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PROSPECTS AND STRATEGIC PRIORITIES FOR THE RISE OF THE BRICS

A SCIENTIFIC REPORT TO THE 7TH BRICS SUMMIT
(ABRIDGED VERSION)

Under the editorship of *V.I. Sadovnichy, Yu.V. Yakovets, A.A. Akayev*



Moscow, SKII — INES — NCS BRICS, 2014

This brochure is a summary (abridged version) of the report “Prospects and Strategic Priorities for the Rise of the BRICS”. A scientific report to the 7th BRICS Summit (Under the editorship of V.A.Sadovnichiy, Yu.V. Yakovets, A.A. Akayev. — M.: SKII — INES — NCS BRICS, 2014. — 392 p. ISBN 9785936182143) prepared by the group of scientists of the Pitirim Sorokin — Nikiolai Kondratieff International Institute, Institute for Economic Strategies, Lomonosov Moscow State University — MGU, NCS BRICS, ILA RAS, and IFES RAS.

At the beginning of the 21st century the world of civilizations has found itself in the state of historical fault line. It is being formed a new global divide. The BRICS that represents the leading powers of the five rising civilizations is becoming the center of civilizational progress. The former leaders — Group 7 — are losing their positions. This process requires scientific understanding and far-sighted vision.

The initiative-based scientific report written by a group of Russian scientists to the BRICS summit in 2015 in Russia assesses the BRICS as a civilizational union of a new generation, reveals the historical trend of shifting the center of civilizational progress to the East (the law of the historical pendulum), researches into the place of BRICS in a geocivilizational space of the 21st century. It is carried out a comparative analysis and forecast of the BRICS dynamics and the "Group of 7", upward and downward dozens of leading powers by eight components of the genotype of civilization. It gives the forecast of the BRICS dynamics for the period up to 2050 on the basis of global models. It substantiates the strategic development priorities and partnership of the BRICS, increase of its role in the establishing integral world civilization.

The report also demonstrates a new approach to understanding of geocivilizational transformations of the 21st century and will be definitely of interest to public officials and political figures, scientists and educators, leaders of a new generation who are to implement these transformations.

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Foreword

Since the end of the 20th century the world of civilizations came to motion, in a rapid stream of radical changes and transformations picking up speed. The beginning of this stream was initiated in the 1990s by the breakup of the Soviet Union (the Eurasian civilization), Comecon and the world socialist system, but then it swept the entire planet. The foundations of the world order seemed unshakable are collapsing, it bursts out the hotbeds of local wars and revolutions, waves of crises go one after another.

This stream of drastic, unexpected changes has turned out to be unknown and frightening, not only for the governmental and business elite, but also for most scientists. Hence — the belated and inadequate response to crises and changes, confusion and belief that the crisis could not be overcome.

However, this approach is wrong. Crisis periods in the history of civilizations in changing of the long-term and super long-term cycles repeatedly occurred in the past and will happen in the future. They are inevitable, expected and predictable, and reasonable humanity can respond to them adequately. This is the point and progressive power of science.

The occurring changes and their outcome have long been predicted by the great Russian scientists of the 20th century — V.I. Vernadsky and N.N. Moiseev, P.A. Sorokin and N.D. Kondratieff, K.E. Tsiolkovsky and A.L. Tchizhevsky, their foreign like-minded associates — Joseph Schumpeter and Fernand Braudel, Arnold Toynbee and Alvin Toffler. Their legacy is being developed by modern Russian schools of thought — noospheric and Russian cyclicism, civilization and innovation, integral macro-forecasting and global modeling.

This line is actively pursued by the Lomonosov Moscow State University which is rich in fundamental knowledge and scientific traditions and the recently established on its basis — the Institute of Complex Systems Mathematical Research that has published a number of monographs on global modeling and forecasting.

The Pitirim Sorokin — Nikolai Kondratieff International Institute that has published a series of fundamental monographs and long-term forecasts on the issues of theory, history and the future of civilization, the strategy for overcoming the current civilizational crisis, has large backlogs.

The Institute of Latin America of the Russian Academy of Sciences has published a series of works on the dynamics of the Latin American civilization and its place in a geocivilizational space. Several monographs on BRICS have been published by the National Committee for BRICS Studies (Russia).

This scientific report is a logical continuation and development of the said researches and forecasts. It is caused by the need to put before the leaders of the BRICS countries who will meet at the next summit in July 2015 in Russia, a new scientific diagnosis of civilizational transformations occurring in the world, a far-sighted vision of the rise of the BRICS and strategic priorities for the functioning and development of the BRICS, its establishment as a leading global institution that expresses partnership of leading powers of five civilizations in surmounting the global crisis and establishing an integral, humanistically noospheric society.

The report is based on the works published in 2014: monograph of V.A. Sadovnichiy, A.A. Akayev, A.V. Korotaev and S. Yu. Malkov “Complex Modeling and Forecasting of the BRICS Countries Development in the Context of the World Dynamics”¹; Report of Yu.V. Yakovets “New Global Divide and Prospects for BRICS”²; monograph of the Institute of Latin America RAS “BRICS — Latin America: Positioning and Interaction” (under the editorship of V.M. Davydov)³ and monograph of B.A. Heifitz “Russia and BRICS. New Opportunities for Mutual Investments.”⁴

At the same time, the report includes a number of new points that move forward this field of science: the methodology for integral global forecasting and modeling as a new area of interdisciplinary fundamental researches; the law of historical pendulum motion (shift of the center of civilizational progress to the East) and related laws; a comparative analysis and forecast of the two poles of the modern geocivilizational space - rising led by the BRICS and declining led by the “G7”. Model and matrices of comparative civilizational analysis and forecasting will get further development.

A specific feature and the value of the report is that it is not limited to fundamental and exploratory research, and getting new knowledge. It goes further, opening the ways to apply this knowledge on a global scale, grounding long-term strategies and

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¹ V.A. Sadovnichiy, A.A. Akayev, A.V. Korotaev, S.Yu. Malkov. Complex Modeling and Forecasting of the BRICS Countries Development in the Context of World Dynamics. M : Publishing House “Nauka”, 2014.

² Yu.V. Yakovets. New Global Divide and Prospects for BRICS // Partnership of Civilizations. 2014 No. 1-2.

³ BRICS — Latin America: Positioning and Interaction / Editor in Chief V.M. Davydov, M.: ILA RAS, 2014, 186 p.

⁴ B.A. Heifitz. Russia and BRICS. New Opportunities for Mutual Investments. M.: Publishing and Trading Corporation “Dashkov and Co.”, 2014. 224 p/

priorities for BRICS partnership, its interaction with the Eurasian Economic Union (EEU), the Shanghai Cooperation Organization (SCO), with the UN and other international institutions.

This report is yet another clear proof of the enormous scientific potential of the Russian science and its leading role in a number of major areas of scientific revolution of the 21st century.

V.A. Sadovnichiy, Academician of the
Russian Academy of Sciences, Rector
of the Lomonosov Moscow State
University.

1. Objectives and Newness of the Report

1.1. ORIGINATORS AND AUTHORS OF THE REPORT

• The report is prepared on its own initiative in accordance with the recommendations of the 8th Civilizations Forum “New Global Divide and Prospects for BRICS” (Moscow, 19.06.2014) in preparations for the 7th BRICS Summit (Ufa, July 2015).

The report is made by a collective body of scientists:

- Lomonosov Moscow State University;
- SKII;
- NCS BRICS;
- ILA RAS;
- IFES RAS;
- INES; and
- featuring scientists from other organizations.

1.2. OBJECTIVES OF THE REPORT

• assessment of the features and development prospects for the BRICS as a cross-civilizational union of a new generation;

• identification of cyclical genetic regularities and historical trends underlying the present-day civilizational crisis, a shift of the center of creative activity to the East and the rise of BRICS;

• Assessment of trends and prospects of the ongoing global shifts in the dynamics of BRICS and G7, upward and downward dozen of leading powers using the geocivilizational reproductive-cyclical macro-model and civilizational matrix;

• Long-term forecast of the BRICS dynamics in the context of the world dynamics using global models and strategic matrix;

• Validation of strategic development priorities and partnership of BRICS countries and their interaction in international organizations.

1.3. THE NEWNESS OF THE RESEARCH PERFORMED

• It is given substantiation of a new geocivilizational divide by the historical fault lines between rising civilizations and leading powers led by BRICS, which are in the forefront of establishing integral civilization, and declining civilizations and leading powers (led by the G7), which are a stronghold of the outgoing industrial civilization.

• It is disclosed the contents and features of the BRICS as a geocivilizational union of a new generation, based on the principles of dialogue and partnership of civilizations and is the coordinating center for the establishing new civilization.

- It is identified the laws of historical pendulum motion, a large cycle of capital accumulation, polarization and socio-political partnership in crisis situations that have caused a shift of the geocivilizational center from the West to the East and a reversal of trends of civilizational dynamics.

- It is carried out a situation analysis (by 8 factors — components of the genotype of civilizations) the dynamics of BRICS and G7, upward and downward dozen of the leading powers.

- On the basis of global models it is carried out a long-term forecast of the BRICS countries development against the background of global transformations.

- It is validated the system of long-term strategic development priorities and partnership of the BRICS countries, involving all parts of the genotype of civilizations.

1.4. THE STRUCTURE OF THE REPORT

- Foreword.
- Chapter 1. BRICS AS a Geocivilizational Union of a New Type.
- Chapter 2. Regularities and Trends of Global Development and the Rise of BRICS.
- Chapter 3. Analysis of Trends of the Rise of BRICS in a Geocivilizational Space.
- Chapter 4. Prospects for Development of the BRICS Countries in the Context of World Dynamics.
- Chapter 5. Strategic Priorities for Partnership of the BRICS Countries.
- Afterword: Major Findings and Scientific Recommendations

2. The BRICS As a Geocivilizational Union of a New Generation

2.1. BRICS EMERGED IN THE CONDITIONS OF HISTORICAL FAULT LINE

- decline of the industrial civilization and establishing integral civilization;
- change of generations of local civilizations, shifting the center of creative activity and global leadership from the West to the East;
- a deep protracted civilizational crisis transforming all the components of the genotype of civilization;
- formation of a new global divide, epochal confrontation between rising and declining civilizations and their leading powers headed by the BRICS and the G7.

2.2. BRICS AS A GEOCIVILIZATIONAL UNION OF A NEW GENERATION

- the union of the leading powers of five rising civilizations: Chinese, Indian, Eurasian, Latin American, and African;
- is not a military-political bloc or regional economic union but a planetary union focused on the dialogue and partnership of civilizations in response to the challenges of the new century;
- based on the principles of equality and cooperation of major powers and civilizations;
- becomes the center of consolidation of states and regional unions of the rising civilizations (SCO, EEU, CELAC, etc.).



2.3. AREAS OF INTERACTION AND CONFRONTATION BETWEEN BRICS AND G7

- The UN and its organizations;
- G20 as a Global Geo-Political Union of All Local Civilizations;
- international economic organizations (WTO, IMF, World Bank, etc.);
- regional unions (OSCE, APEC, etc.).

3. Regularities and Trends of Global Development and the Shift to the East

3.1. REGULARITIES OF GLOBAL DEVELOPMENT

At the heart of the present-day historical fault line and dynamics of civilizations lie historical regularities disclosed by Pitirim Sorokin and Nikolai Kondratieff, Vladimir Vernadsky and Nikita Moiseev, Arnold Toynbee and Fernand Braudel and expounded by modern Russian schools of thought — Russian cyclicism, civilizational, noospheric, innovative, integral macro-forecasting.

