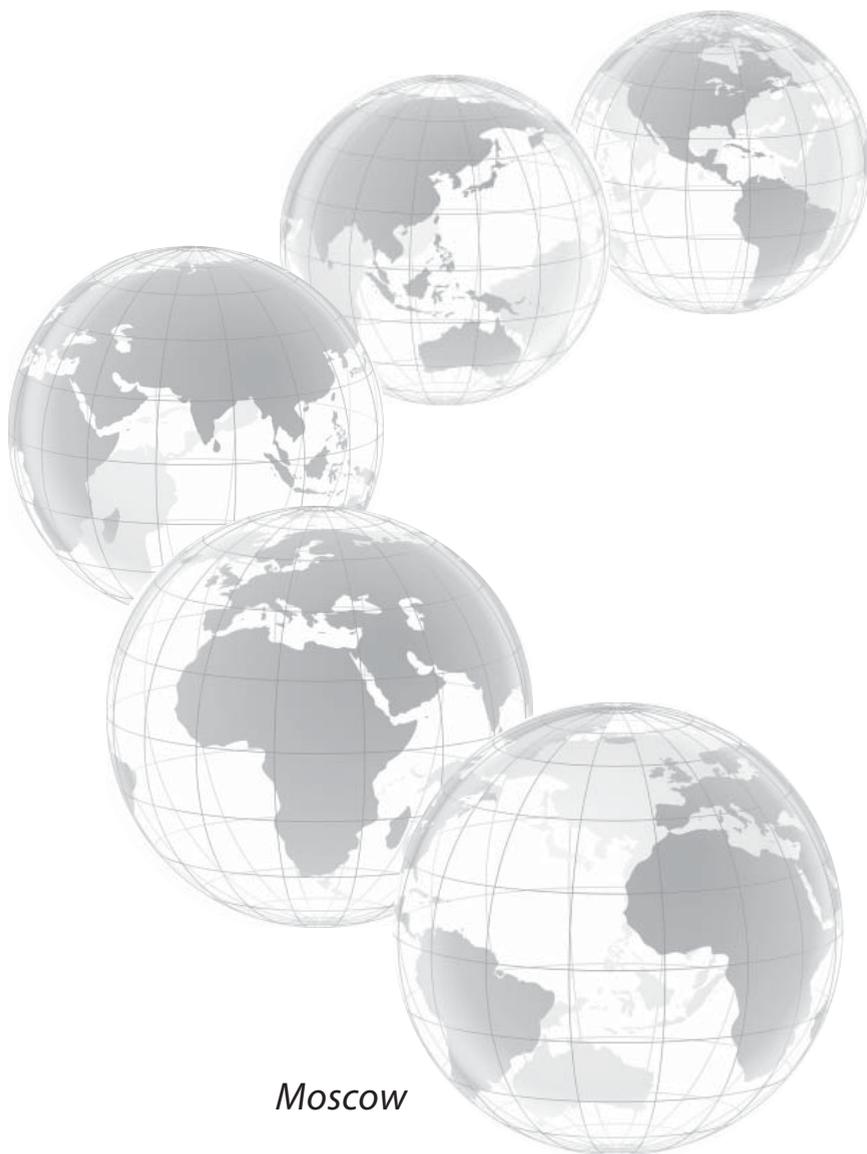


INTERNATIONAL SCIENTIFIC AND EDUCATIONAL JOURNAL

PARTNERSHIP OF CIVILIZATIONS'

N° 3-4/2014



Moscow

THE EDITORIAL BOARD

A.I. Ageev
(Editor-in-Chief
for "The Partnership of
Civilizations" Journal)
Zhang Shaohua
(Editor-in-Chief for the
Chinese edition of "The
Partnership of Civilizations")
S. Farah
(Deputy Chief Editor)
O.P. Yermilina
(Executive Editor)
N.M. Guseinova
(Literary Editor)
Yu.V. Dorovskaya
(English translation)
B.D. Shulgin
(Design, Layout)
Yu.V. Strelnikova
(Proofreader)
Yu.W. Bolshakova, I.P. Yershova
(Subscription Department)
A.M. Kokuev
(Internet Projects)
Yu.W. Bolshakova
(Subscription Department)

Opinions of the authors of published material do not always reflect the views of the scientific and editorial board and team. The editors reserve the right not to enter into correspondence with authors. Submitted materials will not be returned. Any use of materials published in "The Partnership of Civilizations" journal is subject to written consent of the editors.

All inquiries about e-subscription to "The Partnership of Civilizations" journal should be addressed to:
(495) 234 4693;
e-mail: misk@inesnet.ru (the reference should be made to e-subscription to "The Partnership of Civilizations" journal)

Editors' address:
Office 4, bld. 1, 6/1, Sretensky Blvd.,
Moscow, 101000, Russia
Tel./fax: (495) 234 4693

© P. Sorokin — N. Kondratieff
International Institute
T. 3, № 3–4(9)
Frequency of appearance —
4 times a year.
Number of copies 1,000
Free price

THE PUBLISHERS

- Pitirim Sorokin — Nikolai Kondratieff International Institute;
- Institute for Economic Strategies;
- MGIMO-University Center for Partnership of Civilizations;
- International Futures Research Academy;
- Lebanese-Russian House;
- Organization for Promoting Global Civilization (China);

THE SCIENTIFIC EDITORIAL BOARD

FOR THE PARTNERSHIP OF CIVILIZATIONS JOURNAL

Yakovets, Yuri Vladimirovich — Professor, RANS Academician, President of the Pitirim Sorokin — Nikolai Kondratieff International Institute (Chairman of the Board)
Ageev, Alexander Ivanovich — Professor, RANS Academician, Editor-in-Chief of the journal, President of the International Futures Research Academy (Deputy Chairman of the Board)
Farah Suheil — Professor at the Lebanese University, RAE and RANS Academician (Deputy Chairman of the Board, Deputy Chief Editor of the journal)
Bolshakov, Boris Yevgenievich — Professor, RANS member, Head of the School of Sustainable Development
Valiev, Khussain Khasenovich — Professor, member of the Parliament of the Republic of Kazakhstan
Vinokurova, Uliana Alexeevna — Professor, RANS Academician, Prorector of the Arctic State University of Arts and Culture
Glaziev, Sergey Yurievich — RAS Academician, RF Counselor to the President
Zapesotsky, Alexander Sergeevich — RAS corresponding member, RAE Academician, Rector of the Saint Petersburg Humanitarian University of Trade Unions
Kolin, Konstantin Konstantinovich — RANS Academician, Vice-President, Analytical Center for Strategic Researches ("SOKOL") (Deputy Chief Editor of the journal)
Kuzyk, Boris Nikolaevich — RAS Academician, Director of the Institute for Economic Strategies
Malitikov, Yefim Mikhailovich — Professor at Chicago and Denver University (USA), President of the International Association "Znanie" ("Knowledge")
Mathews Robin — Professor at Kingston University (UK)
Maurice Aymard — Professor, Higher School of Humanities and Social Sciences, General Secretary of the UNESCO International Council for Philosophy and Humanistic Studies
Petrosyan, Valery Samsonovich — Emeritus Professor, Moscow State University, RANS Academician
Popov, Veniamin Viktorovich — Professor, Director of the Centre for Partnership of Civilizations of the Institute for International Research at Moscow State Institute for International Relations (University) under the RF Ministry of Foreign Affairs
Spitsyn, Anatoly Tikhonovich — Academician, RANS Vice-President, Professor at the Russian Presidential Academy of National Economy and Public Administration
Ursul, Arkady Dmitrievich — RANS Academician, President of the International Academy of Noosphere, Professor at Lomonosov Moscow State University
Zhang Shaohua — foreign member of RANS, chairman of the Organization for Promoting Global Civilization (China)
Chistilin, Dmitry Konstantinovich — RANS foreign member, President of the Simon Kuznets International Institute for Self-Organization and Development (Ukraine)



BRICS and a Change of the World Economic Hegemon

Opening Remarks of the Editor-in-Chief

The grouping of the BRICS countries, at first seemed to many a convenient speculative statistical finding, has a much deeper meaning. It is defined by a fundamental shift taking place in the world economy for the benefit of developing countries where the BRICS and other countries are in the vanguard (Mexico, Indonesia, Nigeria, Turkey — MINT group, as well as some others). During the 1950–2010s China increased 4.5 times its share in the world GDP, India doubled its share, a share of Russia fell four times. But the developing world today has reached half of the world GDP and continues growing. It is projected that by 2030 the share of the BRICS and related economies will be 70% of the world GDP, as at the beginning of the 19th century. The share of western countries will reduce accordingly to 30%. In 1950, the ratio was inverse — 70% in favor of the West, led by the United States. In 1950, China and India accounted for less than 10% of world GDP.

The historic pendulum swings slowly. For 220 years, we have only the third time faced with a situation of a change of the world technological and economic hegemon.

In the 19th century it was established in the world a system based on the British technological and economic superiority and

on the pound sterling as the world currency. The GDP per capita in Britain in 1820 was 2.1 thousand dollars (in terms of 1990), also significantly outperforming the former world leader — the Netherlands (1.8 thousand) and the future — USA (1.3 thousand), there was no Germany as a single state at that time on the map of the world at all. China, India, Brazil had approximately \$ 600 per capita, still with Russia accounting for two thirds of the world economy¹.

Already in 1913, Britain was behind the United States in per capita GDP (5,150 to 5,301), but the process of changing the world technological and economic hegemon took another 40 years. The falling of the world of the BRICS continued; it was the scene of cruel exploitation with its nuances in every country, even in formally independent Russia and Brazil. In 1913, China's per capita GDP was less than 552 dollars, in India — 673 dollars, and in Brazil — 811 dollars.

On the eve of the First World War the United States was potentially ready to take on the role of the world hegemon. But there were not ready either former dominants, or other European great powers, especially Germany, rushing to win its “place in the sun” and became, along with the US the leader in a technological breakthrough of the first half of the twentieth century.

In 1913, Britain's foreign assets were equivalent to one and a half of its GDP and brought more income than the domestic economy. In 1913, Britain still remained in all the splendor of its imperial majesty as the leader of the world liberal economic system based on the dominance of the pound sterling as the world currency; it still maintained its position as a technological leader in many fields.

By 1950, the US per capita GDP exceeded by one-third of Britain (9.6 thousand to 6.9 thousand), and the dollar became the world currency, replacing the pound sterling, which since the late 1920s lost its former influence and stopped bringing unique benefits to the empire. At that time, per capita GDP in China and India became even lower (439 and 619) compared with 1913. Their share in world GDP fell below 10%.

In the First World War, Britain suffered significant human and material losses, although proportionally less than France, Germany and Russia. Up to Bretton Woods, Yalta and Potsdam London still hoped to maintain its status as the leading empire and currency of the world.

The final verdict to the Empire sounded in 1945 at the international conference in San Francisco in the speech of the representative of India: “We are talking about the great powers and small powers; we are talking about the special responsibility of the great powers, as well as the special privileges of the great powers. I would like to represent in the proper form what India has made in this war. Two and a half million sons of India, soldiers from all over the country that joint the army voluntarily, are fighting now in different parts of the world against the common aggressor ... Immediately after the great countries — four powers ... the closest by the power of the armed forces to the four powers is India.”² In fact, by these words, indicating a strong real contribution to the victory over the aggressor, and also little-known today, it was completed monetary and financial hegemony of Britain, which lasted for more than a century. But the matter was not just in words.

The Second World War further undermined the economy of the empire: the war with Germany; the seizure by the Japanese of the poorly protected fragments of the empire in Asia; the inevitability of war, food and other aid from the United States, as well as the transfer, to the Americans, of its experience of managing a large world empire and big finance, the implementation of advanced technology programs, conducting global intelligence, etc ... Then London had to finance Indian participation in the war not for account of domestic Indian taxes as before but raising loans. As a result, India by the end of the war repaid the pre-war debt to the metropole of 1.2 billion pounds and amassed an even greater reserve. Soon after India gained its independence; Britain withdrew from Burma and Sri Lanka, and then from the African colonies, finally, in 1956, the United States demanded the withdrawal of British troops from the Suez Canal zone.

Thus, the process of changing the world economic hegemon completed.

Between technological innovations, investment and finances there exist its own complex relationship due to different mechanisms for generating real and fictitious capital: financial fever, partly by investing in new production, creates the rush and atmosphere of excitement, and most importantly — the ever-growing “financial bubble”, breaking away farther and farther from real security. Next — the collapse of the bubble, the crisis and social upheavals, if regulatory institutions at the national and international levels are wanting to the occasion. The Second World War was preceded by the “Great Depression” that gripped the US and Britain, and most importantly — a complete breakdown of world trade and payments system.

Until the early twentieth century, the pound sterling backed by gold reserves of Britain coped with the challenges of servicing the world flows of commodities and capital flows. Although the United States became the world’s major net exporter already before the the First World War, in 1913 the share of the pound in international payments still reached 80%. An attempt in 1922 in Genoa, to establish a system of international payments failed. A lack of coordination and interests led to the deterioration of the situation. A shortage of means of payment was big and stifling, there was no full-fledged system of exchange rates, barter spread; the beginning of the economic crisis in 1929 gave impetus to a many-year cascade of currency depreciation. All this was accompanied by endless currency and trade wars, splitting the world monetary system into blocks.

According to Van der Vee, a sharp rise in the economic power of the United States in the early twentieth century allowed it to gain control over Western Europe as early as in 1919: the United States “were to take place of Britain” as “the head of the World”, matching world trade, investments and settlements. In fact, the United States was required to implement the “stabilizing leadership.”

However, this did not happen. First of all, because in the 1920s in the structure of the world’s foreign exchange reserves the pound sterling still accounted for 77%, the dollar held the second place — 21%, but its share increased tenfold since 1913³.

More importantly, it was a milestone challenge for the US — the first invasion of the United States in world politics. But the realization of this maturing mission of the US was prevented not only by the set of

influential circles of this country on isolationism, but also the resistance and mutual confrontation still powerful other great powers, especially Britain and France, the principle of “self-determination” of small nations, gave rise to many consequences, as well as “Russia’s problem.”

But the main knot of contradictions in the decisive moment, which could have provided a moving away from the perspective of a new war, was delayed by two very specific issues: the preservation of the colonial system and reparations from Germany, including the redistribution of its colonies. The essence of the conflict was simple: “In fact, the embittered winners simply craved after the moneyed assistance from the United States, but even more – moneyed compensation for the expense of Germany. The allies resented that the power, entered the war last and suffered least losses relative to other, seeks to dictate its terms.”⁴

Such strong factors as a coming out of Germany and Russia from the normal trade turnover, unresolved debt problems, internal social tensions led to increased disorganization of international capital flows, disorganization of exchange rates, growing protectionism, together increased the propensity of the then actors to solution by force of contradictions and restriction of sovereignty.

As demonstrated by numerous inter-war international conferences and negotiations, including the experience of the League of Nations, the ability of the leading powers to find mutually beneficial solutions apparently left much to be desired. The Second World War eventually became a way of dismantling the obsolete world system, paralyzing trade and cooperation.

The most important economic result of the Second World War is the formation by coalition of victors of the system of supranational institutions of the new generation. By 1945, the US had accumulated, according to various estimates, from 70 to 85% of the world’s gold reserves.

A thousandth part of the Soviet Union in the world trade and settlements excluded any significant influence on the new world financial architecture. The main economic benefit of the war, so went to the United States.

If the key resources of the world economy (energy and raw materials, manpower, transit) are in the countries of the South, then technological, military and institutional resources in the course of the global development concentrated primarily in the countries of the North. And the most important element of this dominance is who owns the right to issue the payment instruments and the world’s reserve currency.

Thus, since the First World War a hundred years falls to rise and triumph of credit-debt model of economic and technological development, which has allowed the United States to make a breakthrough to the current status of the world hegemon, the only superpower.

But the establishment of both British, and American hegemony was based on the leadership in the world technological development and the growing weight of their economies in the world economy. The ability to create the world monetary and financial system received by the rest of the world — is a key factor in the success of such hegemony. Methods of its creation were not the most elegant, they were reduced to the colonial conquest of the world, and then to its redistribu-

tion. Their aim was to provide financial advantage that is directly dependent on the technological advantage, not only in industry but also in the service sector, primarily — financial.

A stage in human history going through resembles the period between 1913 and 1945: one hegemon began to give up its positions, and the other was not yet ready to take them.

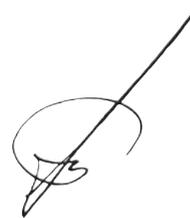
The growing importance of the BRICS countries is a long-term process. The very claim of the BRICS countries for seeking to take an active part in the formation of new institutions of world trade and monetary-financial system is a key step in the formation of a fair world order in the struggle that all these countries carry on for their independence and prosperity in the recent two centuries.

In this case, erosion of the hegemonic position in the real world production, as history shows, can be long enough compensated by excellence earlier achieved in the field of strategic industries, military power, technological advancements, communication platforms, informational influence, the whole complex of factors of “hard” and “soft” power, organizational and intellectual advantage. Due to these factors a fall in the share of the West in world consumption and world finance takes place with a slowdown compared with the fall in the share of world production.

Furthermore, in a crisis situation, with some actors with global interests and potential of global influence it will inevitably exacerbate the tendency to resolve the accumulated contradictions at the expense of other actors through military conflict.

Fortunately, the tragic experience of the twentieth century quite allows counting on a peaceful settlement of the ac-

cumulated contradictions. And if in the second half of the twentieth century, the world economic development was mainly dependent on the United States, then in the 21st century it will mainly depend on the three contemporary and long-range leaders: the United States, the BRICS group and the European Union. In the evolving conditions of today the development of multilateral cooperation within BRICS, and most importantly — increasing their contribution to the reform of the global monetary and financial system, as well as their ability to establish an independent contour of the international financial architecture, is an alternative to dragging them and the world into a new Big War.



A.I.Ageev, Editor-in-Chief For
“The Partnership of Civilizations”
Journal, Professor, RANS Academician

Endnotes

1. *Maddison A.* The world Economy. A Millennial Perspective — OECD, 2002. P 90.
2. Conference of the United Nations in San Francisco (April 26 — June 26 1945: collection of documents. — M, Politizdat, 1984. — P. 143
3. *Katsonov V.Yu.* Bretton Woods: A Key Event in the Contemporary Finance History. — M, 2014. — P 50.
4. *Utkin A.I.* Woodrow Wilson. — M, 2010. — P 448.



Contents

A.I. Ageev. BRICS and a Change of the World Economic Hegemon Opening Remarks of the Editor-in-Chief	3
PROSPECTS AND STRATEGIC PRIORITIES FOR THE RISE OF THE BRICS	
International Scientific Conference “Prospects and Strategic Priorities for the Rise of the BRICS” (The article is published in Russian only)	
Recommendations of the International Scientific Conference “Prospects and Strategic Priorities for the Rise of the BRICS”	13
Prospects and Strategic Priorities for the Rise of the BRICS. A Scientific Report to the 7 th BRICS Summit (abridged version)	17
Message of Rector of M.V. Lomonosov Moscow State University RAS V.A. Sadovnichiy (The article is published in Russian only)	
Message of Counsellor to the RF President, Academician S.Yu. Glaziev (The article is published in Russian only).	
Welcome Message of Deputy Director of the Foreign Policy Planning Department of the MFA RF A.M. Ovchinnikov (The article is published in Russian only).	
Plenipotentiary Minister of the Embassy of the People’s Republic of China in the RF Xie Syaoyun (The article is published in Russian only)	
Message of the Representative of the Embassy of India in RF Belija Presyad (The article is published in Russian only) . . .	
Message of the Ambassador Extraordinary and Plenipotentiary of the SAR in RF Mandisi Bongani Mabuto Mpahlwa (The article is published in Russian only).	
Message of the Ambassador Extraordinary and Plenipotentiary of the Republic of Indonesia Djauhari Oratmangun (The article is published in Russian only)	
Welcome Message of Representative Plenipotentiary of the Republic of Bashkortostan, Deputy Prime Minister of the Government of the Republic of Bashkortostan A.A. Shaimurova (The article is published in Russian only).	
V.A. Sadovnichiy, A.A. Akaev. Development Prospects for the BRICS Countries in the Context of World Dynamics (The article is published in Russian only)	



V.A. *Nikonov*. Prospects and Strategic Priorities for the Rise of the BRICS. Introduction to the Report (The article is published in Russian only)

Yu.V. *Yakovets*. The Law of Historical Pendulum Motion: a Shift to the East. 52

S.Yu. *Glaziev*. A Technological Base for Global Dynamics and Confrontation (The article is published in Russian only) . . .

A.A. *Akaev*. BRICS as the Locomotive of the Developing World (The article is published in Russian only)

A.I. *Ageev*. BRICS: A Geopolitical Status in the Retrospect and Projection Scenarios (The article is published in Russian only)

G.D. *Toloraya*. BRICS and the New World Order (The article is published in Russian only)

A.V. *Ostorvsky*. Experience of Comparative Analysis and Economic Development Forecast for the BRICS Countries: the Rise of the South (The article is published in Russian only)

Ya.G. *Shemyakin*. BRICS in the Light of Civilizational Approach (The article is published in Russian only)

A.E. *Aivasov*. From the American to the Asian Big Cycle of Capital Accumulation (The article is published in Russian only)

K.K. *Kolin*. BRICS Information Security Strategy and Formation of Independent Information and Communication Base (The article is published in Russian only)

T.Yu. *Yakovets*. The Use of UNDP Human Development Index for Validation of Socio-Economic Strategy of the BRICS Countries (The article is published in Russian only)

V.A. *Sadovnichiy*, A.A. *Akaev*, A.V. *Korotaev*, S.Yu. *Malkov*. Complex Modeling and Forecasting of the BRICS Countries Development in the Context of the World Dynamics (The article is published in Russian only)

V.A. *Nikonov*, G.D. *Toloraya*. The Strategy of Russia in BRICS: Goals and Tools (The article is published in Russian only)

A.A. *Akaev*. From Era of Great Divergence to Era of Great Convergence: Mathematic Modeling and Forecasting of Long-term Technological and Economic Development. 63

B.A. *Heifitz*. Russia and BRICS. New Opportunities for Mutual Investments 70

Ye. A. *Kozlovsky*, M.A. *Komarov*, R.N. *Makrushin*. Brazil, Russia, India, China, SAR: the Strategy of Subsoil Use (The article is published in Russian only)



V.V. *Perskaya*, M.A. *Eskindarov*. Competitiveness of National Economy in Conditions of Multipolarity: Russia, India, China (The article is published in Russian only)

Jim O'Neill. The Growth Map: Economic Opportunity in the BRICs and Beyond (The article is published in Russian only).

A New Geocivilizational Divide and Prospects for BRICS. Recommendations of the 8th Civilization Forum. Moscow, June 19, 2014 (The article is published in Russian only).

ON THE PATH TO THE REVIVAL
OF THE EURASIAN CIVILIZATION

EEU to be built on the principles of voluntariness and equality. Message of President of the Republic of Kazakhstan N.A. *Nazarbayev* at Lomonosov Moscow State University, April 28, 2014 73

A.T. *Spitsyn*. Integration Project of the Planetary Scale in the Eurasian Space (The article is published in Russian only)

N.A. *Abykaev*. Integration within the CIS space as a Strategic Prospect of sustainable Development of National Economies 75

T.M. *Suleimenov*. Prospects for the Formation of Common Financial Market of the Eurasian Economic Union Countries (The article is published in Russian only)

Kh. *Valiev*. The EEU as a Global Innovation Project of Today (The article is published in Russian only)

Yu.V. *Yakovets*. About the Program of Innovative Modernization and Raising the Competitiveness of the Eurasian Agri-Food Complex on the Basis of New “Green Revolution”, Organic Farming, Support to Family Households and Cooperation (The article is published in Russian only).

A.M. *Satkaliev*. Integration of Energy Potential of EurAsEC Countries As a Key Element for Modernization of National Economies (The article is published in Russian only)

Ye.Ye. *Rastvortsev*. A Comparative Analysis of Eurasian Countries Dynamics Tendencies (The article is published in Russian only)

Ye.V. *Yermolaeva*. The Integration Potential as a Factor of Industrial-Innovative Modernization of CIS Countries National Economies (The article is published in Russian only)

N.G. *Chemova*. The Prospects for the Revival of High Culture and Inter-Cultural Exchange in the Eurasian Space (The article is published in Russian only).



