



<https://doi.org/10.15407/dse2019.02.096>

UDC 330.3(339)

JEL CLASSIFICATION: E 62, O 11

I.G. MANTSUROV

Dr. Sc. (Economics), Prof., Corresponding Member
of the National Academy of Sciences of Ukraine
Director General of the Research Institute
for System Statistical Studies
04053, Ukraine, Kyiv, Lvivska square, 14
E-mail: imantsurov@gmail.com
ORCID 0000-0003-1753-0422

Y.V. KHRAPUNOVA

PhD (Economics), Docent of Statistical Department
SHEI "Kyiv National Economic University
named after Vadym Hetman"
04053, Ukraine, Kyiv, Lvivska square, 14
E-mail: yakhrapunova@gmail.com
ORCID 0000-0002-6311-3235

STATISTICAL MEASUREMENT OF THE INCLUSIVE GROWTH CHARACTERISTICS IN UKRAINE

The article is devoted to the analysis of the inclusive economic growth and development overall concept, which represents an extremely important, however, overly overdue attempt to establish a link between economic growth and distribution among people and social groups that has to contribute in achieving the future generations' vital interests. The purpose of the article is to measure the inclusive growth's quantitative and qualitative characteristics in Ukraine as well as to define their compliance with the standards recommended by the well-known international organizations. It is proven that the inclusive growth is a potentially important contemporary agenda, but the issue is still to be resolved. In order to solve this task, the methodological basis needed for successful inclusive growth and development qualitative and quantitative measurement that has to show the role of governments in their efforts to reach significantly higher level of labor productivity and social equality as well as to save the environment. In the framework of this methodological approach, authors have improved the system of statistical indicators developed by the international organizations, in particular, by the OECD and WEF, and applied this system in order to measure the inclusive growth quantitative and qualitative characteristics in Ukraine. According to the analysis results that have been achieved, it is proved that the current model of economic behavior in Ukraine does not take into account the contemporary challenges, rules and regulations recommended by the international community. The main scientific results are presented as follows: the first section provides a brief history of the concept and its roots' evolution in the development policy contemporary scientific literature, the second section considers various definitions of the 'Inclusive Growth and Development' concept, the third section concludes with an evaluation of the concept and its qualitative and quantitative measurement on the basis of real Ukrainian statistical data.

The third section also provides the conceptual recommendations for improving the state economic policy and the Ukrainian Government's economic behavior.

Keywords: statistical measurement of the national economy characteristics, inclusive growth and development, economic dynamics and inclusive growth models of the government's economic behavior, improvement of the state economic policy.

І.Г. Манцуров

д-р екон. наук, проф., член-кор. НАН України
дир. Інституту системних статистичних досліджень
04053, Україна, м. Київ, Львівська площа, 14
E-mail: imantsurov@gmail.com
ORCID 0000-0003-1753-0422

Я.В. Храпунова

канд. екон. наук, доц. каф. статистики
ДВНЗ «Київський національний економічний
університет імені Вадима Гетьмана»
04053, Україна, м. Київ, Львівська площа, 14
E-mail: yakhrapunova@gmail.com
ORCID 0000-0002-6311-3235

СТАТИСТИЧНЕ ВИМІРЮВАННЯ ХАРАКТЕРИСТИК ІНКЛЮЗИВНОГО ЗРОСТАННЯ В УКРАЇНІ

Стаття присвячена аналізу загальної концепції всеосяжного економічного зростання і розвитку, що являє собою надзвичайно важливу, проте занадто запізнїлу, спробу вчених установити зв'язок між економічним зростанням і розподілом між людьми та соціальними групами, яке має сприяти врахуванню життєво важливих інтересів майбутніх поколінь. Метою статті є вимірювання кількісних і якісних характеристик інклюзивного зростання в Україні, а також визначення їх відповідності стандартам, рекомендованим відомими міжнародними організаціями. Доведено, що інклюзивне зростання є потенційно важливим питанням нинішнього порядку денного, але комплексне рішення поставленої задачі ще не здійснено. Для вирішення цієї задачі в статті сформувано методологічні засади кількісного виміру інклюзивного зростання і розвитку, результати якого повинні показати роль урядів у їх зусиллях щодо досягнення значно вищого рівня продуктивності праці і соціальної рівності, а також збереження навколишнього середовища. У форматі цих методологічних засад автори вдосконалили систему статистичних показників, розроблену міжнародними організаціями, зокрема, ОЕСР і ВЕФ, та використали її для вимірювання кількісних і якісних характеристик інклюзивного зростання в Україні. За результатами аналізування доведено, що нинішня модель економічної поведінки в Україні не враховує сучасних викликів, правил і норм, рекомендованих міжнародним співтовариством. Основні наукові і практичні результати: у першому розділі статті викладено коротку історію концепції та еволюції її теоретичних основ у сучасній науковій літературі; у другому розділі розглянуто різні визначення концепції «інклюзивного зростання і розвитку»; третій розділ завершується оцінкою концепції, її якісним та кількісним виміром, який здійснено на основі реальних статистичних даних про розвиток України; в останньому розділі представлено концептуальні рекомендації щодо вдосконалення державної економічної політики, реалізація якої повинна призвести до поліпшення економічної поведінки Уряду України.