3.2. THE LAW OF HISTORICAL PENDULUM MOTION

Civilizations originated in North Africa and the Middle East. Then, the center moved to the East — to India and China. In the ancient times the center was in the Mediterranean, in the Middle Ages — in the East, in China and India. From the 16th century it prevailed a trend of the rise of the West that has reached the global domination. In the 21st century it is observed a shift of the center of creative activity of civilizations to the East, and Asia. China and India become the leaders of this shift.

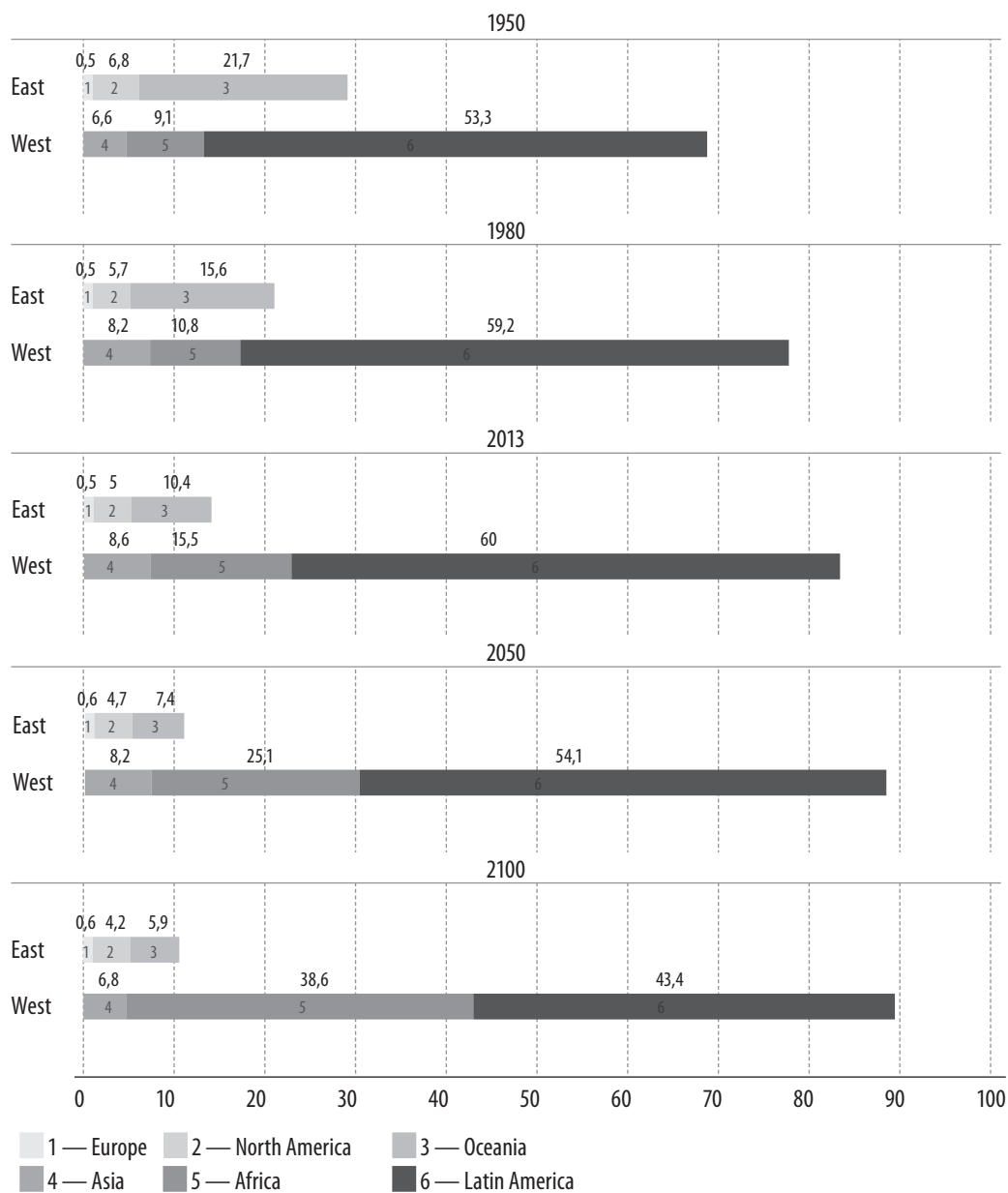
3.3. A CHANGE OF LONG-TERM AND SUPER LONG-TERM CYCLES

The shift to the East is evidenced by the operation of regularities:

- a change of a half a century Kondratieff and centenary civilizational cycles, the decline of industrial and emergence of the integral world civilization, the transition from the fourth generation of local civilizations under the dominance of the West to the fifth generation under the leadership of the East;
 - transition from American to Asian large cycle of accumulation of capital;
 - polarization and socio-political partnership of civilizations, states, social strata and generations in acute crisis situations.

3.4. A SHIFT TO THE EAST

Figure 3.4.1. A share of West and East in world population, %



Source: The 2012 Revision of the World Population Prospects. NY.: UN, 2013. Table 1.1.

3.5. EVOLUTION OF THE WORLD SYSTEM: THE DECLINE OF THE WEST AND THE RISE OF THE EAST

3.5.1. The General Trend of World Development

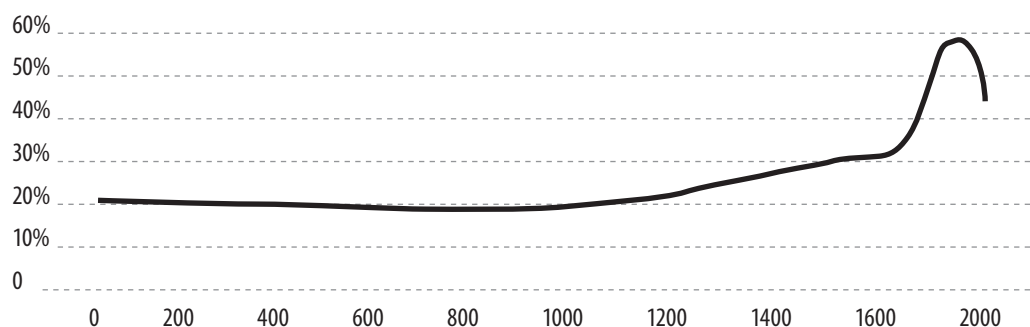
At the end of the 20th — beginning of the 21st century Internet, modern means of transport and communication, international trade and economic integration made the world *uniform*. Globalization has taken place. In addition, in recent decades it has begun the reverse of trends formed in the industrial era: the developed countries of the West are beginning to lose quite quickly the leadership won over recent centuries. The era of great divergence is being replaced by the era of great convergence.

3.5.2. Long-term Trends of Divergence/Convergence by GDP

According to A. Maddison, the share of the West in the world GDP quite noticeably increased over the years 1000–1800, however the explosive growth of this share began after 1800. By the end of the 19th century the share of the West in the world GDP exceeded 50%, and in the 1950s–1960s was more than 60%. From the end of the 1960s this share began to decrease more and more rapidly (see Fig. 3.5.1).

If the total GDP of “non-Western” countries for 1968–2012 increased seven times, then the GDP of the countries of the West — only three.

If after 2000 the total GDP of the countries of the West grew by 20% only, then the GDP of the rest of the world has doubled. At an average annual rate of economic growth in this period the non-West overtook the West 5 times.



To ensure the compatibility of data for the period after 2008 the World Bank data on GDP have been restated in accordance with the Maddison factors of translation of nominal dollars into US dollars at purchasing power parities.

Sources: Up to 2008 (inclusive) — Maddison A. World Population, GDP and Per Capita GDP, AD 1-2008. URL: www.ggdc.net/maddison, 2010; after 2008 — World Bank 2014: NY.GDP.MKTP.PP.KD.

3.5.3. Divergence/Convergence as Manifestation of the Global Phase Transition

In recent decades humanity entered the next stage of the global phase transition that began in the 19th century from the Great Divergence when in the Western Europe it was launched a powerful process of economic modernization, which in the 20th century already involved the whole world. The West took the lead, promoted intensive economic growth. Following the West a larger part of the rest of the world went on the rails of modernization.

3.6. A REVERSAL OF THE ECONOMIC DYNAMICS: THE RISE OF THE SOUTH

3.6.1. A comparative analysis and forecast of trends in the economic dynamics of the leading countries of the North and the South, for the period of 1820–2030 showed that the trend of the falling share of the South in the world GDP from 70% in 1820 to 40% in 1973 replaced in the last quarter of the 20th century by the trend of continuous growth — up to 52% in 2010 and 67% in 2030, whereas in the dynamics of the North it was observed mirror reverse dynamics: growth from 30% in 1820 to 60% in 1973 and a fall to 48% in 2010 and 33%, by the forecast for 2030 the former domination of the North is replaced by the rise of the South.

3.6.2. At the forefront of this reverse of trends are China and India: China's share fell from 33% in 1820 to 5% in 1973, rose to 21% in 2010 and 33% in 2030; India's share fell from 16% in 1820 to 3% in 1973, rose to 8% in 2010 and 19% according to the projection for 2030. These countries become the engines of the world economic dynamics.

3.6.3. At the opposite pole Europe was the economic leader of the industrial epoch — the share of the current EU in the world GDP rose from 23% in 1820 to 36% in 1913, but then decreased to 18% in 2011 and will be even less — 13% in 2030 (the decline of Europe). In the 20th century the leadership was tackled by the US which developed rapidly: its share rose from 2% in 1820 to 28% in 1950, but then fell to 18% in 2010 and in the long view it will drop to 15% by 2030.

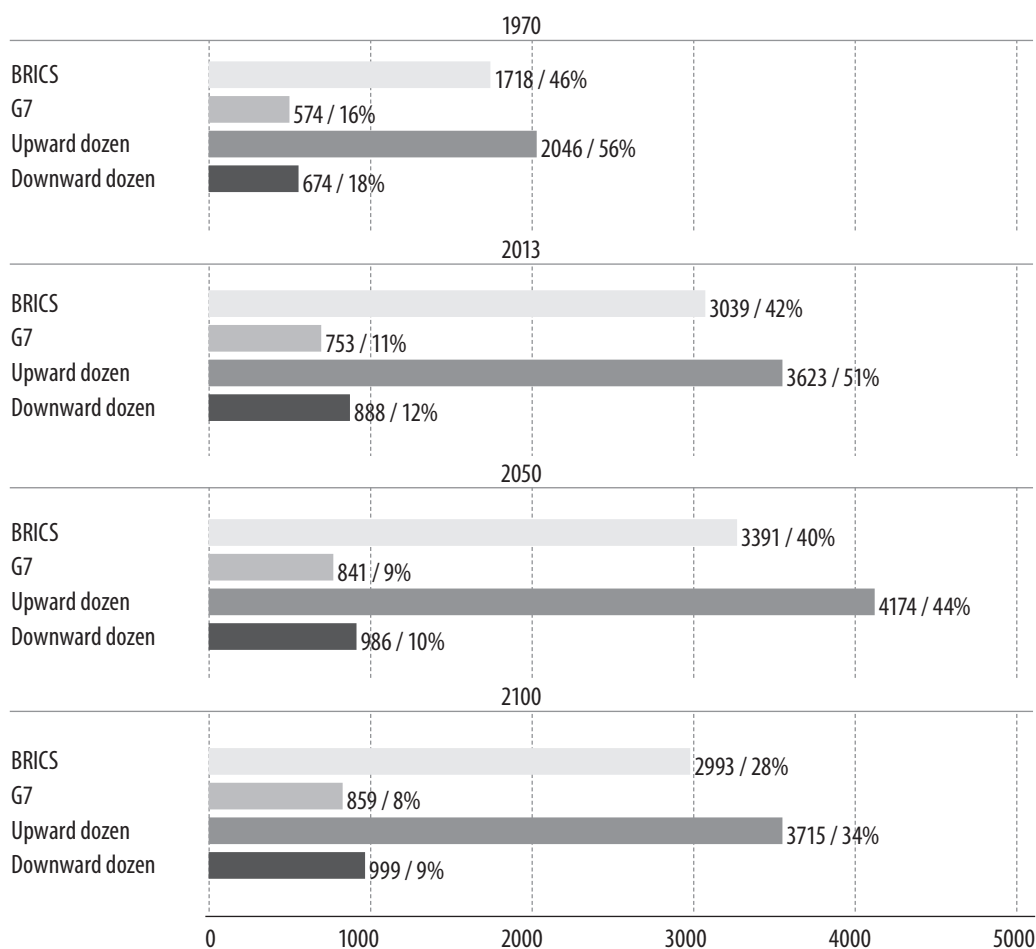
3.6.4. Our research has showed that in the period from 1820 to 2030 the GDP dynamics chart may be designated by the Latin letter U in the countries of the South, especially in China and India, with the top points in 1820 and 2030 and the lowest point in 1950. The rise of the South will be provided mainly through the BRICS countries, and first of all India and China. However, for that end it will be required to develop a coordinated strategy for the faster growth based on an innovative breakthrough and partnership in the assimilation and diffusion of the technologies of the sixth technological order (TO 6) to improve competitiveness.