A.T. Spitsyn. Global Transformations and Innovative Modernization of Economy in the 21st Century 90
N.A. Abykaev. Sustainable Economic Development and Social Modernization in Kazakhstan 93

STRATEGY FOR RAISING COMPETITIVENESS OF THE EURASIAN MARKET OF INTELLECTUAL PROPERTY
Fragments of the Treaty about the Eurasian Economic Union (The article is published in Russian only)
Yu.V. Yakovets About the Formation of the Eurasian Strategy for Protection and Use of Intellectual Property (The article is published in Russian only)
S.B. Aliev, Ye. Yu. Izmailova. Legal Regulation of Trademarks (The article is published in Russian only).
S.B. Aliev, S.N. Shurygin. Analysis of Exhaustion of Rights to Trademarks (The article is published in Russian only).
B.B. Leontiev. Import Substitution and Intellectual Property (The article is published in Russian only)
A.V. Markov. Lines of Cooperation in Intellectual Property Area (The article is published in Russian only)

THE PARTNERSHIP OF CIVILIZATIONS PROJECTS
Yu.V. Yakovets. About Development of International Tourist Program “Silk Road: Black Sea, North-Caucasian and Central Asian Thoroughfares” (The article is published in Russian only)
N.A. Badulin. A Competition of Sustainable Innovative Development Projects on the Basis of High Technologies for gi-BRICS (The article is published in Russian only)



Prospects and Strategic Priorities for the Rise of the BRICS



Recommendations of the International Scientific Conference “Prospects and Strategic Priorities for the Rise of the BRICS”

Moscow, Lomonosov Moscow State University, 17 December 2014

On December 17, 2014, Moscow the Intellectual Center — Lomonosov Moscow State University Fundamental Library — hosted the International Scientific Conference “PROSPECTS AND STRATEGIC PRIORITIES FOR THE RISE OF THE BRICS” dedicated to the discussion of the scientific report under the same title prepared by the Russian scientists to the 7th BRICS Summit (Ufa, July 2015).

The Conference originators and report compilers — Lomonosov Moscow State University, Pitirim Sorokin — Nikolai Kondratieff International Institute, National Committee for BRICS Studies, Institute for Economic Strategies, Institute of Latin America RAS, Institute for Far Eastern Studies RAS.

The Conference was attended by Russian and foreign scientists, representatives of the Russian Foreign Ministry, embassies of the BRICS countries and other states, and youth organizations.

The plenary sessions and the youth sections discussed the main points of the report and substantiated the following conclusions and recommendations.

1. The Conference participants supported the points of the report that the BRICS is an intercivilizational union of a new generation that includes the leading powers of five rising civilizations laying the foundations for an integral, humanistically-noospheric civilization.

BRICS is based on the principles of equality, dialogue and partnership of civilizations and the leading powers, favors non-violent settlement of conflicts arising in the world.

2. In the conditions of new aggravation of geopolitical contradictions, it enhances the role of the BRICS as a consolidating center of the network of related regional unions (EEU, SCO, CELAC, IBSA, the African Union and others.) that rallies the progressive forces of humanity in the process of forming a new multipolar world.

3. The participants highly appreciated the scientific report “Prospects and Strategic Priorities for the Rise of the BRICS” initiated by the Lomonosov Moscow State University, SKII, NCS BRICS, INES, ILA RAS IFES RAS and recommended to send it to the Administration of the President of the Russian Federation, the Russian Foreign Ministry, Embassies of the BRICS countries, as well as interested Russian and foreign research organizations, in order to discuss it at an academic BRICS forum and present within the 7th BRICS Summit (July 2015).

Regularities and Tendencies of the Shift of the Center of Creative Activity to the East

4. The Conference participants endorsed the points of the authors of the scientific report that the deep foundation for the rise of the BRICS are the laws of the historical pendulum motion, a change of civilizational cycles, transition from the American to the Asian large cycle of capital accumulation, polarization and socio-political partnership of civilizations, countries, and social strata and generations in acute crisis situations, the tendency of forming

a new geocivilizational divide between the upward and downward civilizations and the leading powers, and recommend scientists and research organizations to expand fundamental research (using civilizational approach) of radical global transformations processes of the first half of the 21st century.

5. The Conference participants share the conclusions of the authors of the report obtained by using geocivilizational reproductive-cyclical macromodel that at the beginning of the 21st century there was a reverse of the tendencies prevailed at the end of the 20th century. It is observed a faster economic, technological, socio-cultural development and increasing the geopolitical influence of BRICS. Then it is observed a decline in economic growth rate, gross accumulation, inventive, innovation and investment activity of the “G7”.

6. Appreciating the results of intercivilizational and inter-country comparisons, the participants recommend SKII, INES and MSU V.M. Lomonosov with the involvement of other organizations to continue these studies to substantiate a system of long-term goals of global sustainable development and to begin preparations for the fundamental scientific work on the dynamics in the period after the Russian revolutions of 1917 for discussion at the World Scientific Congress in St. Petersburg in 2017.

Prospects for the Rise of the BRICS Countries in the Context of World Dynamics

7. The participants expressed a high opinion of the long-term forecast of the BRICS countries in the context of world dynam-

ics made by the scientists of the Lomonosov Moscow State University on the basis of a global model system, and consider it necessary to establish an international body of scientists of the BRICS countries to substantiate a long-term strategy for development and partnership of the BRICS countries so that to report the results of the research at the 8th BRICS Summit in 2016.

It is necessary to take into account the changing conditions of development of the BRICS countries and world trends, starting with 2014, the use of intensive sources of growth, potential for strengthening integration ties within the union and to reduce the gap in the level of economic, social, technological and energy-ecological development of the BRICS countries, as well as increasing their coordinating role in the process of overcoming the civilizational crisis and the formation of a new world order.

Strategic Priorities for Development and Partnership of the BRICS Countries

8. The Conference participants welcomed the system of strategic priorities for development and partnership of the BRICS countries proposed by the authors of the report and recommend the authors to update it, taking into account the discussions at the Conference and proposals received and send to the Russian Foreign Ministry and the Embassies of the BRICS countries to prepare documents for the 7th BRICS Summit.

9. The Conference participants attach prime significance to the following strategic priorities for development and partnership of the BRICS countries:

— ensuring sustainable faster economic growth with the use of intensive sources, developing and implementing the strategy for an innovation-technological breakthrough, progressive changes in the structure of economy and foreign trade in goods and services with priority of material production;

— forming an effective common market of the BRICS in conjunction with related regional unions, reducing the dependence on the dictates of TNC and market fluctuations of world markets, strengthening positions in the geo-economic space and in international economic organizations;

— joining efforts to improve the competitiveness of economy based on the assimilation of a new technological order and effective use of intellectual property;

— providing food, energy and environmental security through the development of common food and energy markets and reserves, large-scale use of resource-saving, environmentally sound technologies;

— constructing a common information space, multilingual information networks of the Internet and TV channels, information security;

— accelerated development of humanitarian cooperation in medicine and public health, overcoming the gap in science, strengthening scientific-educational and tourist potential, expansion of youth cooperation.

10. The Conference participants emphasize that the implementation of the proposed strategic priorities of section 9 requires promoting the institutionalization of the BRICS, its transformation into a full-scale inter-civilizational union with its institutions and mechanisms for the implementation of the common strategy, programs and projects.

They recommend the Russian Foreign Ministry, in conjunction with representatives of other BRICS countries, to develop and submit for discussion at the 7th BRICS Summit the concept for a stage by stage institutionalization of the BRICS. It is considered the priorities to this end:

— developing the BRICS Information Security Strategy for 2030;

— establishing the Fund for support of science, education and innovation powered by the BRICS New Development Bank;

— developing the National Report of Russia to the 7th BRICS Summit, taking into account the basic points of the scientific report, these recommendations and other materials considered at the Conference.

11. The Conference participants recommend the Russian Foreign Ministry to submit to the 7th BRICS Summit a proposal to establish:

— *BRICS Science Advisory Board («Wisdom Council»);*

— *BRICS Association of Universities* and common scientific and educational center relying on a network of leading research groups and universities of the BRICS countries;

— *BRICS Academy of Sciences and Education* (at the premises of the Academy for Global Studies established in Russia).

The Conference participants support the proposal to hold in preparation for the 8th BRICS Summit (2016) *BRICS Scientific and Educational Congress* aimed at strengthening

and enhancing the impact of scientific and educational potential and development of partnership of the BRICS countries in science, inventions and high technologies.

Prospects for Development and Interactions of the BRICS and EEU

12. The Conference participants consider it essential an active part of a new generation in the development and implementation of the Strategy for Development and Partnership of BRICS and support the proposals of the participants of the round table “Prospects for the Development and Interaction of the BRICS and EEU: a Vision of the New Generation”, held within the Conference, about:

— the need for delivery of the Youth BRICS summit to present at the 7th BRICS Summit a vision of the new generation of prospects for development and partnership of civilizations in response to the challenges of the new century, the rise and strengthening of integration ties of the BRICS countries;

— the need for enhancing interaction between the BRICS and the EEU with the participation of young people in addressing the problems of common interest;

— expansion of humanitarian cooperation of the BRICS countries with broad participation of the youth in science, education, sports, culture and tourism.



Prospects and Strategic Priorities for the Rise of the BRICS

A Scientific Report to the 7th BRICS Summit
(abridged version)

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.

Contents

Foreword

1. Objectives and Newness of the Report

- 1.1. Originators and Authors of the Report
- 1.2. Objectives of the Report
- 1.3. The Newness of the Research Performed
- 1.4. The Structure of the Report

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

- 2.1. BRICS Emerged in the Conditions of Historical Fault Line
- 2.2. BRICS as a Geocivilizational Union of a New Generation

- 2.3. Areas of Interaction and Confrontation between BRICS and G7
- 3. Regularities and Trends of Global Development and the Shift to the East

3.1. Regularities of Global Development

- 3.2. The Law of Historical Pendulum Motion
- 3.3. A Change of Long-Term and Super Long-Term Cycles
- 3.4. A Shift to the East
- 3.5. Evolution of the World System: The Decline of the West and the Rise of the East
- 3.6. A Reversal of the Economic Dynamics: The Rise of the South

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
- 4.2. A Factor-Based Comparative Analysis of Civilizational Dynamics

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

- 5.1. Methodology for Global Modeling and Forecasting
- 5.2. A Long-term Forecast for Development of the BRICS
- 5.3. Prospects for Development of the BRICS Countries against the World Dynamics

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

- 6.1. System of Strategic Priorities
- 6.2. Priorities in the Economic and Innovation-Technological Areas

6.3. Cooperation in the Humanitarian Area

6.4. Strengthening of Integration Ties and Institutionalization of BRICS

Contents of the Full Version of the Report
Authors of the Report

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 cyclicalism, 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 pri-

orities 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 strate-

gies and 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 re-

versal 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 (see Fig. 3.4.1.)

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

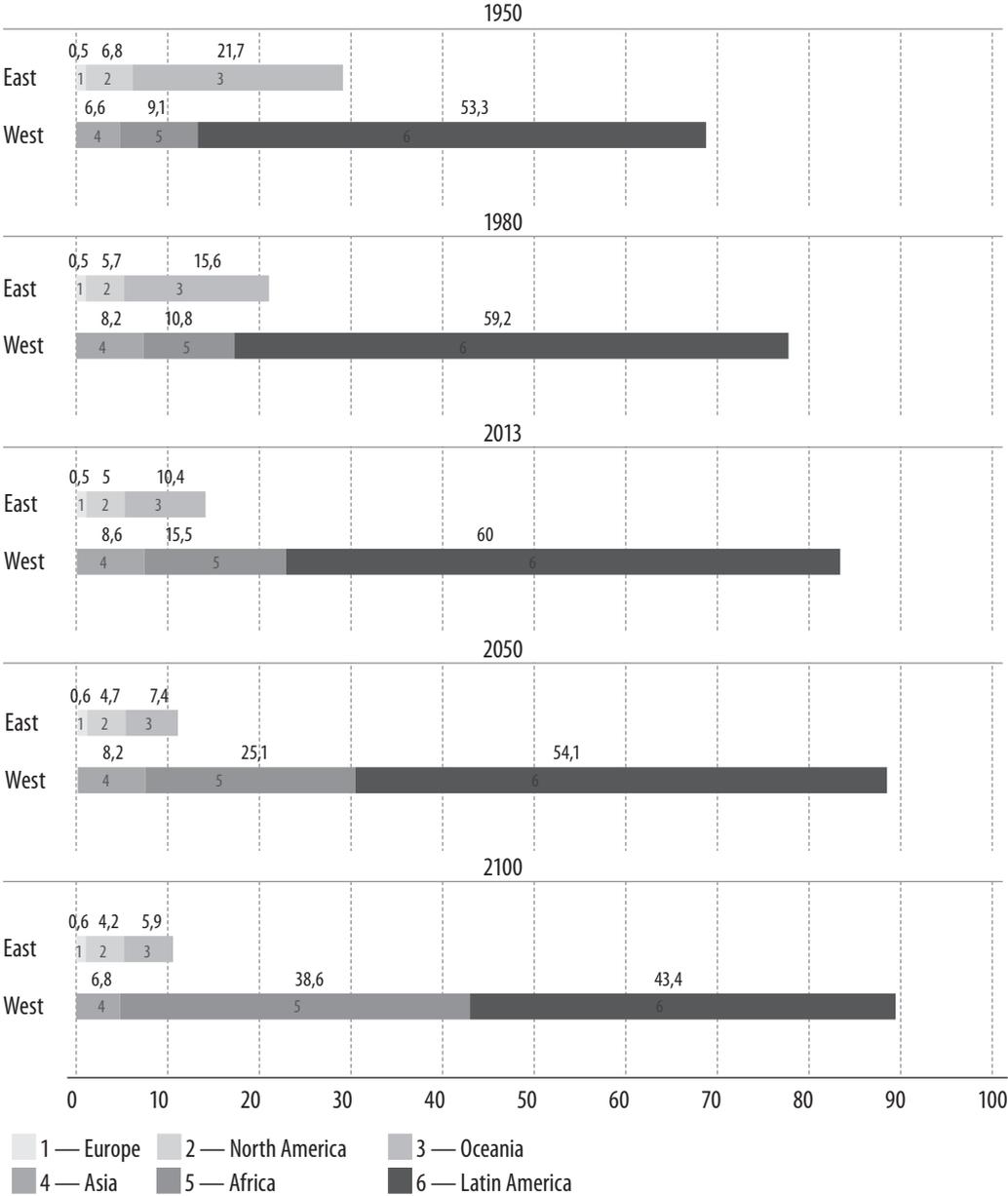
3.5.1. The General Trend of World Development

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

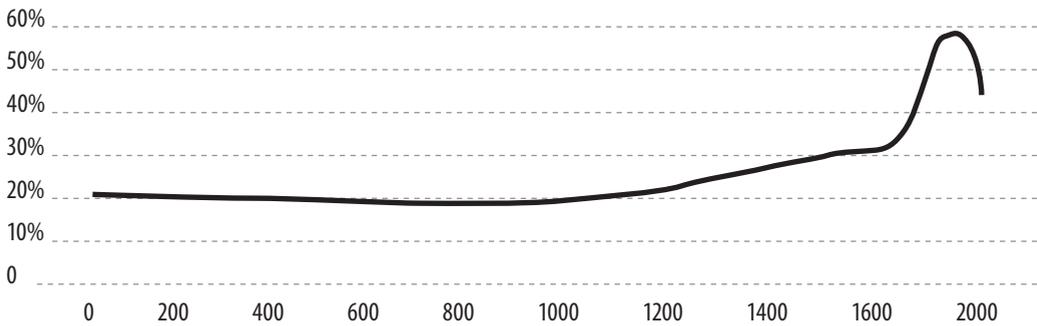
According to A. Maddison, the share of the West in the world GDP quite noticeably increased over the years 1000–1800, however the explosive growth of this share began after 1800. By the end of the 19th century the share of the West in the world GDP exceeded 50%, and in the 1950s — 1960s was more than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

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.

Figure 3.5.1. Dynamics of the share of the West in the world GDP, 1-2012 (by A. Maddison)



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*.

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.

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 coun-

tries 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.

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).

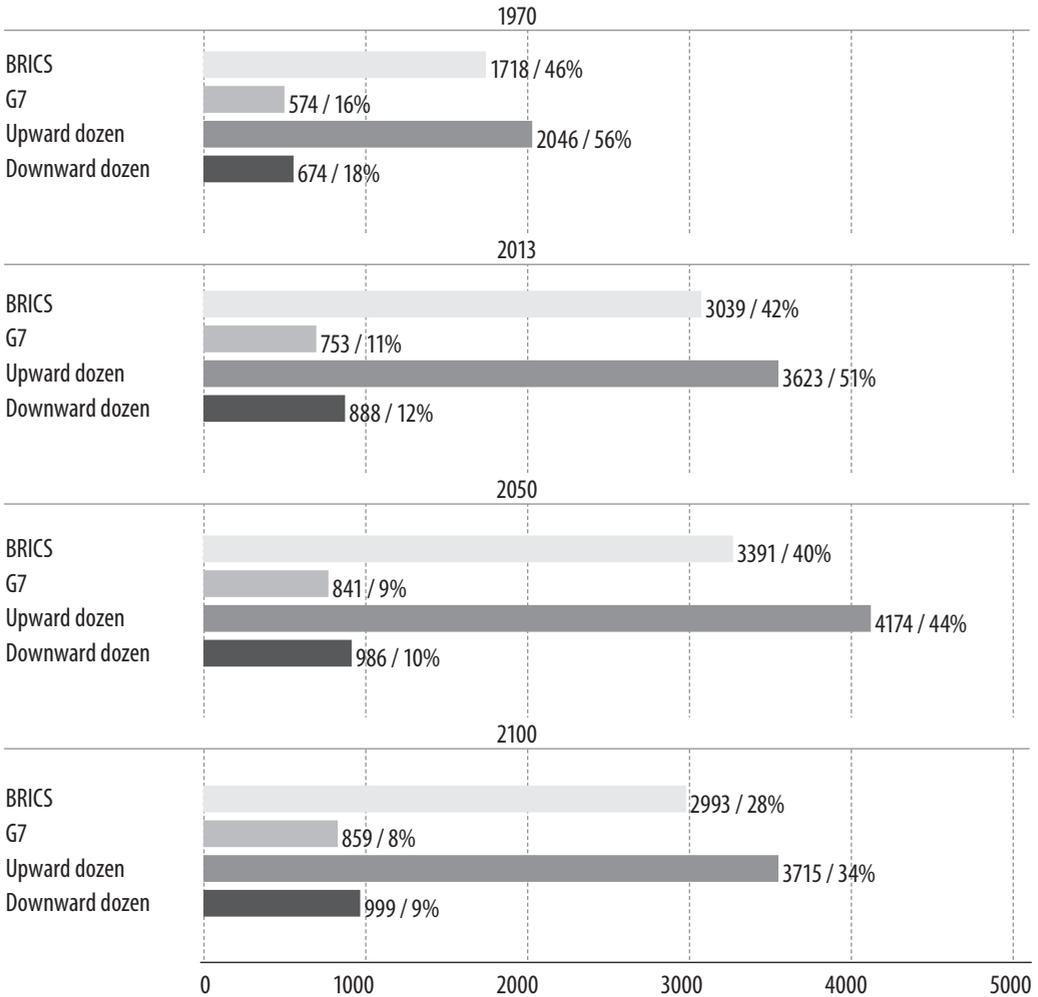
4.2.2. The Agri-Food Potential

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).

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

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



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

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.

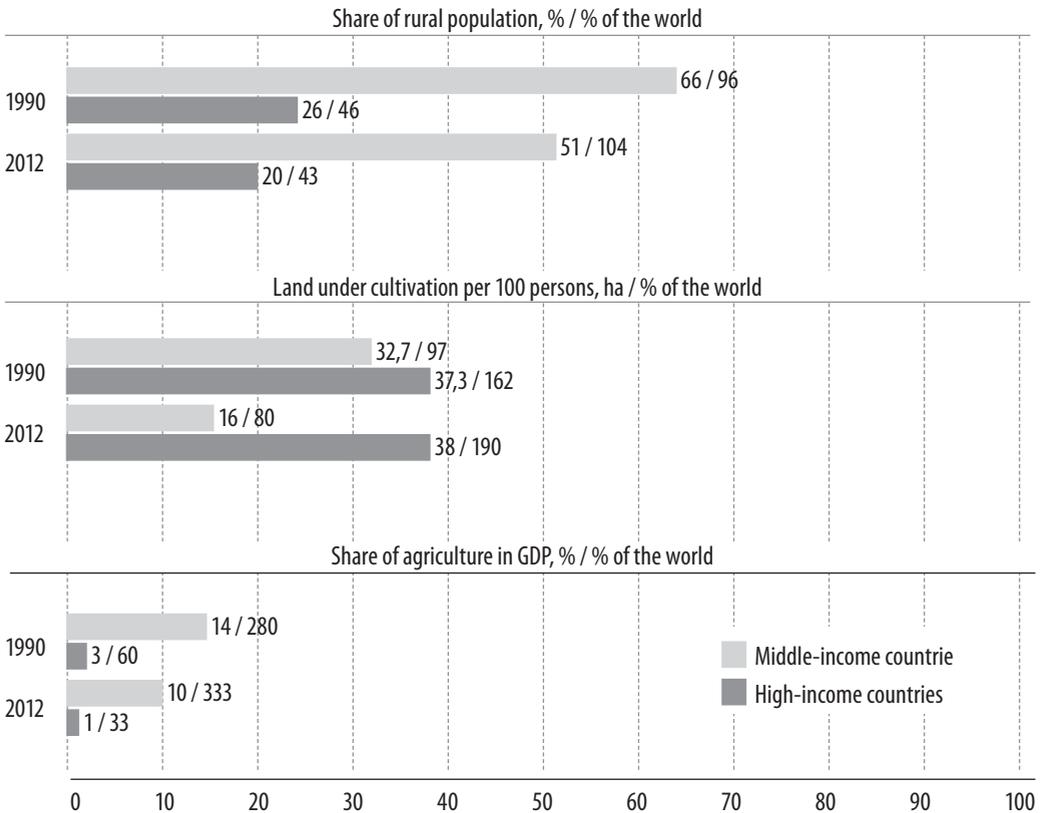
At the same time in Russia, India, South Africa it is observed degradation of scientific and technological potential.

