

ASSESSING THE LEVEL OF ECONOMIC DEVELOPMENT IN COUNTRIES TRANSITIONING TO INFORMATION ORIENTATED, POSTINDUSTRIAL, SOCIETIES

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ABSTRACT

The article deals with the classification of countries in terms of development. Nowadays the main criterion for grouping countries by level of economic development, gross domestic product, does not fully take into account the fact that modern human civilization is gradually entering the stage of information society. Gross domestic product, as a quantitative criterion does not take into account qualitative changes in the nature of social production and associated with these transformations.

The authors suggest using the index of information and technological development, as an indicator of the level of the country development. Special attention is paid to the analysis of the causes of information technology that Russia lags behind the leading countries of the world.

Keywords: *level of economic development, human development index, developed (industrialized) countries, countries with economies in transition, developing countries, information society.*

INTRODUCTION

In today's world there are more than 200 states and state formations. All are at varying stages of socioeconomic development, with differing standards of living and diverse roles in the world economy. Disparity in the economic development of separate states and regions in the world is a phenomenon characteristic of all stages of the development of international economics.

International organizations and experts have attempted to devise universal approaches towards grouping countries by their level of economic development. *Level of economic development*, as a term, is understood as the economic climate (eg. group of countries or economic regions) at a certain moment in history. However, this term is multidimensional; the level of economic development includes such characteristics as; the GDP output level, as well as the level of GDP output in relation to per capita purchasing ability; the structure of social production, meaning, the proportion of industry and agriculture in the world's economy; the proportion of production used by the means of production and the share, scale, and pace of development of advanced subdivisions of the economy; the quantitative level of employment; the level of exploitation of natural resources, meaning, the contribution of land, fuel, energy and mineral resources; the organization and effectiveness of social production, meaning, labor productivity.

Each of the criteria listed above is essential. However, which one of them to use for placing a country in one group or another is a question that has not yet been answered in contemporary scientific and specialized publications. Several approaches can be identified which are used by international institutes for the comparative analysis of the level of economic development in individual countries.

THEORY

The widest recognition in statistical publications has been given to the so-called “standard classification” of countries. This model is currently used by the United Nations Conference on Trade. The standard classification identifies three distinct groups of countries:

- developed or industrialized countries; this group includes countries which are members of the Organization for Economic Cooperation, with the exception of Mexico, the Republic of Korea and Turkey, and new countries, meaning, members of the European Union and Israel;
- countries with transitional economies, for example, Southeastern Europe and the Commonwealth of Independent States (CIS);
- developing countries, meaning, all other countries and subnational entities not included in the previous groupings (Report on Trade and Development 2012).

Another kind of classification has been proposed by the International Monetary Fund (IMF). In its 2014 report, the IMF identified three groups of countries: “Countries with developed economies”, “Countries with developing markets” and “Low-income countries”. The report also used the following terms: “developing countries/small states,” meaning, countries with a population of no more than 1.5 million people. The report also used a separate grouping for some Middle Eastern countries, specifically, “Middle Eastern countries going through a transitional period,” using examples such as Yemen, Jordan, Tunisia, Morocco, Egypt (International Monetary Fund, 2014, p.14).

This classification is also not entirely effective. In the IMF’s system there are no criteria by which countries can be classified into one group or another. An additional classification system has been proposed by the World Bank. The standard used by the World Bank assesses countries by their gross domestic product (GDP) per capita. According to this classification system, countries are divided into three groups: countries with low, medium, and high income levels. The medium income range is includes two subgroups: countries with incomes above and below the average.

For each group of countries, the World Bank has defined threshold amounts. The amounts change periodically because GDP has a tendency to fluctuate over time.

In 2013, the following amounts were proposed:

- high income countries, \$12,616 and up;
- medium income countries, \$1,036 to \$12,615;
- low income countries, below \$1,035 (Information-analytical portal Rating of countries of the world by the level of GDP per, date of the application 04.2016).

Table 1
COUNTRIES BY LEVEL OF ECONOMIC DEVELOPMENT (WORLD BANK METHOD)
(INFORMATION-ANALYTICAL PORTAL RATING OF COUNTRIES OF THE WORLD BY THE
LEVEL OF GDP PER, DATE OF THE APPLICATION 05.2016)

Group of countries	2013
Countries with high income levels	57
Countries with medium income levels	96
Countries with low income levels	33
Total number assessed:	188

Although the GDP per capita index is commonly used in international statistical datasets, it does not fully reflect the level of economic development in many countries. Specialists have highlighted a number of significant problems related to this index. Firstly, this model doesn't account for the qualitative features of a national economy, particularly, its industrial structure. Thus, high-income countries might include primary exporting countries, whose prosperity level depends primarily on the price performance of certain resource in world markets. Secondly, it does not take into account a country's level of foreign trade, which naturally impacts its positioning on the world market. The third issue relates to the fact that the GDP per capita index does not account for the level of innovation present in a country's economy, which can change its position relative to the world market very rapidly.