4. Trend Analysis of the Rise of the BRICS

4.1. A COMPARATIVE ANALYSIS OF TRENDS IN THE BRICS DYNAMICS AND G7, UPWARD AND DOWNWARD DOZENS

Using a geocivilizational reproductive-cyclical macromodel and multifactor geocivilizational matrix it was performed a comparative analysis of trends of the dynamics of the BRICS and G7 countries, upward and downward dozens of leading powers. The analysis has shown the advantages of the BRICS in the potential of development. A global shift in favor of the BRICS and upward dozen at the beginning of the 21st century has become a fact.

Figure 4.2.1. Population Dynamics, mln. people / % of the world



Source: World Population Prospects. Revision 2012. NY.: UN, 2013. Table A9.

4.2. A FACTOR-BASED COMPARATIVE ANALYSIS OF CIVILIZATIONAL DYNAMICS

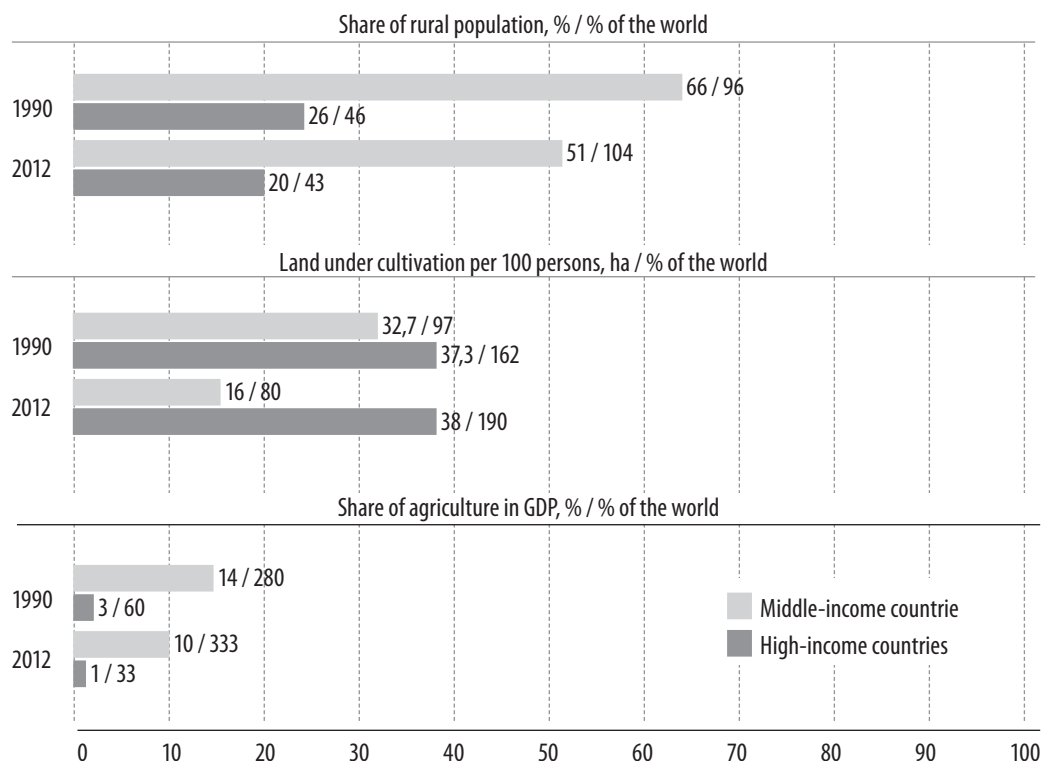
4.2.1. Dynamics of the Population size

The BRICS and the upward dozen have a distinct advantage over G7 and the downward dozen by labor potential — population size and labor resources (see. Fig. 4.2.1).

4.2.2. The Agri-Food Potential

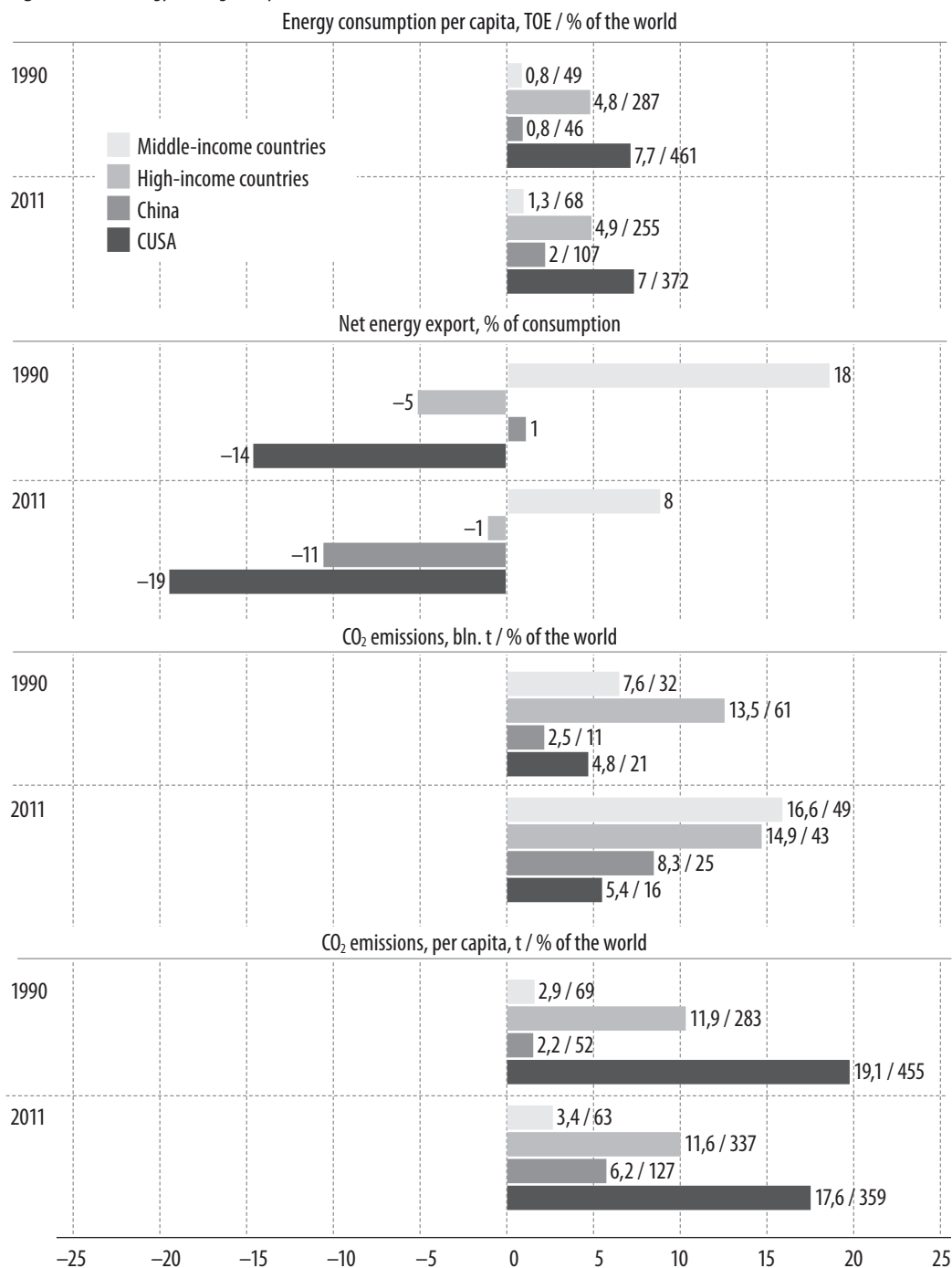
In the BRICS countries it is significantly higher a share of the rural population (especially in India and China) and the area of cultivated land (especially in Russia). However, it is observed a considerable lagging by the use of tractors and fertilizers and labor productivity from G7. It is rapidly declining a share of agriculture in GDP. It is necessary to join the efforts to assimilate a new “green revolution” and provide the population with quality food (see. Fig. 4.2.2).

Figure 4.2.2. Comparison of agri-food area



Source: World Development Indicators 2014. Washington: The World Bank, 2014. 2009 World Development Indicators. Washington: The World Bank, 2009. Tables 3.1, 3.3, 4.2.

Figure 4.2.3. Energy-ecological dynamics



Source: World Development Indicators 2014. Washington: The World Bank, 2014.