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

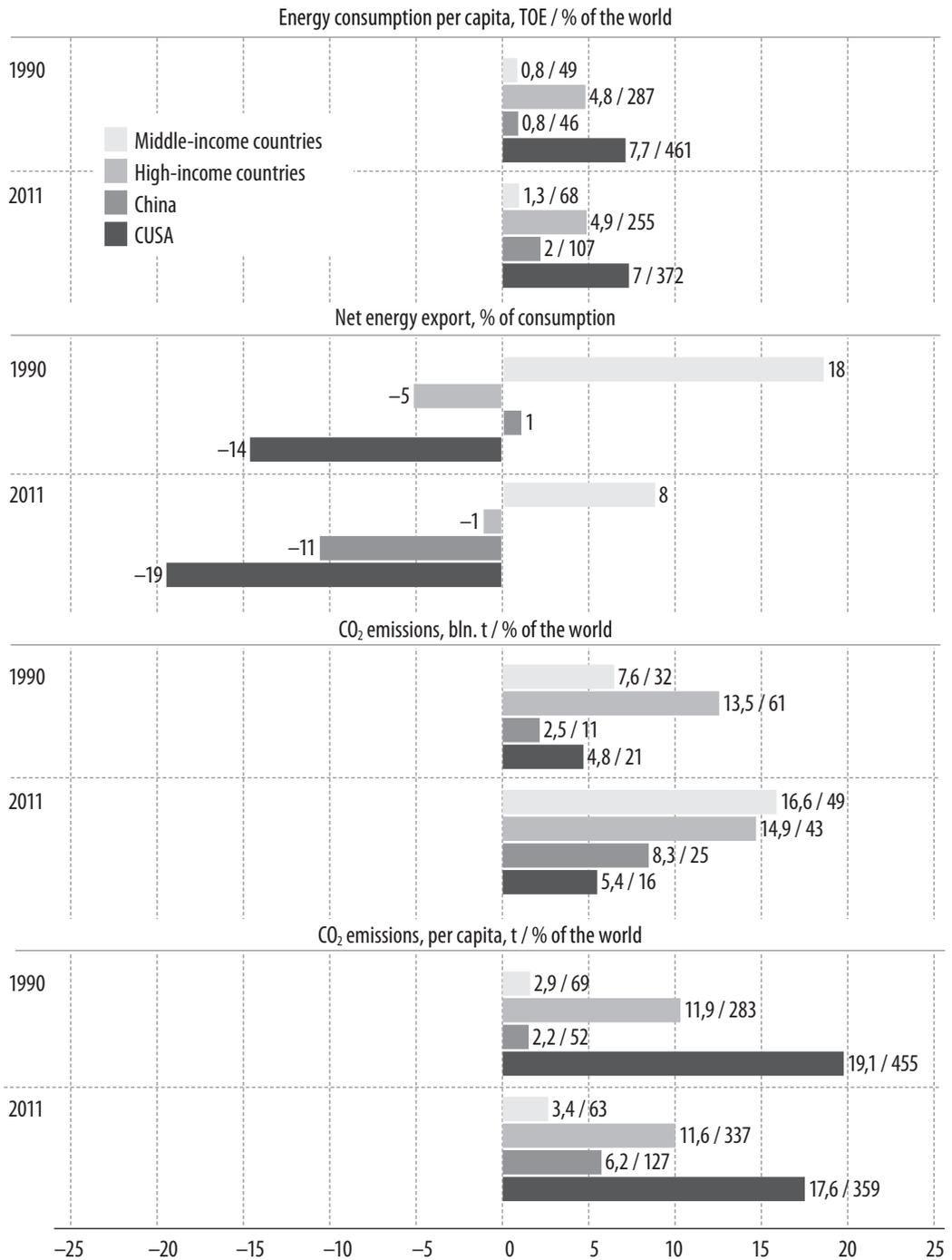
In terms of GDP the BRICS is still second to G7, but its share in the world GDP grew rapidly — from 8.2% in 2000 to 20.2% in 2012, while the share of G7 decreased from 62.4 to 45.7%. The gap between the middle-income countries (where the leading place belongs to BRICS) and high income (where the G7 countries prevail) by the growth rate GDP increased from 1.6 times in 1990–2000 to 3.5 times in 2000

Figure 4.2.2. Comparison of agri-food area



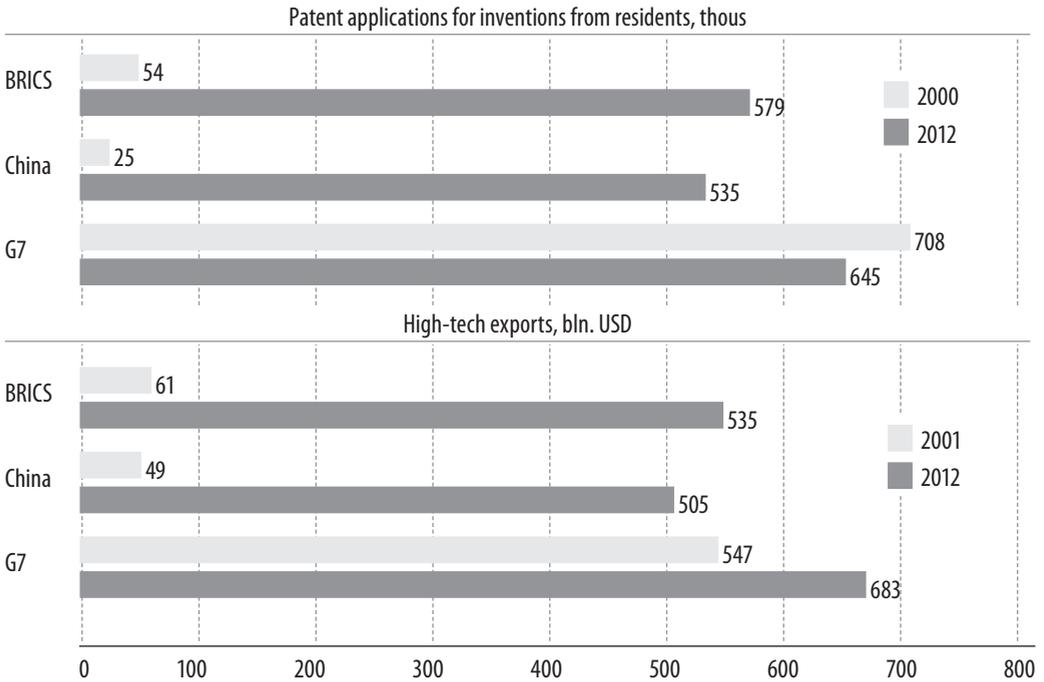
Source: World Development Indicators 2014. Washington: The World Bank, 2014. 2009 World Development Indicators. Washington: The World Bank, 2009. Tables 3.1, 3.3, 4.2.

Figure 4.2.3. Energy-ecological dynamics



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

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.

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).

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%.

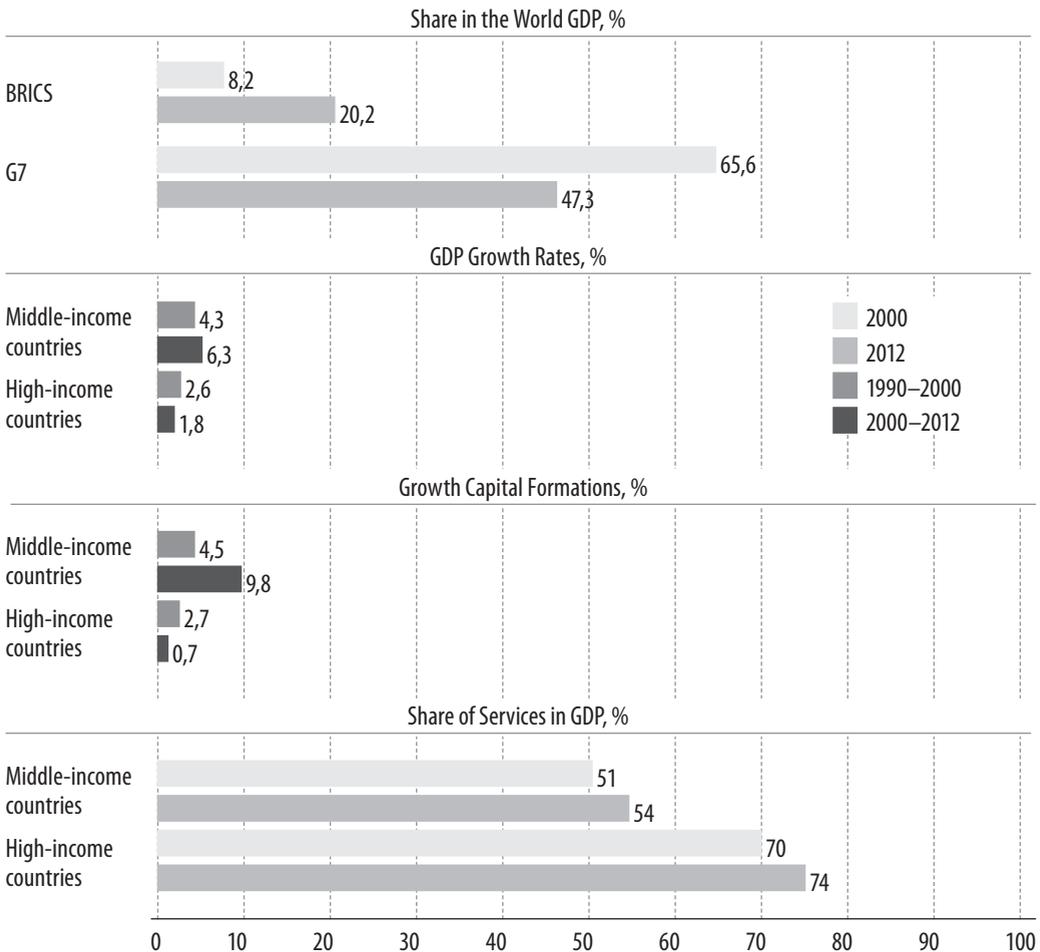
The share of spending on education of the BRICS (excluding China), in 2012 - 8.4%, upward dozen — 16%, while in the G7 — 39% and the downward dozen — 46%. The negative balance on the international tourism by the BRICS was, in 2012, 95 bln. USD (In China — 55 bln.), the upward dozen — 66 bln., but by 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

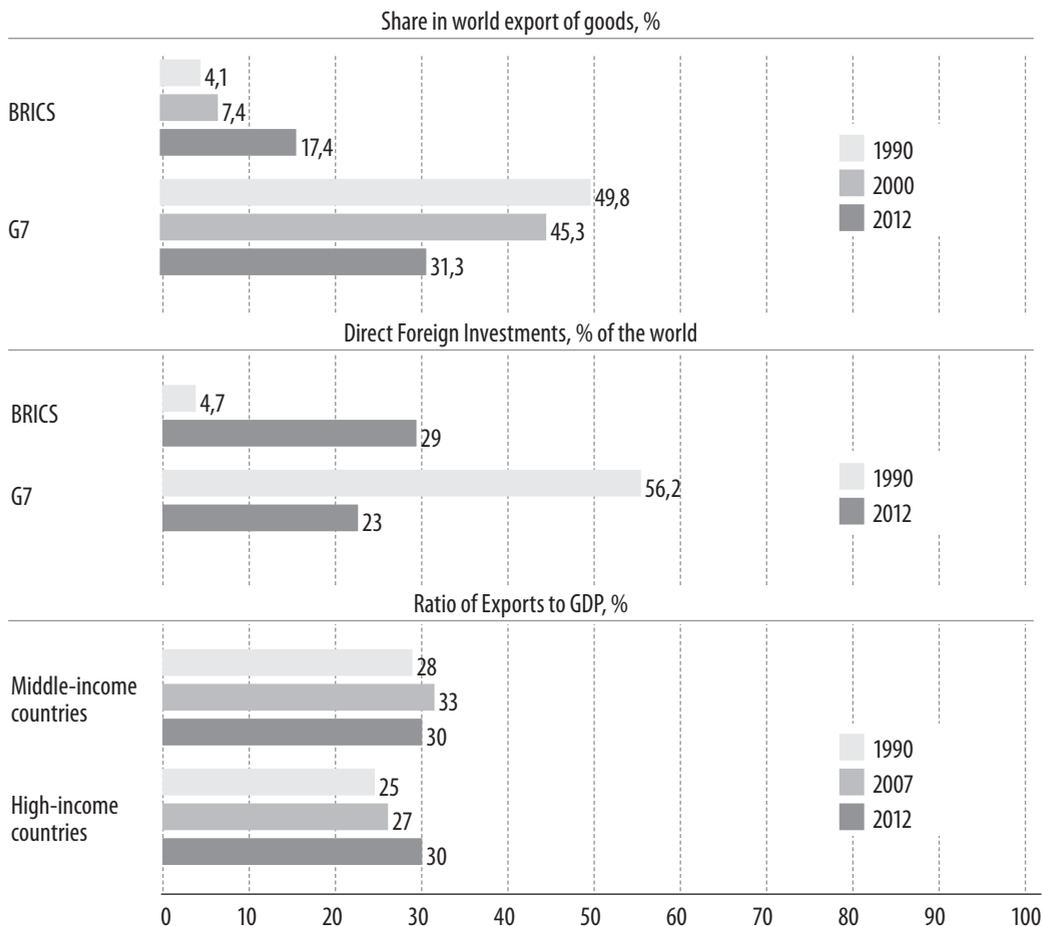
At the beginning of the 1990s there was a radical realigning of the geopolitical architecture in connection with the disintegration of the Soviet Union and the

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.

Figure 4.2.6. Dynamics of participation in globalization

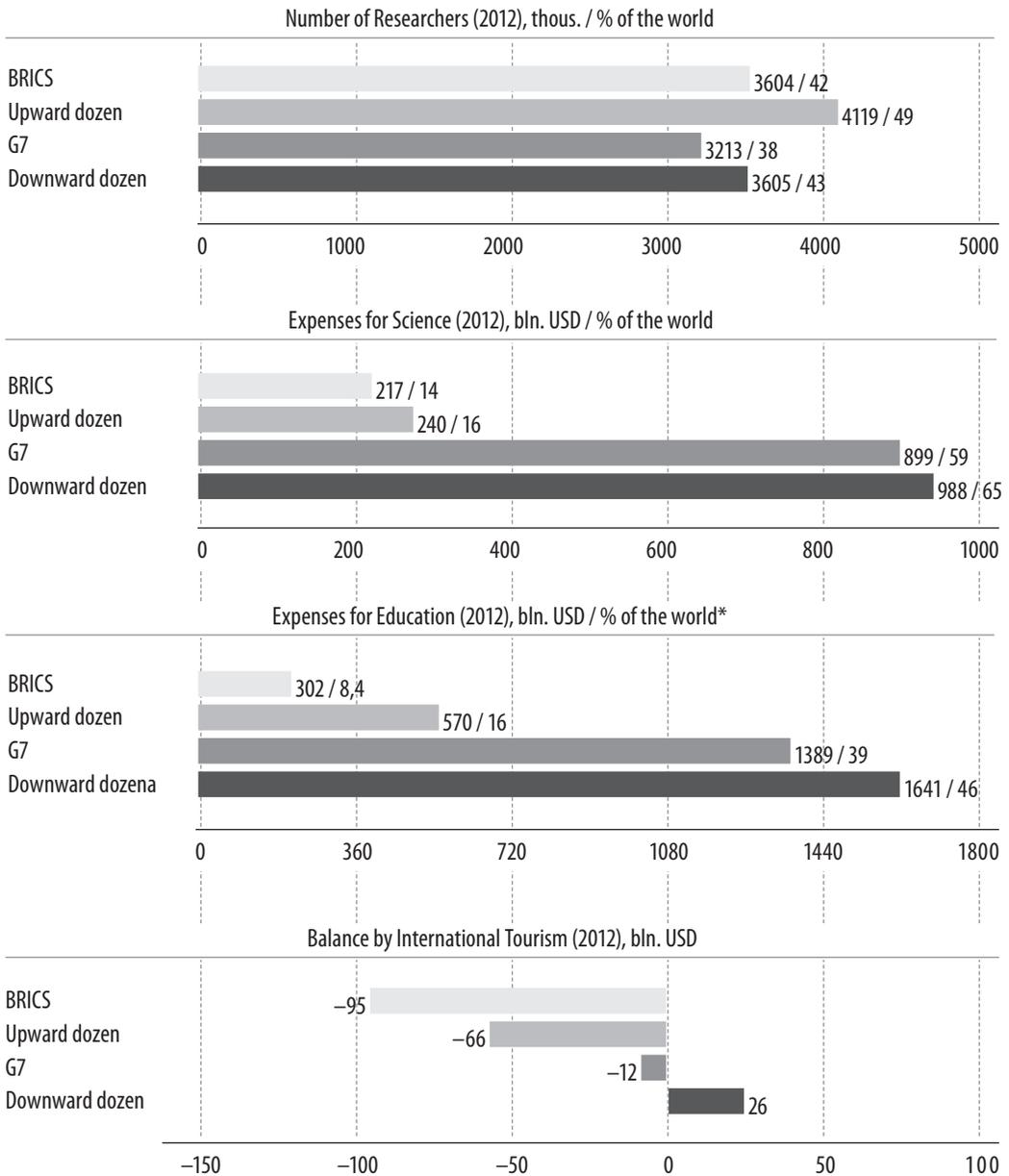


Warsaw Pact and the claims of the US for global dominance in the unipolar world order. In 2014, a new geopolitical crisis broke which has led to the revival of the Cold War. This is related to attempts of the USA, West and NATO to fix its dominance, undermining the position of Russia, China and the BRICS. 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)

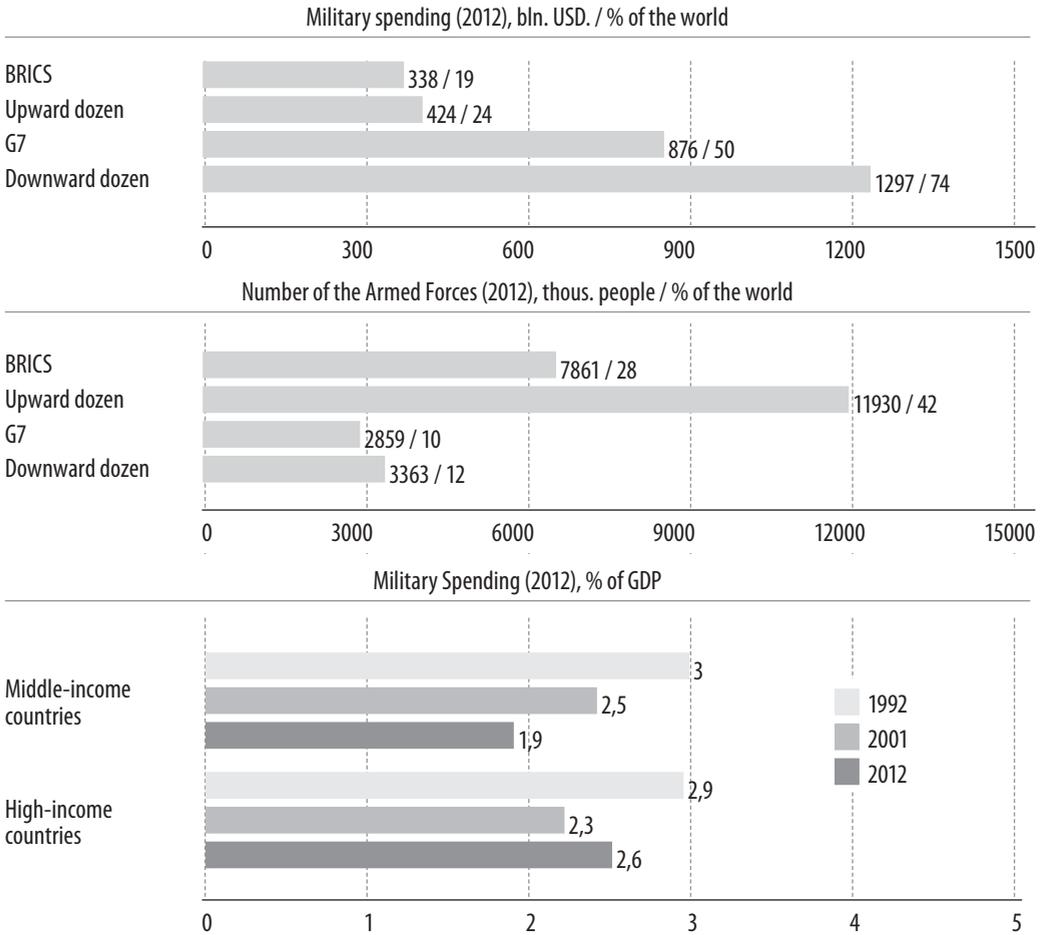
Figure 4.2.7. Comparison of scientific, educational and tourist potentials



* 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

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



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, econom-

ic 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 pow-

ers 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 geocivilizational 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 popula-

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

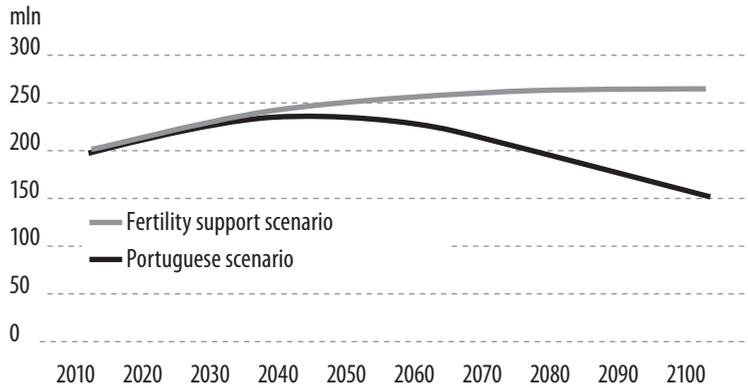
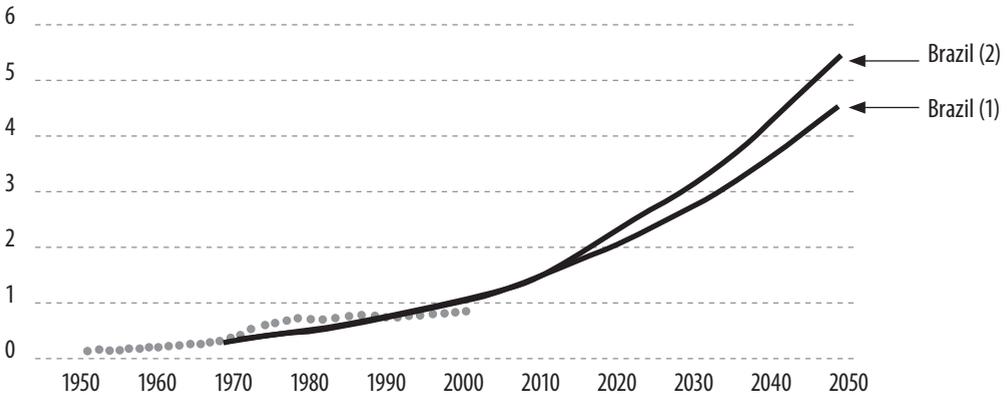


Figure 5.2.2. GDP Dynamics in Brazil (trln. USD) for inertia-based (1) and innovation-based(2) development scenarios



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.

tion 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).

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.

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

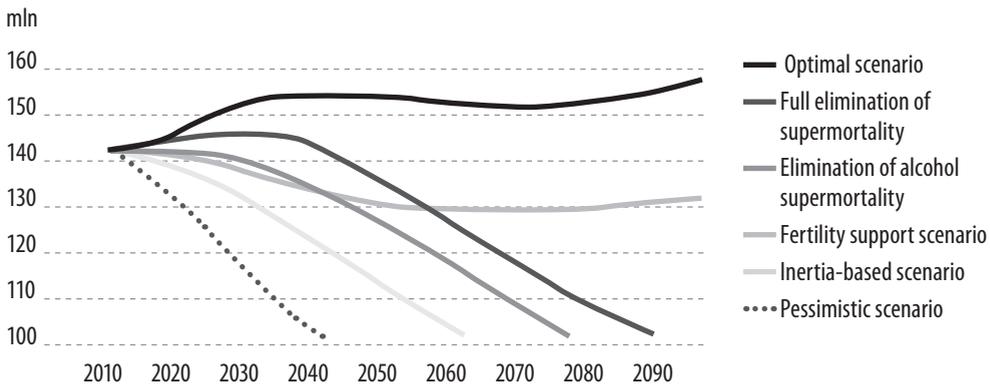
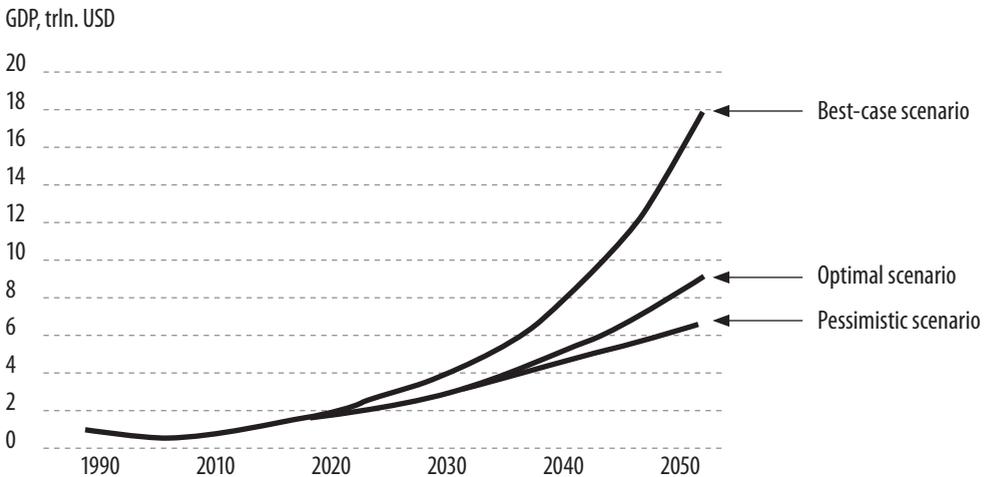


Figure 5.2.4. A GDP dynamics forecast for various scenarios of economic development of Russia in 2010–2050



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.

5.2.4. 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).

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).

