Methodology for assessing globalisation development of countries

Abstract. Under the conditions of economic globalisation, new trends are being formed in terms of social and economic development. There arises a need for a comprehensive assessment of the level of socio-economic development of countries in order to identify factors and components of effective globalisation development. Leading global institutions use different approaches and indicators to carry out such an assessment. However, they do not cover the entire spectrum of the development factors. Therefore, the issue of conducting researches to substantiate the optimal methodology for assessing countries' socio-economic development is relevant. The authors of this research applied the following methods: logical and comparative analysis, monographic method, deduction and induction. To provide a comprehensive assessment of socio-economic development of countries in the context of economic globalisation, it is necessary to calculate an integral indicator. The authors of the article have developed a methodology for calculating such an indicator. To calculate the integral index, five indices, each of which is already an integral one, have been selected. Each of these components is calculated by world scientific, social, economic research institutes and covers all countries of the world. The importance of each component has been determined by the expert assessment method. Thus, GDPonPPPp has the highest rating of 5, the Index of Economic Freedom - 4, the Index of Global Competitiveness - 3, the Global Index of Innovations - 2, and the Index of Globalisation - 1. Luxembourg has the highest level of globalisation development among the countries under investigation with its integral index of 0.842. At the same time, the growth potential of the index is 15.8%.

It has been concluded that globalisation is a major factor affecting the current level of development in most countries of the world. To identify the level of globalisation achieved by various countries and the main factors that determine it, a methodological approach has been developed, which involves calculation of the Integral Index of Globalisation Development (IIGD), including five components: gross domestic product of the country on purchasing power parity per person, Globalisation Index, Global Competitiveness Index, Global Index of Innovations, Index of Economic Freedom, each of which has different weight, determined on the basis of expert judgment.

The obtained results allow making managerial decisions concerning the formation of development models of countries under the conditions of economic globalisation.

Keywords: Globalisation; Methodology; Assessment; Development of Countries; Integral Index of Globalisation Development

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1. Introduction

The development of the world market and economics of most countries has been characterised by the presence of significant structural changes that manifest themselves in various areas of the economy. Generally, modern transformation processes are caused by the growing role of globalisation, which covers various directions of development and interaction between the subjects and objects of socio-economic and environmental relations. Under the conditions of economic globalisation, new trends are being formed in terms of social and economic development. Population growth, as well as the changing structure and culture of consumption, is an impetus for both quantitative and qualitative indicators. There arises a need for a comprehensive assessment of the level of socio-economic development of countries in order to identify factors and components of effective globalisation development. Leading global institutions use different approaches and indicators to carry out such an assessment. However, they do not cover the entire spectrum of the development factors. Therefore, the issue of conducting researches to substantiate the optimal methodology for assessing countries' socio-economic development is relevant.

2. Brief Literature review

Quite a few scholars have focused their attention on the issues of socio-economic development of countries and individual industries under the conditions of economic globalisation. Among the first researchers in the field of global studies are the works by P. Dicken (1998) and Y. Doz (1986). Also, the relevant scientific papers by Ş. Önsel, F. Ulengin, G. Ulusoy, E. Aktaş, Ç. Kabak and Y. ilker Topcu (2008), O. I. Soskin (2012), L. C. Mitchellmore and J. Rowley (2010) investigated impacts of international trade on the economic growth in the Czech Republic and the Slovak Republic. O. Spiliopoulos (2014) points out that Ukraine should find out its own niche in the world economic system. New opportunities may open up as a result of the creation of the free trade zone between Ukraine and the European Union. It is possible to improve the situation at Ukrainian enterprises owing to their integration into global value chains and development of export potential in the frame of the Deep and Comprehensive Free Trade Area (DCFTA). Issues of the development of the agricultural and food market in the context of economic globalisation and the EU’s Common Agricultural Policy (CAP), as well as its enlargements, are revealed in the work by E. Giannakis and A. Bruggeman (2015). Thus, in modern theory and practice, the problems of current development of countries in general, and Ukraine in particular, have been carefully researched. However, these works do not address the full range of factors determining the level of their development. Therefore, it is advisable to improve the methodological approaches to assessing the development of countries of the world.

3. The purpose of the study is to develop methodological approaches to assessing the level of globalisation development of countries on the basis of the integral index, which takes into account a full spectrum of indicators of socio-economic, innovative and environmental development of countries under the conditions of economic globalisation.

