Assessment of the economic sustainability of economic entities of the state sector of the economy in the conditions of military times

Barannik Igor, candidate of Sciences (Economics), postdoctoral student, Simon Kuznets Kharkiv National University of Economics;

Fatyanov Daniil, post-graduate student of Phd of Department of Higher Mathematics, Economic and Mathematical Methods, Simon Kuznets Kharkiv National University of Economics

In the conditions of war, the role of the state in maintaining aggregate demand and supply, effective redistribution of economic income is growing. Famous domestic scientists such as B.M. Danylyshyn believes that the balance of the economic system should be achieved through flows of external support and (necessarily) the implementation of large-scale projects to create new jobs. This will eliminate the risks of structural inflation and productively close the money supply in the real sector of the economy. Therefore, the problems of assessing the economic sustainability of public sector entities remain relevant, and their solution requires urgency and timeliness.

Many works of scientists and practitioners both abroad and in Ukraine are devoted to solving the problems of economic stability. They closely associate the concept of sustainability with the basic concepts of macroeconomics such as development and growth.

Experts of the Organization for Economic Cooperation and Development distinguish four groups of conditions for ensuring the stability of the national economy, namely:

1) the country's foreign trade openness, a high share of competitive product markets in the economy, and an effectively functioning labor market increase the economy's ability to absorb negative external influences and overcome their negative consequences;

2) developed and effectively regulated capital markets support the stability of the economy by overcoming the tendency to increase external debt, supporting co-financing of projects and diversification of financial instruments, development of small and medium-sized businesses;

3) an effective tax policy and a system of social protection of the population ensure an increase in the level of stability of the economy by promoting the comprehensiveness of economic growth and reducing compromise decisions regarding its stimulation;

4) developed state institutions (institutions and organizations) ensure the stability of the economy by forming and implementing an effective policy of countering external negative influences.

Summarizing different approaches to defining economic sustainability, its main modern differences should be singled out: multicriteria, continuity, structuredness, direct dependence on the influence of external and internal environments, conditioning by the potential of the relevant business entity, ability to flexibly change the potential structure. In order to ensure economic stability in modern conditions of limited activity of business entities, it is necessary to form precisely its specified characteristics. Therefore, in modern military conditions, ensuring the economic stability of economic entities should be carried out in the following directions: maintaining a sufficient amount of potential and its effective use; effective management at the enterprise; effective structural policy of economic activity. Everything ensures the economic stability of economic entities in force majeure conditions such as war, natural disasters.

The economic stability of economic entities of the state sector of the economy in the regional section was determined on the basis of the main indicators of their financial and economic activity, namely: net income (x_1, million UAH), net financial result (x_2, million UAH); receivables (x_3, million UAH), payables (x_4, million UAH), total value of assets (x_5, million UAH), equity (x_6, million UAH), average number of employees
(x_7 , thousands of people), arrears from the payment of wages (x_8, million UAH).

Based on the advantages of calculating the integral indicator using the taxonomic indicator of development, namely the simplicity of the calculation algorithm of the method, the clear interpretation of the value of the integral indicator, it is recommended for determining the level of economic sustainability of economic entities of the state sector of the economy in a regional section. In fig. 1 shows the calculated values of the integral indicator of economic stability of economic entities of the state sector of the economy in a regional section.

