



European Economic Integration

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DEVELOPMENT IMBALANCES IN THE «MIP SCOREBOARD» DIMENSION: CRISIS RISK ASSESSMENTS IN EUROPE AND UKRAINE

Abstract

The prospects for economic development in European countries face challenges and macroeconomic imbalances related to global transformations, slow economic growth, energy risks, inflationary pressures, and budgetary and demographic problems, which in Ukraine are significantly exacerbated by the war and the need to restore the economy. The development and implementation in Ukraine of a system of indicators to identify, monitor, and assess threatening imbalances based on the European «Macroeconomic Imbalance Procedure» is of key importance for preventing crisis phenomena and deepening cooperation with the EU. The paper presents the results of a comparative analysis of the dynamics of calculated macroeconomic imbalance indicators for Ukraine and EU countries for 2003–2024. They reflect differences in external conditions and internal development risks. Based on econometric modeling, empirical estimates of the impact of accumulated imbalances on changes in Ukraine's real GDP during 2003–2024 were obtained, and the probability of the occurrence of imbalances in the Ukrainian economy in 2026–2027 was assessed.

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Key Words:

crisis, forecast, linear regression, macroeconomic imbalance, MIP Scoreboard, probit model, scenario analysis.

JEL: O11, O57, D81, C51, C59.

1 figure, 3 tables, 4 formulas, 24 references.

Problem Statement and Literature Review

A significant number of factors of varying strength that currently restrain the pace of economic dynamics and the development potential of European countries and Ukraine, make the issues of identifying and assessing already accumulated problems, as well as predicting the implementation of new threats, relevant. For Ukraine, the creation of a crisis prevention system based on the European practice of the Macroeconomic Imbalance Procedure (MIP) is an opportunity to implement a truly operational mechanism for identifying and assessing accumulated imbalances that can exacerbate existing problems or provoke the emergence of crisis phenomena.

In the context of the successful realization of the economic development potential, the processes of forming imbalances create barriers that prevent the desired results from being achieved. That is why, in practice, as confirmed by scientific research (Heyets et al., 2021; Skrypnychenko, 2020), the potential management system should include not only the analysis and assessment of existing opportunities but also monitoring and mechanisms for regulating accumulated imbalances, in order to identify and prevent risks and threats that may materialize in the event of negative developments at the current stage and in the future.

Of particular note today is the fact that a detailed, comprehensive system of macroeconomic imbalance indicators and an institutional mechanism for assessing effects and, accordingly, determining the necessary political actions have been created only in the countries of the European Union (European Parliament & Council of the European Union, 2011; European Parliament, 2016; European Commission, Directorate-General for Economic and Financial Affairs, 2022). In the absence of an effective imbalance monitoring system in Ukraine, studying European experience is extremely valuable for our country. Heyets et al. (2021) and Grytsenko et al. (2024) emphasize that this is important both from the perspective of introducing an effectively operating system proven in practice, and of gradually integrating into the European monitoring regime, which has a significant ideological load, as it expands the field of potential cooperation with European partners and demonstrates Ukraine's ability to engage in the European discourse.

European practice shows (Borio & Drehmann, 2009; Boysen-Hogrefe et al., 2016) that for adaptation or elimination of imbalances, it is not enough to simply identify them. An important component of the process of mitigating their adverse

effects is also assessing whether the risk of a crisis will materialise and predicting the likelihood of new episodes of macrofinancial instability. The results of the studies (Biegun & Karwowski, 2020; Biegun et al., 2021; Biegun et al., 2024) confirmed the relevance of using some MIP indicators to predict negative macroeconomic phenomena and forecast crises.

A key factor in the process of coordination of economic policy of EU countries is the use of information obtained during the analysis of “MIP Scoreboard” tables to form a crisis prevention system, where the key stage is the assessment of the predictive power of fourteen indicators. Examples of painstaking work on the selection of indicators that would indicate with a high probability the possibility of crisis phenomena in the EU are the studies by Krzysztof Biegun, Jacek Karwowski, Piotr Luty, and Martin Dahl (Biegun & Karwowski, 2020; Biegun et al., 2024; Biegun et al., 2021).