4.2.3. Energy-Ecological Potential

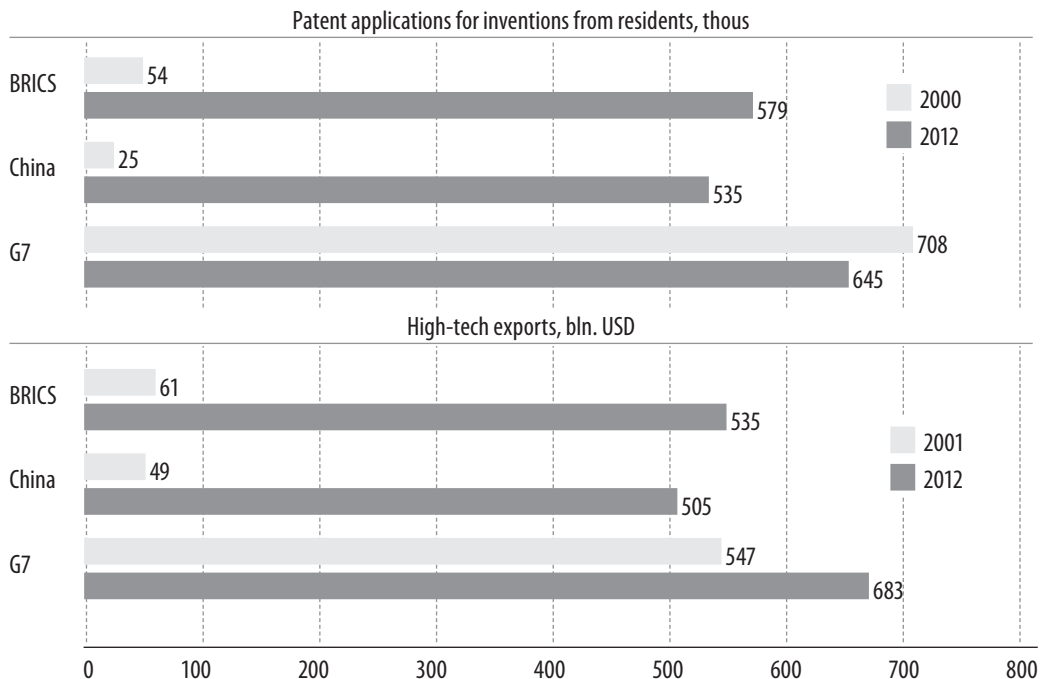
The BRICS countries and the upward dozen have advantages in energy security, appropriate a significant amount of the world's natural resource rent (the BRICS countries — 7.2% of GDP against 2.1% for the G7). Rapid economic growth in China and India have demanded a sharp increase in consumption and imports of energy, and have led to repeated increase in CO₂ emissions: China — 3.4 times (it became the largest polluter of the planet's atmosphere), while in India — 2.9 times. Uniting the efforts for energy supply and reducing greenhouse gas emissions becomes a priority for the BRICS countries (see. Fig. 4.2.3).

4.2.4. Level of Technological Development

By the level of technological development and labor productivity the BRICS countries, in the economy of which it is dominated the fourth technological order (TO4), are far behind the G7, where TO5 prevails.

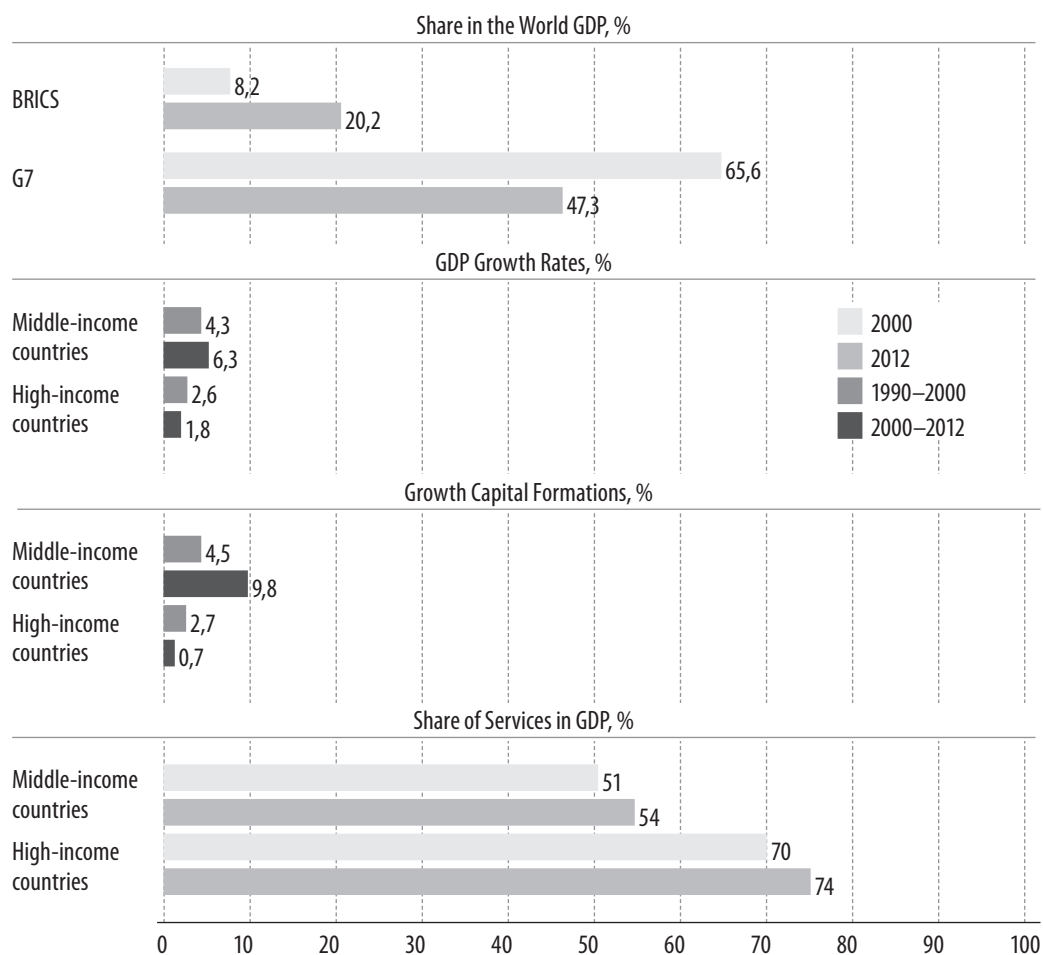
However, at the beginning of the 21st century China has become the world leader in patent applications for inventions and high-tech exports, implementing the strategy of the innovative breakthrough.

Figure 4.2.4. Dynamics of patent applications from residents and high-tech exports.



Sources: World Development Indicators 2003. Washington: The World Bank, 2003. Table 5.12; World Development Indicators 2014. Washington: The World Bank, 2014. Table 5.13.

Figure 4.2.5. A comparison of macroeconomic dynamics



Source: World Development Indicators 2014. Washington: The World Bank, 2014. Tables 4.1, 4.2, 4.10.

At the same time in Russia, India, South Africa it is observed degradation of scientific and technological potential.

In the G7 countries, it is prevailed the trend of stagnation of technological development and a fall of inventive activity (see. Fig. 4.2.4).

4.2.5. A Comparison of Economic Potentials

In terms of GDP the BRICS is still second to G7, but its share in the world GDP grew rapidly — from 8.2% in 2000 to 20.2% in 2012, while the share of G7 decreased from 62.4 to 45.7%. The gap between the middle-income countries (where the leading place

belongs to BRICS) and high income (where the G7 countries prevail) by the growth rate GDP increased from 1.6 times in 1990–2000 to 3.5 times in 2000 and 2012, and by investments in fixed capital — from 1.7 to 14 times. This evidences that the middle-income countries are already on the up wave of the sixth Kondratieff cycle, while the G7 — on the down wave of the fifth cycle (see. Fig. 4.2.5).

4.2.6. Involvement in Globalization

The BRICS countries and the upward dozen were actively involved in the processes of globalization, exports grew at priority rates. However, the crisis of 2008–2009 led to the rollback of globalization and the trend of declining in the share of exports in GDP. The crisis of 2014 will strengthen this trend (see. Fig. 4.2.6).

Figure 4.2.6. Dynamics of participation in globalization

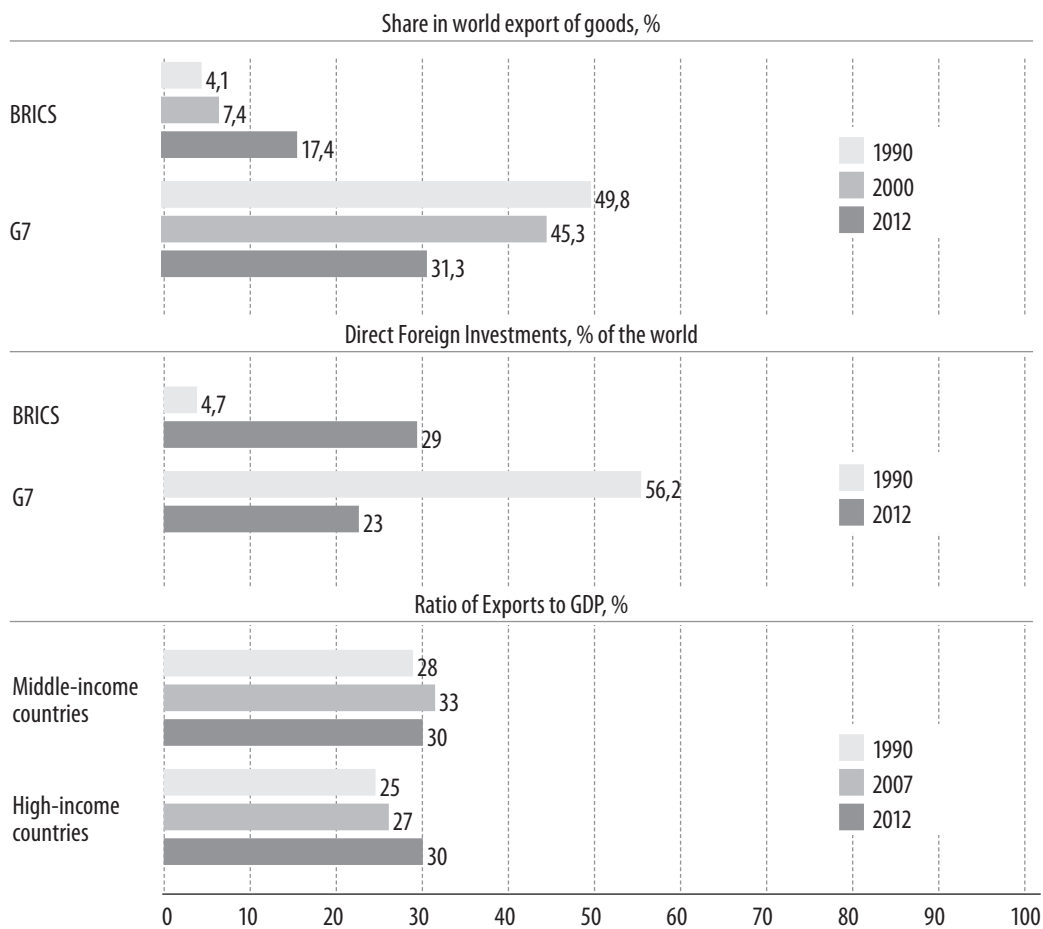
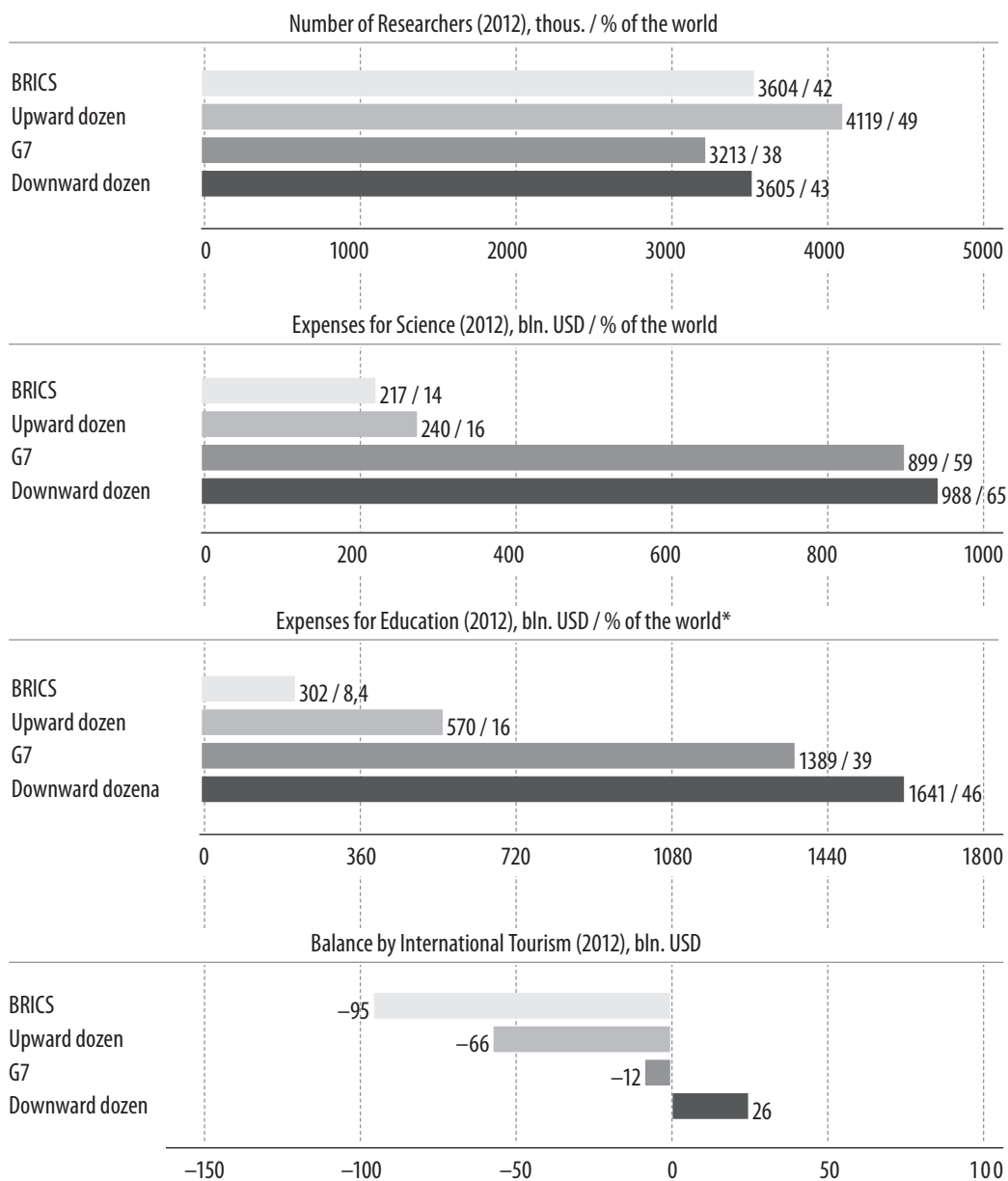


