining of the main types of minerals are shown in Figure 2.

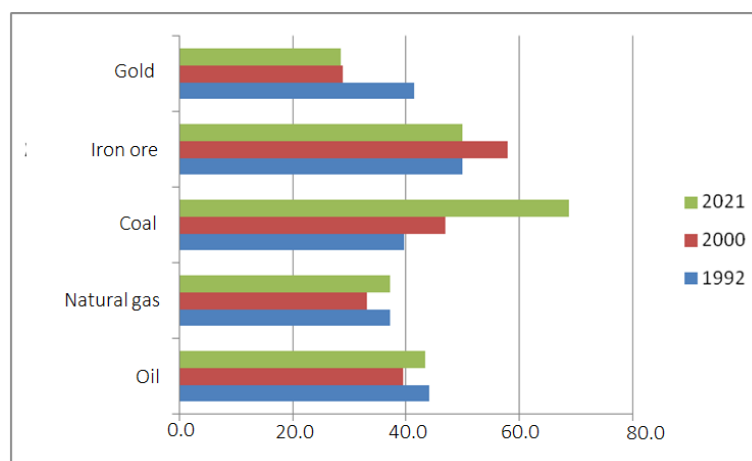


Figure 2. Share of BRICS (in the new 2024 form) in mineral extraction in 1990-2021, %
Source: Compiled by the authors based on BP and the USGS.

As is shown in Figure 2, the role of BRICS in the world extraction of oil, natural gas, and iron ore is rather stable. However, the specific weight of BRICS countries in coal mining grew substantially, and, on the contrary, the share of extracted gold on the territory of BRICS reduced.

The generation of electric energy is an important indicator of the socioeconomic development of a country, accumulating the level of development of industrial and transport directions, as well as the socio-infrastructure sector.

Table 5. Generation of electric energy in countries of BRICS in 1990-2021, billion KWh

Country	1990	2000	2010	2020	2021	2021 compared to 1990, %	Including nuclear power plants	Hydroelectric power stations	Solar power plants + wind farms
Brazil	223	349	516	621	654	294	15	363	144
Russia	1,082	878	1,038	1,085	1,157	107	222	215	5
India	288	571	937	1,563	1,715	596	44	160	172
China	621	1,356	4,207	7,779	8,534	1374	408	1,300	1,153
South Africa	167	211	260	239	244	146	10	1	17
BRICS-1 in total	2,381	3,364	6,958	11,289	12,305	517	699	2,039	1,490
Argentina	51	89	126	145	152	299	11	20	17
Iran	58	119	236	337	358	621	4	15	2
Saudi Arabia	80	139	240	338	357	446	0	0	1
Egypt	42	73	144	199	210	500	0	15	10
Ethiopia	1	2	5	16	15	1,008			
UAE	17	40	94	137	139	816	11	0	5
BRICS-2 in total	249	462	845	1,171	1,231	494	25	49	35
World in total	11,961	15,564	21,581	26,889	28,466	238	2,800	4,274	3,657
Share of BRICS-1, %	19.9	21.6	32.2	42.0	43.2	217	25.0	47.7	40.8
Share of BRICS-2, %	2.1	3.0	3.9	4.4	4.3	208	0.9	1.1	1.0
Total share of BRICS in the new form, %	22.0	24.6	36.2	46.3	47.5	216	25.8	48.9	41.7

Source: Compiled by the authors based on the data of BP, and the Ethiopia data of Undata.

4. INVESTMENT ACTIVITY

Over 1990 – 2021, the share of BRICS in the generation of electric energy has more than doubled – this exceeds the growth rates of GNI of BRICS countries, or dynamics of their energy consumption on the whole (1.7 times – see Tables 1 and 2). At that, the share of BRICS in nuclear generation significantly lags behind the general indicator for energy on the whole. This is explained by the rapid development of nuclear power plants in countries of Europe, the USA, Japan, and South Korea. In this case, developing economies lag behind. The share of hydrogeneration and the modern sector of renewable energy conforms approximately to the economic and energy position of BRICS in the world – around 40-50%. This takes place due to the large-scale growth of green energy (including hydroelectric power stations) in China over the last twenty years.

Development of agriculture, accessibility of food, and food security of countries are important elements of economic and political stability. That is why this overview includes two indicators that characterise very

well the development of two key directions of the agro-industrial complex – harvest of grain crops and meat production.

Figure 3 shows a rapid growth of the share of BRICS in the harvest of grain crops by 2020 – this became possible due to a significant increase in grain production in Russia after the lean year of 2010. Also, during this period, the harvest in Argentina and Brazil grew significantly (more than two times).