Ключові слова: статистичне вимірювання характеристик національної економіки, інклюзивне зростання та розвиток, економічна динаміка та моделі інклюзивного зростання, економічна поведінка урядів, поліпшення державної економічної політики.

І.Г. Манцуров

д-р екон. наук, проф., член-кор. НАН України
дир. Інститута системних статистических исследований
04053, Украина, г. Киев, Львовская площадь, 14
E-mail: imantsurov@gmail.com
ORCID 0000-0003-1753-0422

Я.В. Храпунова

канд. экон. наук, доц. каф. статистики
ГБУЗ «Киевский национальный экономический
университет имени Вадима Гетьмана»
04053, Украина, г. Киев, Львовская площадь, 14
E-mail: yakhrapunova@gmail.com
ORCID 0000-0002-6311-3235

СТАТИСТИЧЕСКОЕ ИЗМЕРЕНИЕ ХАРАКТЕРИСТИК ИНКЛЮЗИВНОГО РОСТА В УКРАИНЕ

Статья посвящена анализу общей концепции всеохватывающего экономического роста и развития, представляющей собой чрезвычайно важную, однако слишком запоздалую, попытку установить связь между экономическим ростом и распределением между людьми и социальными группами, который должен способствовать учету жизненно важных интересов будущих поколений. Цель статьи — измерение количественных и качественных характеристик инклюзивного роста в Украине, а также определение их соответствия стандартам, рекомендованным известными международными организациями. Доказано, что инклюзивный рост является потенциально важной повесткой дня, но комплексное решение задачи еще не осуществлено. Для решения этой задачи в статье сформулированы методологические основы количественного измерения инклюзивного роста и развития, результаты которого должны показать роль правительств в их усилиях по достижению значительно более высокого уровня производительности труда и социального равенства, а также по сохранению окружающей среды. В формате этих методологических основ авторы усовершенствовали систему статистических показателей, разработанную международными организациями, в частности, ОЭСР и ВЭФ, и применили ее для измерения количественных и качественных характеристик инклюзивного роста в Украине. Согласно результатам анализа доказано, что нынешняя модель экономического поведения в Украине не учитывает современных вызовов, правил и норм, рекомендованных международным сообществом. Основные научные и практические результаты: в первом разделе изложена краткая история концепции и эволюции ее теоретических основ в современной научной литературе; во втором разделе рассмотрены разные определения концепции «инклюзивного роста и развития»; третий раздел завершается оценкой концепции и ее качественным и количественным измерением, осуществленным на основе реальных статистических данных о развитии Украины; в последнем разделе содержатся концептуальные рекомендации по совершенствованию государственной экономической политики, реализация которой призвана привести к улучшению экономического поведения Правительства Украины.

Ключевые слова: статистическое измерение характеристик национальной экономики, инклюзивный рост и развитие, экономическая динамика и модели инклюзивного роста, экономическое поведение правительств, совершенствование государственной экономической политики.

Introduction. The current stage of global economy development is characterized by a better understanding of theoretical concepts, aggravating the tensions and new global challenges, the increasing interaction of all participants and components of the world economic system. The globalization of the world economy creates a new *environment* for the countries' economic growth, defining new approaches to the formation of economic policy benchmarks of these countries.

One of those new approaches has been developed by the Organization for Economic Cooperation and Development (OECD) and adopted at the ministerial level during the OECD Council meeting in 2012. This approach recommended passing from the *economic growth model* of the state behavior to the so-called *inclusive growth model*.

Relevance of the paper. It should be noted that given the theoretical challenges, a new definition of the “Inclusive Growth and Development” has been provided by the authors. Taking into account the political challenges, has been proved that the continued desire for growth and the public perception that reducing the national debt should be a policy priority of governments. Given the challenges related to the qualitative and quantitative inclusive growth measurement, the improved statistical methodology has been provided and used in

order to get the numerical characteristics of inclusive growth and development in Ukraine. It is particularly noteworthy that these characteristics and their qualitative interpretation have never been obtained in previous scientific research and publications.

Literature overview. Inclusive Growth is fast becoming a new national development policy concept. Its popularity has been driven, in large part, by two linked trends. The first is widespread concern about the scale and consequences of inequality and the dominant theoretical model has been provided in 1955 by the Kuznets S. [1] and improved during the last decade, particularly, by Benner, C. & Pastor, M. [2], Douglass, C. [3], Cavanaugh, A. & Breau, S. [4], Stiglitz, J. [5], and Summers, L. H. & Balls, E. [6].

The second trend is the growing economic and political importance of economic growth and social development itself. In this context, Inclusive Growth has become one of the most fashionable concept in development policy among the policy-makers in the late 2000s and, as a result, was incorporated into the Sustainable Development Goals (United Nations,) and programs reports developed by the United Nations specialized agencies and other international organizations such as the OECD, World Bank, World Economic Forum (WEF), etc. [7–11].

More recently, there has been concern that economic growth was simply increasing inequality, without benefiting those with low income. A lot of Western scientists such as Atkinson, B. & Bourguignon F. [12], Anand, R., Mishra, S., Peiris, S.J. [13], McConnell & Brue, S. [14], Piketty, T. [15], Ranieri R. & Ramos, A.R. [16], Shearer, C. & Berube, A. [17] also provided numerous publications dedicated to these issues.