A further, separate, criteria for assessing the level of a country's economic development was developed by the United Nations (UN) in the 1990's. Specifically, this system is referred to as the Human Development Index (HDI), *or index of human potential development*. The HDI was developed as a part of the United Nations Development Program (UNDP), and is updated annually in the form of the *Human Development Report*.

The human development index is an aggregated index, which consists of three components (subindexes), each of which reflects a society's level of well-being: 1) the average life expectancy of people; 2) the index of educational attainment (or level education), and 3) index of GDP per capita in purchasing power parity (PPP). The education of the population is measured by the combination of two quantities: (a) index adult literacy with a weight of 2/3 (proportion of literates among adults older than 15 years (in%) a) and b) ratio of the aggregate share of students enrolled in educational institutions with a weight of 1/3 (Encyclopedia of statistical terms, In 8 volumes, 2011).

The HDI ranges from 0 to 1. Countries for which the HDI value ranges from 0.8 and more belong to the group of countries with extremely high human development; from 0.6 to 0.7 to the group of countries with a high level of human development; from 0.55 to 0.6 to the group of countries with medium human development. Countries where the HDI was 0.54 and less are classified as countries with low human development .

The UNDP human development report for 2014 distinguished the world countries by groups in the following way (see table 2.).

Table 2
DISTINGUISHING THE WORLD COUNTRIES BY GROUPS ACCORDING TO HUMAN DEVELOPMENT INDEX

Group of countries	Number of countries	%
Countries with extremely high human development level	49	26,2
Countries with high human development level	53	28,3
Countries with medium human development level	42	22,5
Countries with low human development level	43	23,0
Total	187	100

The highest HDI belongs to Norway, Australia, Switzerland, Netherlands, USA, Germany, New Zealand, Canada, Singapore, Denmark (0.9 and above). Russia, in terms of the HDI ranks only 57th place (0,778), and falls into the group of countries with high levels of human development, second among the CIS countries in the first place of the Republic of Belarus (of 0.786, 53). The bottom of the list shows the African countries (Niger, Democratic Republic of the Congo, Central African Republic, Chad).

The need to include more criteria for distinguishing countries in the system of international economics is especially meaningful for high-income countries, as they are deeply involved in the international divisions of labor and production specialization.

The analysis of the mentioned approaches to classifying countries based on their position in the global economy shows that existing grouping systems do not take into account the 21st century development of the information society. The information society has grown organically from the "post-industrial society," in which the development of productive forces has reached a point where the production and dissemination of information and knowledge is crucial for various sectors of the economy.

The Latest philosophical dictionary notes that the term "information society" was first introduced to the scientific usage by the American economist F. Malupa in the book "the Production and distribution of knowledge in the United States" (1962) (The New philosophical diction, date of the application 04.2016). Research and development of the theory of information society are also: M.Kastels (Castells M., 2000, p.49), F.Uebster (Webster F., 2004, p. 103), E.Giddens (Gidens E., 2005, p.184), D.Bell (Bell D. , 2004, p. 141), M.Maklyuen (McLuhan M., 2003, p. 286), M.Gibadullin, A.Nurieva (Gibadullin M.Z., Fazlieva E.P., Nurieva A.R., p. 501) and many other scientists.

The information society is a society in which telecommunications and computers play a basic role in the production and exchange of information and knowledge, and theoretical knowledge will be the decisive factor of production. If an agrarian society is based on agricultural production, the industrial society is focused on machine production, so post-industrial society is characterized by intellectual production, the production of knowledge in various forms. And if capital and labor are the main structural features of the industrial society, information and knowledge are those for post-industrial society.

Information society organically grows from the "postindustrial society", in the depths of which the level of development of productive forces reaches this state, when production and distribution of information and knowledge acquires crucial meaning in the sectors of the economy. Prerequisites for the more or less simultaneous transition of countries in Europe, North America and Japan to the information society were established in the 1990's. Since the beginning of the 21st century, other countries, including Russia and China have started preparing for the transition to this stage of development.

RESULTS

Given the increasing role of information technology in the development of the world economy the traditional classification of countries in terms of economic development must be supplemented and clarified.

Firstly, it is appropriate to define a specific group of countries where the development of information technologies has reached a high level in comparison with the others. With some degree of conditionality, these countries can be defined as “info-technological” countries.