Figure 4.2.7. Comparison of scientific, educational and tourist potentials



* BRICS and upward dozen — China excluded.

Source: World Development Indicators 2014. Washington: The World Bank, 2014. Tables 2.10, 5.12, 5.13, 6.14

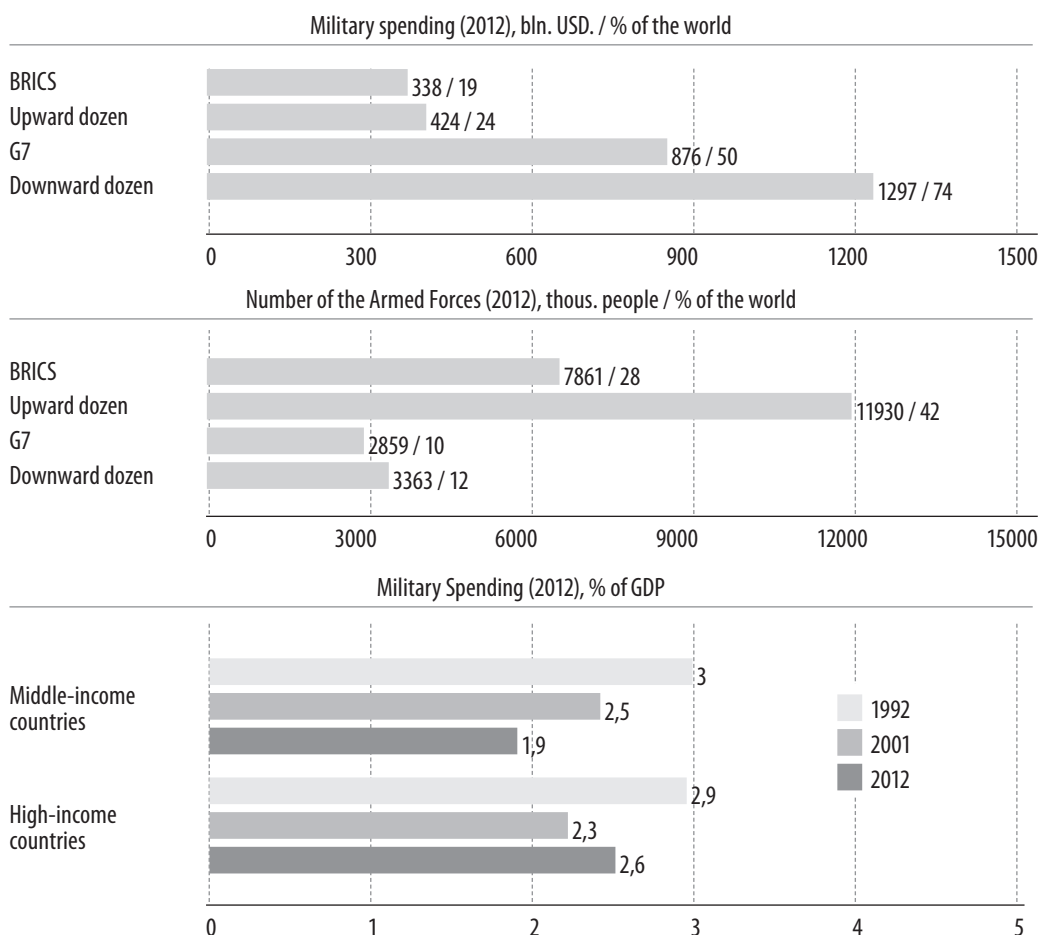
4.2.7. A Comparison of Scientific-Educational and Tourist Potentials

In the context of the evolving STR 21, scientific and educational revolutions of the 21st century the effective use of scientific, educational and tourist potentials assumes key significance. In this area it is observed the most significant lagging of the BRICS and the upward dozen not only from the G7 and the downward dozen, but also from the world average level, despite the progress made at the beginning of the 21st century in China (see. Fig. 4.2.7).

The share of the BRICS and the upward dozen in the number of researchers in 2012 is 42 and 49%, but in expenses for science —14 and 16%.

The share of spending on education of the BRICS (excluding China), in 2012 - 8.4%, upward dozen — 16%, while in the G7 — 39% and the downward dozen — 46%. The

Figure 4.2.8. Dynamics of military spending and the number of the armed forces



negative balance on the international tourism by the BRICS was, in 2012, 95 bln. USD (In China — 55 bln.), the upward dozen — 66 bln., but by G7 — 12 bln. In general, by the downward dozen the positive balance — 26 bln. USD.

The issues of catching up in science, education and tourism must take the central place in the BRICS partnership.

4.2.8. A Comparison of Geopolitical Potentials

At the beginning of the 1990s there was a radical realigning of the geopolitical architecture in connection with the disintegration of the Soviet Union and the Warsaw Pact and the claims of the US for global dominance in the unipolar world order. In 2014, a new geopolitical crisis broke which has led to the revival of the Cold War. This is related to attempts of the USA, West and NATO to fix its dominance, undermining the position of Russia, China and the BRICS. It is broken out a new arms race and local armed conflicts.

A comparison of the geopolitical potentials the BRICS and the G7, upward and downward dozens is made on the basis of data on the dynamics of military spending and number of armed forces published by the World Bank (see. *Fig. 4.2.8*)

5. Prospects for Development of the BRICS Countries in the Context of the Global Dynamics

5.1. METHODOLOGY FOR GLOBAL MODELING AND FORECASTING

5.1.1. The Formation of a New Area of Knowledge

Accelerated processes of globalization, transforming all the components of the genotype of civilization, and the formation of the global technological, economic and information space, developing according to its own regularities, have filled with specific meaning a new stage of development of the global civilization and demanded the creation of a new methodology for modeling and forecasting of global processes.

5.1.2. Its features

- research subject — the global processes in all its diversity and interaction of continents, civilizations, the leading powers that make up the genotype of global, world and local civilizations;
- Research tool — system of models that reflect the nature and processes of dynamics of global processes and factors determining them;

- integral macro-forecasting methodology synthesizing a theory of foresight and the doctrine of cycles, crises and innovations of Nikolai Kondratieff, Simon Kuznets, Joseph Schumpeter, the doctrine of the noosphere of Vladimir Vernadsky and Nikita Moiseev, civilizational approach of Pitirim Sorokin, Arnold Toynbee and Fernand Braudel, the balance method of global forecasting of Wassily Leontief.

5.1.3. The Leaders in the Formation of a New Area are the Russian scientific schools

- School of global modeling and forecasting (*V.A. Sadovnichiy, A.A. Akayev, V.N. Sokolov*);
- School of integral macro-forecasting model and civilizational modeling (*Yu.V. Yakovets, B.N. Kuzyk, A.I. Ageev*);
- School of innovation-technological forecasting and strategic planning (*S.Yu. Glaziev*);
- School of social and socio-demographic forecasting and modeling (*I.V. Bestuzhev-Lada, N.M. Rimashevskaya*).

Russian scientists published a series of monographs, and prepared and submitted to the UN the Global Forecast “Future of Civilizations” for 2050.

5.1.4. In the preparation of the scientific report “Prospects and Strategic Priorities for the Rise of the BRICS: the methodology for global modeling and forecasting has been further developed and specified towards identification and comparing trends and periods of cyclical dynamics of the East and the West, the North and the South, the BRICS and the “Group of 7”, rising and declining civilizations and the leading countries. This has allowed shedding a new light on the drastic shifts developing since the end of the 20th century and especially in the beginning of the 21st century, in the geo-civilizational space, moving the center of creative activity and historical progress from the West and the North to the East and South.

There are formulated a number of new approaches — in particular, it is identified a cluster of trappers in the socio-political development of countries and civilizations, determined the ways and prospects for their surmounting.

5.2. A LONG-TERM FORECAST FOR DEVELOPMENT OF THE BRICS

5.2.1. Based on the proposed methodology for the global modeling and forecasting is made a long-term (for 2050) forecast of demographic and economic development of the BRICS countries. These countries have common features in the endowment of labor and natural resources, trends in economic dynamics in the system of civilizational values, but at the same time they are significantly different by level of technological and economic development, energy security, and integral power.

5.2.2. In Brazil, until 2030 it will continue to persist the trend of population growth, but then under the inertia-based scenario, the country will enter a period of depopulation, the population size declines from 235 mln. in 2038 to 150 mln. in 2100. With the active policies to support the fertility the population size will increase to 260 mln. people by 2060, and then it will stabilize at this level (see Fig. 5.2.1).

The forecast of economic dynamics shows that under the inertia-based scenario the economic growth rate will slow (this trend is noticeable already in 2014), while under the innovation-based scenario Brazil's GDP will increase from 2.25 trillion USD in 2012 to 5.4 trillion USD in 2050 and join the ranks of developed countries (see Fig. 5.2.2).