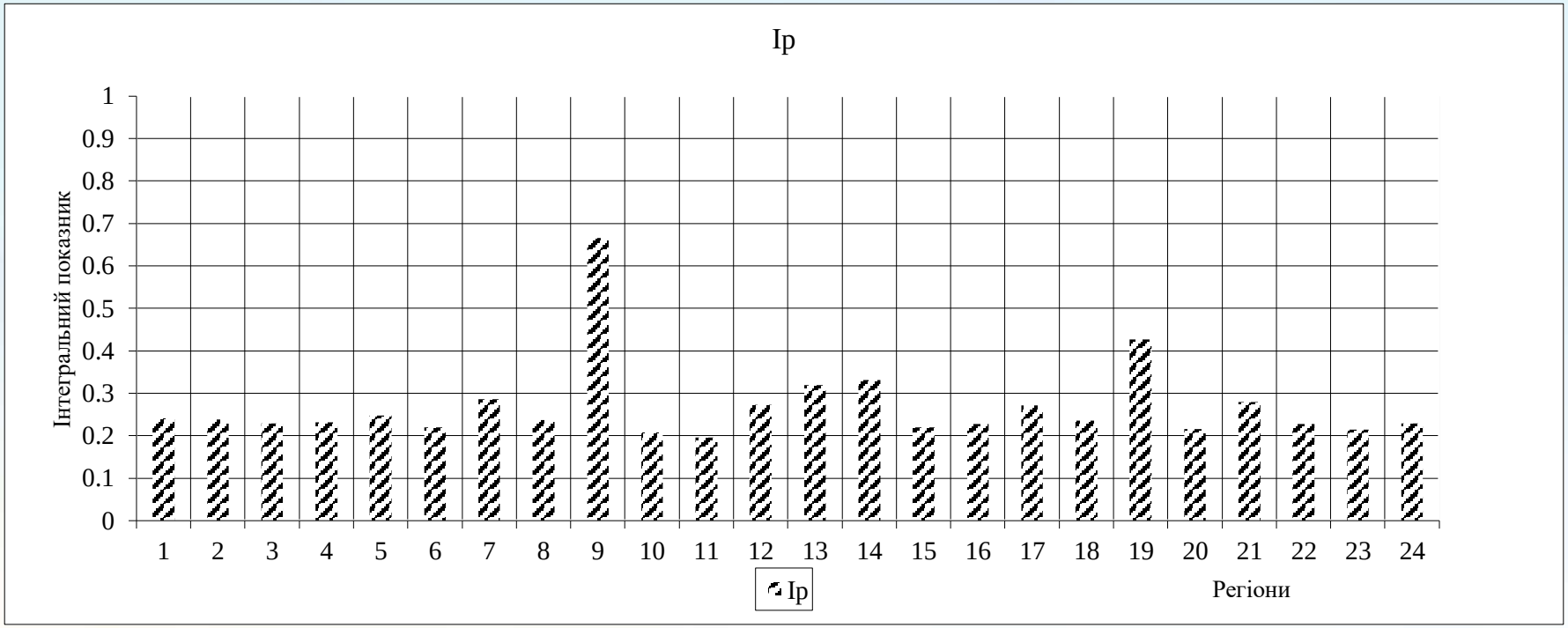

Figure 1. Integrated performance indicator economic entities of the state sector of the economy regionally for 2021,

where 1 – Vinnytsia; 2 – Volynska; 3 – Dnipropetrovsk; 4 – Donetsk; 5 – Zhytomyr; 6 – Zakarpattia; 7 – Zaporizhzhia; 8 – Ivano-Frankivsk; 9 – Kyivska; 10 – Kirovohradska; 11 – Luhansk; 12 – Lviv; 13 – Mykolayivska; where 14 – Odesa; 15 – Poltava; 16 – Rivne; 17 – Sumy; 18 – Ternopil; 19 – Kharkiv; 20 – Khersonska; 21 – Khmelnytska; 22 – Cherkassy; 23 – Chernivtsi; 24 – Chernihivska

Gross regional product per person is an important criterion for the economic sustainability of economic entities in the region. In fig. 2 shows the value of the gross regional product per person in 2021.