The concept of a «multidimensional crisis» was proposed (Biegun & Karwowski, 2020) based on the analysis of several economic indicators: if a certain threshold is exceeded for at least one of them, then this is considered a «one-time crisis». According to the authors’ definition, a «multidimensional crisis» was considered as a combination of several possible negative phenomena in one dependent variable. In particular, the researchers studied the crisis case in detail based on the dynamics of the following indicators: a drop in GDP and the stock market; a significant change in inflation and devaluation of the exchange rate against the U.S. dollar; and restrictions on cash withdrawals. Accordingly, a «multidimensional crisis» could reach levels 1, 2, 3, 4 or 5 per quarter. The authors used a probit model to test the ability of MIP indicators to correctly predict episodes of «multidimensional crises» in the period 2008–2017 in all EU member states. As a result, five MIP variables were identified that were statistically significant in predicting «multidimensional crises» for EU countries: net international investment position, nominal unit labor cost index, house price index, credit to the private sector, and general government debt. Other variables were found to be less important or ineffective in predicting crises.

Biegun et al. (2021), using the Bayesian model averaging (BMA) approach, identified several MIP indicators, which the authors considered reliable explanatory variables for the dynamics of four dependent variables usually associated with crises: a fall in GDP and stock index, an increase in inflation and a depreciation/devaluation of the domestic currency. Only three MIP indicators (growth in total government debt, nominal unit labor cost index and loans to the private sector) over a 17-year time period showed a clear and expected ability to predict crisis phenomena.

The research of Biegun et al. (2024) is worth mentioning, since the authors assessed the predictability of the crisis forecast not only of the main, but also of the auxiliary MIP indicators. The investigation uses the panel of 26 European Union Member States over the 2007–2018 period. Results show that only four main indicators (house price index, nominal unit labour cost index, general government sector debt, and export market shares) and several other auxiliary indicators (residential construction as percentage of GDP, activity rate, and export performance against advanced economies) were able to predict the upcoming crises.

In the examples of studies of the predictive power of MIP indicators to predict the probability of a crisis, the authors point out the limitations of various existing

approaches, since the results depend both on the definition of the crisis itself and on the characteristics of the country, in particular, the choice of indicators for early warning systems differs for highly developed and less developed countries. Evidence suggests that the use of MIP indicators to predict crisis phenomena is a kind of tool for the initial assessment of existing and possible problems of the EU, since they were chosen to reflect European priorities for the coordination and harmonization of the economies of the member states.

In Correia & Martins (2019) based on the analysis of the main indicators of the «MIP Scoreboard», it is shown that macroeconomic imbalances are considered one of the most important causes of the European sovereign debt crisis and became the basis for providing financial assistance to the eurozone countries – Greece, Ireland, Portugal, Spain and Cyprus. The authors emphasize that ten years after the start of the European crisis, although the economic situation has improved, the consequences of the crisis and austerity policies continue to be felt, and macroeconomic imbalances persist in the rescued countries.

The unprecedented negative impact of Russia's military aggression against Ukraine has opened up a large range of problems, the socio-economic consequences of which have been felt by many European countries (Zolotova et al., 2023; Chernysh et al., 2023; Bulatova et al., 2025).

Bulatova et al. (2025) prove that intensive militarization has a significant negative impact on peace and security, as well as on the institutional, legal and socio-economic stability and resilience of the country. Grytsenko et al. (2024) not only reveal the impact of military upheavals in macroeconomic, macrofinancial and social aspects for the period February 2022 – April 2024 but also identifies the main risks and challenges of post-war reconstruction of Ukraine. The authors emphasize that strategic and model developments on Ukraine's post-war reconstruction should take into account the main determinants of the resilience of the national economy and the global challenges facing it.

For a country, the practical use of the European methodology for determining development imbalances and crisis phenomena can provide an impetus, or become a different approach to the development of a methodology for assessing the reliability of complex systems under conditions of uncertainty. In the context of ensuring national stability, the problem of the reliability of complex systems is raised in the work of Pyrozhev et al. (2023). The study emphasizes the importance of developing various methods for assessing the reliability of complex systems and notes that their need forms various promising areas of interdisciplinary research.

For Ukraine, this becomes especially important from the point of view of assessing the ability to control complex situations, because under different options for disrupting the equilibrium of a state or process, imbalances are formed as such: a) amenable to correction/management; b) not amenable to correction/management; c) only partially amenable to correction/management (Skrypnychenko, 2020; Heyets et al., 2021).

The purpose of this study is to assess the economic stability of Ukraine according to European procedures mandatory for EU member states. To achieve this goal, three tasks have been set, in particular: (1) to conduct a comparative analysis of the dynamics of the main indicators determined according to the European

methodology “MIP Scoreboard”, which indicate the presence of imbalances in the economy of Ukraine and the EU countries, and (2) to obtain empirical estimates of the impact of accumulated imbalances on the economic dynamics in Ukraine and the likelihood of their impact on the formation of a crisis; (3) to present forecast estimates of imbalances in the economy of Ukraine for 2026–2027.

