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

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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 century[1].

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

and Alvin Toffler. Modern Russian scientific schools — Russian cyclicisim[2], civilizational[3], noospheric, innovation[4], integral macro-forecasting[5] 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 millennia B.C. This position was maintained by great Russian thinker Academician N.N. Moisseev[7]: "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 eight[11], 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 civilizations[14].

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 sociopolitical 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

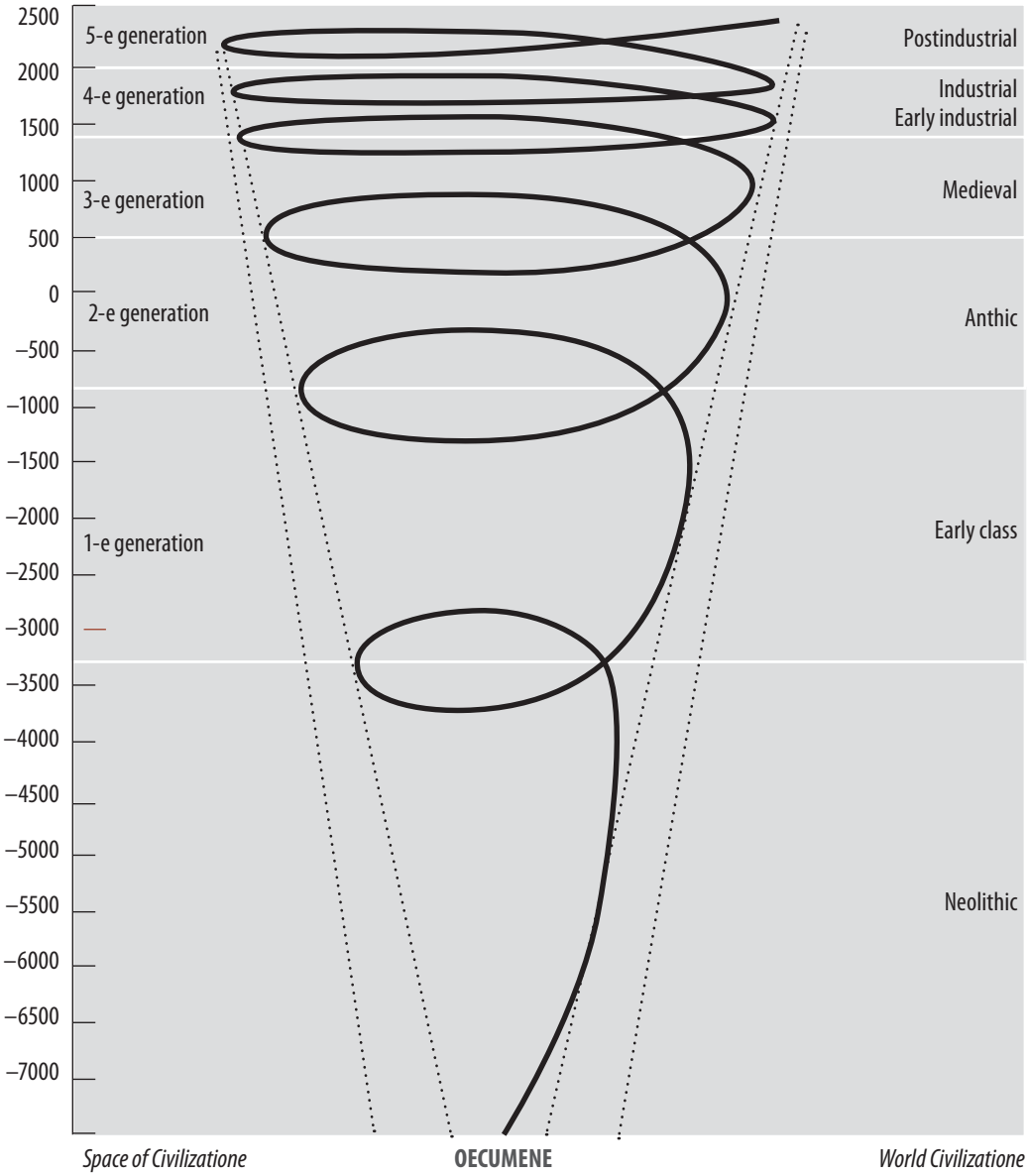
Let us consider the trajectory of the historical pendulum motion and the trajectory of move of the epicenters of the progress of civilizations for ten thousand years of history of civilizations. Graphically, this can be expressed in the form of a spiral of dynamics of civilizations *(Fig. 1).*

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 technological 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 1-2001*[16]

№			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)*

№			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.