M. Castells in his book "The Information Age: Economy, Society and Culture" defines information technologies as: "... a set of converging technologies in microelectronics, the creation of computer technology (machines and software), telecommunications / broadcasting and opto-electronic industry. In addition, unlike some analysts, I turn to information technology and genetic engineering, expanding the set of its achievements and applications. "(Castells M., 2000, p.49)

These countries are distinguished by:

- their ability to produce information based and technological products and services, including knowledge. Information technology products and services are those in which the production is based on the achievements of modern science and engineering;
- the share of information based and technological products in the structure of these countries is significant;
- information based and technological products are available to the general consumer within these countries;
- in this group of countries the conditions for the expanded reproduction of information technology products and services, including knowledge are established.

In other words, the group of info-technological countries consists of countries which have transitioned to information societies. Such countries include countries which dominate in the field of introducing innovation into all components of their economic activity.

The second group of countries consists of advanced industrial countries. We may distinguish two subgroups of countries here; those countries which have the established prerequisites for a transition to a post-industrial, information society, and industrialized countries which are not yet prepared for the transition to an information society.

Post-industrial countries are distinguished by:

- ability to produce separate elements, types of information and technological products, including knowledge;
- the share of information based and technological products in the structure of production of these countries is negligible at this stage;
- information and technological products in this group of countries are available to a significant number of consumers, regardless of the place of their production;

- conditions have been established within this group of countries for expanded reproduction of information based and technological goods and services, including knowledge.

In other words, post-industrial countries are those which are preparing for the transition to an information society.

Industrial countries are distinguished by:

- inability to produce information based and technological goods;
- information based and technological goods in this group of countries, regardless of the place of their production, are only available to a small number of consumers;

Industrial countries are those which are not yet ready for the transition to an information society.

The third group of countries is developing countries, which are distinguished by:

- inability to produce information based and technological goods;
- information based and technological goods in this group of countries are not available to a wide range of consumers.

Developing countries are not yet ready for the transition to the information society.

It is also important to highlight the individual factors which are necessary for assessing countries, based on their level of information based and technological development. Various indexes, characterizing the level of information development of countries, meaning, a global index of innovation, an index of information and communicative technologies development, an index of readiness for web society, and many others, are being calculated in international practice.

CONCLUSIONS

In contrast to existing methods, three groups of indicators are taken into consideration in the approach, proposed by the authors of this research; firstly, indicators, forming public demand for information based and technological goods, meaning, characterizing the potential ability of a society to use, implement and generate information based and technological products. Primarily, this indicator is shaped by the level of development in a country's education system. Secondly, indicators, showing financial capabilities, and thirdly, indicators, showing the degree of expansion already achieved within the level of information based and technological goods available in a society.

The first group of indicators includes the following:

- accessibility of education within a population;
- the number of students enrolled into higher education programs per capita

The second group of indicators includes:

- public expenditure on education as a percentage of GDP
- the percentage of expenditure on education within state budget expenditures;
- total amount of expenditures on education, expressed as a percentage of GDP;
- the structure of expenditures on technological innovation, in resource extraction and manufacturing industries, production and distribution of electricity, gas and water, and production of services formed by innovative activity, measured as an overall percentage of total expenditure;

- domestic expenditure on research and development, measured as a percentage of GDP;
- expenditures of organizations on information technology, measured as a percentage of GDP

The third group of indicators includes:

- the number of subscribers to cellular networks per capita
- the number of internet users per capita
- the proportion of households with internet access;
- the number of personnel engaged in research and development, as a percentage of the total workforce;
- the percentage of successful patents granted to applicants;
- the share of organizations using informational and communicative technologies;
- the share of organizations using the internet to interact with public authorities, expressed as a percentage of the private sector;
- the share of chemical industry and machinery products being exported;
- the share of employees qualified for the positions in which they are employed;
- the share of organizations exploring technological innovations, as a total number of extractive and manufacturing industries and organizations, production and distribution of electricity, gas and water, and expansion of the services sector.

World Intellectual Property Organization, which has been a specialized UN Department since 2007, conducts research on innovative development in various countries of the world. In 2014 this study was conducted in collaboration with the International business school INSEAD and Cornell University. The study was published in the special report "The Human factor in innovation".

143 countries were examined in 2014. In the top ten countries all European countries except the USA, Singapore and Hong Kong were presented. Russia in the rating is only the 49th (National university rating, date of the application 04.2016).

It should also be noted that according to the GII rating Russia is overtaken by Russia's BRICS partner - China (the 29th place), and from the countries of the former USSR – Estonia is the 24th, Latvia is the 34th, Lithuania is the 39th and Moldova is the 43d.