Methodology

Regulation EU No. 1176/2011 (European Parliament & Council of the European Union, 2011) provides a broad definition of imbalances. Although the Regulation defines imbalances in a rather general way, it indicates that there is a difference between «imbalances» and «excessive imbalances», the latter of which deserve closer monitoring. Thus, Article 2 of Regulation No. 1176/2011 provides the following definitions:

- imbalances: «any trend which causes macroeconomic changes which adversely affect or may adversely affect the proper functioning of the economy of a Member State, of the economic and monetary union or of the Union as a whole»;
- excessive imbalances: «serious imbalances, including imbalances that endanger or have the risk of endangering the proper functioning of the economic and monetary union».

In the Alert Mechanism Report-2023, 14 headline indicators were included in the MIP scoreboard, with 25 auxiliary indicators considered for more detailed analysis. In 2024, in accordance with the MIP Regulation 1176/2011, the set of indicators was revised to take into account ongoing improvements in the quality of statistical data while maintaining the stability and relevance of the MIP scoreboard.

The establishment of indicative thresholds is not very strict; however, it is aimed at avoiding a significant number of false alarms and at identifying problems as soon as they arise. The determination of thresholds was carried out by European experts on the basis of an analysis of the upper and lower quartiles of the distribution of indicator values and in accordance with the results of existing empirical studies. The threshold values of the indicators in the process of the European imbalances identification procedure are not fixed; they have changed as a result of practice.

The following thresholds for changes in the main indicators according to AMR-2023 (European Commission, Directorate-General for Economic and Financial Affairs, 2022) were adopted:

- $-4/+6\%$ for the current account balance (**MIP-1: Current account balance % of GDP; 3 year average**);
- -35% for the net investment position (**MIP-2: Net international investment position; % of GDP**);
- $\pm 5\%$ for the real effective exchange rate in euro area and $\pm 11\%$ for countries outside the euro area (**MIP-3: Real effective exchange rate, 42 trading partners, HICP deflator; 3 year % change**);
- -6% for the country's export market share in the world (**MIP-4: Export market share % of world export; 5 year % change**);
- 9% for the nominal unit labour cost index in euro area and $+12\%$ for countries outside the euro area (**MIP-5: Nominal unit labour cost index 2015=100; 3 year % change**);

- 6% for the real housing price index (*MIP-6: House price index, 2015=100, deflated; 1 year % change*);
- 14% for credit to the private sector (*MIP-7: Private sector credit flow, consolidated; % of GDP*);
- 133% for private sector debt (*MIP-8: Private sector debt, consolidated; % of GDP*);
- 60% for general government debt (*MIP-9: General government gross debt; of GDP*);
- 10% for the unemployment rate (*MIP-10: Unemployment rate; 3 year average*);
- 16.5% for total financial sector liabilities (*MIP-11: Total financial sector liabilities, non-consolidated; 1 year % change*);
- 0.2 p.p. for the level of economic activity of the population (*MIP-12: Activity rate, % of total population aged 15–64; 3 year change in p.p.*);
- 0.5 pp. for the level of long-term unemployment (*MIP-13: Long-term unemployment rate, % of active population aged 15–74; 3 year change in p.p.*);
- 2 pp. for the level of youth unemployment (*MIP-14: Youth unemployment rate, % of active population aged 15–24; 3 year change in p.p.*).

Research Results

Based on the quantitative determination of imbalances through the assessment of indicators that form the «MIP Scoreboard» table within the framework of the European Macroeconomic Imbalance Procedure, an analysis of the dynamics of the main indicators that indicated the presence of imbalances in the external and internal spheres and in the labor market (employment indicators) of Ukraine during 2000–2024 was conducted. In particular, in the period 2013–2024, the long-term nature of imbalances is indicated by monitoring the following indicators: the country's export market share (MIP-4); public sector debt (MIP-9); the level of economic activity of the population (MIP-12); the real effective exchange rate of the hryvnia (MIP-3); and the real housing price index (MIP-6) (Table 1).