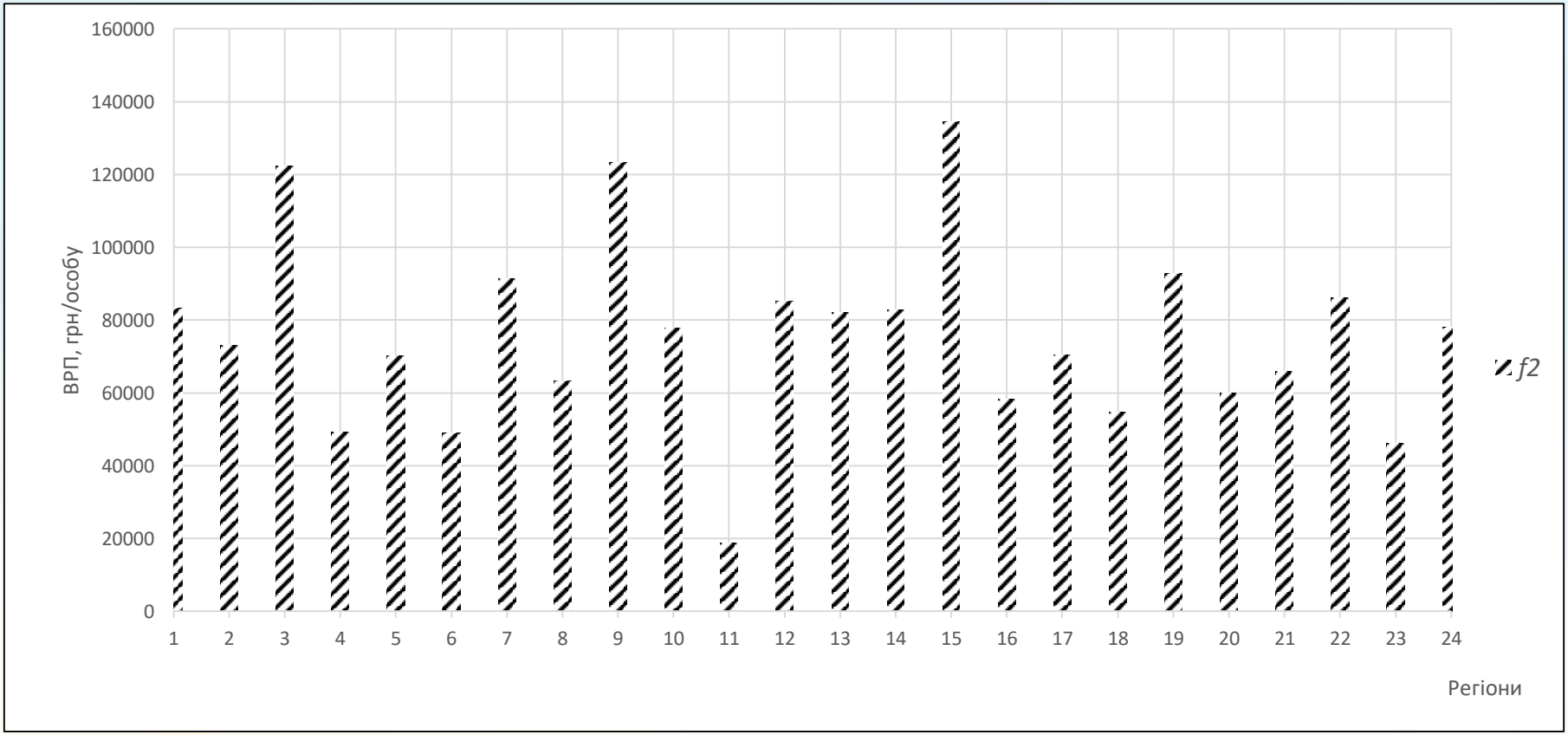

Figure 2. Gross regional product per personin Ukraine in 2021

Analysis of the level of economic sustainability of economic entities of the state sector of the economy in a regional section based on the integral indicator of the efficiency of their activity or the gross regional product per person in the regions does not provide an opportunity to objectively talk about the reserve of this sustainability; a multi-criteria optimization problem should be solved.To compile the objective function of the multi-criteria optimization task, we will use the dependence of the levels of economic sustainability of business entities and the gross regional product per person on the main indicators of financial and economic activity:

$$F(X) = \{f_1(X), f_2(X)\}$$

where $f_1(X)$ is the criterion for the level of gross regional product per person;
$f_2(X)$ – criterion of the level of economic stability of economic entities of the state sector of the economy;
$X = \{x_1, \ldots, x_8\}$ is a vector of variables that are the main indicators of financial and economic activity. At the same time, the limitations in the problem are the numerical characteristics of variables X, which are defined for the totality of regions in 2021.