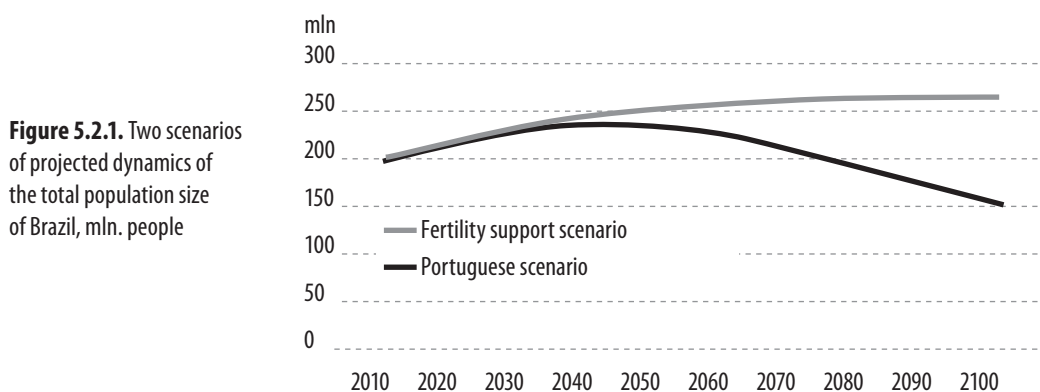
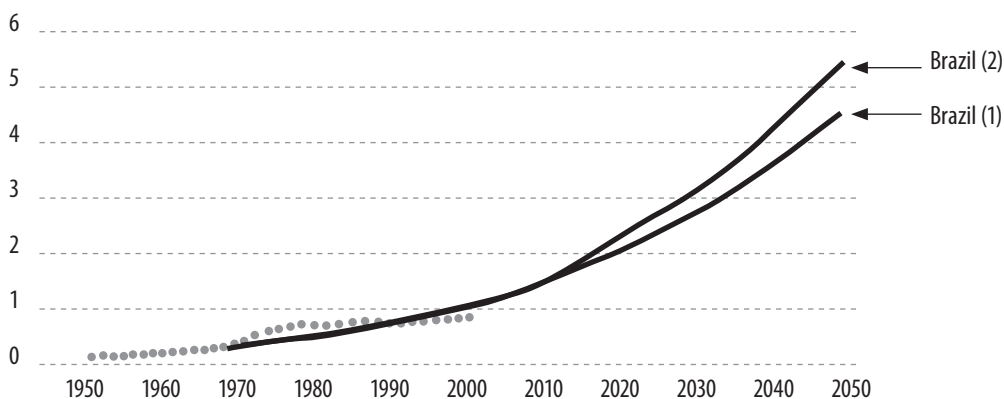


Figure 5.2.1. Two scenarios of projected dynamics of the total population size of Brazil, mln. people

Figure 5.2.2. GDP Dynamics in Brazil (trln. USD) for inertia-based (1) and innovation-based(2) development scenarios



Source: A.A. Akayev, I.Ye. Anufriev. The Vanguard Countries of the World in the 21st Century in the Conditions of the Convergence Development: Long-Term Forecasting of Economic Growth, M.: Knizhny Dom "Librocom", 2013.

Figure 5.2.3 Projected scenarios of demographic future of Russia, RF population, mln. People, 2014-2100

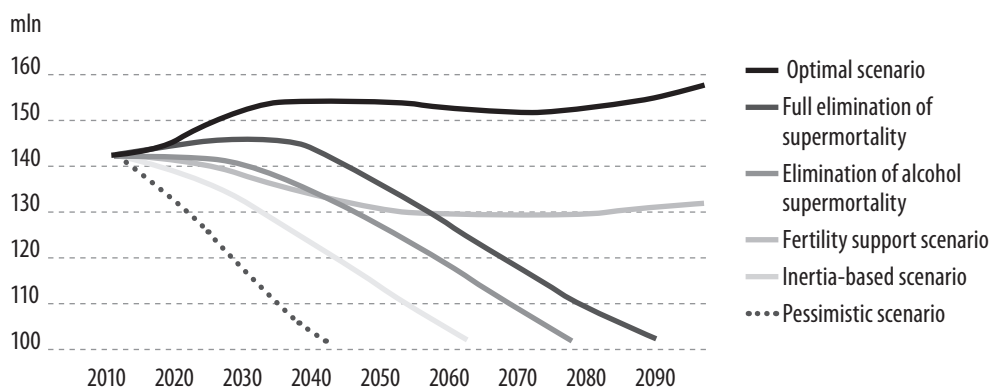
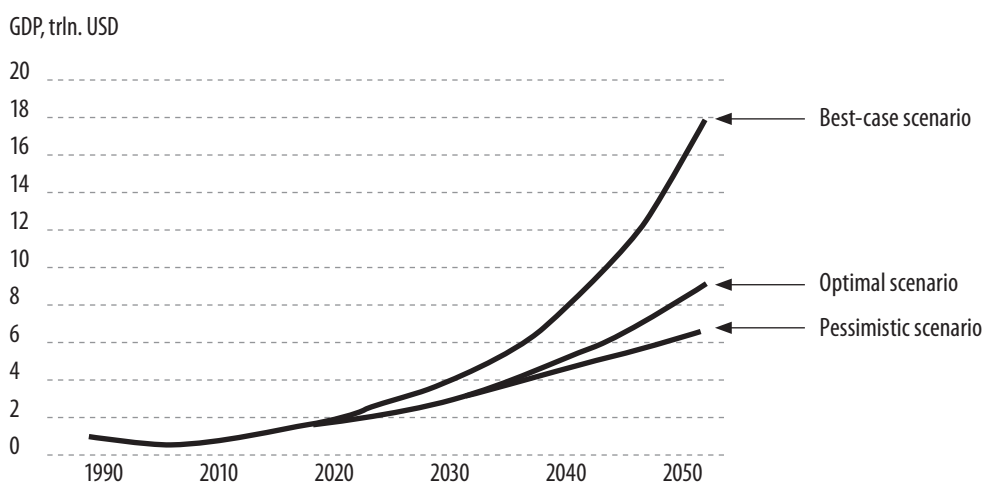


Figure 5.2.4. A GDP dynamics forecast for various scenarios of economic development of Russia in 2010–2050



Note: The best scenario is a combination of the optimal demography and innovative economy; optimal scenario is a combination of inertia — based demography and innovation economy; pessimistic scenario is a combination of inertia — based demography and inertia — based economy; the worst — case scenario is a combination of deteriorating demography and inertia — based economy.

5.2.3. In Russia, under the inertia-based scenario after a little holdback depopulation will resume again because in the childbearing age will enter the cohort of the failed 1990s; by 2050, the population size will decline to 112 mln. people and in the second half of the 21st century it will continue to decrease. The number of the working population will decrease at a faster rate. As a result of the active socio-demographic policy under the complete elimination of supermortality and fertility support the depopulation process will be managed to significantly slow down, and under the optimal scenario, even provide population growth (see Fig. 5.2.3).

Under any scenario, the demographic factor will remain a restraint to economic growth (see Fig. 5.2.4).

Under the best-case scenario (optimal combination of demography and innovative economy) Russia will be able to accelerate the pace of economic growth and enter the world's leading economies. However, it is more realistic scenario of moderate growth rate and a slight increase in the share of the world GDP.

5.2.4. In India, until the middle of the 21st century it will continue to persist high growth rates of the population, and it will go top in the world in terms of its size. But in the second half of the century, according to the middle forecast scenario, India will enter a period of depopulation (see Fig. 5.2.5).

Figure 5.2.5. Scenarios of projected dynamics of total population size in India

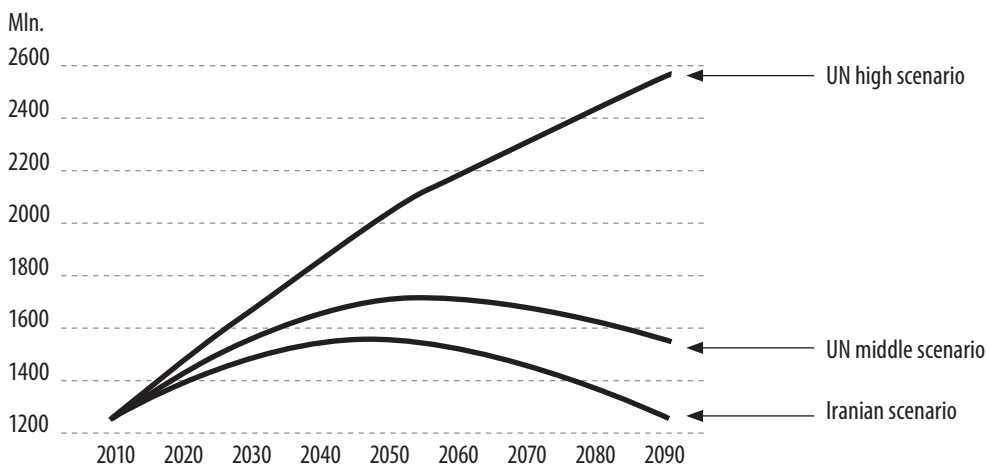
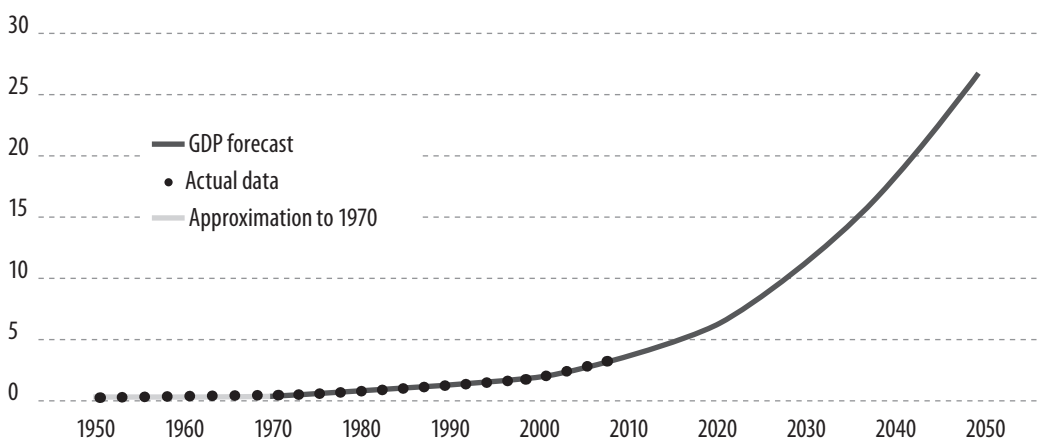


Figure 5.2.6. GDP dynamics in India, trln. USD



It will be required to change the demographic policy to slow down this process. Under the optimal scenario in India it will continue persisting high rates of economic growth.

However, a poor endowment of development with natural resources, low level of development of science and education and low living standards under falling population growth and its working-age part will be serious restraints to economic growth in India (see Fig. 5.2.6).

5.2.5. In China, as a result of one child family policy the population size by 2027 will reach 1.412 billion people, and then begin to decline to 1.3 billion in 2050 and 830-840 million in 2100 (see Fig. 5.2.7).