4. Results

There are a number of techniques for assessing socio-economic development of countries under the conditions of economic globalisation. To provide a comprehensive assessment of globalisation processes around the world, it is advisable to analyse the KOF Index of Globalisation. This indicator was developed by the Swiss Economic Institute and has been calculated since 2002 to characterise the level of globalisation of countries. This integral indicator combines three directions of globalisation: economic (flows of goods, services, capital and information), political (popularisation of state policies), and social (dissemination of ideas and images). As a whole, the method
involves the calculation of 24 key indicators (Table 1). The highest globalisation indicators belong to the Netherlands, Ireland, and Belgium, where in 2016 they were 91.7, 91.64 and 90.51, respectively. Austria, Switzerland, Singapore, Denmark, Sweden, Hungary and Canada are also characterised by high rates of globalisation. There were insignificant changes in the top ten leaders during 2010-2016. The number of countries with a globalisation index over 75 is 37. Singapore, Ireland, Luxembourg, the Netherlands and Malta are among the highest with the index of economic globalisation over 90. Austria, Singapore, Switzerland, Ireland, the Netherlands, Belgium, and Puerto Rico are the leaders by the Index of Social Globalisation.

Assessing the level of globalisation of countries, it is important to analyse the Global Competitiveness Index suggested by the World Economic Forum. This indicator is made up of 113 variables, two-thirds of which are the result of a global survey of company executives, and one-third is based on the public sources. All variables are grouped into 12 benchmarks, namely quality of institutions, infrastructure, macroeconomic stability, healthcare and primary education, high education and training, efficiency of the market for goods and services, labour market efficiency, financial market development, level of technological development, size of the domestic market, companies’ competitiveness, and innovation potential.

The World Economic Forum annually publishes data on global competitiveness by analysing trends among countries and causes for changes in key components of global competitiveness. The topicality of the Global Competitiveness Index assessment of competitive-ness is caused by the need to determine the priorities for further development under the conditions of the fourth industrial revolution; identify macro-economic challenges, strengths and weaknesses of the economies of the world, as well as factors that cause polarisation of the world, development priorities, competitive advantages, contribution of countries to solving global problems. The ranking of countries in terms of global competitiveness over the past five years was led by Switzerland, the index of which was 5.86 in 2017-2018 (Figure 2).

The world leaders in terms of global competitiveness include the United States, Singapore, the Netherlands, Germany, Hong Kong, Sweden, the United Kingdom, Japan and Finland. At the same time, the ranking of the Netherlands rose significantly from the 8th to the 4th position, whereas Finland’s rating dropped from the 3rd to the 10th position. The upward movement in the table ranking is observed for the United Kingdom, Denmark, New Zealand, Israel and Ireland. The fall in positions was most significant for Austria (from the 16th to 19th position). Ukraine has improved its ranking by moving from the 85th to the 81st position. It was in 2016-2017 that the index of global competitiveness of Ukraine was the lowest over the previous five years. It was the highest (73rd) in 2012-2013. The prioritisation of the world, development priorities, competitive advantages, contribution of countries to solving global problems. The ranking of countries in terms of global competitiveness over the past five years was led by Switzerland, the index of which was 5.86 in 2017-2018 (Figure 2).

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\[
I_{GD} = 0.333K_i \cdot GD_PonPPP_i + 0.067K_i \cdot IG + 0.2K_i \cdot IEF_i + 0.133K_i \cdot IG + 0.267K_i \cdot IEF_i
\]

where \(GD_PonPPP\) is the gross domestic product of the country by/on purchasing power parity per person;

### Table 1: Division of countries according to the index of globalisation (KOF Index of Globalisation), 2010-2016

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Source: Calculated and generalised by the authors based on the Global Innovation Index 2017

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Italy, France, Belgium, Austria, Spain, Great Britain, Sweden, Brazil, the Netherlands, Switzerland, Canada and Egypt also have high indices of political globalisation. Consequently, high balanced indices of globalisation can be observed in the Netherlands and Belgium. Ukraine’s place in the overall globalisation space is shown by the data in Figure 1.

In recent years, the index of globalisation of Ukraine ranged from 68.85 in 2013 to 70.24 in 2016, with the 45th position in the world ranking in 2016; its highest ranking in 2015 was the 41st position with its value of 70.71. Among the components of the globalisation index, the value of the Index of Political Globalisation was the highest - the 41st position with the value of 84.9; the Index of Social Globalisation was the lowest - 67th position with the value of 61.05 in 2016. The Index of Economic Globalisation ranged from 65.7 (59th position) in 2013-2016 to 68.42 (54th position) in 2016.