Importantly, indicators characterizing macroeconomic imbalances in European practice also often «violated» the thresholds (Figure 1). Analysis of the Imbalance Tables based on the annual reports (The Alert Mechanism Report, AMR – 2023) for 27 EU countries for the period 2003–2023 showed that the number of cases in which main MIP indicators exceeded the threshold values was largest in Cyprus (120), Spain (120), and Greece (115), while the smallest numbers were observed in the Czech Republic (40) and Austria (41). The average value for all 27 countries in the selected period is 74. Over the same period of time, 67 cases in which the main MIP Scoreboard indicators exceeded the thresholds were recorded in Ukraine.

Table 1

Results of assessment of the presence of imbalances in Ukraine according to the European MIP Scoreboard methodology

Period	External imbalances					Internal imbalances						Employment indicators			Total for the year
	MIP-1	MIP-2	MIP-3	MIP-4	MIP-5	MIP-6	MIP-7	MIP-8	MIP-9	MIP-10	MIP-11	MIP-12	MIP-13	MIP-14	
2013	1	1		1											3
2014	1	1	1	1					1			1		1	7
2015		1	1	1					1		1	1	1	1	8
2016		1	1	1					1			1	1	1	7
2017				1					1			1	1		4
2018				1					1						2
2019			1	1	1	1									4
2020			1			1			1		1				4
2021			1			1						1	1		4
2022				1	1	1			1	1	1	1			7
2023				1		1			1	1	1	1			6
2024				1	1	1			1	1		1			6
Total by indicator	2	4	6	10	3	6	0	0	9	3	4	8	4	3	

Note: "1" – indicators exceeding their thresholds.

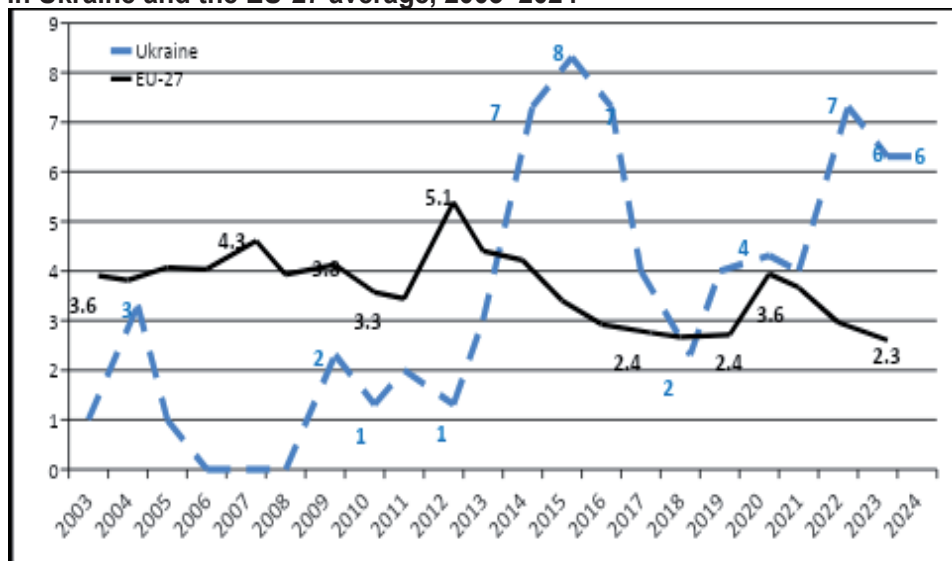
Source: authors' calculations based on data from the State Statistics Service of Ukraine (n.d.), National Bank of Ukraine (n.d.), Ministry of Finance of Ukraine (n.d.).

It should be emphasized that the largest number of imbalances in the 27 EU countries appeared during the sovereign debt crises in Europe in 2012 and 2013, respectively, a total of 137 and 119 (the average for the group was 5.1 and 4.4) imbalances. It is clear that the problems that were accumulated during the crisis of 2007–2008 and formed imbalances in each country were different, but the most painful of these problems for the vast majority of countries in 2012–2013 were signaled by the following indicators exceeding their threshold limits:

- net investment position (MIP-2): in 2012 – in 16 countries, in 2013 – in 16 countries;
- real effective exchange rate (MIP-3): in 2012 – in 12 countries;
- the country's export market share in the world (MIP-4): in 2012 – in 19 countries, in 2013 – in 18 countries;
- private sector debt (MIP-8): in 2012 – in 13 countries, in 2013 – in 13 countries;
- general government debt (MIP-9): in 2012 – in 14 countries, in 2013 – in 16 countries;
- unemployment rate (MIP-10): in 2012 – in 12 countries, in 2013 – in 14 countries;
- long-term unemployment rate (MIP-13): in 2012 – in 22 countries, in 2013 – in 15 countries;
- youth unemployment rate (MIP-14): in 2012 – in 15 countries, in 2013 – in 9 countries.