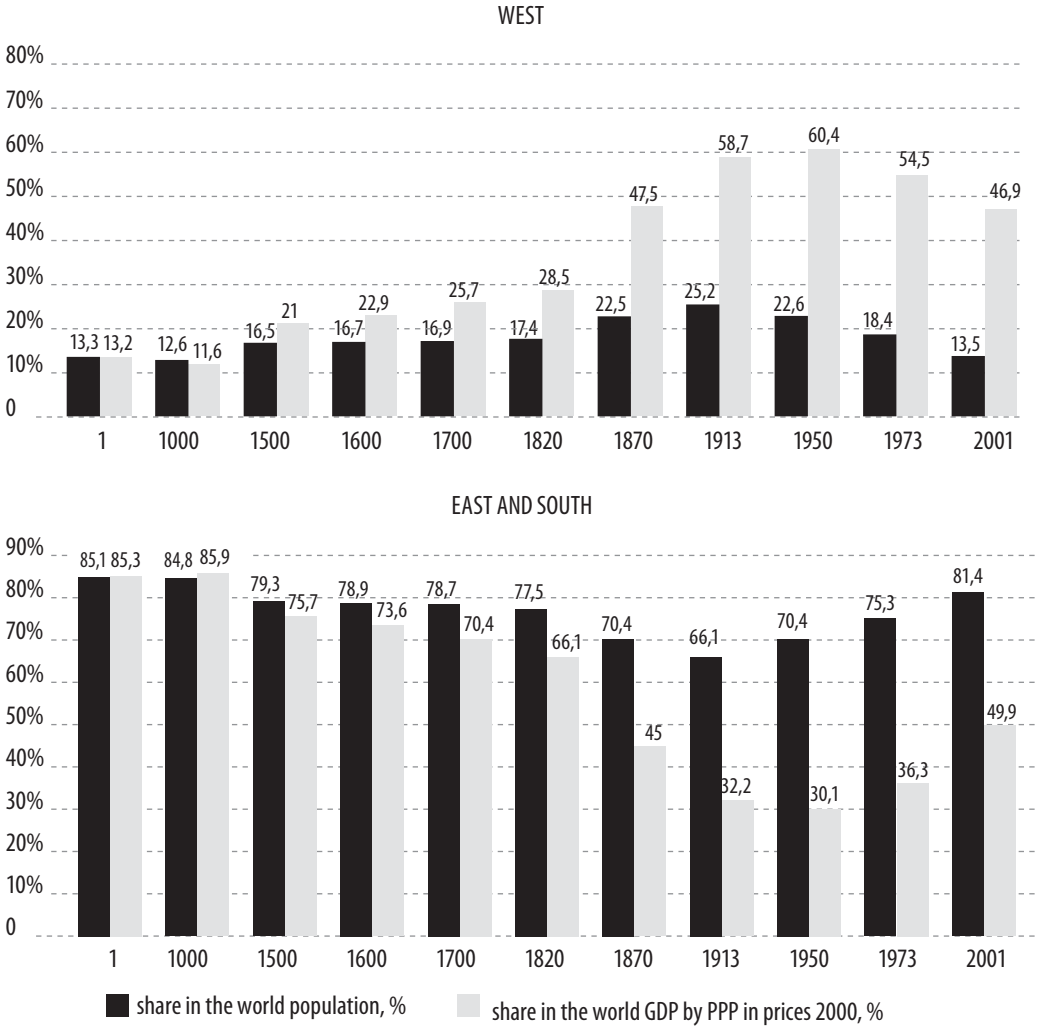
3. In the first half of the 2nd millennium the historical pendulum began to turn towards Western Europe, with its growth of the share in the world population from 9.5% to 13.1%, in the world GDP from 8.7% to 17.8%; production efficiency was twice the world average. This was due to the accelerated development 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 1000–1500[17]). After 1000, according to McNeil, there occurred a shift of the world center of civilizations from the Middle East to China[18].

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^{O}_{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^{O}_{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^{O}_{E} 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.

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