Tajikistan, Burundi, Guinea, Myanmar, Yemen, Togo, Sudan are at the bottom of the ranking (from 137 to 143).

Several reasons of Russia's innovation gap with advanced countries of Europe and America may be mentioned. The first of them is inadequate funding of the education system. The data presented in table 3. convincingly proves that. In Russia, the share of expenditure on education in percentage of GDP is lower than in most Western European countries and some Asian countries.

Table 3
SHARE OF EXPENSES FOR EDUCATION IN THE GENERAL STRUCTURE OF EXPENSES OF THE STATE (CONSOLIDATED) BUDGET OF THE CERTAIN WORLD COUNTRIES (RUSSIA AND COUNTRIES OF THE WORLD. 2014, P. 302)

	Year	Education
Russia	2012	9,5
Belgium	2012	11,5
Germany	2012	9,7
Denmark	2012	13,3
Netherlands	2012	11,5
Norway	2012	12,6
Great Britain	2012	12,6
Finland	2012	11,2
France	2012	10,8
Switzerland	2011	15,8
Sweden	2012	13,1
Canada	2007	15,0
USA	2009	15,8
Australia	2012	14,4

The second reason, which should ukazat- weak link innovative ideas and real business practice in which these ideas have to be realized. An essential feature of the Russian research capabilities is its concentration in the public sector, which is typical of the post-socialist countries and the former Soviet republics, but not typical for countries with a market economy in which R & D personnel are concentrated in the business sphere.

Next reason is the lack of interest of Russian business in the creation of their own innovations. Gross domestic expenditure on research and development, ie, the cost of implementation of research and development carried out by its own forces organizations, including both current and capital expenditure (as a percentage of GDP) in Russia is 1.12%. (St. for 2012.). It is also substantially lower than in the countries, tops the list of the GII (eg Shvetsii- 3.41% to 1.73% Velikobritanii-, in Finland 3.55% in Niderlandah- 2.16% in the USA-2, 79% in Singapore- 2.04% to 2.98% Danii- c Lyuksemburge- 1.46%) (Russia and countries of the world, 2014, p. 323).

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REFERENCES

- Bell D. The coming post-industrial society: the experience of social prognozirovaniya.- M.: Publishing House of the "Academy", 2004.- pp. 141-138.
- Castells M. The Information Age: Economy, Society, kultura.- M.: in HSE, 2000.- pp.49-79.
- Encyclopedia of statistical terms. In 8 volumes- V.8.-M.:, 2011.
[online resource]http://www.gks.ru/free_doc/new_site/rosstat/stbook11/tom5.pdf
- Gibadullin M.Z., Fazlieva E.P., Nurieva A.R. 2014Assessing the level of economic development in countries transitioning to information orientated, postindustrial, societies// World Applied Sciences Journal 29 (4): pp 501-505.
- Gidens E. dispensation obschestva.- M.: Academic Project in, 2005.- pp. 184-196.
- International Monetary Fund. From stabilization to stable growth. Year report. 2014. - Washington.-2014. - C.14, 26, 29, 30. [online resource] <http://www.imf.org/external/russian/>
- Liberal arts technologies center. Information-analytical portal Rating of countries of the world by the level of GDP per capita [online resource] http://gtmarket.ru/ratings/rating-countries-gni/rating-countries-gni-info_date_of_the_application_04.2016
- McLuhan M. Understanding Media: The external expansion cheloveka.- M.: Zhukovsky: "canon - the press - C", "Kuchkovo field", 2003. – pp. 286-351.
- National university rating [online resource] // <http://www.univer-rating.ru/news.asp?id=277&Int=6>
- Report of the United Nations conference for Trade and Development office. Report on Trade and Development 2012.- New York-Geneva: United Nations, 2012 - C. IX
http://unctad.org/en/PublicationsLibrary/tdr2012_ru.pdf
- Russia and countries of the world. 2014.: Stat.is. / Rosstat. - M., 2014.- p. 302.
- Russia and countries of the world. 2014.: Stat.is. / Rosstat. - M., 2014.- p. 323.
- Table 4.1. is based on: Liberal arts technologies center. Information-analytical portal Rating of countries of the world by the level of GDP per capita [online resource] http://gtmarket.ru/ratings/rating-countries-gni/rating-countries-gni-info_date_of_the_application_05.2016
- The New philosophical dictionary [online resource] http://enc-dic.com/new_philosophy/Informacionnoe-Obschestvo-519/.
- Webster F. Theories of information obschestva.- M.: Aspect Press, 2004.- pp. 103-154.