Figure 1

Number of main MIP indicators that exceeded their thresholds during the year in Ukraine and the EU-27 average, 2003–2024



Source: authors' calculations based on data from Eurostat (n.d.), State Statistics Service of Ukraine (n.d.), National Bank of Ukraine (n.d.), Ministry of Finance of Ukraine (n.d.).

According to the results of the analysis of reports (AMR) in 27 EU countries, the values of the indicators of the public sector debt, net investment position, and private sector debt most often exceeded the thresholds, and the fact that these indicators have been leaders in the number of violations for many years in a row indicates, according to experts, the persistence of the problems and the long-term nature of these imbalances in EU countries (Skrypnychenko, 2020).

Given that the preparation of the Imbalance Scoreboard and the corresponding reports are only the beginning of the lengthy annual procedure for identifying macroeconomic imbalances (MIP), it should be noted that, at this stage, the main task following quantitative assessments is to identify, for each Member State, those imbalances that require political and economic measures. The next step is a more in-depth analysis for European countries, which focuses on identifying and addressing imbalances that hinder the functioning of both the Member States' economies and the EU economy as a whole, i.e., those that may endanger the proper functioning of the Economic and Monetary Union.

Empirical assessment of the impact of imbalances on economic growth rates and macro-financial stability in Ukraine. For Ukraine, which is taking the first steps towards implementing the European mechanism «Macroeconomic Imbalance Procedure» (Skrypnychenko, 2020; Heyets et al., 2021), in addition to identifying and monitoring already accumulated imbalances, it is important to test possible threats, assess the risks of new macroeconomic imbalances and the probability of a crisis.

It is worth emphasizing here that from the point of view of the mechanism of occurrence (Skrypychenko, 2020), imbalances are the result of the action of:

- a) internal factors, which are a reflection of the evolutionary development or bifurcation of the system;
- b) established (in the medium or long term) trends/tendencies;
- c) random (short-term) endogenous factors;
- d) external factors or exogenous shocks;
- e) the application of measures, policy instruments (economic, social, geopolitical);
- f) the influence of (subjective) non-economic factors.

However, in real life, it is challenging to single out one factor in the formation of imbalances, since they are most often the result of a number of interrelated factors and, accordingly, provoke the formation of several imbalances simultaneously, which complicates the choice of measures aimed at their weakening or elimination. When the potential of accumulated imbalances is realized, whether they will provoke a crisis, that is, whether it will occur at all, depends on the strength of the factors that determine the imbalances.

Table 2 presents the results of the regression analysis and quantitative assessments of the impact on the rate of change in real GDP of Ukraine of the indicator reflecting the dynamics of accumulated imbalances in the economy (that is, the number of indicators that during 2003–2024 violated the thresholds according to the European methodology).

Analysis of the statistical characteristics of model (1) provides empirical confirmation of the presence of a statistically significant impact of existing macroeconomic imbalances on economic dynamics in Ukraine (the value of Prob. (t-Statistic) is less than 0.10). Among the statistical characteristics of the model, the relatively low level of the R² coefficient is an expected result, which is explained by the absence in the analysis of other important factors of GDP growth, in particular, fundamental ones (capital, labor, scientific and technological progress).

$$UKR_growth = C(1) * UKR_imbalances + C(2), \quad (1)$$

where *UKR_growth* is the rate of change of real GDP of Ukraine, % to the previous period; *UKR_imbalances* is the number of macroeconomic imbalances (the number of cases of exceeding the threshold limits by the MIP indicators).

Table 2

Results of regression analysis of the impact of accumulated imbalances on the rate of economic growth in Ukraine

	UKR_growth		
Coefficient C(1)	-2.005064	-2.010406	-2.864087
Prob. t-Statistic	0.0996	0.0533	0.1011
Constant C(2)	5.753331	8.968249	12.71917
Prob. t-Statistic	0.0699	0.0929	0.0850
R-squared	0.247730	0.489733	0.270330
Durbin-Watson statistic	1.558017	2.131481	2.455341
Sample	2003-2014	2014-2021	2014-2024

Source: authors' estimates using the EViews 9.0 statistical package.