One common feature of many institutional definitions is that they highlight not just the importance of Inclusive Growth but also suggest that by making growth inclusive it will reach untapped sections of the economy and so increase overall output.

Several studies have tried to measure numerically the Inclusive Growth and Development. The Brookings Institution, for instance, has defined it statistically as three things: 1) the overall size of the economy – measured through jobs, new firms and output; 2) a measure of prosperity – productivity, average wages or standard of living; and 3) some indicator of narrowing economic disparity – either ‘general’ with employment, middle-class wages, working poverty or ‘racial’ – outcomes for whites and people of color and disparities between different groups.

In the end, success for Inclusive Growth and Development as a policy agenda may not be in the new policies and frameworks, but in the way existing programs and policies are reconfigured to consider distributional considerations.

Growing scientific interests in the search for a model for the development of socio-economic systems that will meet the principles of sustainable development and inclusive growth has been manifested in the increasing number of publications by such foreign scientists as D. Acemoglu, D. Robinson, E. Rinette, J. Stiglitz, S. Hollander, R. Boling, S. Podesta, C. Bedos, E. Duflou, M. Todaro and other researchers.

Among scientists from ex-Soviet Union counties, particularly from Ukraine, mention should be made of the scientific works of A. Amosha, V. Anisimova, A. Bazilyk, V. Vishnevsky, V. Granatourova, V. Heyets, E. Libanova, O. Lugina, I. Mantsurov, N. Nureev, A. Sidorova, etc. [18–21].

Summarizing the results of studies of foreign and Ukrainian scientists, it can be concluded that in the relevant publications, inclusive and extensional development models are considered, their features are described in different countries, although insufficient attention is paid to scrupulous analysis of each of the mentioned models.

The purpose of the article is to measure the inclusive growth and development quantitative and qualitative characteristics in Ukraine as well as to define their compliance with the standards recommended by the well-known international organizations such as the OECD and the World Economic Forum.

Formulation of the problem and the article's novelty is to present to the international scientific and expert community the result of the inclusive growth statistical characteristics of Ukraine measurement and interpretation that never has been done previously in **recent research and publications**.

Methods and data. As has been mentioned above, in order to measure the inclusive growth quantitative and qualitative characteristics in Ukraine the methodology developed by the WEF in 2017–2018 was applied. According to this methodology, the WEF's Inclusive Development Index (IDI) ranks the world's advanced and developing economies based on their performance against key performance indicators ranging from poverty, inequality to public debt and environmental factors.

The IDI is an annual assessment of 103 countries' economic performance that measures how countries perform on eleven dimensions of economic progress in addition to GDP. It has 3 pillars; growth and development; inclusion and; intergenerational equity – sustainable stewardship of natural and financial resources.

The IDI is a project of the World Economic Forum's System Initiative on the Future of Economic Progress, which aims to inform and enable sustained and inclusive economic progress through deepened public-private cooperation through thought leadership and analysis, strategic dialogue and concrete cooperation, including by accelerating social impact through corporate action.

According the WEF's methodology, in contrast to the traditional measure of economic growth – a country's gross domestic product – the WEF's Inclusive Growth and Development Index is designed to capture other economic indicators, such as poverty levels, life expectancy, public debt, median income, wealth inequality and even damage to health and the environment caused by pollution. All these economic indicators are divided in three groups (See Fig.1). In order to average the values of these indicators, the WEF proposes to **use the principal component analysis (PCA)** statistical method.

Following these conceptual recommendations, authors applied PCA methodology on the basis of **real statistical data** provided by WEF (Tables 1&2), the Ukrstat and the National Bank of Ukraine (NBU) (Fig. 2).

Main results of the research. The term *inclusive growth* in the interpretation of the OECD implies understanding that the welfare of society is not only the growth of real GDP and material incomes of the population, it's also a multi-vector concept that includes such spheres of a person's life as education, health-care, personal safety, ecology, and many others. Authors take into account the fact that one parameter of "sustainability" for economic growth is not enough. As a result, growth should be *inclusive, that is, it should positively affect the well-being of the widest possible groups of population and simultaneously contributes to the nature environment preservation*.

The main statistical characteristic developed for the measurement of the inclusive growth essence in one or another country is named as the ***Inclusive Growth and Development Index (IDI)***. It was proposed at the World Economic Forum in Davos in 2017 – as an alternative indicator to ***GDP per capita***. This *composite* or, by other words, *aggregate indicator* is proposed to be used for a general estimation of the country's economic development state. At the same time, the indicator *GDP per capita* is considered as one of the components in the calculation of the IDI.