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

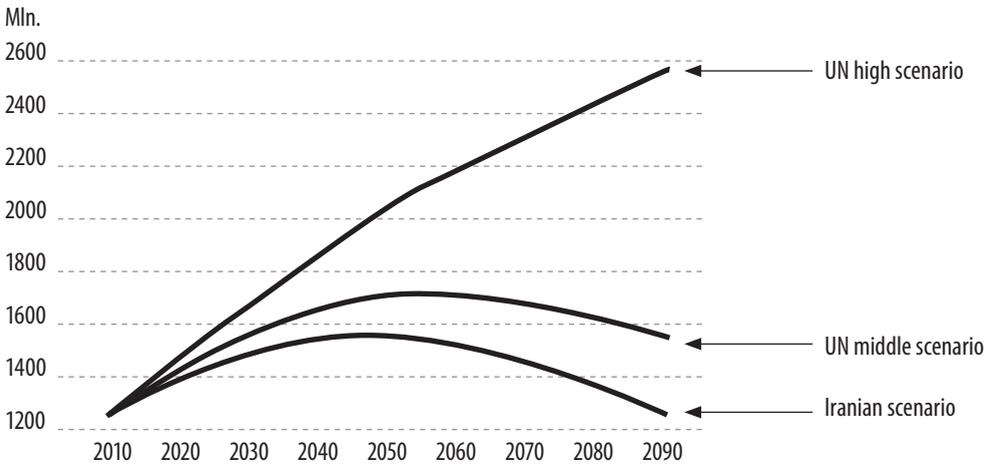


Figure 5.2.6. GDP dynamics in India, trln. USD

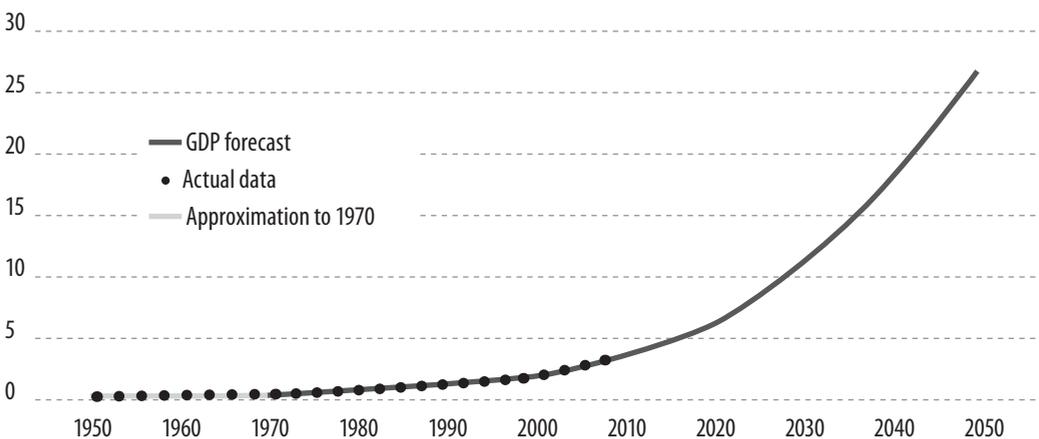


Figure 5.2.7. Two scenarios of projected dynamics of total population size in PRC

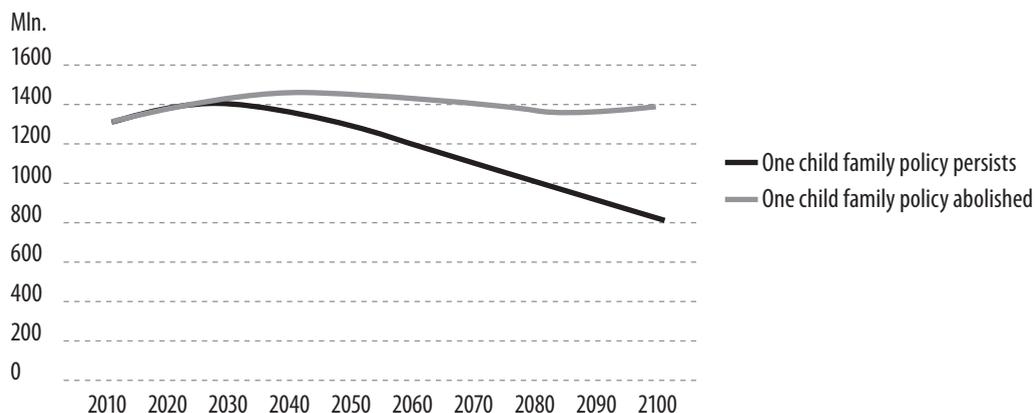
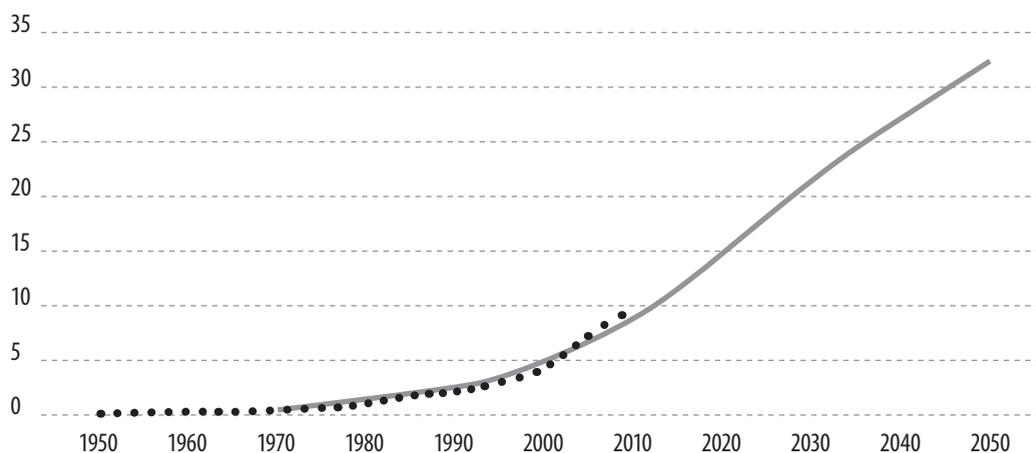


Figure 5.2.8 Dynamics of GDP in China, trln. USD



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).

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 productiv-

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

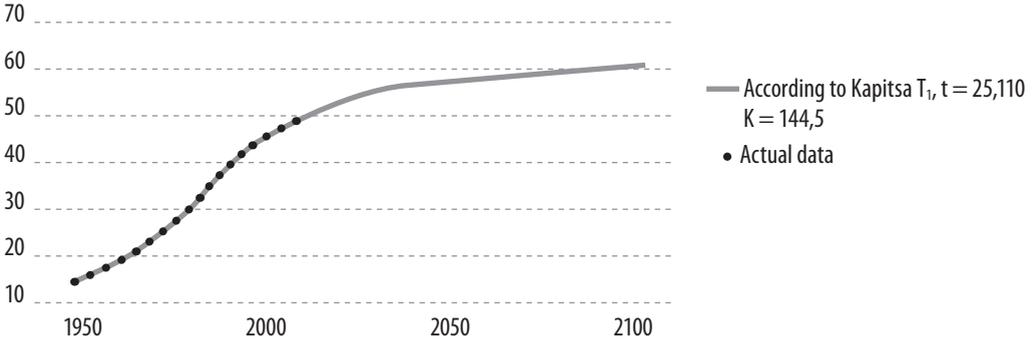
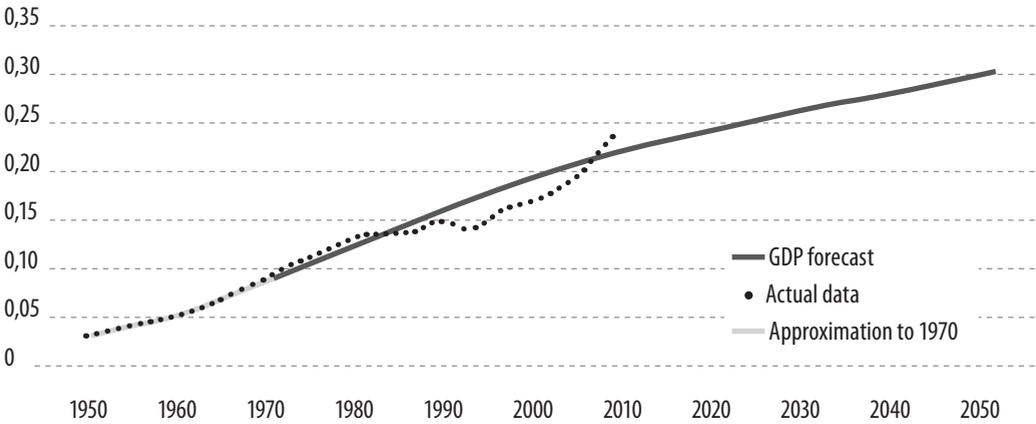


Figure 5.2.10 Dynamics of GDP in RSA, trln. USD



ity 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 GDP, 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.

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

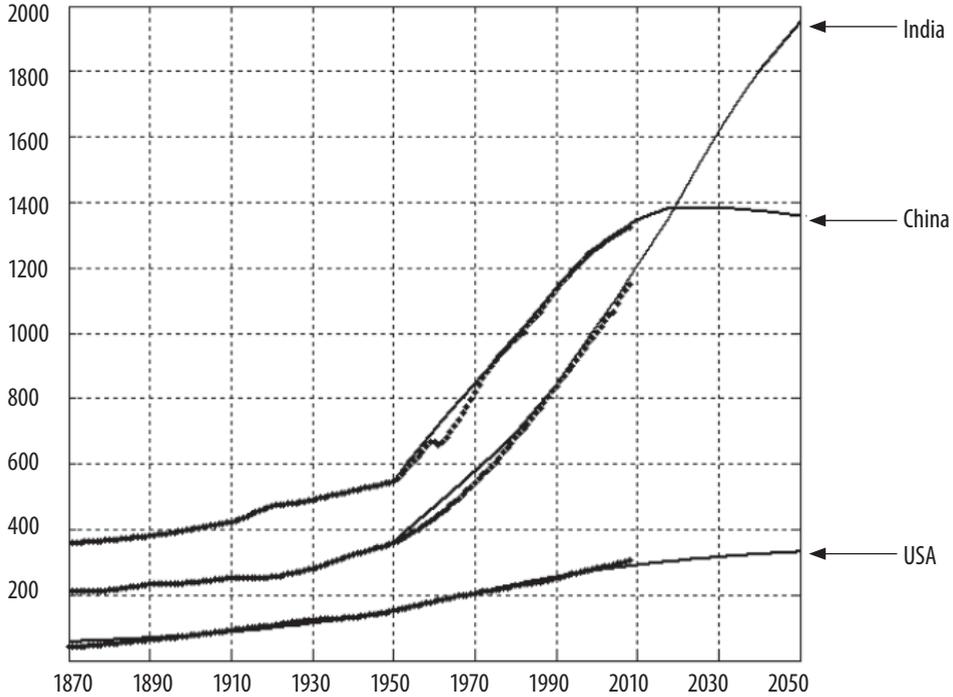
6.1. SYSTEM OF STRATEGIC PRIORITIES

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.

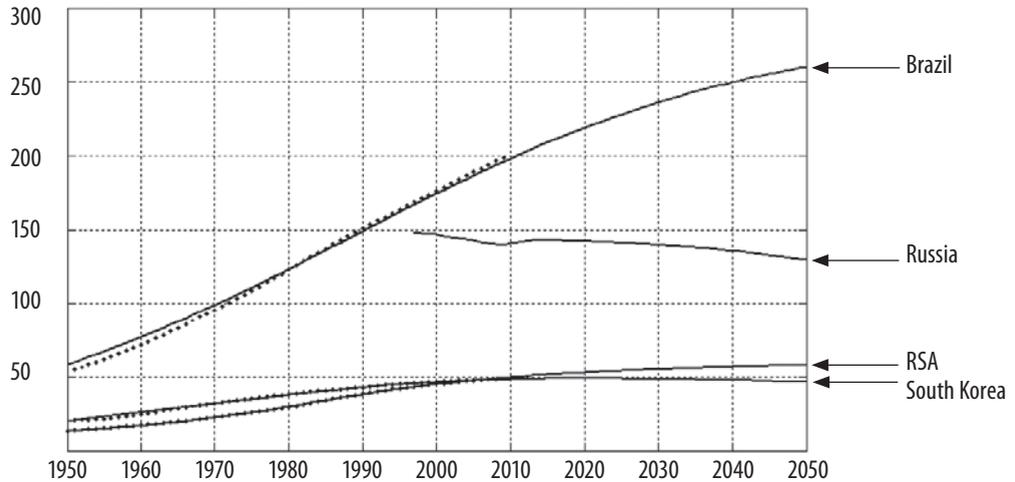
This system should involve the strategic priorities not only in the geo-economic and geo-political, but also in innovation-technological and humanitarian areas, to focus on the further institutionalization of the BRICS, development of integration ties and increasing the role in geocivilizational space.

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

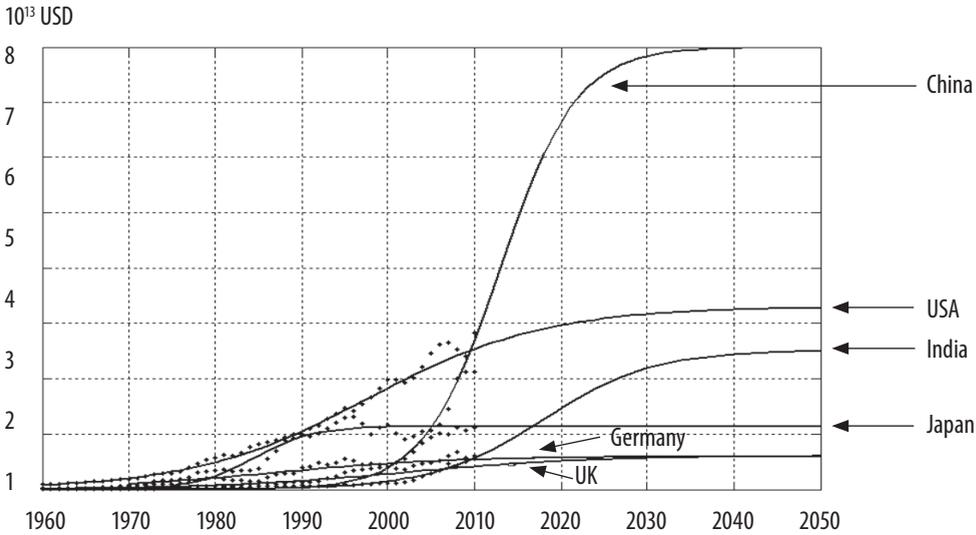


Population, mln. people



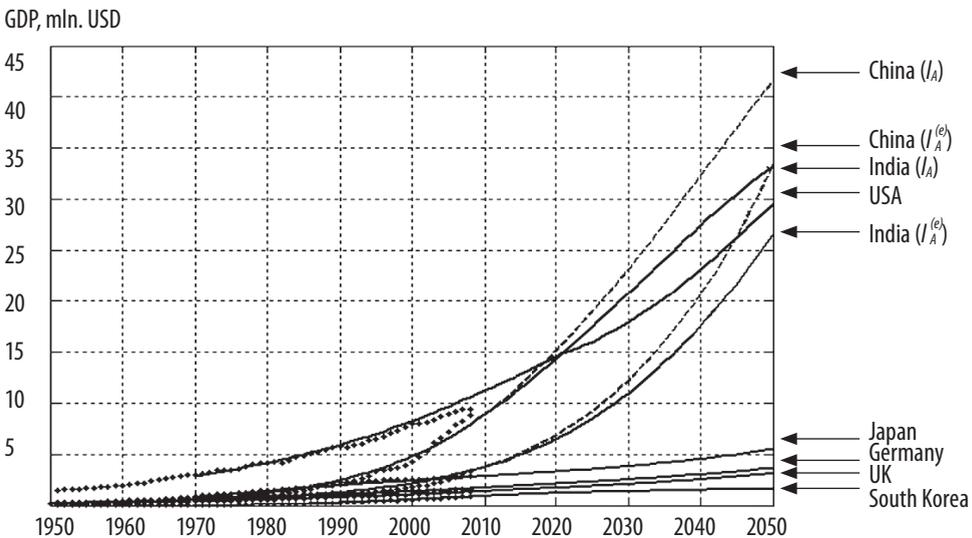
Source: A.A. Akayev, I.Ye. Anufriev, B.A. Akayev. *The Vanguard Countries of the World in the 2nd Century in the Conditions of the Convergence Development: Long-Term Forecasting of Economic Growth*. M.: Knizhny Dom "Librocom", 2013.

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 by 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.

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 sup-

port 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 inter-civilizational 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, CELAC, 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.

Contents of the Full Version of the Report

Authors of the Report || 14
V.A. Sadovnichiy. Foreword || 16
V.A. Nikonov. Introduction || 19

Chapter 1. The BRICS As a Geocivilizational Union of a New Type || 25

1.1. Mission of BRICS in the Geopolitical Space of the 21st century || 26
1.2. BRICS as a Union of a New Type under Conditions of Globalization || 29
1.3. New Approaches to the Planetary World Order || 35
1.4. BRICS and the New World Order || 40
1.5. Factors of BRICS Growth and Interaction with Regional Integration Unions || 57
1.6. The Role and Goal Sets of China in BRICS || 70
1.7. Latin American Aspect of BRICS || 75
 1.7.1. Brazil in Latin American Context || 76
 1.7.2. Relations of BRICS with Latin American Countries || 82

Chapter 2. Regularities and Trends of Global Development and the Rise of BRICS || 95

2.1. The Law of Historical Pendulum Motion: Shift to the East || 96
 2.1.1. The Perturbation of Minds || 96
 2.1.2. The Pendulum Motion in Dynamics of Civilizations || 97

 2.1.3. A Shift of Civilizational Progress Epicenters || 98
 2.1.4. A Turn of Historical Pendulum to the East || 104
 2.1.5. A Long-term Historical Pendulum Movement Prospect || 105
 2.1.6. Related Laws || 107
 2.1.7. The Key Role of Science in Understanding and Use of Laws || 111
2.2. A Technological Base of Global Dynamics and Confrontation || 112
 2.2.1. A Change of Technological Orders As an Objective Base for Escalation of Global Military and Political Tension || 112
 2.2.2. The American Strategy for Maintenance of the Global Domination || 120
 2.2.3. The Anti-Crisis Program on Harmonization of the World Order || 123
 2.2.4. The Anti-War International Coalition || 127
 2.2.5. The Strategy of Faster Growth on the Basis of a New Technological Order || 131
2.3. From American to the Big Asian Cycle of Capital Accumulation || 133
 2.3.1. Establishment of Pax Americana || 134
 2.3.2. The Autumn of the “Patriarch” || 137
 2.3.3. The Spring of Asian Capital Accumulation Cycle || 139
 2.3.4. The Day to Come, What Is It Bearing || 142
2.4. A New Geocivilizational Divide and Prospects for BRICS || 144
 2.4.1. Time for Transformation of Geocivilizational Architecture || 144
 2.4.2. Outlines of the New Geocivilizational Divide || 146

- 2.4.3. Stages of the New Divide Evolvement || 148
- 2.5. Evolution of the World-System: The Decline of the West and the Rise of the East || 149
 - 2.5.1. General Trends of the World Development || 149
 - 2.5.2. Interaction of the Center and Periphery of the World-System || 157
- 2.6. Experience of a Comparative Analysis and Prospects for Economic Development of the BRICS Counties economic development: The Rise of the South || 160
- 2.7. BRICS As a Geopolitical Status in Retrospect and Projection Scenarios || 172
 - 2.7.1. Economy of Force and Crises || 173
 - 2.7.2. Pendulum of Force Relation || 174
 - 2.7.3. Beneficiaries and Victims in the World Economy || 175
 - 2.7.4. Projection Scenarios || 178

Chapter 3. Analysis of Trends of the Rise of BRICS in a Geocivilizational Space || 183

- 3.1. Methodology for Comparative Analysis on the Basis of Geocivilizational Macromodel || 184
- 3.2. A Factor-Based Analysis of BRICS Dynamics in the Context of World Trends || 186
 - 3.2.1. Trends of Demographic Dynamics || 186
 - 3.2.2. A Comparison of Agri-Food Potentials || 191
 - 3.2.3. Outlooks and Threats of Energy-Ecological Development || 195
 - 3.2.4. Challenges of Innovation-Technological Revolution of the 21st Century || 198

- 3.2.5. The Decline of Industrial and Establishing Integral Economic System || 202
- 3.2.6. Transformation of Globalization || 208
- 3.2.7. A Comparison of Socio-Cultural Potentials || 213
 - 3.2.7.1. A Socio-Cultural System || 213
 - 3.2.7.2. Scientific Potential || 213
 - 3.2.7.3. Educational Potential || 216
 - 3.2.7.4. Cultural Potential || 218
 - 3.2.7.5. Human Development Index and Creative Activity || 220
 - 3.2.7.6. Tourism Potential || 225
- 3.2.8. Geopolitical Challenges and Responses || 229
- 3.3. Summary Calculations and Estimations of Global Dynamics Based on Geocivilizational Matrix || 234

Chapter 4. Prospects for Development of the BRICS countries in the Context of World Dynamics || 239

- 4.1. Methodology for Global Modeling and Forecasting || 240
 - 4.1.1. Principles of Global Modelling and Forecasting || 240
 - 4.1.2. Modeling Demographic Dynamics || 245
 - 4.1.2.1. Modeling Demographic Dynamics Long-Term Trends || 245
 - 4.1.2.2. Modeling Demographic Dynamics for Individual Countries || 247
 - 4.1.3. Modeling Socio-Economic Dynamics || 248
 - 4.1.3.1. Modeling the Impact of Scientific-Technological Progress and Human Capital on Economic Development || 248

- 4.1.3.2. Modeling Modernization Processes || 250
 - 4.1.3.3. Modelling Modernization Traps || 257
 - 4.2. Experience of Forecast of the BRICS Countries Development || 260
 - 4.2.1. Brazil || 260
 - 4.2.2. Russia || 264
 - 4.2.3. India || 269
 - 4.2.4. China || 272
 - 4.2.5. South Africa || 276
 - 4.3. Prospects for Development of the BRICS Countries in the Context of World Dynamics || 277
 - 4.3.1. Economic Growth Patterns of the Vanguard Countries of the World || 278
 - 4.3.2. A Comparative Analysis and Dynamics Forecast of the Vanguard Countries of the World in the First Half of the 21st Century || 278
 - 4.3.3. A Model of Sustainable Development of the World Economy in the First Half of the 21st Century || 284
- Chapter 5. Strategic Priorities for Partnership of the BRICS Countries** || 294
- 5.1. System of Strategic Priorities for Development and Partnership of the BRICS countries || 295
 - 5.1.1. Providing Faster Economic Growth Rates and Progressive Shifts in the Structure of Economy and Foreign Trade || 295
 - 5.1.2. A Strategy of Innovation-Technological Breakthrough, Partnership in Innovation-Based Renewal of Economy, Stepping Up Scientific, Invention and Innovation Potentials, Providing Faster Growth Rates of Labor Productivity || 296
 - 5.1.3. Saturation of the BRICS Countries Market with Own Quality Food Relying on Organic Agriculture Development, Support of Family Farms and Cooperation || 297
 - 5.1.4. Uniting the BRICS countries efforts for Satisfaction of Energy Needs under Energy Saving and Decrease of Environmental Pollution Policy || 298
 - 5.1.5. Development of Aerospace Technologies and New Effective Means of Transport || 298
 - 5.1.6. Extensive Humanitarian Cooperation in Public Health Care, Science, Education, Culture and Tourism || 299
 - 5.1.7. Institutionalization of the BRICS as Full-Featured Intercivilizational Integration Union || 300
 - 5.1.8. Coordination of BRICS Countries Actions in Geopolitics, within International Organizations and Ensuring Information Security || 300
 - 5.1.9. Relying on Entrepreneurial, Non-Governmental and Youth Organizations || 301
 - 5.1.10. Coordination of BRICS Actions in Counteracting the Global Challenges and Threats of the 21st Century || 302
 - 5.2. Priorities for Investment Cooperation of the BRICS Countries || 305
 - 5.2.1. Investments and Economic Growth in the BRICS Countries || 305
 - 5.2.2. International Investments Position of the BRICS Countries and the Role of Mutual Investments || 308

5.2.3. Investments Cooperation Roadmap for the BRICS countries 313	5.7.4. Ensuring Information Security in BRICS Economic and Financial Sectors 361
5.3. Trade-Economic and Financial Cooperation 318	5.7.5. Development of ICT Industry in the BRICS Countries As a Strategic Factor to Enhance Their Competitiveness and Security 361
5.3.1. Trade and Economic Cooperation 318	5.7.6. Measures for Counteracting of Collective Consciousness Manipulation Technologies 363
5.3.2. Finance and Credit Cooperation 325	5.7.7. New Information Culture of Society and Ensuring National Security 363
5.3.3. The BRICS Development Bank: Issues of Formation 330	5.7.8. The Issue of Intellectual Security in the Information Society 364
5.4. The BRICS Role and Place in the New Global Financial Architecture in the Context of Long-Term Development 333	5.7.9. Creating Personal Information Security Culture 365
5.4.1. BRICS and Major Tasks of Reforming 334	5.8. Humanitarian Cooperation Priorities 366
5.4.2. The Structure of International Monetary and Financial Relations in the Context of Long-Term Development of the World System, 1815–2015 334	5.8.1. Public Health Care 366
5.4.3. New Global Architecture Projects 337	5.8.2. Science 367
5.4.4. Regional and Global International Trade 339	5.8.4. Culture 368
5.4.5. BRICS Role in the New Architecture of World System 340	5.8.5. Education 370
5.4.6. Afterword 341	5.8.6. International Tourism 370
5.5. Resource Potential and Energy-Ecological Partnership 341	5.8.7. Humanization of Information Networks 371
5.6. Lines of Cooperation in Intellectual Property 353	Afterword: Main Findings and Scientific Recommendations 372
5.7. BRICS Information Security Strategy and Formation of Independent Information and Communication Base 359	Notes 376
5.7.1. Globalization and Super-Monopolization of Information Area 359	References 386
5.7.2. Strategy for Ensuring Information Security of BRICS 359	
5.7.3. Major Tasks in Forming BRICS Information and Communication Base 360	