The hypothesis of the negative impact of accumulated imbalances on the country's economic dynamics was tested over a fairly long period of time, 2003–2024. During the selected period, as already noted above, the economy was affected by a number of negative events (the crises of 2008–2009 and 2015–2016, the transformational shock for the country and the economy in 2014, the Covid-19 pandemic in 2020, the war of 2022–2024), which were both the result of already accumulated imbalances and themselves became triggers for the formation of new various (external, internal, on the labor market) imbalances in Ukraine. The correctness of the hypothesis put forward is confirmed by quantitative assessments of the effects of the negative impact of imbalances using a simple regression model (1). Empirical estimates (Table 2) show that on average (other things being equal), the formation of a new imbalance restrained the dynamics of real GDP by 2% during the period 2003–2021 (before the war with the Russian Federation), and the inclusion of Russian military aggression in the analysis of 2022–2024 increased the estimates of the slowdown in economic dynamics during the unstable 2014–2024 period to an average of 2.9% per annum.

In order to assess the probability of a crisis due to the formation of imbalances in various areas, i.e. to assess the impact of imbalances on economic stability, binary choice models were used. In particular, in the probit model estimated on Ukrainian data for the period 2001–2018, the dynamics of 4 out of 14 MIP Scoreboard imbalance indicators (MIP2, MIP9, MIP12 and MIP14) were used in research (Heyets et al., 2021) to construct independent regressors as proxy variables for multidimensional crisis factors (negative phenomena, shocks):

$$CRIZA = 1 - @CNORM(- (0.3938 * MIP2 - 7.4037 * MIP9 + 14.8239 * MIP12 - 7.8144 * MIP14(-1) - 0.1969)), \quad (2)$$

where:

CRIZA is a binary variable: 1 – represents the occurrence of an event, i.e. a crisis (in the year in which the % change in real GDP has a negative sign) and 0 – the absence of a crisis (where the % change in real GDP has a positive sign);

MIP2 is a binary variable: 1 – the presence of an external imbalance, which is described by the dynamics of the net investment position, where the indicator exceeds the threshold limits (-35%) and 0 – the indicator does not exceed the threshold limits;

MIP9 is a binary variable: 1 – the presence of an internal imbalance, which is described by the dynamics of the general government debt sector, where the indicator exceeds the threshold limits (60%) and 0 – the indicator does not exceed the threshold limits;

MIP12 is a binary variable: 1 – the presence of an imbalance in the employment sector, which is described by the dynamics of the level of economic activity of the population, where the indicator exceeds the threshold limits (-0.2 p.p.) and 0 – the indicator does not exceed the threshold limits;

MIP14 is a binary variable: 1 – the presence of an imbalance in the employment sector, which is defined as exceeding the threshold (2 percentage points) of the indicator – the youth unemployment rate, 0 – the indicator value does not exceed the threshold.

In this study for the period 2000–2023, the impact of each imbalance on the formation of the crisis in Ukraine was assessed using probit models. The best predictive quality among the 14 models evaluated, where the presence of an

imbalance was considered as a factor provoking the crisis, was shown by probit models (3)-(4), where the dynamics of the MIP_9 and MIP_6 indicators were used as the imbalance variable:

$$CRIZA = 1 - @CNORM(- (1.14049366171 * MIP_6 - 0.887146558758)), \quad (3)$$

$$CRIZA = 1 - @CNORM(- (1.74471623616 * MIP_9 - 1.42607687222)), \quad (4)$$

where:

CRIZA is a binary variable: 1 – represents the occurrence of an event, i.e., a crisis phenomenon (in the year in which the % change in real GDP has a negative sign, or a transformation shock, pandemic, war occurred) and 0 – the absence of a crisis (where the % change in real GDP has a positive sign and there are no negative shocks and war);

MIP6 is a binary variable: 1 – the presence of an internal imbalance, which is described by the dynamics of the real housing price index (House price index, 2015=100, deflated; 1 year % change), where the indicator exceeds the threshold limits (6%) and 0 – the indicator does not exceed the threshold limits;

MIP9 is a binary variable: 1 – the presence of an internal imbalance, which is described by the dynamics of the general government sector debt, where the indicator exceeds the threshold limits (60%) and 0 – the indicator does not exceed the threshold limits.

To confirm the adequacy of models (3)-(4), the Hosmer–Lemeshow criterion (H-L Statistic) and the values McFadden R-squared were used. The quality of the calculations according to the results of the Expectation-Prediction Evaluation for Binary Specification test is good, since the percentage of correct predictions is high, in particular, for model (4) % Correct=80.95 and for model (3) % Correct=76.19.