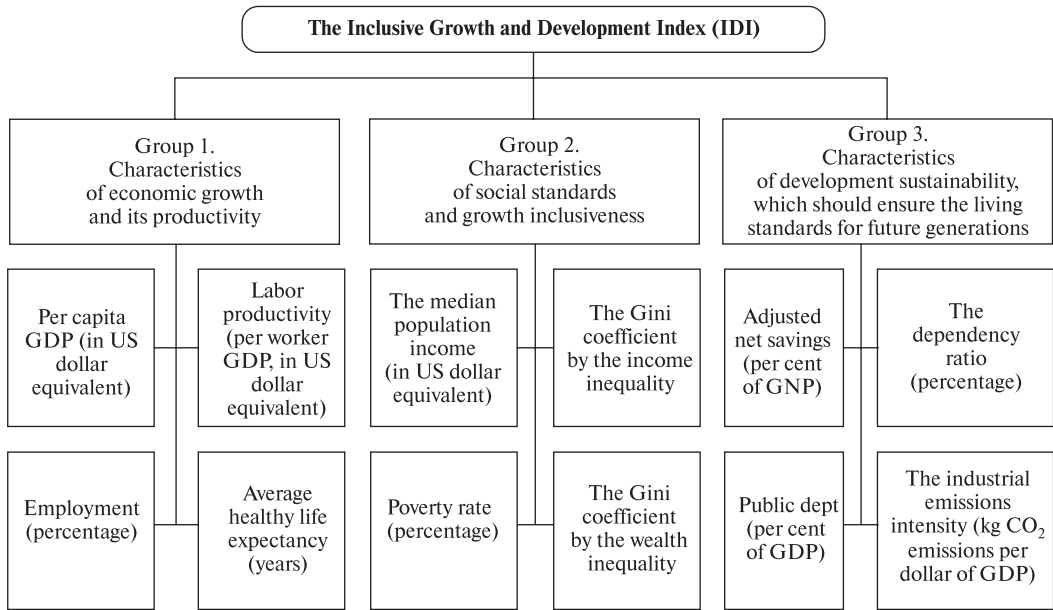


Fig. 1. Inclusive growth scorecard

Source: developed by the authors.

According to the WEF methodology, the *Inclusive Growth and Development Index* averages the values of 12 individual indicators of the country’s development, which are distinguished into three groups. Each of these groups combines the characteristics of the state of the economy, the environment, and the country’s social behavior model.

For the calculation of the values of the three group indicators (*let’s call them partial indicators of inclusiveness*), that is, to average the values of the Key Performance Indicators, the WEF proposes to use the principal component analysis (PCA) method, according to which partial indicators – components G_j – are determined based on their ties with individual (primary) indicators:

$$z_i = \sum_1^m a_{ij} G_j \quad (\text{Eq. 1})$$

where Z_i – standardized values of i -indicator; a_{ij} – factor influence of j -component on i -indicator, which evaluates correlation level between them.

Taking into account that the principal component analysis is a statistical procedure that converts a set of observations of *correlated variables* into a set of values of *uncorrelated variables* called **principal components**, the Inclusive Growth and Development Index is *summarizing values* of three partial indices G_j that belong to Groups 1, 2 and 3 (see Fig. 1 above) *as an average arithmetic value*.

In 2018, the World Economic Forum analyzed the inclusiveness of the development of 103 countries, among which 28 countries belong to the group of developed countries, and thus, 75 belong to the group of developing countries, among which, as is known, also is Ukraine [22].

According to the results of this study, among the *developed countries* in terms of the inclusiveness of economic growth, the *top-five group* includes Norway, Iceland, Luxembourg, Switzerland and Denmark.

The group of *developing countries* was led by Lithuania, Hungary, Azerbaijan, Latvia and Poland.

As it was mentioned above, Ukraine, according to the classification of the World Bank, belongs to the group of developing countries. Among these countries, Ukraine ranks 49th in terms of the inclusiveness of the economy, and thus, 78th out of 103 countries whose development characteristics were examined this year by a team of experts of the World Economic Forum.

Turkey ranked 16th in the same group, Russian Federation – 19th, Moldova – 31st. Honduras, Pakistan, Tanzania are ranked before Ukraine. Ukraine is *followed only* by Jordan, Kyrgyzstan, Ghana and Cameroon. *In terms of the total score, Ukraine is the worst among all European countries.*

It should be mentioned that 52 of the 103 countries that calculate the IDI recorded a decrease in the level of inclusive development over the past 5 years. This indicates the validity of the concern of the world scientific and expert community, which was expressed, in particular, at the World Economic Forum.

In 42 per cent of countries, the IDI has decreased quite significantly – even though the growth in per capita GDP. According to the results of their own calculation, the authors explain this by the fact that in 75 % of countries where a decrease in the IDI was recorded, the level of wealth inequality significantly increased, which is measured using the Gini coefficient. The results of the calculations are presented in Table 1.

Ukraine, as mentioned above, takes 49th place in the ranking of developing countries in 2018. It is much worth than in 2013, when the country occupied 41 positions in the same ranking.

This means that the percentage of Ukrainians, whose standard of living corresponds to their personal contribution to the process of economic growth, has decreased significantly. It's also necessary to bear in mind that Ukraine tops the list of countries in which a decrease in the level of inclusivity in 2013–2017 was recorded.

On the basis of the analysis of the values of individual indicators, which may be divided into indicators *stimulator and destimulator*, it's possible to draw the conclusions: the extremely low level of the index in Ukraine is shaped by a number of reasons.