Authors of the Report⁵

Yakovets Yu.V., Dr.Sc.(Economics), RANS Academician, President of the Pitirim Sorokin — Nikolai Kondratieff International Institute, head of the team (*sections 2.1, 2.4, 3.1, 3.2, 3.3, 5.1, 5.7, 5.8, afterword, general editorship*)

Sadovnichiy V.A., Dr.Sc. (Physics and Mathematics). RAS Academician,

- RAS Academician, Rector of the Lomonosov Moscow State University (*Foreword, sections 4.1, 4.2, general editorship*)
- Akayev A.A.**, Dr.Sc. (Engineering), RAS foreign member, senior staff scientist at the Lomonosov Moscow State University (*sections 4.1, 4.2, 4.3, general editorship*)
- Nikonov V.A.**, Dr.Sc. (History), Chairman of the Board of the National Committee for BRICS Studies, Dean of Public Administration of the Lomonosov Moscow State University, Chairman of the Committee of the State Duma of the Russian Federation for Education, (*Introduction*)
- Ageev A.I.**, Dr.Sc. (Economics), RANS Academician, General Director of the Institute for Economic Strategies, Director of the Pitirim Sorokin — Nikolai Kondratieff International Institute (*section 2.7*)
- Aivazov A.E.**, independent analyst, economist (*section 2.3*)
- Bobrovnikov A.V.**, Dr.Sc. (Economics), senior research scientist at the Institute of Latin America RAS (*section 1.2*)
- Glaziev S. Yu.**, Dr.Sc. (Economics), RAS Academician, Counsellor to the RF President (*section 2.2*)
- Davydov V.M.**, Dr. Sc. (Economics), RAS corresponding member, Director of the Institute of Latin America RAS (*sections 1.1, 1.2*)
- Kolin K.K.**, Dr.Sc. (Engineering), RANS Academician, Vice-President of the Analytical Center for Strategic Researches “Sokol” (*sections 5.1.10, 5.7*)
- Korotaev A.V.**, Dr.Sc. (History), senior staff scientist of the Institute of Oriental Studies RAS, Professor at the global processes faculty of M.V. Lomonosov MSU (*sections 2.5, 4.2*)
- Koshkin R.P.**, Dr.Sc. (Engineering), RANS corresponding member, President of the Analytical Center for Strategic Researches “Sokol” (*section 5.1.10*)
- Lavut A.A.**, Cand.Sc. (Economics), senior research scientist at the Institute of Latin America RAS (*section 5.3*)
- Malkov S.Yu.**, Dr.Sc.(Engineering), senior research scientist at the Institute of Economics RAS, Professor at the global processes faculty of the Lomonosov Moscow State University (*section 4.2*)
- Markin A.V.**, Head of international cooperation at the Legal Policy and Social Development Department, “Skolkovo” Foundation (*section 5.6*)
- Martynov B.F.**, Dr.Sc. (Politics), Deputy Director at the Institute of Latin America RAS (*section 1.7*)
- Nikolaeva L.B.**, Cand.Sc.(Economics), senior scientist at the Institute of Latin America RAS (*section 5.5*)
- Ostrovsky A.V.**, Dr.Sc. (Economics), Deputy Director, Head of the Center for Economic and Social Studies of China of the Institute of Far Eastern Studies RAS (*section 2.6*)
- Popov V.V.**, Cand. Sc. (History), Ambassador Extraordinary & Plenipotentiary of the RF, Director of the MGIMO-University Center for Partnership of Civilizations (*section 1.3*)
- Rastvortsev E.E.**, Postgraduate student of the Russian Presidential Academy of National Economy and Public Administration (*section 3.2*)
- Remyga V.N.**, Dr.Sc.(Economics), senior research scientist, Center for

International Economic Relations
Studies of the Finance University
at the RF Government, General
Director of the International Strategic
Technology Alliance (*sections 4.3, 5.3.3*)

Simonova L.N., Cand. Sc. (Economics),
Director of the Center for Economic
Studies of the Institute of Latin
America RAS (*section 1.7*)

Titarenko M.L., Dr.Sc.(Philosophy), RAS
Academician, Director of the Institute
for Far Eastern Studies RAS (*section 1.6*)

Toloraya G.D., Dr.Sc. (Economics),
Executive Director at the
National Committee for
BRICS Studies (*section 1.4*)

Kheifitz B.A., Dr.Sc. (Economics),
senior staff scientist at the
Institute of Economics RAS,
member of the Academic Board
of the National Committee for
BRICS Studies (*section 5.2*)

Kholodkov N.N., Dr.Sc.
(Economics), senior research
scientist at the Institute of Latin
America RAS (*section 5.3*)

Tsagolov G.N., Dr.Sc. (Economics),
RANS Academician, Professor
at the International University
in Moscow (*section 1.5*)

Chemova N.G., Postgraduate Student
of the Russian Presidential Academy
of National Economy and Public
Administration (*section 5.8.4*)

Chistilin D.K., Cand.Sc. (Economics),
RANS foreign member, President
of the Simon Kuznets International
Institute for Development and
Self-Organization (*section 5.4*)

Yakovets T. Yu., Cand.Ec.
(Economics), Academician of the
International Futures Research
Academy (*section 3.2.7.5*)

Endnotes

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.
5. 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.



The Law of Historical Pendulum Motion: a Shift to the East

Perturbation of Minds

Since the end of the 20th century humanity entered a period of the historical fault line. Tectonic shifts take place in the world of civilizations, the formation of new global fault lines are taking shape. The familiar world is falling, and it sharply aggravates the contradictions between civilizations, nations, ethnic groups, social strata and generations. The pace of changes is increasingly picking up — as evidenced by the events in 2014 around the Ukrainian and Arab crisis.

All this overset not only ordinary people of the Earth, politicians and statesmen, business leaders and cultural professionals, but also scientists. The now prevailing scientific schools professing the industrial paradigm, usual picture of the world, have failed to give any definite diagnosis of today's global crisis, nor to determine the outlines of the emerging society and ways forward to it. The very science about society has found itself in the global crisis, a paradigm shift. It has lost its predictive power, the gift of foresight. It is time to change the scientific paradigms, time of the scientific revolution of the 21st century¹.

The fundamental principles of the new picture of the world were laid by the great thinkers of the 20th century: Vladimir Vernadsky and Nikita Moisseev, Pitirim Sorokin and Nikolai Kondratieff, Joseph Schumpeter and Fernand Braudel, John Galbraith

Yakovets, Yuri V. —
*RANS Academician,
President of the Pitirim
Sorokin — Nikolai Kondratieff
International Institute, Dr.Sc.
(Economics), Professor*

and Alvin Toffler. Modern Russian scientific schools — Russian cyclicism², civilizational³, noospheric, innovation⁴, integral macro-forecasting⁵ actively develop their ideas.

The fundamental principles of the new paradigm of social sciences were laid by great Russian-American scientist Pitirim Sorokin whose 125th birth anniversary is celebrated in 2014. His monograph “Basic Trends of Our Times”⁶ published 50 years ago, in 1964 gives a profound analysis of the crisis of the industrial society, defines the outlines of the forthcoming integral socio-cultural system. His foresight comes true.

Causes of the current perturbation of minds lie in the fact that the scope and depth of drastic transformations occurring in the world of civilizations are far beyond the usual fluctuations of medium-term cycles of about ten-year rhythm and even half a century long-term Kondratieff cycles. They can only be understood at the level of super long-term, secular and millennial civilizational cycles: a change of world civilizations, generations of local civilizations and historical super-cycles in the dynamics of global civilization.

One needs not even from a bird's eye view, but from the space height estimate the certainty, essence and prospects of movements and changes occurring in the world, understand the essence of the laws that define this movement, and long-term prospect of transformations.

Pendulum Motions in Dynamics of Civilizations

The history of civilizations dates back to the Neolithic Revolution 7–8 millen-

nia B.C. This position was maintained by great Russian thinker Academician N.N. Moisseev⁷: “The Neolithic Revolution qualitatively changed the nature of social development of the human race. Its consequences were such that already allow us speaking about the beginning of history ... The Neolithic Revolution speeded up the development of society many times by creating a qualitatively new development incentives — incentives that could not be in a previous era in principle ... The Neolithic Revolution was the beginning of all the currently existing civilizations ...”⁸.

Five thousand years after there was a new qualitative leap: the world of local civilizations emerged, there were fully formed the genotypes of civilizations that persist to this day.

This revolution evolved on a relatively small area north of the equator: in the valleys of great historic rivers — the Nile (the ancient Egyptian civilization), the Tigris and Euphrates (Sumerian civilization), the Indus (Harappan civilization), a little later — Huang He and Yangtze (Chinese civilization)⁹, and also Phoenician, Minoan, Elam and other civilizations of the first generation.

Since then, *the history of the world is developing as a history of civilizations*. Arnold Toynbee studied 37 civilizations of three generations, including five civilizations of the 20th century: Western (Western Christian) Orthodox-Christian, Islamic, Hindu, and Far Eastern.¹⁰ Fernand Braudel increased the number of currently existing civilizations to eight¹¹, and S. Huntington to 9, singling out the western, Eurasian, Muslim, Chinese, Indian, Japanese, Latin American, Buddhist and African.¹²

Modern Russian civilizational school identifies five generations of local civi-

lizations: ancient class-based (late 4th — early 1st millennium B.C.), Antiquity (early 1 millennium B.C. — Mid 1st millennium A.D.); medieval (6th–15th centuries); industrial (16th–20th centuries); from the end of the 20th century there was a transition to the fifth, a more differentiated and active generation. Modern integral generation includes 12 local civilizations: Europe (Western European, Eastern European, and Eurasian), America and Oceania (North American, Latin American, and Oceanic), Asia and Africa (Chinese, Indian, Japanese, Buddhist, Muslim, African — Sub-Saharan Africa)¹³. In addition, one can talk about the Arctic civilization as the interaction space of the Eurasian, Western European and North American civilizations¹⁴.

A study of the history and future of local civilizations has discovered the periodic movement of the epicenter of civilizational progress (as a result of the change of civilizational cycles) — from the East to the West and back. I term it the *law of the historical pendulum* and research into its manifestations in the history of civilizations for five thousand years (in more detail — for the last two thousand years). Concurrently I research into two related laws: the law of compression of historical time and the law of polarization and socio-political partnership in the periods of civilizational crises and recovery.

The contents of the law of the pendulum can be formulated like this: *when the cycles of civilization change, it is observed a shift of the epicenters of progress (vanguard civilizations) from the East to the West and back*. The operation of this law applies both to the five thousand year history of local civilizations, and to the shift of the epicenter of civilizational progress in the 21st century.

A Shift of the Epicenters of the Civilizational Progress

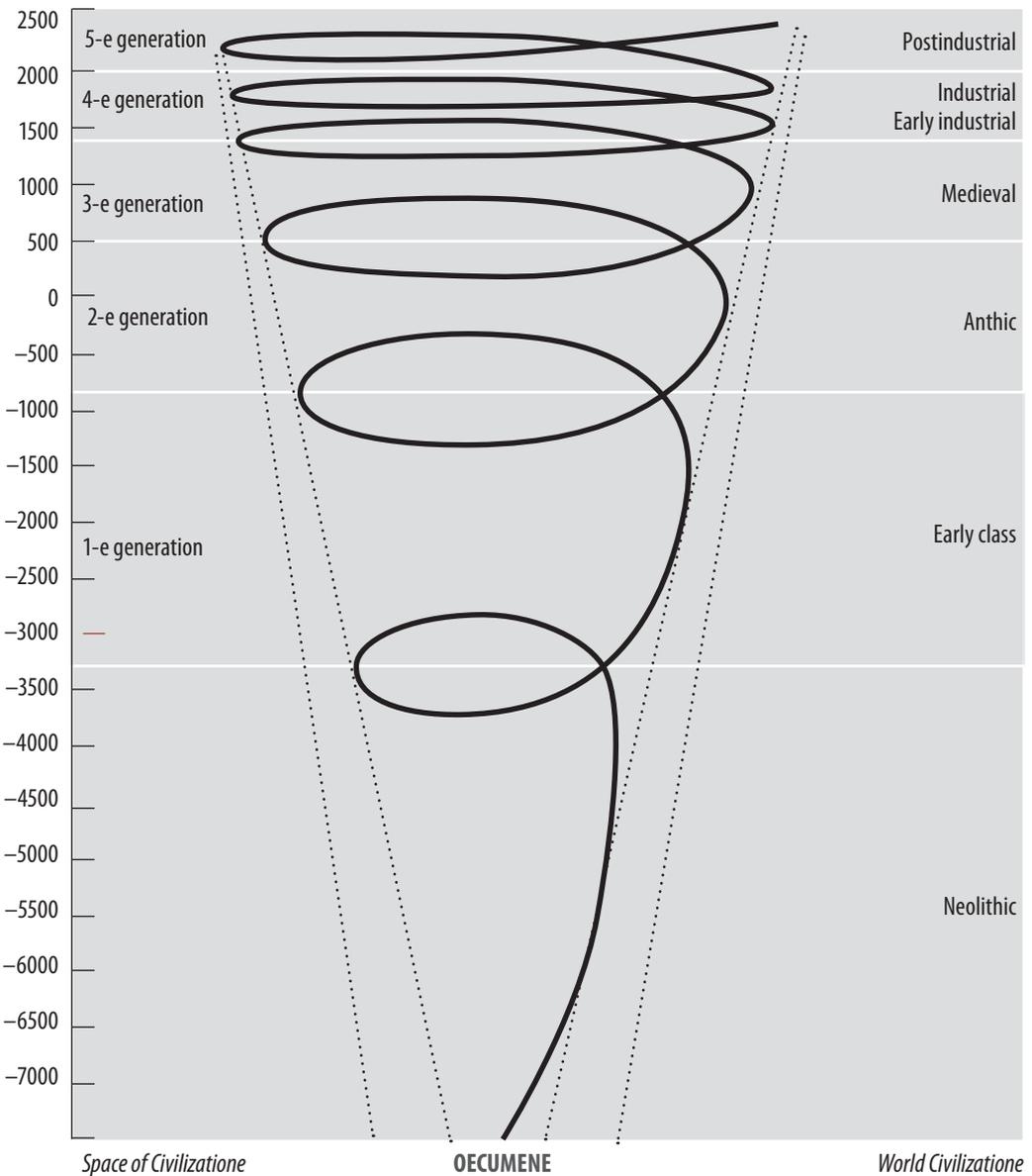
Let us consider the trajectory of the historical pendulum motion and the trajectory of move of the epicenters of the progress of civilizations for ten thousand years of history of civilizations. Graphically, this can be expressed in the form of a spiral of dynamics of civilizations (Fig. 1).

The epicenter of *the first turn of the spiral* of history of civilizations was located in a relatively narrow belt to the north of the equator in North Africa and Asia, where the Neolithic Revolution evolved about ten decades ago, about seven thousand years ago — the urban revolution, the first cities (Jericho, Tyre, Mahenjo-daro, et al.) sprang up.

The second turn of the spiral began more than five thousand years ago — the first generation of local civilizations — ancient Egyptian, Sumerian, Harappan formed, and then Phoenician, Minoan, Elam, and Chinese. This required preconditions: favorable conditions — natural (fertile lands, moderate climate) and demographic (relatively high for that time, the number and density of population). It was at this time laid the beginning of the history of civilizations, the foundations of applied scientific knowledge and movement to the noosphere.

At the third turn of the spiral, during the ancient world civilization and the second generation of local civilizations, the historical pendulum fluctuated towards the West. The epicenter of the progress of civilization move to the Mediterranean (Greek and Roman civilizations), but the second epicenter was in the East — Persian and Chinese civilizations. During this period, it evolved the first scientific revo-

Figure 1. *The spiral of dynamics of civilizations*¹⁵



lution, there were laid the foundations of the modern system of science (Plato, Aristotle), the first scientific institutions were established (Plato's Academy — 387 B.C., Aristotle's Lyceum — 347 B.C.), the techno-

logical revolution of the Iron Age evolved, democracy was born in the Greek city-poleis, the world empires emerged (the Achaemenids, Alexander the Great, Roman, Chinese).

Further motions of the historical pendulum can be represented on the basis of statistical data of A. Maddison on the dynamics of population and GDP (in comparable prices, by purchasing power parity) for two millennia (1–2001), uniting these data into two groups: the civilizations of the West (Western Europe, Eastern Europe, Western offshores, including the US, Canada, Australia and New Zealand) and civilizations of the East and the South (China, India, Japan, the rest of Asia, Africa, and Latin America) — see *Table 1.* and *Fig. 2.*

What conclusions maybe made from the data given in table 1?

1. *In the ancient times* (beginning of the 1st millennium B.C. – 5 A.D.), despite all the achievements of the Greco-Roman civilization, the epicenter of civilization was in the East, where more than 3/4 of the world population lived (at the beginning of A.D.), and produced more than 4/5 of world GDP. The world leaders were India (32% of the population and 33% of GDP) and China (26% of the population and GDP). The gap in the level of economic development (GDP per capita) was negligible.

Table 1. A comparison of dynamics of civilizations of the West, East and South for 1-2001¹⁶

Nº			1	1000	1500	1600	1700	1820	1870	1913	1950	1973	2001
1	Western Europe	A	10.7	9.5	13.1	13.3	13.5	12.8	14.7	14.6	12.1	9.2	6,4
		B	10.8	8.7	17.8	19.8	21.9	23.0	33.0	33.0	26.2	25.8	20,3
2	Eastern Europe	A	2.1	2.4	3.1	3.0	3.1	3.5	4.2	4.4	3.5	2.8	2,0
		B	1.9	2.2	2.7	2.8	3.1	3.6	4.5	4.9	3.5	3.4	2,0
3	Western Offshores	A	0.5	0.7	0.4	0.4	0.3	1.1	3.6	6.2	7.0	6.4	5,1
		B	0.5	0.7	0.5	0.3	0.2	1.9	10.0	21.3	30.7	25.3	24,6
3.1	including USA	A	0.3	0.5	0.5	0.3	0.2	1.0	3.2	5.4	6.0	6.4	4,6
		B	0.3	0.2	0.1	1.8	8.9	18.9	27.3	22.1	21,4
1-3	West	A	13.3	12.6	16.5	16.7	16.9	17.4	22.5	25.2	22.6	18.4	13,5
		B	13.2	11.6	21.0	22.9	25.7	28.5	47.5	58.7	60.4	54.5	46,9
4	China	A	25.8	22.1	23.5	28.8	22.9	36.6	28.1	24.4	21.7	22.5	20,7
		B	26.1	22.7	24.9	29.0	22.3	32.9	17.1	8.8	4.5	4.6	12,3
5	India	A	32.5	28.0	25.1	24.3	27.3	20.1	19.9	17.0	14.2	14.8	16,6
		B	32.9	28.9	24.4	22.4	24.5	16.0	12.1	7.5	4.2	3.1	5,4
6	Japan	A	1.3	2.8	3.5	3.3	4.5	3.0	2.7	2.9	3.3	2.8	2,1
		B	1.2	2.7	3.1	2.9	4.1	3.0	2.3	2.6	3.0	7.8	7,4

Table 1. A comparison of dynamics of civilizations of the West, East and South for 1-2001 (continued)

Nº			1	1000	1500	1600	1700	1820	1870	1913	1950	1973	2001
7	Rest of Asia	A	15.9	15.5	12.6	11.1	11.9	8.6	9.4	10.3	15.6	17.3	20,0
		B	16.0	16.0	12.6	11.1	10.9	7.5	6.9	6.0	6.8	8.7	13,2
8	Latin America	A	2.4	4.3	4.0	1.5	2.0	2.1	3.2	4.5	6.6	7.9	8,6
		B	2.2	3.9	2.9	1.1	1.7	2.2	2.5	4.4	7.8	8.7	8,3
9	Africa	A	7.2	12.1	10.6	9.9	10.1	7.1	7.1	7.0	9.0	10.0	13,4
		B	6.9	11.7	7.8	7.1	6.9	4.5	4.1	2.9	3.8	3.4	3,3
4-9	East and South	A	85.1	84.8	79.3	78.9	78.7	77.5	70.4	66.1	70.4	75.3	81,4
		B	85.3	85.9	75.7	73.6	70.4	66.1	45	32.2	30.1	36.3	49,9
Former USSR		A	1.7	2.7	3.9	3.7	4.4	5.3	7.0	8.7	7.1	6.4	3.7
		B	1.9	2.4	3.4	3.5	4.4	5.4	7.5	8.5	9.8	9.4	3.6
Relation of West to East and South (1-3/4-9), %		A	15.6	14.9	20.8	21.2	21.5	22.5	32.0	38.1	32.1	24.4	16.6
		B	15.5	13.5	27.7	31.1	36.5	43.1	105.6	182.3	200.7	150.1	94.0

A — share in the world population, %; B — share in the world GDP by PPP (in prices of 2000), %

2. In the heyday of the medieval of the world civilization (in 1000) the lead remains with the East (80.5% of the population and 85% of GDP) — by labor productivity the East gets ahead the West. In rivalry of India and China by production efficiency China shot ahead (with a share of 22% in the population the share of GDP 29%, in India 28% and 29%, respectively). Western Europe's share declined slightly for the millennium (after the failure in the middle of the 1st millennium as a result of the fall of the Western Roman Empire).

In this period Africa developed at a faster rate — its share in the population and GDP of the world for millennium increased from 7 to 12%. 3.

3. In the first half of the 2nd millennium the historical pendulum began to turn to-

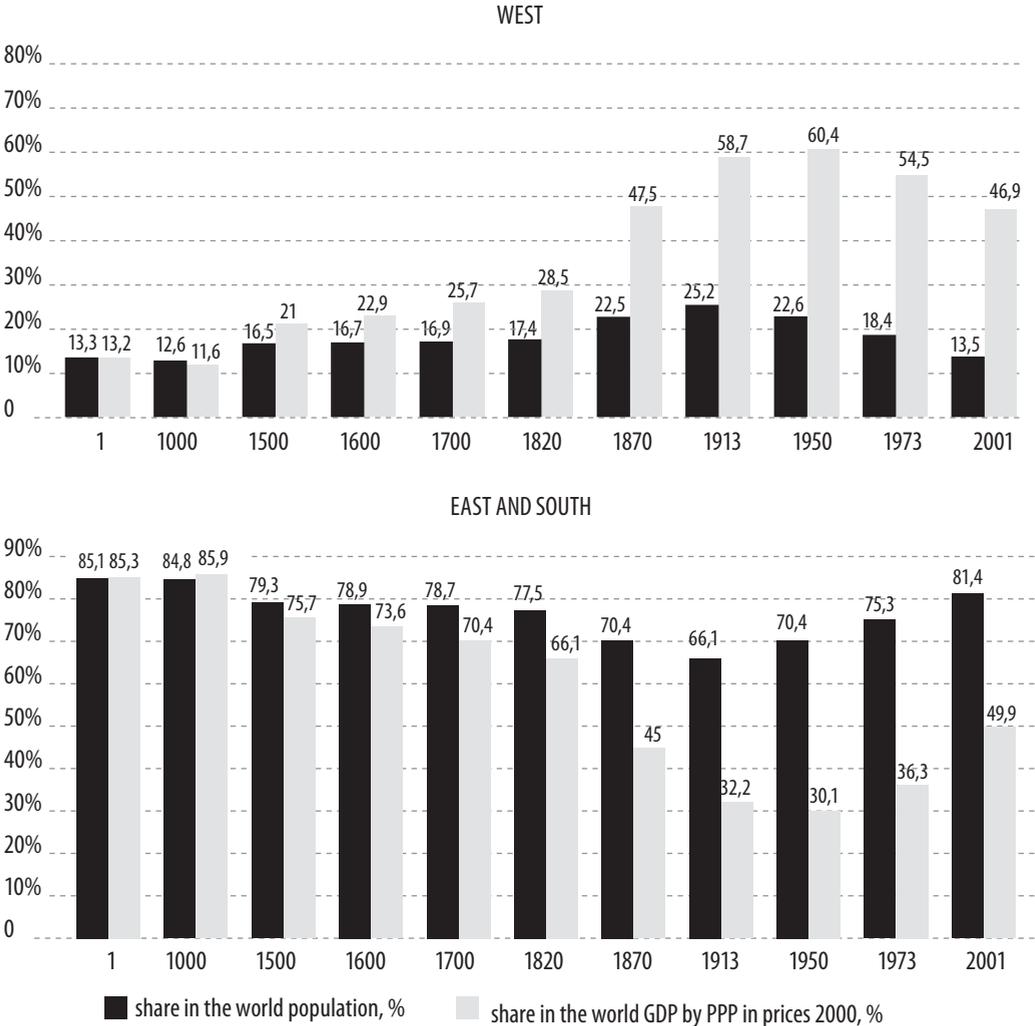
wards Western Europe, with its growth of the share in the world population from 9.5% to 13.1%, in the world GDP from 8.7% to 17.8%; production efficiency was twice the world average. This was due to the accelerated development of workshop production and trade. However, the world leadership still remained with the East, first of all, with China (23.5% of the population and 25% of GDP), India (25% and 24%, respectively). Africa and Latin America began to cede the grounds.