As shown in Figure 4, the role of BRICS in meat production grew significantly over 1990-2010, after which production rates began conforming to world average values, and the increase in the relative share of the group stopped. This could be explained by a large growth of cattle breeding in Brazil, India, and China, which increased meat production in 1990 – 2010 almost by three times. But over the last decade, this growth slowed down a lot, equalling only 15-20%. In other words, the cattle breeding sector of these developing countries reached the limit of rapid development and is now in the phase of stabilisation of production.

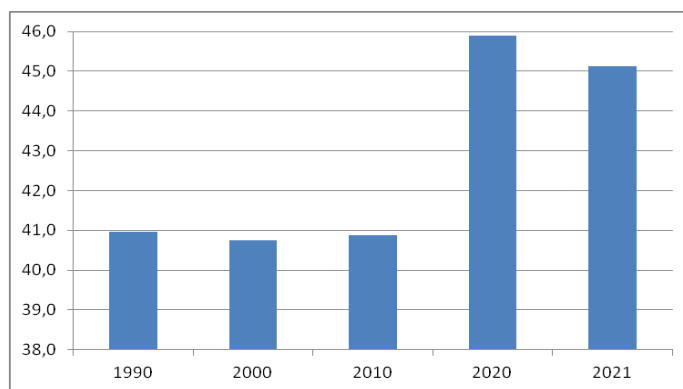


Figure 3. Share of BRICS in the harvest of grain crops in 1990-2021, %

Source: Compiled by the authors based on the data of FAO. The indicator of harvest includes 10 cultures: barley, beans, corn, oats, peas (dried and green), rice, rye, sorghum, triticale, and wheat.

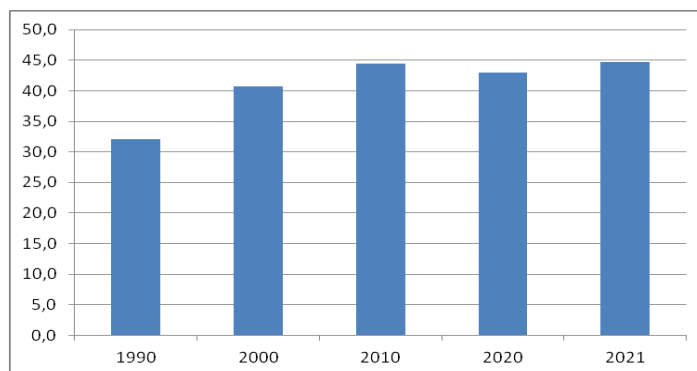


Figure 4. Share of BRICS (in the new 2014 form) in meat production in 1990-2021, %

Source: Compiled by the authors based on the data of FAO.

At the last stage of this research, let us make an overview of the most important industrial indicators, which indirectly characterise the infrastructural and construction activity – the production of steel and cement.

As shown in Table 6, the role of BRICS in the world steel production grew from around 25% to the overwhelming 68% over the last thirty years – more than 2/3 of steel production accounts for countries of the group. The main part belongs to China (53%). Growth

of China's ferrous metallurgy equalled 15.6 times over thirty years. Higher indicators are observed only in Iran (growth of 20 times) and the UAE (growth of 67 times – but almost from scratch in 1990). However, the last two countries do not play a significant role on the global scale.

Two countries of the group allowed for a decrease in steel production – these are Russia and South Africa. In Ethiopia, ferrous metallurgy is absent as a sphere, despite the large population of this country. It is quite probable that the future will see the formation of this sphere in Ethiopia.

Table 6. Steel production in countries of BRICS in 1990-2021, million tons

Country	1990	2000	2010	2020	2021	2021 compared to 1990, %
Brazil	20.6	27.9	32.9	31.4	36.1	176
Russia	89.6	59.2	66.9	73.8	77.0	86
India	15.0	26.9	69.0	100	118	790
China	66	129	639	1,065	1,035	1,560
South Africa	8.6	8.5	7.6	3.9	5.0	58
BRICS-1 in total	200	251	815	1,274	1,271	635
Argentina	3.6	4.5	5.1	3.7	4.9	134
Iran	1.4	6.6	12.0	29.0	28.3	1,986
Saudi Arabia	1.8	3.0	5.0	7.8	8.7	488
Egypt	2.2	2.8	6.7	8.2	10.3	458
Ethiopia	0.0	0.0	0.0	0.0	0.0	-
UAE	0.0	0.1	0.5	2.7	3.0	6,660
BRICS-2 in total	9.1	17.0	29.3	51.4	55.2	604
World in total	770	849	1,435	1,881	1,958	254
Share of BRICS-1, %	26.0	29.6	56.8	67.7	64.9	250
Share of BRICS-2, %	1.2	2.0	2.0	2.7	2.8	237
Total share of BRICS in the new form, %	27.2	31.6	58.9	70.5	67.8	249

Source: Compiled by the authors based on data from the World Steel Association.