Table 1. The IDI dynamics and the ranking of the leading countries in the relevant international distribution, period 2013–2017

Group of developed countries		Group of developing countries	
Rating of the top 5 countries in the international distribution by inclusive growth in 2018 and IDI value	Ranking of the top 5 countries by rate of increase of growth inclusiveness in 2013–2017, (%)	Rating of the top 5 countries in the distribution according IDI's levels in 2018 and IDI value	Ranking of the top 5 countries by rate of increase of growth inclusiveness in 2013–2017, (%)
1. Norway (6,08)	1. Iceland (12,58)	1. Lithuania (4,86)	1. Republic of Northern Macedonia (9,24)
2. Iceland (6,07)	2. Ireland (9,28)	2. Hungary (4,74)	2. Latvia (8,60)
3. Luxembourg (6,07)	3. Denmark (4,76)	3. Azerbaijan (4,69)	3. Hungary (8,10)
4. Switzerland (6,05)	4. Israel (3,57)	4. Latvia (4,67)	4. Panama (4,80)
5. Denmark (5,81)	5. Czech Rep. (2,88)	5. Poland (4,61)	5. Romania (4,21)

Source: developed by the authors and calculated according to the World Economic Forum data.

Table 2. The IDI dynamics and the ranking of the leading countries in the relevant international distribution, period 2013–2017

Group of developed countries		Group of developing countries	
Rating of the top 5 countries that demonstrate the most significant pace of decline of IDI and its value in 2017	IDI decline rate in 2013–2018, (%)	Rating of the top 5 countries that demonstrate the most significant pace of decline of IDI and its value in 2017	IDI decline rate in 2013–2018, (%)
11. Finland (5,33)	–2,92	49. Ukraine (3,42)	–6,80
19. Slovenia (4,93)	–2,39	60. Mali (3,10)	–5,71
26. Spain (4,40)	–2,12	66. Mauritania (3,00)	–5,12
28. Portugal (3,97)	–1,42	41. Bolivia (3,76)	–3,80
10. Austria (5,35)	–0,17	53. Cameroon (3,32)	–2,78

Source: developed by the authors and calculated according to the World Economic Forum data.

As is known, individual indicators the increase of which positively affects the level of a composite indicator are called *stimulators*. And indicators the value of which affects the generalized level of a composite indicator with a negative sign are called *destimulators*.

Sometimes, in order to bring indicators *stimulators* and indicators *destimulators* into a single framework, the latter are calculated as inverse, or its values are taken with a negative sign.

In the system of 12 individual indicators by which the growth inclusiveness is measured there are six indicator stimulators, while the rest are destimulators.

The first group should include *GDP per capita, labor productivity, employment, average healthy life expectancy, the median population income, and volume of adjusted net savings*.

The second group should include the *Gini coefficient by the income inequality, poverty rate, the Gini coefficient by the wealth inequality, the dependency ratio, public debt, and the industrial emissions intensity*.

It should be pointed out that among macroeconomic indicators-stimulators, three, namely – *GDP per capita, labor productivity, volume of adjusted net savings* – have values that are well below not only the levels that are characteristic of the leading states in the developing countries group, but also average values relevant indicators of this group of countries. Moreover, analyzing the temporal change in these indicators, it should be emphasized that over the last five years, a continuing annual decrease in the values of all indicators stimulators can be traced.

For example, in 2017 the volume of GDP per capita in Ukraine was only \$ 2,905, while in 2013 the level of this indicator was much higher, namely, \$ 41,845. To understand how low, the value of this important macroeconomic indicator is, it's enough to compare it with indicators of other countries. And if it makes no sense to compare the indicator of Ukraine with that of, for example, Luxembourg (11,1001), Norway (89818) or Switzerland (\$ 75,726 per capita GDP), then the comparison with other post-Soviet states is entirely correct.

And the results of this comparison are also stacked against Ukraine. So, in 2017, the level of GDP per capita in Kazakhstan was \$ 10,570, in the Russian Federation – \$ 11,099, in Belarus – \$ 7,525. Thus, today Ukraine is situated in last place among European countries by indicator of “GDP per capita”.

The same might be said about the value of the *labor productivity indicator*, which during 2013–2017 has decrease with an average annual decrease rate of 7.8 %.

By the *rate of employment*, which is equal to 53 %, the country is also at a relatively low 51st position. The *unemployment rate*, that is, the inverse of the *employment rate* quantitative indicator, which is defined as the ratio of the number of unemployed to the total number of economically active population, over the last five years in Ukraine has decreased by 0,3 %. In September 2013, in Ukraine, the unemployed made up 1,5 % of the total number of working-age population, and now they make up only 1,2 %. The highest unemployment rate in the last 4 years was in 2014: at the time 1,6 % of Ukrainian working age citizens officially remained unemployed. Starting in 2015, the rate of unemployed has demonstrated a trend to decrease.

It should also be added that in December 2017, in terms of the contents of the labor market with vacancies, Ukraine regressed to approximately the 2014 year figures.

This would help to reduce the IDI from 3.42 to 3.33, which, in turn, would also lead to a dip in Ukraine's ranking position in the international distribution of developing countries from 49th to 53rd, and, consequently, to 82nd position from 103 countries that WEF experts have included in the rating by IDI values.

Deepening the horizons of the analysis, the authors conclude that the main reason for the relatively low values of macroeconomic indicator stimulators and the negative dynamics of these values is the ultra-low adjusted net savings volume, which in Ukraine is equal to **1 % only (unprecedented case)**, while for the group of developed countries the average value is 19 %, and in the group of developing countries is 11 %.

The basis for such a conclusion is the result of a correlation and regressive analysis of *GDP per capita, labor productivity and employment*, on the one hand, and net savings level, on the other.