A characteristic feature of this period was the absolute leadership of China both by the share of the world population and GDP, and the technological level and economic efficiency. American historian William McNeill noted the factor that changed the balance of power in that

era — the heyday of the Chinese civilization, which raised its culture, wealth and power to a new level for four-five centuries, surpassing the achievements of the rest of the world at the time (it was about the period 1000–1500¹⁷). After 1000, according to McNeil, there occurred a shift of the world center of civilizations from the Middle East to China¹⁸.

During this period, China was the world leader in the development of science, technology, economy, and culture. There were invented gunpowder, the compass and printing that changed the course of the world history, achieved the utmost high technical and economic level, which can be estimated by the ratio of the specific share in world GDP to the share of the

Figure 2. Comparative dynamics of civilizations of the West, East and South



world population — term it the coefficient of relative effectiveness C^0_E : It was 1.3 in 1000, while in Western Europe 0.9. However, by the end of the period (by 1500) it decreased to 1.1 in China and in Western Europe it rose to 1.4 that became the basis for the further rise of the West.

4. *Radical changes took place in the next 500 years*, when the pendulum of history of civilizations with an increasing speed rushed to the West, which share in the world population grew from 16.7% in 1500 to 17.3% in 1820 and peaked in 1913 (24% — nearly a quarter of the world population), and in the world GDP — from 20.8% in 1500 to 28.4% in 1820 and peaked in 1950 — 57%.

Western Europe led this breakthrough, with its share of the world population that changed slightly (13.1 in 1500, 12.8% in 1820, up to 14.7% in 1870), but the share in the world GDP as a result of the manufacturing and then the industrial revolution rose from 17.8% in 1500 to 23% in 1820 and peaked at 33% in 1913. But then started to decline to 20.3% in 2001 (the world population — to 6.4%). The epicenter of progress moved to North America. The US share in the population and production began to grow rapidly, reaching the peak in 1950 — 6% of the world population and 27.3% of GDP — the tops of technological and economic efficiency ($C^0_E = 4.55$).

This rise of the West was achieved by the conquest of civilizations of the East, the conquest of civilizations of the South. India's share in world population decreased from 27.3% in 1700 to 14.2% in 1950, GDP — from 24.5% in 1700 to 3.1% in 1973; relative efficiency factor for the same period fell from 0.9 to 0.2. China continued to grow, reaching a record high in 1820 — 36.6% of the world population and 32.9% of the world GDP. However, the

coefficient of relative efficiency decreased from 1.1 in 1500 to 0.9 in 1820 and continued to fall to 0.2 in 1973.

The share of the West in the world population grew from 16.7% in 1500 to 24.4% in 1913, but then began to decline to 21.6% in 1950 and 13% in 2001. The share of GDP increased from 20.8% in 1500 to 57% in 1950; the coefficient of relative efficiency increased from 1.2 in 1500 to 1.6 in 1820 and 2.9 in 1973. This was a result of the manufacturing revolution of the 16th century, the industrial revolution of the 19th century and the scientific and technological revolution of the middle of the 20th century.

At the same time, the opposite trend prevailed in the East and South: the share in the world population from 78.7% in 1500 remained almost unchanged until 1820 (77.5%) — mainly due to the increase in the share of China from 23.5% to 36.6%, while the share of India fell from 24.4% to 16%, the rest of Asia from 12.6% to 8.6%, and Latin America from 4% to 2.1%). Drop in the share of GDP was more significant: by the East and the South in general — from 75.2% in 1500 to 66% in 1820 and 29.2% in 1970.

Thus, the early industrial period (16th–18th centuries) and especially the industrial (19th–20th centuries) world civilizations and the fourth generation of local civilizations (16th–20th centuries) is characterized by a progressive shift of the historical pendulum towards the West, the formation of the Western European (from the 20th century in alliance with North American) civilization that subjected more than a half geocivilizational space to rule, destroyed American civilizations and undermined the Indian, Chinese, Muslim, Buddhist and African civilizations. In the 19th cen-

tury this dominance was opposed by Eurasian (the Russian Empire) and a part of the Muslim (the Ottoman Empire) civilizations.

A Turn of the Historical Pendulum to the East

In the second half of the 20th century the first signs of a reverse movement of the historical pendulum — from the West to the East and South — appeared that was the forerunner of the decline of the Western domination. The first signal about it was given by postwar Japan. For a quarter century (1950–1973) despite the decline in the proportion of the world population from 3.3% to 2.8%, its share in the world GDP rose from 3.0% to 7.8% (2.6 times), and the coefficient of relative efficiency increased from 0.91 to 2.79 — 3.1 times, almost on par with those in the West (2.95). However, in general, for the East and South it was 0.4 only.

The shift to the East and South became evident in the last quarter of the 20th century when from 1973 to 2001, their share in the world population increased from 76.3% to 81.6%, in the world GDP from 29.2% to 49.2%, and the relative efficiency coefficient increased from 0.4 to 0.6. This trend accelerated at the beginning of the 21st century. By 2012, China's share in world GNI by PPP rose to 15.2%, India to 8.6%, while the United States declined to 17.1%; the coefficient of relative efficiency C_E^O in China rose from 0.6 in 2000 to 0.8 in 2012, in India from 0.3 to 0.5, and in the United States declined from 4.6 to 3.8.

There was a sharp turn of the historical pendulum towards the East and South, rising civilizations represented by the BRICS. The descending civilizations represented

by the “Group of 7” are steadily losing grounds in a geocivilizational space, despite extensive but unsuccessful attempts by the US and the European Union to maintain and consolidate its dominance, to stop the movement of the historical pendulum. It can be expected that by 2030, the superiority of the East and South will be undisputed and solidify itself for the next century.

The leader of this breakthrough was China. By reducing the share in the world population from 22.5% to 20.3% its share in the world GDP increased from 4.6% to 12.3 — 2.7 times, and the coefficient of relative efficiency increased from 0.2 to 0.59. India's share in the world population increased from 14.8% to 16.8% in the world GDP — from 3.1% to 5.4% — 1.7 times; the coefficient of relative efficiency increased from 0.21 to 0.32. Japan's share in the world population declined from 2.8% to 2.1% in the world GDP — from 7.8% to 7.4%.

The rest of Asia that included the Republic of Korea, Indonesia and a number of Muslim and Buddhist countries, rose. Its share in the world population increased from 18.3% to 20%, in the world GDP — from 6.8% to 13.2%; the coefficient of relative efficiency — from 0.5 to 0.66.

The share of Latin America in population increased from 7.9% to 8%, but its share in GDP decreased from 8.7% to 8.3%, and the relative efficiency coefficient decreased from 1.1 to 1.04.

Africa's share in the world population increased significantly — from 10% to 13.4%, but the share in GDP declined from 3.4% to 3.3%; the coefficient of relative efficiency fell from 0.34 to 0.25. Africa rapidly growing by population is in a state of protracted civilizational crisis.

Thus, in the last quarter of the 20th century it began a drastic transformation of geocivilizational space. The period of the Western domination comes to an end. The main line of this transformation is becoming increasingly apparent (it was foreseen by Pitirim Sorokin and Arnold Toynbee half a century ago): the degradation of the West and sensate socio-cultural system, the rise of the East and the evolvement of an integral socio-cultural system.

A Long-Term Prospect for the Historical Pendulum Motion

The reverse of the historical pendulum to the East is not short term. This is a long-term, secular trend determined by the pace of civilization progress, a profound transformation of all components of the genotype of civilization, and first and foremost the demographic and nature-ecological factors. Long-term and super long-term projections made by the UN (population by 2100, environmental and food by 2050), Energy Outlook of the International Energy Agency, OECD economic outlook by 2060, and, lastly, the Global Forecast “Future of Civilizations” for 2050, made by the Pitirim Sorokin — Nikolai Kondratieff International Institute in 2008-2009 and presented at the United Nations headquarters, the global forecast of the Institute of Complex Systems Mathematical Research Lomonosov MSU — all these projections show that the main progress constraints for civilizations in the 21st century are two factors: *first*, the fall in the rate of population growth (and therefore — labor resources), depopulating, aging of the population and the consequent drop in innovation activity; *second*,

the oncoming exhaustion of fossil fuels, and many kinds of mineral raw materials, the growing shortage of water, land and forest resources and the achievement of a critical level of environmental pollution that is becoming one of the factors of adverse climate change, a growing number of natural and man-made disasters.

The negative effect of these two factors is compounded by three other factors:

- increase of parasitism and decay of market-capitalist economic system, the proliferation of “bubble economy” and pyramid schemes (including the global pyramid of the dollar), the omnipotence of transnational corporations and the growing gap between rich and poor civilizations, countries and social strata;

- aggravation of geopolitical and socio-political confrontation, attempts to build a unipolar world order with the aggressive domination of the West, a new round of the arms race, the growing threat of military conflicts and international terrorism; most clearly apparent in 2014 against the background of the Ukrainian and Arab crises;

- increasing degradation and decaying of sensate socio-cultural system that prevails in the West, the crisis of science and education, the spread of mass impersonal culture, danger of losing civilizational values by the next generation.

All these five negative trends and threats are quite real and give a negative global synergetic effect, complementing and extending each other. But they do not mean the End of history, the death of civilization. On the contrary, they cause a vigorous response of progressive forces, increasing trends of evolving integral, humanistically — noospheric civilization, and integral socio-cultural system. And this

is neither a dreamboat, nor crystal castles, but growing, gaining strength reality — especially in the civilizations of the East (but its elements are also present in the Western civilization — such as Austria, Sweden and the other Nordic countries). The future is with these elements of the oncoming integral society, the forthcomingness and the basic outlines of which are determined by Pitirim Sorokin half a century ago, and disclosed by representatives of modern civilizational school.

One should also expect the convergence of the coefficient of relative effectiveness at both poles. As a result, after a couple of decades, the East and South will become the world's dominant economic power, narrowing the West. This trend will be exacerbated by the inevitable collapse of the “bubble economy” and the dollar pyramid.

Demographic, natural-resource and economic advantages of the East will eventually be supplemented by technological and socio-cultural, and will ensure geopolitical advantages, despite the enormous military might of the U.S. The West will be losing a dominant position in the UN and other international organizations.

Consequently, in the 21st century it will persist and enhance the path of the historical pendulum motion towards the East.

Endnotes

1. *Yakovets Yu.V.* The Great Scientific Revolution of the 21st Century. M.: SKII, 2010.
2. *Yakovets Yu.V.* The Russian Cyclicalism: A New Vision of the Past and Future. Lewinston-Queenston-Lampeter. The Edwin Mellen Press, 1999.

3. *Kuzyk B.N., Yakovets Yu.V.* Civilizations: Theory, History, Dialogue, and the Future. Volumes 1,2. M.: INES, 2006.
4. *Sadovnichiey V.A., Akayev A.A.* Modeling and Forecasting of World Dynamics. M.: Nauka, 2012.
5. Global Forecast “Future of Civilizations” for 2050. Under the editorship of Yu.V. Yakovets. Parts 1-10. M.: SKII, 2008, 2009. (www.globfuture.newparadigm.ru)
6. *Sorokin Pitirim A.* The Basic Trends of Our Times. M.: Nauka, 1997.
7. *Moisseev N.N.* The Fate of Civilizations. The Path of Mind. M.: MNEPU, 1997.
8. *Moisseev N.N.* The Fate of Civilizations. The Path of Mind. M.: MNEPU, p. 32.
9. *Mechnikov L.I.* Civilizations and Great Historic Rivers. M.: Progress, 1995.
10. *Toynbee, Arnold.* A Study of History. M.: Progress, 1991.
11. *Braudel, Fernand.* Grammar of Civilizations. M.: Ves Mir, 2008.
12. *Huntington S.* The Clash of Civilizations and the Remaking of World Order. N.Y.: Simon and Shuster, 1996. P. 41.
13. *McNeill, William.* The Rise of the West. A History of the Human Community. Kiev: Nika-Center; Moscow: Starlight, 2004.
14. *Yakovets Yu.V.* The Arctic Civilization: Distinctions, Historical Background and Prospects. M.: SKII, 2011.
15. *Kuzyk B.N., Yakovets Yu.V.* Civilizations: Theory, History, Dialogue, and the Future. Vols 1,2. M.: INES, 2006.
16. *Maddison A.* The World Economy. Paris: OECD, 2006. P. 638, 641.
17. *McNeill, William.* The Rise of the West. A History of the Human Community. Kiev: Nika-Center; Moscow: Starlight, 2004.
18. *Ibid.* P. 29.



From Era of great divergence to Era of great convergence

Mathematic modeling and forecasting of long-term technological and economic development.

Present paper is dedicated to the practical use of endogenic models of economic growth in long-term modeling and forecasting of economic development of different groups of countries with high, average and low per capita income in industrial age (1820s–2050s). BRICS countries are separated in special group.



Akayev Askar A —
*RAS foreign member,
senior staff scientist at the
Lomonosov Moscow State
University, Dr.Sc. (Economics)*

The classical exogenic and endogenic models of economic growth are presented in the first part of present book along with modern calculation models of technical (technology) advance, which plays key part in economic development of any country. We single out models appropriate for the practical calculations of long-term technological and economic dynamics. Using the calculation of long-term dynamics of world economy the technique of sequential stepwise refinement of technical progress, developed by author was presented. The potential of NBIC-technologies as the main source of economic growth till 2050 was calculated. Limitations, due to gradual exhausting of hydrocarbon energy resources and new strategy of energy development for the XXI century, providing ecological safety were considered.

In the second part of present paper we perform, by means of simple AN-model of economic growth and stepwise refine-

ment of technical progress (A), modelling of two-century transition process to Great Divergence (XIX c. and the first half of the XX century), then — from Divergence to Convergence (second half of the XX century), and at last, to the acceleration of convergence in the early XXI century. The forecast, calculated after this model reveals that Great Convergence will occur by 2050 and the world center of production of goods and services will shift again to China, India and other Asian countries, like it was in pre-industrial era.

In the third part of the book, we analyze the outlines of the model of sustainable development of global economy in the first half of the XXI century. We listed problems which slow down convergence process, and the prospects of forthcoming sustainable development of vanguard countries of developing world as exemplified by BRICS countries which provide main contribution to acceleration of convergence. We formulated conditions, providing sustainable development of world economy and mechanisms and strategy of management of sustainable growth in the first half of the XXI century.

Content

Foreword

Part one. MODERN MODELS
OF ECONOMIC GROWTH

**Chapter 1. Classical models
of economic growth**

- 1.1. Factors of economic growth
- 1.2. Harrod-Domar growth model
Solow growth model
- 1.3. R. Lucas and P.Romer models
of endogenic growth

- 1.4. G. Mankiw, D.Romer and D. Weil
model with human capital
- 1.5. AN-model and related
models of endogenic growth

**Chapter 2. Modern models for
the calculation of dynamics
of technological advance**

- 2.1. Malthusian economy and industrial
era. Kuznets-Kramer model
- 2.2. R&D field as modern factory
producing technological innovations
- 2.3. R&D Romer-Jones model
and its elaboration
- 2.4. The forecast calculations of long-term
demographic and economic dynamics
- 2.5. Further refinement of R&D model
- 2.6. Model for the calculation of
borrowed technologies contribution
into the catch-up growth rate

**Chapter 3. The forecast of rate of
technological advance, generated by
NBIC-technologies and its influence
on world economic growth in the
first half of the XXI century**

- 3.1. The trend of deceleration of world
economy growth rate over 5th BKC (5th
Big Kondratiev Cycle, 1982–2018)
- 3.2. From the theory of innovative —
cyclic economic development by
Schumpeter — Kondratiev
- 3.3. Innovative paradigm by Hirooka
- 3.4. The start of upswing of 6th
long Kondratiev wave of economic
development expected soon
- 2.5. Mathematical model for the
forecasting of NBIC-technologies
economic potential

**Chapter 4. Modeling and forecasting of
world economic dynamic in industrial
era with the help of AN-model**

Chapter 5. Energy model of economic growth and energy-ecological strategy of the XXI century

- 5.1. Pokrovsky energy model of economic growth
- 5.2. Energy-ecological strategy of the XXI century
- 5.3. Transition to new paradigm of energy consumption
- 5.4. Modification of Pokrovsky energy model for simplification of forecast calculations
- 5.5. The forecast of particular indicators of world economic development in the XXI century

Chapter 6. The effect of exhaustible hydrocarbon energy resources on the dynamics of world economic development in the XXI century

- 6.1. Dubovsky Production Function taking into account the effect of exhaustible natural resources
 - 6.2. Dynamics of world consumption of energy resources in XXI century
 - 6.3. Calculation of production factor dynamics
 - 6.4. The effect of exhaustible energy resources under conditions of new paradigm of energy consumption
- References for part one

Part two. FROM GREAT DIVERGENCE TO GREAT CONVERGENCE

Chapter 7. Forces which facilitated Great Divergence in the XIX century

- Chapter 8. Post-war “golden era” of world economic development. The source of convergence between developing and developed countries**
- 8.1. Economic growth of high-income countries

- 8.2. Economic growth of average-income countries
- 8.3. On the reasons for appearance of new conditions, facilitating fast growth of developing countries with low per capita income

Chapter 9. The transition to fifth Big Kondratiev Cycle and the start of real convergence

- 9.1. Developed economies switch to evolutionary development
- 9.2. Vanguard countries of developing world (BRICS) make economic breakthrough

Chapter 10. Possible results of forthcoming Great Convergence
References for part two

Part three. MODEL OF SUSTAINABLE DEVELOPMENT OF GLOBAL ECONOMY IN THE FIRST HALF OF THE XXI CENTURY

Chapter 11. Will Great Convergence take place?

- 11.1. Transition from average to high income
- 11.2. Investments and savings
- 11.3. The effect of income inequality on economic growth

Chapter 12. BRICS — locomotive of developing world

- 12.1. BRICS — growing power
- 12.2. The role of Russia in new world
- 12.3. Middle class in BRICS countries
- 12.4. BRICS and developed countries
- 12.5. BRICS and developing countries

Chapter 13. On the model of sustainable development of world economy in the first half of the XXI century

- 13.1. Innovations in technology as source of long-term economic growth
- 13.2. World trade — the engine of economic growth
- 13.3. On the new model of development of world economy in the first half of the XXI century
- 13.4. Conditions that provide long-term sustainable growth of world economy
- 13.5. Ecological imperative, providing stability of the Earth biosphere
- 13.6. World government that provides the formation of neoeconomics and transition to neospheric civilization

Chapter 14. Strategic management of sustainable development based of theory of innovative-cyclic economic growth by Schumpeter-Kondratiev

- 14.1. Some elements of theory of innovative-cyclic economic growth by Schumpeter-Kondratiev
 - 14.2. Financial capital and economic development
 - 14.3. Strategic management of sustainable economic growth over the period of 6th BKC (2018–2050)
- References for part three

Foreword

The majority of modern study books and scientific monographs on microeconomics and economic growth present detailed classical analysis of the existing models of economic growth. The latest most outstanding examples of such papers are, for example study book by D. Romer “Higher microeconomic” (2014) and monograph “Economic growth” by R.J. Barro and X. Sala-i-Martin (2010). They analyze mechanisms of action of models of economic

growth or, in the words by Nobel Prize Winner Robert Lucas, “mechanics” of models of growth. Then, the existence of equilibrium or stationary state is studied. An important position is taken by qualitative analysis of conditions of stability of equilibrium and determination of trajectories of equilibrium and balanced growth. After that, the conditions and rate of convergence to stationary state, which determine the transition of economics to mainstream trajectory of long-term balanced growth are studied.

One of required components of theoretical analysis is the study of influence of change in saving ratio (investments) on GDP dynamics, and the type of return (falling, growing or constant) from the scale of reproduced factors. A lot of attention is paid to how these models explain the reasons of difference in per capita income between various countries. Is it convergence or divergence of per capita income in the developed and developing countries that follows from a model?

At the same time, little attention is paid to numerical examples, showing the way this models can be applied for the solution of specific problem, related to modeling and forecasting of economic development of certain real country. Probably the only exception is study book by L. Stoleru “Equilibrium and economic growth” (1974), where theoretical analysis of growth models is supplemented by detailed illustration of practical use of models for the calculation of main indicators of the France economic growth program in the 1970s. Moreover, it is accompanied by the listings of numerical calculations and the results of optimization of balanced growth. However, the paper by L. Stoleru was written yet in the time of the monopoly of neoclassi-

cal exogenic growth models. While today, there is a need for application of endogenic models, describing modern economic development much better.

In present paper, the point of interest is shifted on practical use of endogenic growth models for long-term modeling and forecasting of economic development of both rich and poor countries. The first part of the book presents brief description of existing exogenic and endogenic models of economic growth, which are analyzed from the viewpoint of efficiency of their use impractical calculations. In the end, the author comes to a simple model of endogenic economic growth — AN-model and enunciates its advantages for long-term modeling and forecasting of economic development.

A lot of attention is paid to the models of calculation of dynamics of technology advance A , by which cumulative productivity of all factors is implied (CPF), since differences in per capita consumption are largely determined by CPF. We considered models of technology advance, proposed by M. Kremer, R&D Romer-Jones model, modified by author, as well as model, describing technology advance generated by NBIC-technologies, developed by author. It was shown, that NBIC technologies, due to powerful synergetic effect, created by the convergence of nano-, bio-, info-, and cognitive technologies, would provide strong acceleration of technology advance rate in forthcoming long wave of economic development in the 2020s-2050s. There will be the change of trend from the deceleration of rate of world economic development, witnessed over a long period from 1980 to 2010 to upward trend.

In what follows, flexible technique of sequential stepwise refinement of techni-

cal progress dynamics, applicable to both developed and developing countries, is presented. The efficiency of the technique is illustrated by modeling and forecasting of world economics dynamics in industrial era (1820s-2050s).

Since energy industry plays a key part in the development of world economy and sustainable development of humanity, energy-ecological strategy for the XXI century and transition to new ecologic paradigm of energy consumption are considered in the end of the first part of the book. The energy model of economic growth by V. Pokrovsky is presented, based on which certain indicators of world economic development in the XXI century are forecasted. The effect of depletable hydrocarbon energy resources on the dynamics of world economic development in XXI century is studied. It was shown that the share of expenditure on the hydrocarbon energy in GDP due to fundamental factors (production cost, depletion and replacement) do not exceed the allowable 5% of GDP throughout XXI century. The spikes of expenditures on purchase of hydrocarbon energy resources exceeding 5% GDP and hampering economic growth down up to recession are only due to speculative factors, trade wars or are the consequences of geopolitical conflicts and confrontations.

In the second half of the book, the technique of long-term modeling and forecasting, developed by author, is employed for the calculation of world economic dynamics over the whole period of industrial era, starting from 1820 until present time and forecast until 2050, exemplifying transition from the era of Great Divergence (XIX c.) to the era of Great Convergence (XXI c.) by numerical-analytical technique. The author has constructed mathematical

model, which orderly describes transition Great Divergence — abrupt and dynamic break-off of the West from the rest of the world in XIX century, due to Industrial Revolution; then hard and lengthy transition stage to convergence between the West and developing world after the World War II, which has made an end to world colonial system; and, finally, transition to accelerated convergence in the beginning of XXI century, owing to the rise of the East, first of all China and India. The model also forecasts that Great Convergence will occur by 2050 and the world production center of goods and services will shift again to China, India and other Asian countries, like it was before 1750 in pre-industrial era. It was shown, that starting from the 5th Big Kondratiev cycle (big Kondratiev cycle in changes of market conditions in long-term period, embracing 30–40 years) started in the beginning of the 1980s, developed countries shift to evolutionary way of economic development, while vanguard countries of developing world — BRICS countries make revolutionary economic breakthrough, which facilitate the acceleration of convergence at present.

In the end of the second section of the book, the possible results of forthcoming Great Convergence are presented. It was shown, that the most important outstanding result of convergence will that BRICS countries with population comprising 40% of that of the world will shift by the middle of the XXI century to the rank of average-income developed states. Thus, by the middle of the XXI century about 5 bln. people, i.e. a slightly more than half of the Earth population, will live in developed countries with average level of per capita income. The side effect of this fact will be the decrease of gap between

developed and developing countries in per capita income, from recent 7–8 fold down to 2–3 fold, as it was in pre-industrial era. Therefore, the life of humanity will become more comfortable, and flagrant inequality in the level and quality of life, which takes place in most of the world nowadays, will disappear.

The third part of the book considers separate elements of the model of sustainable development of global economy in the first half of the XXI century. In the beginning, we stated issues, which slow down the convergence: “middle income trap” for vanguard countries of developing world; possible deficit of savings and investments; negative effect of income inequality in a society on economic growth. For full-scale convergence to succeed, vanguard countries of developing world should find “soft” ways of solution of abovementioned issues by means of social innovations. The analysis of prospects of long-term sustainable development of vanguard of developing world — BRICS countries, which make decisive contribution to the acceleration of convergence, is also presented.