Figure 5.2.7. Two scenarios of projected dynamics of total population size in PRC

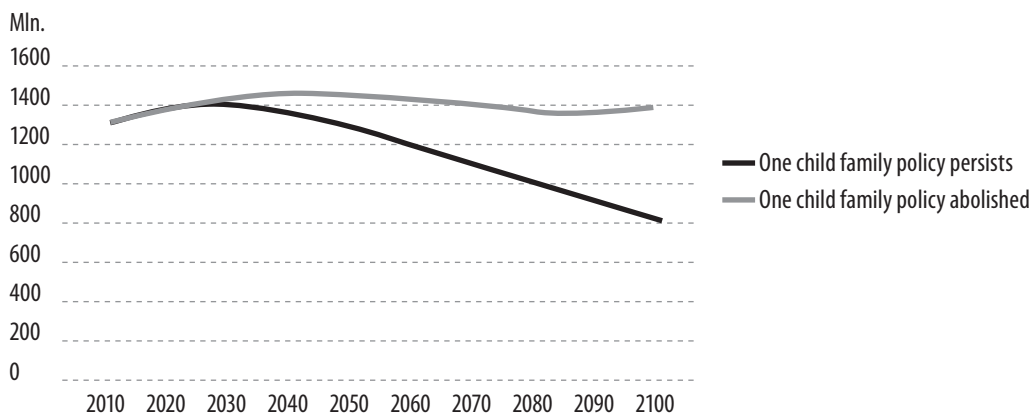


Figure 5.2.8 Dynamics of GDP in China, trln. USD

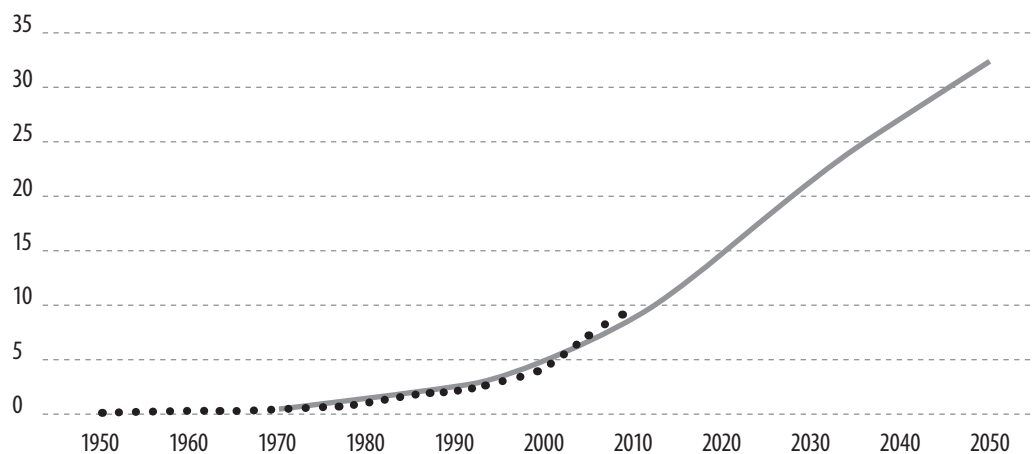


Figure 5.2.9. Dynamics of population size in the RSA, mln. people

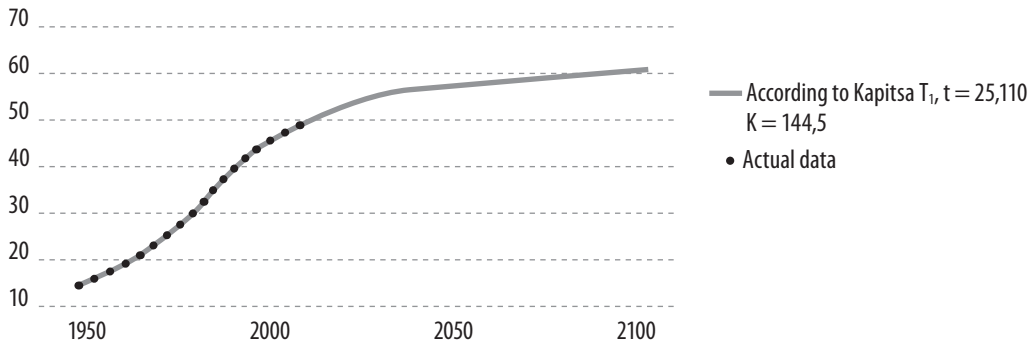
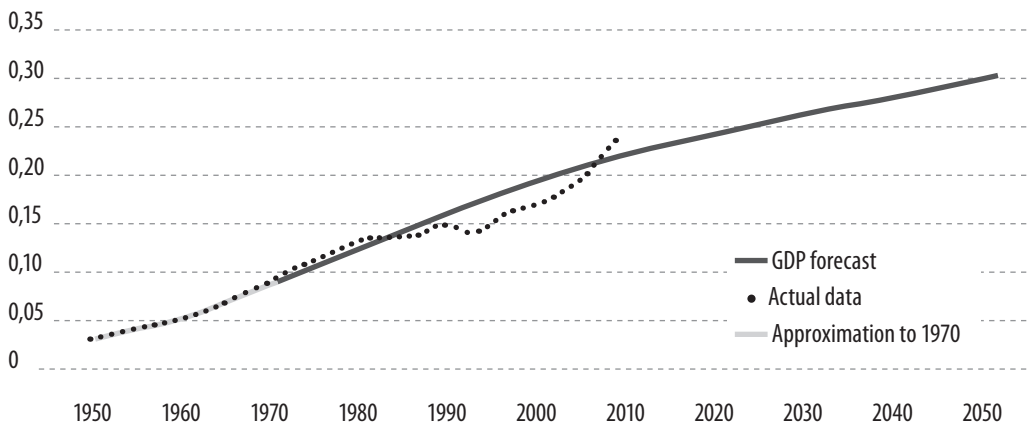


Figure 5.2.10 Dynamics of GDP in RSA, trln. USD



This may be prevented by the transition to the two children family policy but depopulation and aging of the population will still continue to persist, albeit at a slower pace. The decline in the working age population will be especially significant. This will be a significant restraint to economic growth.

Together with environmental restrictions it will lead to lower economic growth rates after indicators growth at the end of the 20th — beginning of the 21st century. The line towards the implementation of an innovation-based breakthrough and accelerating the productivity growth rates taken by China at the beginning of the century will counteract this trend. In this case, China will soon go top in the world by GDP and by 2050 it will strengthen its leadership (see Fig. 5.2.8).

5.2.6. The Republic of South Africa in the long term the trend will retain the trend to increasing the population size and economic growth, but the population size and GDP will take more modest place in comparison with other BRICS countries (see Fig. 5.2.9 and Fig. 5.2.10).

5.3. PROSPECTS FOR DEVELOPMENT OF THE BRICS COUNTRIES AGAINST THE WORLD DYNAMICS

5.3.1. Distinctive features of economic growth in the vanguard countries in the Prospects for the mid-21st century:

- economic dynamics has become increasingly dependent on the growth rate of labor productivity on the basis of large-scale introduction of clusters of basic innovative technologies;
- requires increasing investment in R&D and training of highly qualified personnel.

Model of economic growth of the BRICS countries is built on the basis of:

- active import substitution technologies;
- building up own R&D;
- priority investment in human capital.

5.3.2. A Comparative Analysis and Forecast of Dynamics of the Vanguard Countries

It is made the analysis and forecast of dynamics of the vanguard countries on the most significant factors.

5.3.2.1. By labor resources, dynamics of which is determined by economic growth rates, China and India are the world leaders in terms of population size and labor resources, but in the long term it is possible transition to depopulation and reduction in labor resources. In Russia and Japan, such a transition has already occurred (see Fig. 5.3.1).

5.3.2.2. Physical capital. China directs to investment in the fixed capital about 40% of GPD, developed countries — less than 20%, hence a gap in the economic growth rates (see Fig. 5.3.2).

5.3.2.3. Human capital. In assessing the development based on advanced research and development model that takes into account the number of scientists and engineers engaged in R&D, their professional skills and technical equipment, it is calculated motion paths of the GDP by the vanguard countries (see Fig. 5.3.3).

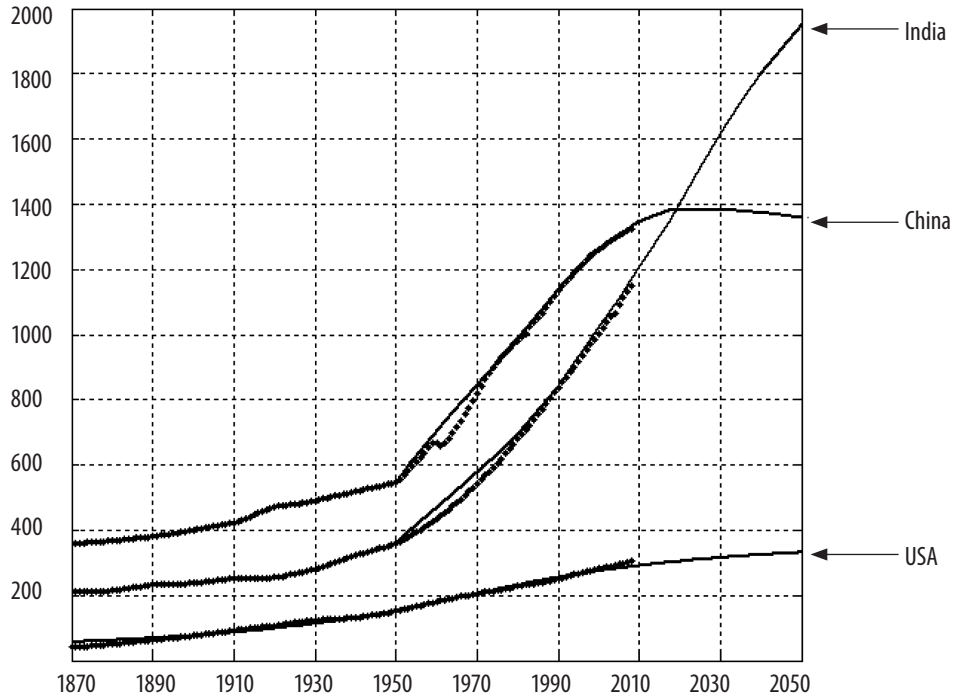
Calculations have showed that the BRICS countries have a chance in the long term move from the periphery to the center of the world system

5.3.3. A Model of Sustainable Development of World Economy

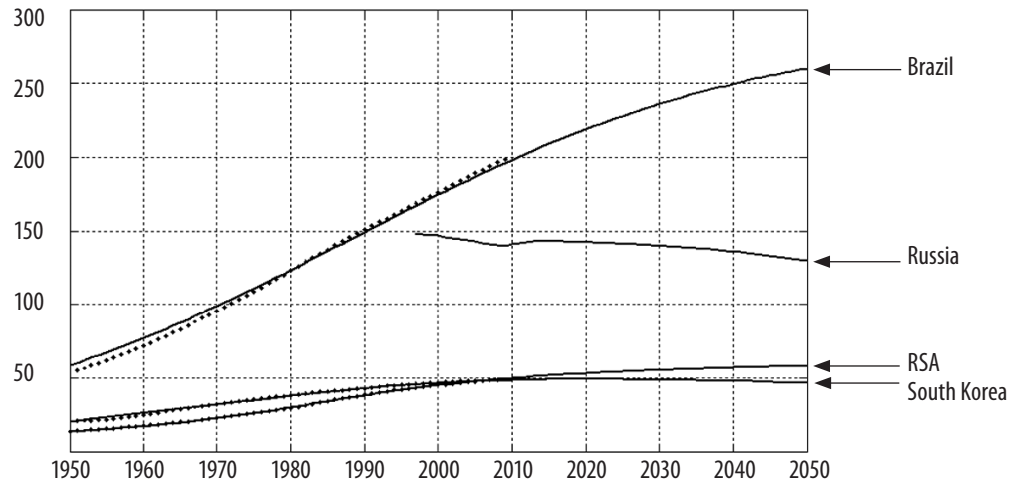
Approximately in 2017–2018 it will begin the up wave of the six Kondratieff cycle. Transition to a new technological order and NBIC technologies will provide acceleration in economic growth rates in the world economy. As the example of China and India shows, the BRICS countries can take the lead in this process. They become attractive for foreign direct investment and high technologies.