In the first case, the coefficient of determination is equal to 0.87, in the second case – to 0.83, in the third – to 0.78. This indicates that 87 % of the variation in GDP per capita, and, consequently, 83 % of the variation in labor productivity and 78 % of the variation in the level of employment depends on the variation in the values of the net savings volume.

The situation is no better with the dynamics of values of indicator destimulators. In particular, in terms of social fragmentation by wealth inequality, Ukraine is in one of the last positions in the group of developing countries. The corresponding value of the Gini coefficient is 90.1 %, which puts Ukraine at 73rd position from 79 developing countries. This indicates that wealth which is strongly concentrated in a few families doesn't work to develop production and doesn't generate sufficient incomes for the general public, which contributes to the growth of income inequality and, as a result, reduces the inclusiveness of growth.

In terms of the sustainability level of development, the Ukraine economy also demonstrates one of the worst indicators, ranking 75 in total from 79 countries.

In terms of public debt, both in absolute and in percent of GDP, Ukraine is in the middle of a variation row of a corresponding countries distribution. It is worth noting, however, *that by the public debt volume growth rate in percentage to GDP, Ukraine ranks first among 103 countries of the world*. Over the last five years, the value of this macroeconomic indicator has increased by 43 %.

Another theoretical and practical interest is paid to the analysis of the effect of population pressure on the volume of *adjusted net savings* – to test Nathaniel Leff's hypothesis regarding the existence of a tight and fairly significant inverse correlation between the proportion of dependents (pensioners and minors) in the total employed population and the volume of net savings – and, as a result, IDI's value.

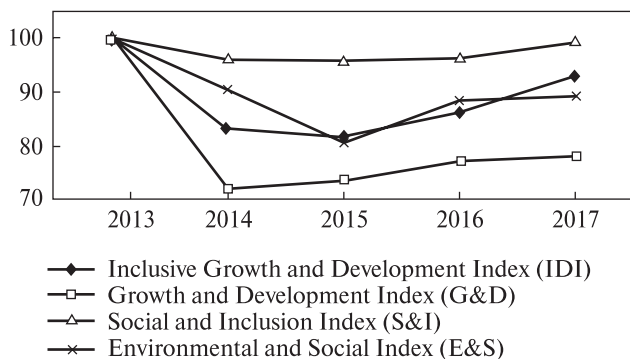


Fig. 2. Dynamics of the IDI components of Ukraine in 2013–2017

Source: developed by the authors on the basis of data provided by the Ukrstat and NBU.

According to the results of the correlation analysis, it must be acknowledged that the values of the coefficients of determination and verification criteria for testing the *relationship to materiality (importance)* give reason to confirm the hypothesis formulated by Nathaniel Leff.

The dynamics of the values of the three partial indices and the aggregated IDI's value of the Ukraine economy throughout 2013–2017 are graphically presented in Figure 2. The histograms presented on the graph characterize the chain-growth rates of IDI and its three components.

The form of all four histograms indicates that the characteristics of both economic growth and social standards and sustainable development, having decreased significantly in 2014, haven't yet restored the earlier indices. The set of averaged characteristics for the three indicators shapes the specific form of the fourth histogram, which combines the points characteristic of the IDI synthesis levels for 2013–2017.

Conclusions.

1. The concept of inclusive growth arose from the fact that GDP growth cannot be the sole criterion for determining the effectiveness of the development of national economies, which is more fully measured by the system of indicators proposed at the last World Economic Forum.

2. The principal indicator of this system is the Inclusive Growth and Development Index (IDI), which is considered as an alternative indicator to per capita GDP.

3. The use of the Inclusive Growth and Development Index is expedient not instead, but in addition to per capita GDP, since IDI is an abstract indicator, while per capita GDP is a real and widely understood indicator that has a clear interpretation.

4. Based on the analysis of the deviations of the actual values of the partial and integral indicators of compliance with the sustainable inclusive growth standards and the estimation of the threat of a crisis situation from the threshold levels, it was determined that during the years 2013–2017 the state of the Ukraine economy and its components deteriorated significantly. In 2017, as compared to 2013, the integral inclusiveness index value deteriorated by 6,8 points. This indicates the increasing impact of destabilizing factors and the developing of supercritical, with a pathological feature, state of the Ukraine economy.

5. It has been proven that the negative impact of inadequate volume of domestic and foreign investment on the economy development is increasing, as evidenced by the extremely low value of *adjusted net savings* value (only 1 %). The resurgence of the investment

volumes in fixed capital that would correspond to the volumes of the pre-crisis years – for the period of 2014–2017 – hasn't been achieved. In turn, this significantly limits the opportunities for economic growth and increases the level of threat of a permanently deepening economic crisis.

6. To lift the national economy's level, it's necessary to increase the share of *investments in GDP* value at least to the level common to developed countries, i. e., to 25–30 %. Only under such conditions the opportunities for the functioning of expanded reproduction can be created. In rapidly developing countries, the share of investment in GDP is up to 40 % – as, for example, in China, where the last 30 years have passed under the banner of annual GDP growth of 10 % on average.

7. Thus, the strategic priorities for the functional components of the inclusive growth index are as follows: elimination of distortions in macroeconomic reproduction processes, which consists in ensuring optimal proportions between investments and consumption, streamlining the ratio between wage growth and labor productivity growth, the renewal and disposal rate of fixed assets; keeping inflation at a moderate level, prevention of deflationary processes; stimulation of domestic consumption through the mechanism of consumer household demand growth, etc.