Following that, the model of sustainable development of world economy in the first half of the XXI century is described. The new sources of long-term economic growth are identified and new global conditions are phrased, fulfilling which long-term sustainable development is made possible. The source of economic growth, capable of overcoming current depression in world economy is broadest implementation of new technological mode, based on converging NBIC technologies. The process of technological convergence will be accompanied by powerful synergic effect, giving rise to high rate of technology advance. It is the synergy of NBIC-technol-

ogies that will have decisive impact on the acceleration of rate of economic growth in the first half of the XXI century.

What are the conditions, capable of providing long-term sustainable economic growth in the XXI century? The author singles out five basic conditions: establishing social justice at both national and global levels; fair harmonious globalization; adherence to ecologic imperative; stability of world financial system; convergent development of avant-garde world countries. In order to maintain and support aforementioned conditions at global level, the creation of efficient world government is required. In that context, the author's view on the algorithm of creation of such government and principles of its operation is presented.

The book is finalized by the consideration of strategic management of long-

term sustainable economic growth. Since we witness the crisis of now dominating economic theory, author proposes to build strategic management on the basis of innovative-cyclic economic development by Schumpeter-Kondratiev, which at the time was outside the mainstream of modern economic theory. However, it acquires particular relevance nowadays, because it indicates the efficient ways of surmounting the current crisis of world economy and providing long-term sustainable development. Moreover, it was shown that a new economic theory could be built by the synthesis of neo-Keynesian, neoclassical and neo-monetarist theories based on Schumpeter-Kondratiev theory. Besides, each of the classical theories listed above will be dominant at corresponding stage of long Kondratiev wave of economic development.



Russia and the BRICS. New opportunities for mutual investments

Russia and the BRICS. New Opportunities for Mutual Investments: Monograph / B. A. Kheyfets. — M: Publishing and trading Corporation «Dashkov and K°», 2014. — 220 p.

Kheifitz, Boris A. —
Chief Research Scientist of the
RAS Institute of Economics,
Professor at the State University
of Management, member of the
Research Board of the National
Committee for the BRICS
Studies, Dr.Sc. (Economics)

A wide range of issues is investigated aiming to enhance BRICS countries' investment cooperation, which produces a synergetic effect by expanding mutual trade, production, scientific-technical and other economic relations, and requires the monetary and financial sphere to be improved. The policies of individual BRICS countries on foreign investment and their position in global cross-border investment flows are addressed. On the basis of extensive factual evidence, the current investment cooperation condition of individual BRICS countries and problems existing in the area are investigated. To activate interaction and increase its efficiency several specific directions are advanced to improve Russia's economic policy in its relations with BRICS members, develop a roadmap of investment cooperation in BRICS, which would allow to concentrate efforts on strategic lines of investment interaction. For the first time ever the idea is raised to create, in the framework of BRICS, a free investment zone to achieve significant mutual investment growth.



Contens

ACRONYMS AND ABBREVIATIONS INTRODUCTION

Chapter 1. BRICS COUNTRIES IN GLOBAL AND MUTUAL INVESTMENT FLOWS

1. Investment and economic growth in BRICS countries
2. International investment position of BRICS countries and the role of mutual investment
3. Russia's foreign investment policy and the role of investment cooperation with BRICS countries

Chapter 2. SPECIFIC FEATURES OF INVESTMENT COOPERATION BETWEEN RUSSIA AND INDIVIDUAL BRICS COUNTRIES

1. China
 - 1.1. China's foreign investment policy
 - 1.2. Mutual investment of China and Russia
2. India
 - 2.1. Indian foreign investment policy
 - 2.2. Mutual investment of India and Russia
3. Brazil
 - 3.1. Brazilian foreign investment policy
 - 3.2. Mutual investment of Brazil and Russia

4. South Africa
 - 4.1. South Africa's foreign investment policy
 - 4.2. Mutual investment of South Africa and Russia

Chapter 3. WAYS OF IMPROVING INVESTMENT INTERACTION OF BRICS COUNTRIES

1. Problems of investment cooperation between Russia and BRICS countries
2. Road map of investment cooperation between BRICS countries
3. Bank for International Settlements BRICS and other institutional premises to enhance investment cooperation
4. Prospects of a free investment zone in BRICS

CONCLUSION

REFERENCES

ANNEXES

Table 1. TNCs from BRICS countries in the ranking of the largest non-financial companies from developing countries in terms of foreign assets

Table 2. Assets of Russian businesses in BRICS countries

Table 3. BRICS countries' business assets in Russia



On the Road to the Revival of the Eurasian Civilization



EEU to be built on the principles of voluntariness and equality

Eurasian Economic Union must be built on the principles of voluntariness and equality, President Nursultan Nazarbayev said during his lecture on Eurasian integration at M.Lomonosov Moscow State University.

President reminded the idea of creating a new model of integration association was brought out 20 years ago for the first time after the collapse of the USSR in the MSU — the Eurasian Economic Union.

“Its concept was based on truth of equally close and understandable to all citizens of our countries. Common history, economic attraction, close relationship and closeness of people’s desire gave chances to our people to build a new type of multilateral interstate relations,” the Head of State said.

The President noted that “this initiative is a starting point for a new historical process, which is now called the Eurasian integration.”

Promising integration effect in the form of aggregate GDP’s growth of the EEU states may reach by 2030 USD 900 billion.

“It is symbolic that in May Astana will become a place of signing the agreement to establish the Eurasian Economic Union. This year marks 20 years from the time when the idea for creating this integration association was put forward”, said the President.

*Message of President
of the Republic of Kazakhstan
N.A. Nazarbayev at
Lomonosov Moscow State
University, April 28, 2014*

He stressed that the economic potential of the Eurasian integration was very high. “The total volume of the three countries will be USD 2.2 trillion. The total volume of industrial production of the three countries amounted to USD 1.5 trillion. Promising integration effect as a cumulative growth of GDP by 2030 may reach USD 900 billion”, he said.

President Nursultan Nazarabayev believes that G8 and G20 fail to cope with today’s global challenges.

“The current global instability is crisis of economy, international law, and global politics. G8n and G20 cannot cope with the problems. That is why in 2012 we launched the idea called ‘G-Global’. It has been interactively participated by 160 countries. G-Global includes the fundamental principles of the world in the 21st century including evolution, justice,

equality, consensus, global tolerance and trust, global transparency, constructive multipolarity, rejection of revolution, transition to evolution”, said the President of the Republic of Kazakhstan.

According to the President, ‘the current global challenge will be overcome if there are profound changes in international law, foreign policy practice, methods of interstate relations’.

The lecture on topic “From idea of the Eurasian Union to new perspectives of Eurasian integration” taking place in the building of Moscow State University’s Fundamental Library is attended by representatives of the Presidential Administration, the Government of the Russian Federation, heads of diplomatic agencies and international organizations accredited in the Russian Federation, as well as MSU students and teachers.



Integration within the CIS Space As a Strategic Prospect of Sustainable Development of National Economies

Origins of Eurasian integration and problems of its strengthening at the present stage

Abykaev, Nurtai A. —
*RANS foreign member,
President of the Kazakhstan
National Academy of
Natural Sciences*

*Chapter from the book
“Sustainable Economic
Development and
Social Modernization in
Kazakhstan”, — Moscow:
Ekonomika, 2014*

In the early 1990s, the new independent states in the former Soviet space began to form a new strategy of economic and trade cooperation and create market-based mechanisms of interaction in various spheres of activity in accordance with changed geopolitical realities. Modern Eurasian integration in its formation and development passed several key stages — from understanding of the necessity to restore the broken socio-economic linkages to formation of the EurAsEC, the Customs Union (CU) and commencement of work of the Common Economic Space (CES).

The idea of modern Eurasian integration belongs to the President of Kazakhstan Nursultan Nazarbayev, who in March of 1994 proposed the project of formation of the Eurasian Union of States (EUS), which is essentially the forerunner of the EurAsEC, the Customs Union and the Common Economic Space. It is based on the concept of «diversified and multi-level integration», which suggests that forms, paces and extent of mutual cooperation are selected depending on the level of readiness and interest of countries.

Since the proclamation the Eurasian strategy of the President of Kazakhstan passed an evolutionary way. In times of crisis of the 1990s, this strategy was aimed at overcoming of the negative consequences of the collapse of the USSR by new independent states, and preservation of unified economic, political, transport, civilizational ties between the peoples of Eurasia existing over the centuries.

Formalization of EUS should happen without infringing the sovereignty, without interference in internal affairs of States, with respect for the rights of each nation which determined the order of government structure in their country. The necessity for a pragmatic approach to integration, economic feasibility and voluntariness of unification were recognized as the priority principles of formation of the EUS model.

As conceived by Nursultan Nazarbayev the EUS was supposed to represent a union of equal independent states, aimed at implementing the national interests of each Member State and existing aggregate integration potential. Strengthening of stability and security, as well as social and economic modernization in the region were called as the main objectives of integration of the Eurasian states.

The President of Kazakhstan not only put forward the plan, but was able to convince heads of neighboring states in the effectiveness of integration proposals. As a result, this project «On the formation of the EUS» became the conceptual and organizational basis for the subsequent formation of the Eurasian Economic Community. Modern integration structures are the key tools for implementing the «Eurasian project».

However, in 1995–2000 despite many supporters this project was not imple-

mented both by the objective and subjective reasons. At this stage of integration Eurasian states were looking for the most suitable ways of cooperation. Thus, on January 20, 1995 the Treaty on establishment of the Customs Union between Russia, Kazakhstan and Belarus was signed; on March 29, 1996 — the Treaty between Belarus, Kazakhstan, Kyrgyzstan and Russia on deepening integration in the economic and humanitarian spheres and establishment of the CU.

At the meeting of the Interstate Council of the Republic of Belarus, Republic of Kazakhstan, the Kyrgyz Republic, the Russian Federation and the Republic of Tajikistan on May 23, 2000 in Minsk it was decided to transform the Customs Union into the new economic organization with international status, endowed with greater authority in matters of integration interaction, having a clear structure and effectively functioning institutions and mechanisms. As a result, on October 10, 2000 in Astana, the Presidents of five countries signed the Treaty on establishment of EurAsEC, which entered into force on May 30, 2001. Members of the Eurasian Economic Community since its establishment are Belarus, Kazakhstan, Kyrgyzstan, Russia and Tajikistan. Armenia, Moldova and Ukraine have the status of observer under the EurAsEC. The Eurasian Development Bank (EDB) and the Interstate Aviation Committee also have the status of observer. In 2006–2008 Uzbekistan was a member of the Community, while then it suspended its participation in EurAsEC bodies.

EurAsEC is an international regional economic organization established for implementation of the integration processes, contributing to establishment of the Customs Union and the Common Eco-

conomic Space, coordination of approaches to integration into the world economy and international trade system.

Simultaneously with signing of the Treaty on establishment of the EurAsEC by Heads of Member States of the Community a declaration was adopted which formulated the tasks that needed to be addressed as part of the Community. They concerned foreign trade, customs and economic policies, social and humanitarian spheres and legal sphere. These tasks formed the basis for development of basic program documents of EurAsEC — Measures for the implementation of priority directions of development of the Eurasian Economic Community for 2003–2006 and subsequent years.

In economic terms, the Eurasian Economic Community is a major regional market (about 181 million consumers), located on the world's largest territory (15% of the inhabited land), having a potent resource base and considerable economic potential. 8.5% of the world's proven oil reserves, 25% of natural gas, 22% of coal, 20% of fresh water and forest cover of the entire planet are concentrated in the Community.

Over the years of the Community existence its Member States have made significant progress, their main macroeconomic indicators have increased significantly. This is evident in the growth rates of main EurAsEC macroeconomic indicators for 2001–2011.

The volumes of mutual trade in products of the Community states over the years of EurAsEC activities increased in 4 times: from 31.1 billion dollars in 2001 to almost 125 billion dollars in 2011.

Present stage is characterized by increasing integration activity at the level of economic entities — enterprises, corpo-

rations, organizations — which actively establish economic and business ties. At the same time the business community has not only begun to use the results of integration processes, but also more effectively interact with national and inter-governmental organizations. In the long term, this will lead to leveling of the degree of economic development of States belonging to the Community, and raising of living standards of population.

23 councils and commissions operate in EurAsEC, including 4 subsidiary bodies of the Community and 19 councils and commissions under the EurAsEC Integration Committee. They perform elaboration of key issues, development and coordination of the basic documents in specific areas of cooperation. Council members include Ministers, their deputies or heads and deputy heads of the relevant departments of the EurAsEC states.

On July 12, 2011 in Moscow as part of the Russian — Belarus — Kazakhstan Business Dialogue, a conference «From the Customs Union to the Common Economic Space: Business Interests» was held with the participation of Prime Ministers of Belarus, Kazakhstan and Russia, who pointed out that real step was made a towards the restoration of economic and trade ties at the post-Soviet space and qualitatively new conditions for doing business were created in the states of the Customs Union and the Common Economic Space. Business representatives made specific suggestions at the Forum which should be considered when finalizing the legal framework of the CU and the CES, including about the activities of small and medium-sized businesses.

The EurAsEC Anti-Crisis fund with an authorized capital equivalent to 8.5 bil-

lion dollars provides financial loans and allocates funds for investment projects.

The Eurasian Development Bank (with an authorized capital of 1.5 billion U.S. dollars, including Kazakhstan's share — 0.5 billion dollars) and the Eurasian Business Council (EBC) which has its office in Kazakhstan have shown their interest in participation in the investment and innovation projects of Kazakhstan. They closely work with business organizations, business community and investors and can raise their funds for implementation of a number of projects.

9 interstate programs and 11 concepts are being developed as part of the EurAsEC, on the basis of which interaction of the Member States in different fields is provided; some of them are already being implemented. It is provided to develop more than 40 advanced biotechnologies, to create 16 national collections of cultures of microorganisms and cell cultures, 5 retrieval databases, to obtain 110 prototypes of drugs for all EurAsEC states.

Since 2012 the EurAsEC proceeded to implementation of the program «Creation of a unified automated information system for control over the customs transit of EurAsEC member states» with an execution period of 3 years; implementation of its activities will allow to reach a qualitatively new level of organizing control over the transportation of transit goods through the customs territory of the EurAsEC states. It will be linked to the new computerized transit system (NCTS) used by the European Union countries.

An important direction of the Eurasian Economic Community activity in the field of transport integration in accordance with the Concept of establishment of the EurAsEC Common transport space is re-

alization of transit potential. Currently, three international transport corridors (ITC) are being formed in the EurAsEC territory: Western Europe — Western China, North — South and East — West.

The concept of coordinated social policy of EurAsEC countries

Fundamental document in the field of socio-humanitarian cooperation is the Concept of coordinated social policy of the Eurasian Economic Community Member States, adopted on April 18, 2007 by the decision of the EurAsEC Interstate Council. The main objectives of coordinated social policy include: expanding opportunities for human development; deepening of integration in social and humanitarian sphere; monitoring of implementation of social policy and forecasting of consequences of social reforms. Deepening of social integration as part of the Community is carried out by the transition to higher social standards comparable with the standards of the most developed countries.

The result of this concept implementation will be ensuring of the work of a single social space, including the operation of the common labor market; use of the system of agreed social standards and indicators; development and harmonization of the social security system; pension coverage of citizens based on the agreed principles and approaches; creation of a common educational space; accessibility of health services and pharmaceutical care; formation of environment favorable for life; common space for interstate and international cultural contacts; functioning of the common legal space.

The Customs Union. Thanks to the measures taken as part of the Community for organization of free trade zone without exceptions and limitations, mutual trade turnover between EurAsEC countries in 2008 compared to 2000 increased in more than 4 times (from 29 to 123 billion dollars). This created prerequisites for transition to the next stage of integration — the Customs Union.

The Customs Union is a form of trade and economic integration of territory with the single customs territory, within which customs duties and economic restrictions (except special protective, antidumping and countervailing measures) shall not be applied in mutual trade in goods of own production and goods from third countries, while common customs tariff shall be applied in trade with third countries, which includes import duties on positions of the Commodity nomenclature of Foreign Trade and common measures regulating trade with third countries.

The supreme body of the Customs Union is the Interstate at the level of Heads of States and Heads of Governments of three countries. The first supranational body has been created — the Commission of the Customs Union, which included Deputy Prime Ministers of Belarus, Kazakhstan and Russia. On January 1, 2010 the Common Customs Tariff and the Uniform Rules of tariff and non-tariff regulation were introduced, which became the beginning of functioning of the Customs Union. On July 1, 2010 single legal framework in the field of technical regulation, application of sanitary, veterinary and phytosanitary measures came into effect in the CU. Since July 6, 2010 the Treaty on the Customs Code of the Customs Union and a unified system of customs regulation are operating.

The CU member states brought national legislation in accordance with the Customs Code of the Customs Union, ratified the International Convention on Simplification and Harmonization of the Customs Procedures dated May 18, 1973 (as amended by the Protocol of Amendments to the International Convention on Simplification and Harmonization of the Customs Procedures dated June 26, 1999). The procedure of customs administration was unified, including uniform rules for declaring goods; payment of customs duties and unified customs regimes; common rules for determining the customs value, as well as common rules for determining the country of origin of goods were set and applied. Customs control on the border between Russia and Belarus is missing from the second half of 2010, while between Russia and Kazakhstan — from July 1, 2011.

By July 1, 2011 a unified customs territory was established, customs borders between the CU countries were completely abolished; all forms of state control (customs, transport, veterinary, sanitary and phytosanitary), except for the border control, were transferred to the external customs border of the Customs Union. The CU operates under all international standards with a single customs territory, unified customs tariff and Customs Code, the effect of seizures from the Customs Code of the Customs Union was ceased. Distribution of import duties on goods from third countries is as follows: Belarus — 4.70%, Kazakhstan — 7.33%, Russia — 87.97%. Work is carried out on creation of the Integrated information system of foreign and mutual trade of the Customs Union.

Business community and population are already now getting real benefit from the CU, and in the future it will only be

increased. This is conditioned by the fact that the CU in accordance with the principles of open market economy and free competition has eliminated customs, administrative and other barriers to mutual trade, which has automatically led to reduction of costs of enterprises, expansion of production scales and improvement of the competitiveness of economies merging into a single customs territory.

Heads of Member States of the Customs Union believed that its establishment is a powerful integration breakthrough in the post-Soviet space. President of the Republic of Kazakhstan Nursultan Nazarbayev in an article in «Izvestiya» newspaper dated October 26, 2011 «Eurasian Union: from the idea to the history of future» said: «The Customs Union has expanded borders of the market for Kazakhstani producers to Brest and Vladivostok. In 2011 our export to Russia increased by 60%, while to Belarus — in more than 2.3 times. Restrictions on movement of foreign currency within the common customs territory were abolished. This also happened for Russian and Belarusian producers. All of these are real pluses primarily for all Kazakhs, Russians and Belarusians. The Customs Union of Kazakhstan, Russia and Belarus is the first really voluntary and equitable form of integration in the CIS space».

The Common Economic Space. On November 27, 2009 in Minsk Presidents of Belarus, Kazakhstan and Russia, without waiting for the final completion of the Customs Union, decided to form the Common Economic Space.

On December 19, 2009 the Heads of three states adopted the Action Plan for the formation of the CES. During 2010 (instead of originally planned two years) 17 basic agreements on formation of the CES

were developed and adopted. In 2011 they were ratified by the CES Members Countries. On December 19, 2011 at the meeting of the Supreme Eurasian Economic Council Heads of state decided to introduce them from 1 January 2012, which meant the beginning of CES operation.

The Common Economic Space is a space that unites territories of the Republic of Belarus, the Republic of Kazakhstan and the Russian Federation, where the uniform mechanisms of economic regulation are functioning based on market principles and application of harmonized legal norms, a single infrastructure exists and a coordinated fiscal, monetary, financial, trade and customs policy is being pursued in order to ensure free movement of goods, services, capital and labor force.

International treaties and decisions of the CES authorities concluded and adopted with regard to the interests and laws of the Member States and in accordance with universally recognized norms and principles of international law are the legal basis for the formation and activities of the CES. Formation and activities of the CES are also carried out with regard to the norms and rules of the WTO. The CES is open to accession by other States, providing incurrance of obligations by them arising from international agreements concluded and operating within the CES, their compliance with the agreement of the Member States, macroeconomic and institutional criteria and with the consent of all Member States.

Formation of a common market is ensured by creation of the favorable equal conditions for trade and investments, pursuance of common competition policy, establishment of common rules in the field of regulation of natural monopolies, uni-

fication of the practice of granting subsidies, rejection of anti-dumping and other protective measures, harmonization of technical and regulatory standards and regulations and other non-tariff barriers, facilitation of labor migration.

Establishment of the CES is primarily an opportunity to promote free competition and increase innovative activity in the common space. The competition is a powerful incentive to improve the quality of goods and services. Unification and harmonization of rules and regulations at the formation of CES create favorable conditions for production of competitive products by enterprises, their transfer into the path of innovative development. All of this will serve as a powerful engine of modernization in all spheres of economic activity in our countries and will provide an opportunity to move away from the outdated standards and move to production of perspective products with high added value which are in demand in the global market.

Common market of goods has been already created within the CU. The principle of free movement of services in the CES involves formation of the common rules and approaches in order to ensure full access to the services market and service providers within the CES and pursuance of the coordinated policy regarding access of third countries to services market and service suppliers of the CES. The principle of free movement of capital involves gradual removal of all restrictions on movement of capital from the Member States within the CES and pursuance of the coordinated policy in the field of capital market development while ensuring macroeconomic stability. The principle of free movement of labor lies in ensuring the smooth move-

ment of individuals of the Member States within the CES and formation of the coordinated migration policy in relation to third countries in accordance with the norms and principles of international law and the WTO. The principle of pursuance of coordinated macroeconomic policy enables the convergence of macroeconomic indicators, including alignment of domestic prices, especially for energy resources, and tariffs on the services of natural monopolies.

Alongside with strengthening of economic ties, transition to a common market a single social space has been created, which includes: functioning of the common labor market; using the system of agreed social standards and indicators; harmonization of social security systems; pension coverage of citizens based on agreed principles and approaches; creation of a common educational space; accessibility of health services and pharmaceutical care; formation of a favorable environment; a common space for interstate and international cultural contacts.

Currently scientific and industrial cooperation, joint investments in innovative projects and human capital come to the forefront in interstate cooperation of the CES Member States. As a result of the CES establishment the common market of three countries will become more attractive to mutual and foreign investments and innovations, entrepreneurs will be able to obtain additional resources that will give a noticeable boost to economic development and creation of new jobs. All of this is a powerful engine of modernization in all spheres of economic activity and provides an opportunity to move away from old standards and move to production of perspective products with

high added value which are in demand in the global market. Moreover, huge transit potential of the CES will be used more efficiently.

The benefit from formation of the Common Economic Space is obvious for population and business community. Entrepreneurs will have equal access to the common market of three countries, will be free to choose where they can register their companies and do business, they will sell products and provide services in the territory of any of the CES Member States without any restrictions and have access to facilities in the field of energetics, transport and communications. Formation of the common market is a part of plans of the CES Member States to make transition from raw-material economy to the innovation one.

According to the Russian Institute for Economic Forecasting of the Russian Academy of Sciences, the macroeconomic impact of establishment of the Customs Union and the Common Economic Space will be at least 5% of GDP growth with a view to five-year term and up to 15% with a view to ten-year term.

On the way toward establishment of the Eurasian Economic Union. New stage of the Eurasian integration after establishment of the CES will be formation of the Eurasian Economic Union, which will be a major center of power in the world, able to compete and cooperate with the other poles of the multipolar world. This union is designed to open up additional opportunities for effective cooperation in technological, modernization and innovation spheres, in the field of education and science of Belarus, Kazakhstan and Russia. In the future, other post-Soviet countries that share the goals and principles of the

Union and are ready to implement them will be able to join the Union.

On November 18, 2011 Presidents of Belarus, Kazakhstan and Russia signed the Declaration on Eurasian economic integration, the Treaty on the Eurasian Economic Commission (EEC) and Regulations of its activities. The Declaration states that the main content of further integration will be complete realization of potential of the Customs Union and the Common Economic Space, improvement and further development of their regulatory framework, institutions and practical cooperation. Belarus, Kazakhstan and Russia will endeavor to complete the codification of international treaties constituting the legal framework of the Customs Union and the Common Economic Space by January 1, 2015, and on this basis to create the Eurasian Economic Union. Proceeding to work since the beginning of 2012 (simultaneously with the commencement of the CES functioning) the Eurasian Economic Commission has become a permanent supranational regulatory body of the Customs Union and the Common Economic Space, executing decisions of the Supreme Eurasian Economic Council (at the level of Heads of States and Heads of Governments).