Figure 5.3.1. Population dynamics of the BRICS countries, the US and South Korea in the 20th and 21st centuries. mln. people. Population, mln. people

Population, mln. people

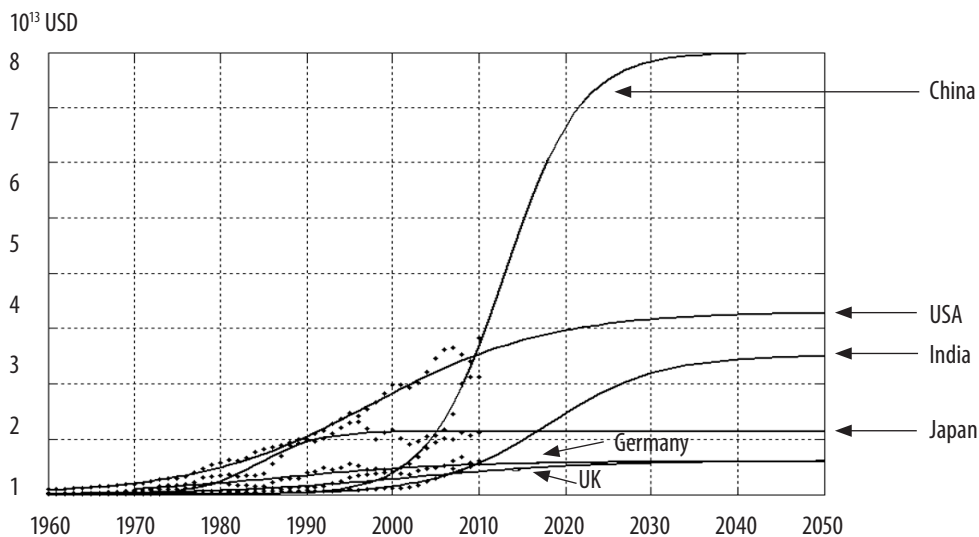


Population, mln. people



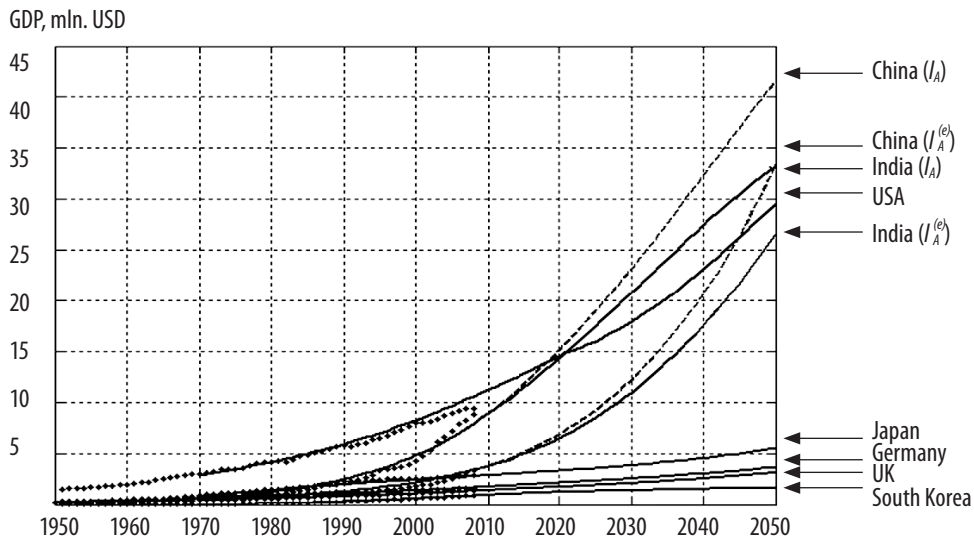
Source: A.A. Akayev, I.Ye. Anufriev, B.A. Akayev. The Vanguard Countries of the World in the 2nd Century in the Conditions of the Convergence Development: Long-Term Forecasting of Economic Growth. M.: Knizhny Dom "Librocom", 2013.

Figure 5.3.2. Data on the physical capital of developed and developing countries (markers) and projected dynamics of capital (line) to 2050



Source: A.A. Akayev, I.Ye. Anufriev, B.A. Akayev. The Vanguard Countries of the World in the 2st Century in the Conditions of the Convergence Development: Long-Term Forecasting of Economic Growth. M.: Knizhny Dom "Librocom", 2013.

Figure 5.3.3. Motion path of GDP byr vanguard countries for 2050 by basic and advanced R&D models (for the US, China and India)



Source: A.A. Akayev, I.Ye. Anufriev, B.A. Akayev. The Vanguard Countries of the World in the 2st Century in the Conditions of the Convergence Development: Long-Term Forecasting of Economic Growth. M.: Knizhny Dom "Librocom", 2013.

A new model of sustainable economic growth is evolving:

- the vanguard countries, including the BRICS countries become engines of global economic growth.
- The BRICS countries become engines of growth of developing countries.

6. Strategic Priorities for Development and Partnership of the BRICS Countries

6.1. SYSTEM OF STRATEGIC PRIORITIES

The most important outcome of the 7th Summit of BRICS should be to identify the system of strategic development priorities and partnership of the BRICS countries in the medium and long term in the face of the deteriorating geocivilizational crisis, a new global divide between the rising and declining civilizations and powers and the shift of the center of creative activity to the East.

This system should involve the strategic priorities not only in the geo-economic and geo-political, but also in innovation-technological and humanitarian areas, to focus on the further institutionalization of the BRICS, development of integration ties and increasing the role in geocivilizational space.

6.2. PRIORITIES IN THE ECONOMIC AND INNOVATION-TECHNOLOGICAL AREAS

6.2.1. An active use of intensive sources of economic growth, progressive changes in the structure of the economy and foreign trade of the BRICS countries.

Slowdown of economic growth rates of the BRICS countries in 2013–2014 shows that extensive sources of faster growth under favorable world conjuncture has largely exhausted. It is necessary to focus on intensive sources of growth based on the development of new technological order, increase in labor productivity, a higher rate of development of the manufacturing industry, agri-food complex and social infrastructure, actively using domestic sources of growth and expansion of mutually beneficial economic ties of the BRICS countries and similar emerging powers, freeing from the dictates of transnational corporations and international financial centers, increasing control over the processes of globalization and more equitable distribution of its results.

6.2.2. The central place in the system of priorities should belong to the partnership in the field of innovation and technology, joining efforts to improve the competitiveness of economy and accelerated labor productivity growth based on the development of a new technological order, faster development of high-tech industries and

expanding mutual exchange of their products, promoting activities to implement Agreement on cooperation in the field of innovation concluded in 2014.

6.2.3. Development of a common long-term program to market saturation of the BRICS countries with quality food and ensure food security through the development of a new “green revolution” and support of family and farms and corporations, establishment of a common food market.

6.2.4. Elaboration of a common energy and ecological strategy focused on mutually beneficial cooperation in the development and efficient use of energy resources, conservation of non-renewable resources in the interests of future generations, the use of renewable energy and materials, reducing pollution of the environment that has reached an extremely high level, an adequate response to natural and man-made disasters.

6.2.5. The priority direction of cooperation among the BRICS countries with their vast territory is the realization of effective joint projects in the development of new generations of land, air and water transport and aerospace, creating transcontinental transport corridors, the revival of the Silk Road and the use of the Northern Sea Route.

6.2.6. Strategic priorities for the partnership of the BRICS countries are: measures to establish a New Development Bank of the BRICS outlined at the 7th summit; higher stability of the national and reserve currencies; reducing dependence on the dictates of the world’s financial centers and rapid market fluctuations in world markets, including strengthening of controllability and predictability of bilateral trade prices; elaboration of measures for the creation of the Customs Union of the BRICS countries, linked with the EEU Customs Union.

6.3. COOPERATION IN THE HUMANITARIAN AREA

6.3.1. Strategic direction of the BRICS partnership is to unite efforts to overcome the lag in the development of science and development of new scientific revolution, to create the Scientific Advisory Board of the BRICS and joint creative collective bodies, to solve contemporary problems of cooperation in the training of scientific personnel. It is proposed to deliver the BRICS Scientific Congress to discuss the issues of elevation of science and making recommendations to the summit of BRICS.

6.3.2. The key significance for solving the issues of the rise of the BRICS is an accelerated development of education, increasing its fundamental nature, creativity, continuity, overcoming illiteracy in individual countries and regions, the use of network BRICS University and the Open University for dialogue among civilizations to develop civilization education of leaders of a new generation.

6.3.3. The BRICS countries have a high culture and rich cultural heritage. There are necessary joint projects for the preservation and efficient use of this heritage and its transmission to future generations.

6.3.4. One of the areas of the BRICS partnership is to combine efforts to develop international tourism, which is now the source of the negative balance (China — 55 billion USD, Russia — 30 billion, Brazil — 19 billion). There are necessary joint projects with respect to the Silk Road and other routes, development of tourism infrastructure, human resources training for tourism.

6.3.5. An important area of the partnership of the BRICS countries is to humanize the information channels, especially the Internet, filling it with scientific and educational programs, materials on the world cultural heritage. It would be useful to organize a series of educational programs on the dialogue and partnership of civilizations and make the Russian TV channel “Culture” international - at least for the BRICS and EEU.

6.4. STRENGTHENING OF INTEGRATION TIES AND INSTITUTIONALIZATION OF BRICS

6.4.1. In the conditions of aggravating geocivilizational crisis and the formation of a new global divide there are being formed the objective conditions for enhancing the role of the BRICS as a consolidating core of rising civilizations and powers and the vanguard of establishing integral, humanistically noospheric civilization.

6.4.2. This involves the institutionalization of the BRICS as a full-featured intercivilizational union with the General Secretariat, with the interaction between the executive, legislative and sectoral bodies, scientific, educational and informational base, relying on a system of interstate agreements.

6.4.3. In its activities, the BRICS relies on a network of regional unions — SCO, EEU, SELAC, IBSA and others that expands the area of joint actions in future, creates the conditions for incorporation of new members to the BRICS and creating the institution of observers (as is customary in the SCO).

6.4.4. To enhance the role and geopolitical influence of BRICS will contribute the agreed performance with the common position within international organizations: UN, UNESCO, IMF, WTO, WIPO and others.

6.4.5. The upcoming 7th summit of BRICS (Ufa, 9–10.07.2015) will be a significant step in the development of new strategic priorities and institutionalization of BRICS, strengthening its scientific base and reliance on the leaders of a new generation. It is planned to discuss this report, which expresses the vision of scientists at the 9th Civilizations Forum in Moscow, present it at the BRICS Business Council, at the Academic Forum, Youth Summit and to make a presentation at the 7th BRICS summit.

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¹ Hereinafter referred to the chapters of the report Prospects and Strategic Priorities for the Rise of the BRICS. A scientific report to the 7th BRICS Summit (Under the editorship of V.A. Sadovnichiy, Yu.V. Yakovets, A.A. Akayev. — M.: SKII — INES — NCS BRICS, 2014. — 392 p. ISBN 9785936182143) report prepared by the group of scientists of Pitirim Sorokin — Nikolai Kondratieff International Institute, Institute for Economic Strategies, Lomonosov Moscow State University, NCS for BRICS Studies, ILA RAS, IFES RAS.

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