![Fig. 1: Dynamics of indicators of Ukraine globalisation, 2013-2016](image-url)

Source: Calculated and generalised by the authors based on the Global Innovation Index 2017
According to the developed methodology, the indicators of each IIGD component are selected for each country under research; a benchmark (model country) with the highest indicators for each IIGD component is formed. By the GDPonPPP, the benchmark is Qatar with a value of USD 127,870 per person. By the Index of Globalisation, the benchmark is the Netherlands (91.7), and by the Global Competitiveness Index and the Index of Global Innovations - Sweden with the corresponding indicators of 5.86 and 67.69. Hong Kong is the leader by the Index of Economic Freedom, with its 89.8 score. On the basis of the indicators, we calculate the benchmarking ratio ($K_b$):

$$K_b = \frac{I_i}{I_{ib}}$$

where $I_i$ is the indicator of the $i$-th component of the integral index of globalisation development of the estimated country; $I_{ib}$ is the indicator of the $i$-th component of the IIGD of the country benchmark.

According to this methodology, the countries of the world, Ukraine and Slovakia in particular, have been evaluated (Table 2).

By the GDPonPPP, for Ukraine, the calculated value of 0.021 is only 6.4% of the potentially possible value, which is the lowest indicator among all the components of the IIGD. The benchmarking value for the Globalisation Index is 91.7; for Ukraine the given component is equal to 70.24; the weight of the indicator is equal to one; the integral value is 0.051, which is 76.6% - the highest value among the investigated indicators. Switzerland is the leader by the Global Competitiveness Index and the Global Index of Innovation. For Ukraine, the integral values of these components are respectively 0.14 (70%) and 0.074 (55.6%). The Integral Index of Economic Freedom for Ukraine is 0.143, or 53.6%. The overall indicator, the integral index of globalisation development of Ukraine, is 0.429 (42.9%).

Slovakia has higher values than Ukraine, though they are lower than potentially possible ones. Thus, the total IIGD is 0.58. The closest to the benchmark is the Index of Globalisation, which is only 8.8% less than the reference value. The lowest value is the GDPonPPP - 24% of the reference value.

Luxembourg has the highest level of globalisation development among the countries under investigation with its integral index of 0.842. At the same time, the growth potential of the index is 15.8% (Figure 3). The top five countries include Switzerland (0.816), Ireland (0.769), the United States (0.755), Norway (0.740), and the...
5. Conclusions

Globalisation is a major factor affecting the current level of development in most countries of the world. Under the influence of this factor, there emerge new economic conditions that change the vector of the development. To identify both the level of globalisation achieved by countries worldwide and the main factors that determine it, a methodological approach has been developed, which involves the calculation of the Integral Index of Globalisation Development (IIGD), including five components: gross domestic product of the country on purchasing power parity per person, the Globalisation Index, the Global Competitiveness Index, the Global Index of Innovations, the Index of Economic Freedom, each of which has different weight, determined on the basis of expert judgment.

Drawing a comparison between the IIGD values for Ukraine and Slovakia made it possible to conclude that both countries have lower indicators than potentially possible values, with Slovakia having by 15.1 percentage points higher than Ukraine. At the same time, the main economic reasons behind the low indicators of globalisation development are:

- instability of the banking system and national currency;
- growth of external public debt;
- decline in investment attractiveness of the country due to the increasing difficulty of contracting, worsening of foreign investors protection, ineffective operation of free economic zones and territories of the priority development;
- increasing monetisation of the national market, inferior methods of antimonopoly control and economic regulation;
- imperfection of the system of public administration and management at the level of entrepreneurship;
- lack of effective incentives for the development of small and medium-sized businesses;
- excessive migration of the population, with «the outflow of human capital» in particular;
- lack of intellectual business and ineffective development of the intellectual property institute;
- low level of the development of socio-economic infrastructure, road transport network and logistics systems in particular;
- lack of a clear development strategy with a step-by-step action plan in various socio-economic fields;
- lack of competitive advantages and selected development priorities that are globally understood;
- increasing dependence on raw material agriculture, which does not involve production of goods with high added value and occupation of a well-established protected niche in the global market.

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