LITERATURE

1. *Kuznets S.* Economic growth and income inequality // *American Economic Review*. – 1955. – 45 (1). – P. 1–28.
2. *Benner C., Pastor M.* Equity, growth, and community: What the nation can learn from America's metro areas. – Oakland: University of California Press, 2015. – <https://doi.org/10.1525/luminos.6>
3. *Douglass C.* North Institutions, institutional change and economic performance. – New York: Cambridge University Press, 1990. – 152 p.
4. *Cavanaugh A., Breau S.* Locating geographies of inequality: publication trends across OECD countries // *Regional Studies*. – 2017. – 52 (1). – P. 1–12. – <https://doi.org/10.1080/00343404.2017.1371292>
5. *Стиглиц Дж.Ю.* Экономика государственного сектора. Пер. с англ. – М.: МГУ, ИНФРА, 1997. – 639 с.
6. *Summers L.H., Balls E.* Report of the Commission on Inclusive Prosperity. Washington, DC: Center for American Progress, 2015. – 166 p. [Электронный ресурс]. – Режим доступа: <https://cdn.americanprogress.org/wp-content/uploads/2015/01/IPC-PDF-full.pdf> (дата звернения: 22.03.2019).
7. G20 Group of Twenty (G20). Declaration of the leaders of the G20 St Petersburg Summit. – 2013. – 28 p. [Электронный ресурс]. – Режим доступа: http://www.g20.utoronto.ca/2013/Saint_Petersburg_Declaration_ENG.pdf (дата звернения: 22.03.2019).
8. National Accounts Statistics: Main Aggregates and Detailed Tables, 2015. – Part I–V – U.N., N.Y. [Электронный ресурс]. – Режим доступа: <https://unstats.un.org/unsd/nationalaccount/madt.asp> (дата звернения: 22.03.2019).
9. *New Approaches to Economic Challenges. A Framework Paper / OECD.* – Paris, 2012. [Электронный ресурс]. – Режим доступа: <https://www.oecd.org/general/50452415.pdf> (дата звернения: 22.03.2019).
10. *New Approaches to Economic Challenges: A sustainable and inclusive growth agenda. – Yearbook. – 2015. / OECD* [Электронный ресурс]. – Режим доступа: <http://www.oecd.org/greengrowth/new-approaches-economic-challenges-sustainable-inclusive-growth-agenda.htm> (дата звернения: 22.03.2019).
11. *All on board: Making inclusive growth happen / OECD.* – Paris, 2014. – <https://doi.org/10.1787/9789264218512-en>.
12. *Kanbur R.* Income distribution and development // *Handbook of income distribution / Eds. Atkinson B., Bourguignon F.* – Amsterdam: North-Holland, 2000. – Vol. 1. – P. 791–841 [Электронный

- ресурс]. – Режим доступу: <https://EconPapers.repec.org/RePEc:eee:income:l> (дата звернення: 22.03.2019).
13. Anand R., Mishra S., Peiris S.J. Inclusive Growth Revisited: Measurement and Determinants / IMF Working Paper, 2013 [Електронний ресурс]. – Режим доступу: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.692.342&rep=rep1&type=pdf> (дата звернення: 22.03.2019).
 14. Макконел К.Р., Брю С.Л. Экономика. Пер. с англ. – М.: Инфра-М, 2003. – 983 с.
 15. Piketty T. Capital in the Twenty-First Century / Transl. by A. Goldhammer. – Cambridge, Massachusetts: Belknap Press of Harvard University, 2014. – 818 p.
 16. Ranieri R., Ramos A.R. Inclusive growth: Building up a concept. Working Paper No. 104 / International Policy Centre for Inclusive Growth. – Washington, DC, 2013 [Електронний ресурс]. – Режим доступу: <https://ideas.repec.org/p/ipc/wpaper/104.html> (дата звернення: 22.03.2019).
 17. Shearer C., Berube A. The Surprisingly Short List of US Metro Areas Achieving Inclusive Economic Growth // Brookings. The Avenue. – 2017 [Електронний ресурс]. – Режим доступу: <https://www.brookings.edu/blog/the-avenue/2017/04/27/the-surprisingly-short-list-of-u-s-metro-areas-achieving-inclusive-economic-growth/> (дата звернення: 22.03.2019).
 18. Коваленко Д.В., Шалімова І.М., Керницький О.М. Конфліктологія: навч. посіб. для вузів Укр. інж.-пед. акад. – Харків: Точка, 2012. – 221 с.
 19. Манцуров І.Г., Єріна А.М., Мазуренко О.К. та ін. Макроекономічна статистика: підруч. для вищ. навч. закл. / За ред. д-ра екон. наук, проф. І.Г. Манцура; Київ. нац. екон. ун-т. –Т. 1. – Київ, 2013. – 325 с.
 20. Харазішвілі Ю.М., Дронь Є.В. Прогнозування індикаторів, порогових значень та рівня економічної безпеки України у середньостроковій перспективі: аналіт. доп. / Нац. ін-т стратег. дослідж. – Київ, 2014. – 117 с.
 21. Тимошенко О.В. Економічна безпека національної економіки в умовах глобалізації. – Київ: Наш Формат, 2016. – 384 с.
 22. The Inclusive Development Index Summary and Data Highlights / World Economic Forum (Geneva, Switzerland). – 2018. – 14 p. [Електронний ресурс]. – Режим доступу: <https://www.weforum.org/reports/the-inclusive-development-index-2018> (дата звернення: 22.03.2019).