Notably, the results of the evaluation of the MIP9 and MIP6 indicators, which demonstrated good predictive properties in the context of the probability of predicting crisis events in Ukraine, are similar for European countries. This is evidenced by the results of the studies of Borio & Drehmann (2009) and Boysen-Hogrefe et al. (2016), who believed that a rapid increase in the housing price index is usually a certain indicator of a future crisis, and the growth of public debt is negatively associated with the occurrence of crises, both “small” and “large”.

Forecast estimates of macroeconomic imbalances for the Ukraine’s economy in 2026–2027. According to the basic assumptions for the macroeconomic forecast of the main indicators of the development of Ukraine in 2026–2027, the economy will develop under the influence of global trends and possible crisis phenomena (Elsner et al., 2025; Savoy & Staguhn, 2023; International Monetary Fund, European Department, 2025). The calculations were made considering the assumption that international financial assistance will be rhythmic and sufficient to cover the budget deficit, and foreign investors will continue to support investment projects for the restoration and modernization of infrastructure.

The dynamics of the growth rate of the Ukrainian economy in 2025 demonstrated a continued trend towards slowdown, which is primarily due to the existing negative impact of the full-scale war: in 2023, real GDP growth was 5.5%, in 2024 – 3.2%, in 2025 according to preliminary estimates of the NBU – 1.8% (National Bank of Ukraine, 2026).

Along with the destruction of infrastructure, losses in agriculture, logistical difficulties, and high dynamics of inflationary processes, among the key factors hindering recovery is the high unemployment rate, which currently stands at about 12% to 15% according to various estimates. This indicator is a direct consequence of the war, as well as an obstacle to sustainable economic development, since unemployment is structural in nature.

In the post-war period, which according to current IMF assumptions (International Monetary Fund, European Department, 2025) may start in the second half of 2026, a gradual recovery of the Ukrainian economy is expected. The NBU forecasts GDP growth at 1.3% in 2026 and 2.8% in 2027 (National Bank of Ukraine, 2026) against the backdrop of reduced security risks, provided that the domestic situation stabilizes and sufficient support is provided by international partners, as well as the positive impact on the economy of good harvests, a reduction in electricity shortages, and an increase in defense orders.

Given the risks, based on medium-term forecast estimates of Ukraine's macroeconomic indicators (Skrypnychenko, 2020), a quantitative analysis of the dynamics of the main MIP Scoreboard indicators for Ukraine was conducted, which indicated the formation of threatening imbalances in the domestic economy in the perspective until 2027 (Table 3).

Table 3

Main indicators of macroeconomic imbalances for Ukraine, 2024–2027

Components	#	MIP scoreboard indicators	Threshold level	2024 actual	2025 preliminary	2026_f forecast	2027_f forecast
External Imbalances and Competitiveness	1	Current account balance (% of GDP), 3 year average	-4.0%/6.0%	-2.30	-6.1	-11.4	-16.3
	2	Real effective exchange rate (39 trading partners, HICP deflator), 3 year % change	±5.0% (EA), ±11.0% (Non-EA)	-10.0	-8.6	-1.4	3.0
	3	Export market share (% of world exports), 5 year % change	-6.0%	-32.3	-32.5	-33.5	16.7
	4	Nominal unit labour cost index (2010=100), 3 year % change	9.0%(EA), 12.0%(Non-EA)	7.2	-23.6	-10.9	-6.8
Internal Imbalances	5	House price index (2015=100), 1 year % change	6.0%	12.7	11.2	10.4	9.5
	6	General government gross debt,% of GDP	60.0%	103.4	100.0	90.2	83.4
	7	Unemployment rate (according to ILO methodology) aged 15–70, 3 year average	10.0%	14.9	14.2	11.5	10.3
Employment Indicators	8	Activity rate (% of the economically active population at the age of 15–70), 3 year change in p.p.	-0.2 %	-0.8	-1.2	-0.8	-0.5

Source: authors' calculations based on the Macroeconomic Imbalance Procedure methodology (MIP Scoreboard, AMR–2023).

Among the main 8 out of 14 MIP indicators, the long-term nature of imbalances in Ukraine (in the forecast period 2026–2027) is indicated by monitoring indicators (through an assessment of their deviation from threshold level, namely: current account (% of GDP), Ukraine's share in world exports of goods and services, housing prices, public sector debt, unemployment rate (according to ILO methodology) at the age of 15–70, level of economic activity (% of the economically active population at the age of 15–70), which indicates a high probability of crisis situations developing and increased macroeconomic instability.