The EEC makes decisions within its authority which are binding for its Member States. Decisions of the Commission are included into the contractual-legal base of the Customs Union and the Common Economic Space and are directly applicable in the territory of Belarus, Kazakhstan and Russia. The Commission acts as the depository of international agreements which are components of the contractual-legal base of the Customs Union and the Common Economic Space and decisions of the Supreme Eurasian Economic Council.

Thus, the Eurasian Economic Community established in 2000 has made significant progress during the period of its activities: the Customs Union of Belarus, Kazakhstan and Russia has been established and is operating; the Common Economic Space starts to operate, which in four years will work in full-scale mode; EurAsEC states jointly implement a number of important programs and projects in various fields. This suggests that the integration processes systematically lead Eurasian states to creation of a common market similar to the European Union, and later — to creation of the economic union, while in the future — the Eurasian Union. The EurAsEC really defines integration vector of development of the entire post-Soviet space at the beginning of the XXI century.

STRATEGY GUIDELINES OF SUSTAINABLE DEVELOPMENT OF THE NATIONAL ECONOMIES OF CIS COUNTRIES

The essential foundation of reproduction restructuring for development of its industrial-innovative type is to ensure optimal interaction between business entities under the criterion of accession of the countries to highly developed global market of high technologies on equal conditions. Improvement of state regulation, increase of its efficiency is possible with a qualitative change in its functions on the basis of dynamics and structure of the aggregate demand. What is meant here is the support of industrial way of development of domestic commodity producers on the basis of long-term government policy, which include comprehensive solution of socio-economic and strategic innovation challenges. Restructuring of

mixed forms of ownership and management should be aimed at strengthening cooperation not only between the state and the economy, but also the activities of economic entities and institutions — from production to credit ones¹. In this case it is advisable to create the most advanced domestic production of new equipment and technologies, implementing its innovative modernization and constantly increasing domestic production of competitive products.

Analysis of industrial development in Kazakhstan and Russia shows that is difficult to achieve turn to innovative and high-tech type of development due to the fact that the growth rates of manufacturing industry are lower than GDP growth index. This can be seen in the dynamics of electro-industrial sector in Russia, on the work of which the level of competitiveness of the whole complex of high-tech production depends.

Transition to innovative way of development of the national economies of the CIS countries occurs in the process of the production stimulation through aggregate demand in case of formulating the industrial policy based on high, primarily digital, technologies. This is contributed by promotion of initiatives put forward by modern science and practice, while features appear in the aspects of effective functioning of the unified system of large, medium and small enterprises, as there is no alternative to economic integration.

Furthermore, the sphere of horizontal and vertical integration includes both real and cost (financial) and human resources. It is possible to achieve optimization of private interests with the interests of the state and society as a whole only through the consistent integration.

Effective front of system work is a qualitative organizational and structural transformation of social production on the basis of industrialization and innovative modernization of industrial capital. In this regard it is necessary to use a system of economic regulators and mechanisms to improve the competitiveness of domestic producers in the world market. This can be achieved with effective implementation of the process of integration of banking and industrial capital, formation of Russian transnational corporations with respect to cross-sectoral, inter-regional and cross-country interactions. In this context it is necessary to develop a new model of economic development and transition of national economies to innovation and competitive type of reproduction. Science has developed proposals for a strategy of economic development, industrial, financial and monetary policies of the state, which take into account national and international experience, including the experience of function of monetary and financial systems focused on strengthening of the national currency, replenishment of the revenue side of budget on the basis of domestic production development, increase of public confidence to government programs².

General economic integration is aimed at enhancement of efficiency of the process of movement of goods, labor force, money and capital. What is meant here is a system in which the market economic mechanism is complemented by the regulatory influence of the state on operation of enterprises and entrepreneurs that affects the trend of production diversification. Rational combination of small, medium-sized and large enterprises provide employment of population, better satisfaction of changing demand, use of the latest

achievements of science and technology, widening of cooperation ties. However, big business owns 80% of technological innovations and not less than 60% of foreign trade turnover.

In the corporate sector of national economies effective strategic planning can be achieved as part of the defined development strategy of all subdivisions. Corporations seek closer connection between science and production, forming for this purposes scientific and technical centers and technological laboratories with qualified personnel. Well-organized actions of corporations held to achieve exploiting advantages of specialization and integration of production. By increasing diversification of production, improving organization and management with advanced marketing functions corporate companies create the conditions for effective participation of Kazakhstan, Russia and other CIS countries in formation of the global market of high technologies and intelligent services.

Regularities of scientific and technical integration are not only manifested in expanding areas of cooperation, but also suggest the addition of forces and resources in the scales of large corporations, as well as within mutually beneficial cooperation between the concerned States: EU, common market of USA, Canada, Mexico; common market of Asian countries; EurAsEC, CES and economic integration in the CIS space. Establishment of integrated corporate structures (affiliate group of corporations, holding companies) is the backbone of industrial capital. Creation of vertically integrated structures is deployed in electronics industry, aircraft industry, construction industry, shipbuilding, and other business complexes.

In the age of globalization of the world economy, strong positions of companies in the market are defined as tangible assets and «know-how», introduction of new technologies. In the field of industrial development it is necessary to note an agreement on long-term cooperation between banks and companies, implementation of national programs of priority innovative value. As has already been noted, efficient operation of companies and holdings in domestic markets can serve as the basis of concentration of research and production and financial resources, providing life cycle of current technologies: from mass production to service maintenance in operation.

Development of Kazakhstan's competitiveness, establishment of Russia as a major technological power, other CIS countries is realizable on the basis of using system-forming factors of comprehensive modernization of national economies and their integration for transition to the reproduction of innovative type and is an important condition for participation of national economies in formation of the global market of high technologies and intellectual services. The problem of qualitative economic development of the CIS countries in terms of raw orientation of investment flows may be decided to a large extent due to transition to a system of innovation priorities of the economy, its industrial and basic industries, having significant multiplicative effect. Analysis of development of the leading post-industrial countries of the world economy shows that almost all of them in its strategy resorted to use of industries which provide such effect. Innovative technologies, regardless of their form of ownership, served as multipliers at different stages

of development, while at the initial stage launch of multiplicative programs has been implemented by the state.

The management of the process of economic growth and social modernization as an optimal choice of development priorities provides the planned eventual outcome. As it is noted in researches, «Economics as a science is a theory of the way in which society makes a choice in use of its limited resources»³. State participation in justification of innovative priorities and programs of the country economic growth is of exceptional importance that should yield an economic and social effect. The social effect is from the position of growth of human wellbeing and relatively demand, the economic effect is from the point of view of innovative reproduction guarantee at the cost of expanding demand⁴.

Realization of national priorities at this stage of development is possible at public administration and dominance of a long-term approach over a short-term one. Whereupon state influence is carried out both by direct methods (budget investments, state orders, legislation, preferential loans, tax holidays, and others) and indirect ones. Indirect methods of regulation include conditions and fillips for attracting investments in a state needed direction. It is necessary to note that developed nations have been extensively using state regulation for achievement national objectives.

The development of new (the sixth) technological mode is getting more stringent by world economy requirements to level of output competitiveness in the age of globalization. For the Republic of Kazakhstan, Russia and other CIS countries it is important to increase competitive positions at external and internal markets,

aiming not to be among technologically backward countries, operated by multinational corporations (MNC). For this purpose it is necessary to implement industrialization and innovative modernization of the economy on the latest engineering capability in comparatively short historic time⁵.

It is essential, that development of the mechanism for the implementation of the sustainable development strategy will include legislative supply of long-range projection and strategic planning of innovative modernization of the economy. Thus financial and economic incentive is effective within a framework of the national and industrial and innovative system, created in the Republic of Kazakhstan, based on the formation of partnership between government and business, which conducive to step effective use of actual investment resources for innovative breakout. At last, assessment of economic and social consequences of realization of enterprises' innovation strategy, increasing of economy technological level and output competitiveness, is necessary.

The switch to innovative reprocessing type in modern times is viewed as a strategic priority. The possibilities of innovative development are based on a long-time strategy of sustainable development, focused on transition to industrial economy, its reproduction process on the base of the accelerated extension of the fifth modern Technological Mode and pioneer mastering of the sixth Technological Mode directions⁶. Here the defining role of state in support of basic production innovations, innovative mastering of effective gaps in the market including import substitution, first of all, in the market of investment equipment, is needed. In addition,

the technological level of the economy in whole and all the sectors will rise in prospect, that caused by both increasingly stringent requirements of world and internal markets to competitiveness of goods and services and innovative renovation of fixed capital based on outpacing growth of investments.

It is essential to wipe out the lag from world standards in innovative and investment sector. The technological level will increase at little higher rate in power sector and branches, in which there were a great inflow of foreign investments and technologies. The national economies of CIS countries will come more under TNC, serve as a source of mineral raw materials and market outlet of finished goods. Within the implementation of the innovative breakout scenario in CIS countries and reduction of inertia market scenario mastering of the fifth and sixth Technological Mode will grow, the further development of national scientific, inventive and designing facilities will take place⁷.

One of the most important government functions in addition to law making, social, ecological, and defensive is a strategic industrial and innovative function. State is urged to provide sustainable development, considering experience of the past, interests of present and future generations, to elaborate a long-term strategy of social and economic, innovative and technological, ecological and territorial development⁸. It is necessary to predict crises and provide the way out of them, having overcome their consequences, support progressive structural changes and effective innovative renewal of the economy. Especially the value of state strategic industrial and innovative function increases during the periods of transition to new

technological modes, when state support is needed for mastering epochal and basic innovations within the partnership with business sector.

The successful implementation of long-term economic strategies for sustainable development of the CIS countries depends on financial sources and investment resources, providing achievement of goals. For formation investment resources of innovative development it is important to involve internal hi-tech potential at coordinated accumulation and effective use of investment funds both of state and business, based on public and private partnership in those branches, where it is viable. It should be noted, that investment rate is differentiated along branches with respect to their reproduction opportunities. It is necessary to carry out technological retooling of machine-building industry as soon as possible, aimed to return in the number of highly-developed countries. In Western Europe technological companies update equipment every seven — ten years, and this process stimulates government to be interested in increasing of its industry technology level. It defines at which directions the rate of development can be lost and gives such companies preferential credits at 2-2.5 %⁹.

Investment problems are also connected with non-saleable facilities of lending resources at banks because of still high cost of money. As it is known, low-interest credits at large banks are determined by a strong capital base, supported with pension and insurance savings, and also by net capital (shares, securities on possession of land, capital and subsoil assets, and others). Having such assets, the banks carry out credit activities at lower, than in Russia, interests. That is why, national banks

should find opportunities for reduction in interest rate on credits, including long-time ones. At the same time capitalization of companies and organizations would grow that increases its mortgage value and provides the access to cheap credits, having solved the problem of investment as a whole, including investment projects. Thus, the role of government in industrial and innovative development is constantly increasing.

Under these circumstances the importance of cluster model of development grows in the Republic of Kazakhstan, Russia, and other CIS countries¹⁰. It is linked with wave nature of innovations, spreading by the most competitive companies and affecting suppliers, consumers and competitors of this company. In this behalf the cluster initiative in Russia and Kazakhstan can become a real pressure for economic transitions that will permit to consolidate efforts of public organs, pecuniary institutions, business and society in full to achieve real results of innovative modernization of the economy. So, because of innovative nature the cluster of transport and logistics services is of territorial and functional nature and has its specifics: firstly, cluster core, its essential part, is delivery optimization, major components of crossing and origin of cargo flows; secondly, the cluster activity extends to the entire territory, where enterprises deliver transport and logistics services, are located.

The Republic of Kazakhstan, Russia, and other CIS countries, forming modern hi-tech economy, should have effective pricing policy, aiming at creation of favorable conditions for competitive goods production. Pricing policy of monopoly structures shouldn't widen the spiral of price

growth in all related sectors that hamper growth of competitiveness of domestic output goods. The coordinating system of measures, allowing implementation of weighted long-term pricing policy and effective control, is necessary.

The development of export-oriented commodities-based industry in Kazakhstan and Russia shows itself in industry reorientation to new quality of economic growth. Identifying the factors for deepening of differentiation of the base material and processing industry branches causes investment demands and financing facilities at the expense of proprietary and borrowed funds. In forecasts offers on industrial growth provision should be estimated. Decrease of high differentiation of branches of commodities-based and processing industries in future is possible by means of redistribution of financial resources to the advantage of the branches — carriers of novel technologies, modernization of the manufacturing branches, including import of advanced resource saving technologies. To achieve this aim optimal changing of price ratio by price management, taxification and aid grants, ensuring of greater transparency of investment flows is necessary. At the same time credit strategies of corporations should be oriented on optimization of all the mobilized resources at the expense of capital procurement, using issue of and operations with securities. Active interaction with foreign funds and organizations permits to accumulate funds of corporations in non-state (established within the corporation) pension funds, insurance companies, in deposits of banks and commercial credit companies, and also in funds of enterprises — members of corporation.

In the process of justifying of priorities of industrial and innovative modernization of the economy you must consider the principles of their choice from the position of social and economic eventual outcome, interests of all business and ownership patterns (emerging factor), and also receiving multiplicative effect due to inclusion of a growing number of «innovative» branches into the sphere of production. The strategy of sustainable industrial and innovative development should be assumed as a basis of created national systems, the mission of which is to provide the transition to effective development on the base of the chosen priorities, become a focus of perspective scientific and technical policy and social modernization, the main guideline in activity of authority in the center and at the local levels, and business leaders. The mentioned strategy after open discussion should be legislated and supported by government regulation and market mechanisms of its effective implementation.

Endnotes

1. See: *Spitsyn A.T.* Integration within the CIS space as a strategic perspective of innovative modernization of the economy (experience of theoretical analysis). M.: Economics, 2009. P. 75.
2. It should be noted that there are scientifically grounded recommendations of the Economics Institute of the Russian Academy of Sciences, the Institute of Economic Forecasting of the Russian Academy of Sciences, scientific research institutes of Kazakhstan.
3. See: *J. Stiglitz.* Economics of Public Sector. M.: MSU publishing house, 1997. P.18.

4. See: *A.G. Zeldner. Conceptual Approaches to Strategy and Tactics of Economy Government Regulation. M., 2010. P. 31.*
5. See: *V.N. Kusykh, V.I. Kushlin, Yu.V. Yakovets. Forecasting, Strategic Planning and National Programming. M.: Economics, 2008. P. 237-238.*
6. See: *V.N. Kusykh, Yu.V. Yakovets. The Strategy of Russia Innovative Breakout based on Long-term Forecasting of Innovative and Technological Development (research report). M.: INES, 2004, P.21.*
7. The share of infrastructure sector will rise within effective development of international transport corridors and export of tourism services.
8. See: *V.N. Kusykh, Yu.V. Yakovets. The Strategy of Russia Innovative Breakout based on Long-term Forecasting of Innovative and Technological Development (research report). M.: INES, 2004, P.85.*
9. In China government allocates grants for new equipment acquisition and provides exporters loans free of interest and tax advantages to promote their goods in world market.
10. According to M. Porter cluster theory the most internationally competitive companies of the same industry are usually concentrated in one region.



Global transformation and innovative modernisation of economics in XXI century

Global transformation and innovative modernisation of economics in XXI century / A.T.Spitsyn. — Moscow : Economics, 2014. — 320 p.

**Spitsyn Anatoly
Tikhonovitch** —
*Director of EurAsEc Institute
for Strategic Studies, Dr. of
Economy, Professor of RANEPA
of President of Russian
Federation, RANS Vice-President*

The book of Spitsyn A.T. presents a theoretical analysis of global trends and contradictions of the world economic development at the beginning of the XXI century. Social transformation patterns and economic modernisation are revealed. Economic crisis theories, disbalances and origins of today's systemic crisis, solution problems are considered. The author explores the issues of sustainable development on the basis of economic systems evolution and the dynamics of reproduction cycles. The concept of structural-level transformation of the economy reflects a strategic option modernization reproduction considering measurement of costs and benefits at the optimum indicative planning. Economic optimum dynamic grounded in the reproduction process of innovation type in conditions of increasing social orientation of production and the market. Analytical capacity assessment of "Russia — 2020" and "Kazakhstan — 2030" strategies and the prospects for their implementation, are presented in the monograph. An importance of national economies integra-



tion in the CIS grows based on EurAsEC dynamics, Customs Union and Common Economic Space efficiencies. Formation of the Eurasian Economic Union is represented as a planetary project of the President of Kazakhstan Republic — Nursultan Nazarbayev, supported by Russian President Vladimir Putin. A new strategy of “Kazakhstan — 2050” on creation of welfare society based on a strong state, economic development and opportunities of universal labour is presented. International recognition of strategic initiatives and innovative proposals of Nazarbayev N.A. to radically-creative reformation of the global monetary and exchange rate systems and solutions of global and regional integration issues are presented.

Contents

Chapter I. GLOBAL TENDENCIES OF WORLD ECONOMY AND CONTRADICTIONS OF SOCIO-ECONOMIC DEVELOPMENT

- 1.1. Globalization processes and their impact on the global economy
- 1.2. Tendencies and contradictions of the current stage of economic and social development
- 1.3. Activation of globally evolutionary and transformation processes

Chapter II SOCIAL TRANSFORMATION PATTERNS AND ECONOMIC CRISES

- 2.1. Laws of social development and economic crises
- 2.2. Systemic innovation as a defining stage of social transformation
- 2.3. The new paradigm of global transformation of economy

Chapter III SYSTEMIC FINANCIAL AND ECONOMIC CRISIS AND SOLUTION PROBLEMS

- 3.1. Contemporary financial and economic crisis: disbalances and origins
- 3.2. Program of anti-crisis measures in Russia and Kazakhstan within EurAsEC
- 3.3. The second wave of the global financial crisis: assumptions or reality

Chapter IV ECONOMIC TRANSFORMATION AND SUSTAINABLE DEVELOPMENT BASES

- 4.1. Economic dynamics and economic systems evolution
- 4.2. Transformation of the reproduction cycle and transaction costs
- 4.3. The progress of optimal macroeconomic dynamics based on sustainable development

Chapter V STRUCTURAL TRANSFORMATION OF THE ECONOMY AND REPRODUCTION MODERNIZATION .

- 5.1. Main provisions of structural-level concept economic transformation
- 5.2. Qualitative-structural characteristic of strategic reproduction parameter
- 5.3. Key factors of scientific and technological progress and organization of production

Chapter VI DYNAMIC OPTIMUM OF ECONOMIC IN REPRODUCTION SYSTEM OF INNOVATIVE TYPE

- 6.1. Development of an efficient market as a condition of innovative economy
- 6.2. Intensification of reproduction based on the industrial, scientific and technical integration

6.3. Dynamic economic optimum
of innovative reproduction

Chapter VII

STRENGTHENING THE SOCIAL ORIENTATION OF PRODUCTION AND MARKET

7.1 Lessons of reforms and formation
issues of social market economy
7.2. Strengthening integration function
of market at the present stage
7.3. Further development of social
orientation of production and market .

Chapter VIII

DEVELOPMENT OF INTERSTATE INTEGRATION OF NATIONAL ECONOMIES IN THE CIS COUNTRIES

8.1. Economic integration in the
CIS as world economy trend
8.2 Impact of international
scientific and industrial cooperation
on the CIS economies
8.3. Investment cooperation of
CIS countries in transition to
an innovative economy

Chapter IX

PLANETARY SCALE INTEGRATION PROJECTS IN EURASIA SPACE

9.1 Strategic Initiative of Nazarbayev
N.A. to create a new type of
association — Eurasian Union
9.2 The conversion of the Eurasian
idea into «public project»
of Nazarbayev N.A.
9.3 From the idea of the Eurasian
Union to the new prospects
of Eurasian integration

Chapter X

THE STRATEGY «RUSSIA — 2020» AND THE VALUE OF INNOVATIVE

DEVELOPMENT SCENARIO OF THE RUSSIAN ECONOMY

10.1 Prospects of the Russian
economy development and
innovative type of reproduction
10.2 Innovative economic
modernization and restructuring
reproduction as a complex approach
10.3 Structurally innovative
background for production upgrade

Chapter XI

«KAZAKHSTAN — 2030» AND A LONG- TERM ECONOMIC DEVELOPMENT STRATEGY AND SOCIAL MODERNIZATION UNTIL 2050

11.1. Structural reforms and
secure resourced development of
Kazakhstan in market conditions
11.2. Economic priorities of industrial
innovative competition policy
and competition protection
11.3. Strategic priorities of modernization
and technological break-through

Chapter XII

INITIATIVES OF NAZARBAYEV N.A. AND NEW WORLD ECONOMY MODEL PROSPECTS

12.1. Innovative proposals of Kazakhstan
as a base model for future economy
12.2. Globalization challenges of the
energy and ecological security and
solution strategy in the XXI century
12.3. Implementing ideas of Nazarbayev
N.A: The project «Communication
platform «G - Global»

FORMATION OF A NEW MODEL OF THE WORLD ECONOMY AND EURASIAN INTEGRATION PROSPECTS

(Instead of a conclusion)



Sustainable economic development and social modernization in Kazakhstan

Sustainable economic development and social modernization in Kazakhstan / Nurtay Abykayev. — Moscow: Economics, 2014.

Abykaev, Nurtai A. —
RANS foreign member, President
of the Kazakhstan National
Academy of Natural Sciences

This book is a fruit of long standing creative generalization of what happened and is happening in the spheres of economy and socio-political life of Kazakhstan, Russia and other post-Soviet countries which formed backbone of CIS. This scientific publication describes the experience of market transformation of economic and social modernization of society's strategic plans and the direct supervision of the President of the Republic of Kazakhstan Nursultan Nazarbayev, President of Kazakhstan National Academy of Natural Sciences, Doctor of Economic Science N.A. Abykaev. They were performed by famous statesmen of Kazakhstan, Doctor of economics, Abykayev N.A., one of the closest companion of President of Republic of Kazakhstan, Nazarbayev N.A. Therefore, the book very accurately reflected the stages of formation and implementation of long-term socio-economic strategy "Kazakhstan — 2030" and long term "Kazakhstan's path — 2050": a common goal, common interests, common future.

The monograph is distinguished by organic combination of illumination of features of Kazakhstan's national economic policy



and its objective embeddedness into world processes defined by development of globalization. Also there is a precise depiction of priority of the course on deepening of Kazakhstan's integration with traditionally close countries in the space of the CIS, in a frame of the Customs Union of Belarus, Kazakhstan and Russia, the Common Economic space, the Eurasian Economic Community and emerging Eurasian union.

Questions of innovative transformation and modernization of the economy considered from the point of view of possibilities of sustainable economic development, founded late in 20th century by a number of considerable scientists and politicians. The paper highlights the problem of global energy policy, ecological policy and energy security in the XXI century. Special attention is paid to the strategic initiatives of the President of the Republic of Kazakhstan that received wide attention in the world by having a breakthrough character on a new model of the world economy, which allows achievement of effective social and economic development within its frames in the post-crisis world.

Content

Preface
Introduction

CHAPTER I. QUESTIONS OF THEORY AND PRACTICE OF MARKET TRANSFORMATION AND MODERNIZATION OF ECONOMICS

1.1. Structural priorities of transformation modernization of reproduction

1.2. "Kazakhstan — 2030": implementation stages of long-term strategy of socio-economic development
1.3. Economic social modernization as the main vector of development of Kazakhstan

CHAPTER II. SCIENTIFIC BASES FOR SUSTAINABILITY OF DEVELOPMENT AND ACHIEVEMENT OF OPTIMAL MACROECONOMIC DYNAMICS

2.1. Scientific basis of sustainable socio-economic development
2.2. Activation of scientific research in the field of sustainable development in the context of unequal economic dynamics
2.3. Strategic decisions to achieve optimal macroeconomic dynamics

CHAPTER III. ROAD MAP OF INDUSTRIALLY INNOVATIVE AND SOCIAL MODERNIZATION

3.1. Implementation of forced industrialization program of innovative type
3.2. Interaction of Kazakhstan and Russia in realization of industrially innovative production strategy.
3.3. Formation of a national model of socially oriented market in Kazakhstan
3.4. New quality of living of the people

CHAPTER IV. INTEGRATION IN A SPACE OF CIS AS STRATEGIC PERSPECTIVE FOR SUSTAINABLE DEVELOPMENT OF NATIONAL ECONOMIES

4.1. Sources of Eurasian integration and issues of its strengthening on a contemporary stage
4.2. Concept of coordinated social policy of the Eurasian Economic Community countries

4.3. Strategic reference points of sustainable development of national economies of CIS countries

CHAPTER V. KAZAKHSTAN'S INITIATIVES AND PERSPECTIVES FOR CREATION OF NEW MODEL OF WORLD ECONOMY

5.1. Post crisis world and ways of its renovation

5.2. Kazakhstan's innovative offers as a basis of economy of future's model

5.3. Globalization of the issue of energy-ecological safety and strategies for its solution in the 21st century

5.4. Initiatives of President of Republic of Kazakhstan N.A. Nazarbayev in the epicenter of intellectual breakthrough.