Table 7. Cement production in countries of BRICS in 1990-2021, million tons

Country	1990	2000	2010	2020	2021	2021 compared to 1990, %
Brazil	26	40	59	61	65	252
Russia	83	32	50	56	59	72
India	49	95	220	295	330	673
China	210	597	1,882	2,400	2,500	1,190
South Africa	8	8	13	12	13	160
BRICS-1 in total	376	772	2,225	2,824	2,967	790
Argentina	4	6	10	10	12	336
Iran	13	24	61	68	62	477
Saudi Arabia	12	18	48	53	55	458
Egypt	14	24	48	45	50	355
Ethiopia	0	1	3	10	10	2,794
UAE	3	6	18	15	15	460
BRICS-2 in total	46	79	187	200	204	440
World in total	1,160	1,660	3,290	4,200	4,400	379
Share of BRICS-1, %	32.4	46.5	67.6	67.2	67.4	208
Share of BRICS-2, %	4.0	4.8	5.7	4.8	4.6	116
Total share of BRICS in the new form, %	36.4	51.3	73.3	72.0	72.1	198

Source: Compiled by the authors based on the data of the USGS.

Cement production is an important element of the assessment of not only current and retrospective analysis of economic processes in the country and the world – it also facilitates the compilation of forecasts for the economic position of countries in the future. This is the key feature of the construction sphere, which characterises the volumes of industrial and infrastructural construction; in turn, they determine the future position of the country in the global economic

field. The created production capacities and means of communication are the groundwork for future decades. In this aspect, China – as the manufacturer and consumer of more than half of world cement production – will have a decisive role in the world economy in the next decades. Growth of production in the PRC equalled 12 times over the last 30 years. It should be noted that in 1990, China was already the leader in cement production in the world (18%).

Surprisingly, China is also the world leader in cement production per capita. A similar progress on the world

scale is observed only in Vietnam, which increased cement production by 40 times in the same period and raised the share from 0.2% to 2.4%. As of 2021, Vietnam was ranked third in the world by cement production per capita (Sidorova & Tarasov, 2022).

Russia is the only country in BRICS with a decrease in cement production in the studied period. However, the share of BRICS on the whole is more than 72%, and this indicator was rather stable in the recent decade. Thus,

countries of BRICS form almost 3/4 of the world construction sector by means of production and consumption of the corresponding volume of cement.

5. CONCLUSIONS

The most significant conclusion of this retrospective research will be uniting the key results on various indicators in one figure. Let us present in Figure 5 the key results, which generalise the important observations, made in the course of analysis of the economic indicators of BRICS countries.

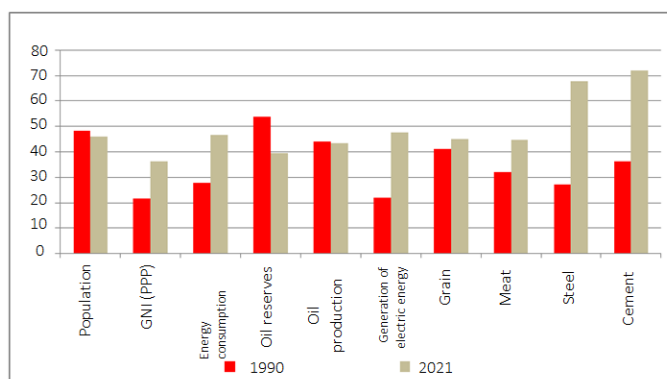


Figure 5. Share of BRICS (in the new 2024 form) by various indicators of socioeconomic development among countries of the world in 1990-2021, %.

Source: Compiled by the authors based on the research data.

In the last three decades, the world changed dramatically in the political and economic aspects. With the visible preservation of the share of BRICS countries in population, there was a significant growth of this group of countries in relative consumption of energy, generation of electric energy, food production, steel production, and cement production. We should note a decrease in the resource base of BRICS countries at the global scale, which is explained by an increased level of resource extraction for the economic breakthrough of China and India. Geological exploration allows, in certain cases, a significant increase in the resource base of individual developing countries due to the insufficient level of geological exploration at earlier stages.

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