The risks of the forecast remain: continuation of the military confrontation of the Russian Federation («war of attrition») beyond 2026 with the escalation of military actions and an increase in the scale of destruction of critical infrastructure facilities; insufficient international aid and loss of territories; a possible sharp increase in world prices for energy products (by 15% to 20% per year), a significant accumulation of logistical problems and a corresponding increase in imports of transport services from EU countries; Ukraine's preservation of the image of a country with a high level of corruption (corruption and inefficient management of resources can become serious obstacles to economic recovery, and the lack of transparency and accountability in the use of financial resources can reduce the effectiveness of recovery measures); insufficient institutional capacity of the country's government to implement full-scale European integration processes; increasing levels of social exclusion (poverty of the population) due to price spikes and increases in electricity tariffs; continued migration of the population from Ukraine; loss of skilled labor resources and human capital necessary for economic growth due to the war.

Reducing the level of security risks, supporting international partners, and activating post-war reconstruction will contribute to investment activity in Ukraine and the return of forced migrants, which will become an important factor in economic recovery in the medium term.

The practical significance of monitoring macroeconomic imbalances lies not only in the timely identification of structural weaknesses of the national economy and forecasting the risks of crisis phenomena, but also in the formation of substantiated management decisions regarding the determination of priority areas of state policy, the assessment of the effectiveness of reforms, and the adjustment of the economic regulation tools in accordance with official EU documents on Ukraine's accession.

Among the specific practical recommendations regarding the necessary steps for Ukraine on its path to the EU, the following are extremely important:

- harmonization of the regulatory framework with EU law and implementation of the *acquis communautaire* by accelerating the implementation of the Association Agreement between Ukraine and the EU, implementation of the Negotiating Framework for accession, adaptation of legislation to 35 negotiating chapters of the EU *acquis*, primarily in the areas of competition, public procurement, customs policy, energy, transport, and the digital market;
- formation of a sustainable and competitive economy through the modernization of strategic sectors, such as defense and industrial complex, mechanical engineering, ICT, the agro-industrial complex, and energy, and through the development of exports of products with high added value and integration into EU production chains;
- acceleration of the green transformation of the economy through the implementation of the provisions of the European Green Deal, the development of renewable energy sources, improvements in energy efficiency, and preparations for the CBAM (Carbon Border Adjustment Mechanism);

- strengthening anti-corruption policy and institutional capacity of the state in accordance with the recommendations of the European Commission in 2022, which concerned judicial reform, the fight against corruption, de-oligarchization, media legislation, and protection of the rights of national minorities;
- activation of investment activity and innovative development through the implementation of the Ukraine Facility instrument for 2024–2027, which provides for financing reforms, modernization of infrastructure, and stimulation of private investment;
- ensuring macro-financial stability by observing budget discipline, reforming tax administration, increasing transparency in the use of international aid, and effective management of public debt in accordance with EU and IMF requirements;
- reducing regional and social imbalances through the use of the principles of the EU Cohesion Policy: creating jobs and supporting internally displaced persons.

Therefore, systematic monitoring of macroeconomic imbalances should become an important tool of state strategic management, as it allows ensuring the implementation of the official roadmap for Ukraine's accession to the European Union, increasing economic stability, and successful integration into the single European space. A balanced macroeconomic policy, which is a prerequisite for the sustainable growth of the Ukrainian economy and its successful progress towards European integration, will determine the direction of future research.

Conclusions

The conducted study of the dynamics of the macroeconomic imbalances formation in European countries and Ukraine not only empirically confirmed their negative impact at different time intervals with a high probability of crisis phenomena due to the accumulation of imbalances in the economy, but also reasonably showed in Ukrainian context the need to use monitoring indicators calculated according to the European MIP Scoreboard methodology. They indicate the presence of imbalances in the development of the national economy and may indicate the possibility of a crisis.

The results of scenario analysis and modeling of the dynamics of indicators of economic imbalances levels in Ukraine according to the criteria of «Macroeconomic Imbalance Assessment Procedures in the EU» revealed the expected economic instability during the war and significant external and internal imbalances in the economy.

Ensuring the balance of monetary, fiscal and structural policies to support dynamic development in the war and post-war periods are key components of compliance with the avoidance of threatening macroeconomic imbalances in Ukraine. To achieve success in eliminating existing risks, comprehensive and coordinated work is required from all branches of government, business, and society.

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Received: March 14, 2026.

Reviewed: July 28, 2026.

Accepted: August 20, 2026.