REFERENCES

1. Kuznets, S. (1955). Economic growth and income inequality. *American Economic Review*, 45(1), 1-28.
2. Benner, C., & Pastor, M. (2015). *Equity, growth, and community: What the nation can learn from America's metro areas*. Oakland: University of California Press. - <https://doi.org/10.1525/luminos.6>
3. Douglass, C. (1990). *North Institutions, institutional change and economic performance*. NY: Cambridge University Press.
4. Cavanaugh, A., & Breau, S., (2017). Locating geographies of inequality: publication trends across OECD countries. *Regional Studies*, 52 (1), 1-12. - <https://doi.org/10.1080/00343404.2017.1371292>
5. Stiglitz Joseph, E. (1999). *Jekonomika gosudarstvennogo sektora [Economics of the public sector]*. Third edition. NY-London: W.W. Norton & Company [in Russian].
6. Summers, L.H., & Balls, E. (2015). *Report of the Commission on Inclusive Prosperity*. Washington, DC: Center for American Progress. Retrieved from <https://cdn.americanprogress.org/wp-content/uploads/2015/01/IPC-PDF-full.pdf>
7. G20 Group of Twenty (G20). *Declaration of the leaders of the G20 St Petersburg Summit*. (2013). St. Petersburg: G20. Retrieved from http://www.g20.utoronto.ca/2013/Saint_Petersburg_Declaration_ENG.pdf
8. *National Accounts Statistics: Main Aggregates and Detailed Tables* (2015). Part I-V. U.N., NY. Retrieved from <https://unstats.un.org/unsd/nationalaccount/madt.asp>
9. *New Approaches to Economic Challenges* (2012). A Framework Paper, OECD, Paris. Retrieved from <https://www.oecd.org/general/50452415.pdf>
10. *New Approaches to Economic Challenges: A sustainable and inclusive growth agenda* (2015). Retrieved from <http://www.oecd.org/greengrowth/new-approaches-economic-challenges-sustainable-inclusive-growth-agenda.htm>

11. *All on board: Making inclusive growth happen* (2014). Paris, OECD. - <https://doi.org/10.1787/9789264218512-en>
12. Kanbur, R. (2000). Income distribution and development. B. Atkinson, F. Bourguignon (Eds.). *Handbook of income distribution*, Vol. 1, 791-841. Retrieved from <https://EconPapers.repec.org/RePEc:eee:income:1>
13. Anand, R., Mishra, S., & Peiris, S.J. (2013). *Inclusive Growth Revisited: Measurement and Determinants*. IMF Working Paper. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.692.342&rep=rep1&type=pdf>
14. McConnell, C.R., & Brue, S.L. (2008). *Economics [Economics]*. (17th edition). NY: McGraw-Hill [in Russian].
15. Piketty, T. (2014). *Capital in the Twenty-First Century*. A. Goldhammer (Transl.). Cambridge, Massachusetts: Belknap Press of Harvard University.
16. Ranieri, R., & Ramos, A.R. (2013). Inclusive growth: Building up a concept. *Working Paper, 104*. Washington, DC: International Policy Centre for Inclusive Growth. Retrieved from <https://ideas.repec.org/p/ipc/wpaper/104.html>
17. Shearer, C., & Berube, A. (2017). *The Surprisingly Short List of US Metro Areas Achieving Inclusive Economic Growth*. Brookings. The Avenue. <https://www.brookings.edu/blog/the-avenue/2017/04/27/the-surprisingly-short-list-of-u-s-metro-areas-achieving-inclusive-economic-growth/>
18. Kovalenko, D.V., Shalimova, I.M., & Kernickij, O.M. (2012). *Konfliktolohiia [Conflictology]*. Ukr. engine.-ped. acad. Kharkiv: Tochka [in Ukrainian].
19. Mantsurov, I.G., Yerina, A.M., & Mazurenko, O.K. et al. (2013). *Makroekonomichna statistika, tom 1. Pidruchnyk dlya vyschyh navchalnyh zakladiv. [Macroeconomic statistics: manual higher educational institutios]*. Kyiv [in Ukrainian].
20. Kharazishvili, Y.M., & Dron, E.V. (2014). *Prognozuvannya indikatoriv, porogovih znachen ta rivnya ekonomichnoyi bezpeki Ukrainy v serednostrokoviy perspektyvi; analit. dop. [Forecasting of indicators, threshold values and level of economic security of Ukraine in the medium-term perspective: analytical report]*. Kyiv [in Ukrainian].
21. Tymoshenko, O.V. (2016). *Ekonomichna bezpeka natsionalnoyi ekonomiki v umovah globalizatsiyi. [Economic security of the national economy in globalization conditions]*. Kyiv [in Ukrainian].
22. The Inclusive Development Index 2018. (2018). *Summary and Data Highlights. World Economic Forum*. Geneva, Switzerland. Retrieved from <https://www.weforum.org/reports/the-inclusive-development-index-2018>

Стаття надійшла до редакції журналу 22.03.2019.