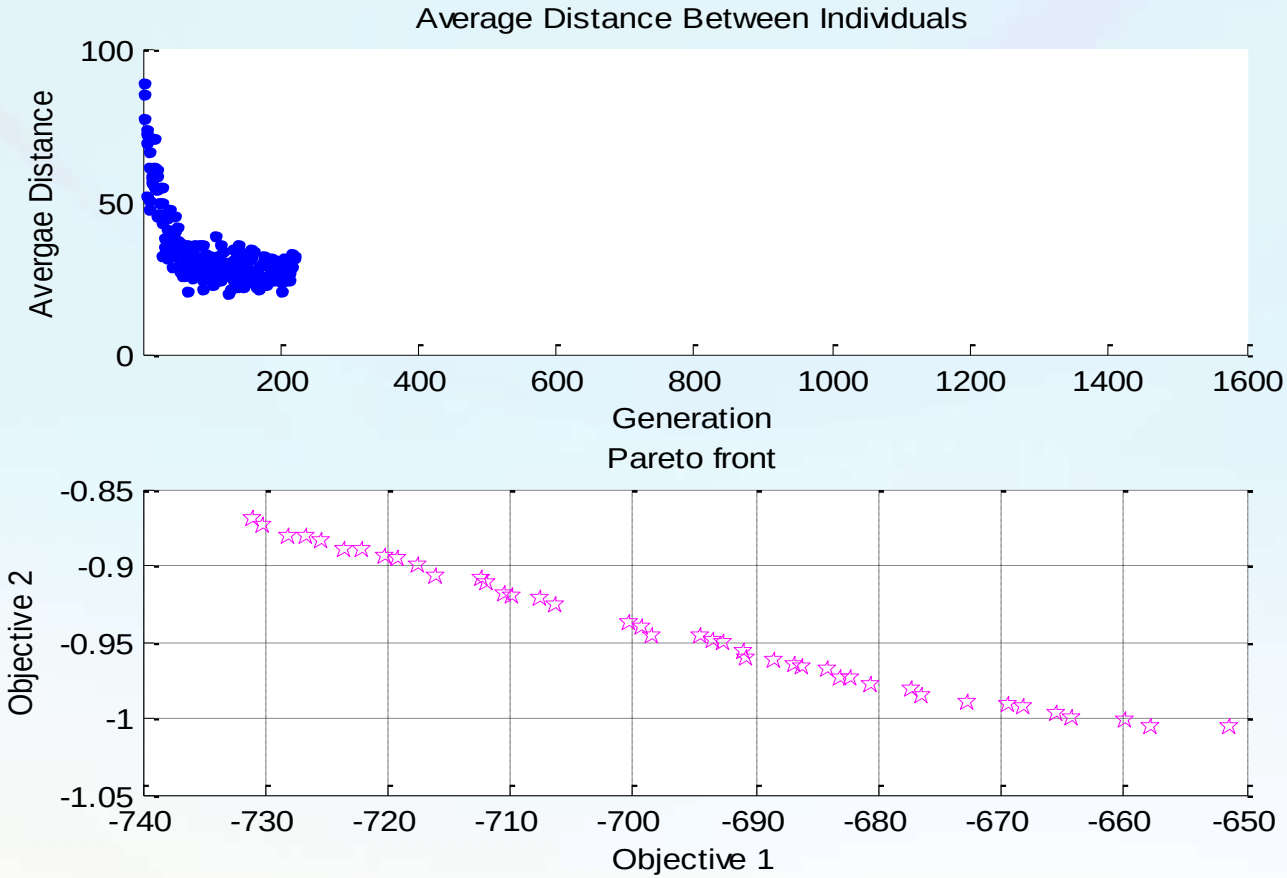

Figure 3. Results of calculations of Pareto-optimal solutions using the genetic algorithm

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