INSTITUTIONAL DESIGN OF MACRO-FINANCIAL SECURITY FOR THE NATIONAL ECONOMY STABILIZATION

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The *relevance* of the study as regards macrofinancial security institutional design for the Ukrainian economy and society is explained by at least two circumstances. First, the macrofinancial sphere of the national economy lacks stability, and the accumulated imbalances threaten its integrity. Second, macro-financial imbalances have not been the object of special monitoring, analysis, correction, and prevention by public (state) authorities. This is manifested in the lack of rules, algorithms, procedures, incentives, sanctions, channels of interaction between governments and communities and society, and so on. Thus, there is a lack of what is called institutional design. The latter is designed to evaluate, prevent, and correct macrofinancial imbalances. And macrofinancial stability in this way, at the request of governments, becomes an economic reality.

The *purpose* of this study is to substantiate a certain algorithm of actions for the formation of institutional design, intended to counteract the formation and deepening of macrofinancial imbalances in the Ukrainian economy.

The scientific and managerial *issue* regarding macrofinancial security institutional design formation provides answers to several questions. First of all, the question about the actual meaning of the «macro-financial security» concept arises. This follows from a clear logic of reasoning: since macrofinancial security is the content (and purpose) of institutional design, there should be a correspondence between content and form. The latter involves the most accurate identification of the content. Also equally important is the question of the content of the «institutional design» concept, the necessary components (elements) of the existing design and the features of institutional design in the Ukrainian economy, with regard to the existing economic imbalances and the current system of public management. Exploring the main issue, we will try to partially answer these questions.

Our research logic is based on the following two *assumptions*.

First, the macrofinancial sphere can and should be singled out as a certain segment of the national economy with its inherent proportions (balances), respectively – indicators for evaluation and public authorities for monitoring, control, and adjustment.

Second, the concepts of «stability» and «security» are closely related and possibly synonymous. We mean the indisputable fact that the existence of macrofinancial stability means that the economy is in a safe state. Conversely, macrofinancial security, which is manifested in the absence of excessive imbalances, also testifies to macrofinancial stability. If the concepts of «macrofinancial stability» and «macrofinancial security» have differences, they are not fundamentally important for our study.

The term «macrofinancial» is used not only in the context of security, but also in other contexts, namely: «macrofinancial disproportions» [1], «macrofinancial stability» [2], «macrofinancial analysis» [3], etc. The activity of using these terms increased after the global financial crisis of 2008-2010.

The analysis of the use of the mentioned related concepts gives grounds to conclude that there are two interpretations, respectively, of two applications of the term «macrofinancial»: simplified (general) and more complex (concretized).

A simplified variant of the use of the term «macrofinancial», for example, is found in the fundamental work of British and American researchers on policy optimization. The study deals with macrofinancial stability as one that assumes compliance of the financial system with the general state of the whole economy [4]. In fact, «macrofinancial» is interpreted as the interaction (coordination) of financial and macroeconomic.

A more complex (more specific) variant of the term «macrofinancial» is associated with various algorithms (methods) for evaluating the imbalances of national economies. This is primarily a list (scoreboard) of indicators set for the EU countries and their reference threshold values for evaluating imbalances and applying the procedure for overcoming them («MIP Scoreboard»). Although imbalances are referred to as macroeconomic (Macroeconomic imbalances procedure – MIP) in the official EU document, many of them undoubtedly have a «dual» macrofinancial nature. This is evidenced by the actual content of indicators for evaluating the state of the EU national economies, presented in Table 1.

The given analytical Table reflects the information on indicators for evaluating the stability of national economies and standards for determining the degree of deviation from safe limits. If the documents of 2011 provided 10 indicators for the use, 6 of which had an obvious macrofinancial nature, now their total number has increased to 14, 7 of which can be interpreted as macrofinancial. The indicators of the «double» – macroeconomic and, at the same time, financial content – include, in our opinion, the following:

- the average value of the current account balance over the last 3 years (in% to GDP);
- net international investment position (% to GDP);
- change of the real effective exchange rate (REER), calculated on the basis of the GDP deflator against the currencies of developed countries over the last 3 years;
- private sector loan financing, estimated on a consolidated basis (% of GDP);
- private sector debt calculated on a consolidated basis (% of GDP);
- total public debt (% of GDP);

– annual change in financial sector debt on an unconsolidated basis (%).

Table 1. The indicators for detecting macroeconomic imbalances in the EU countries in 2011 and 2018

Sphere of imbalances	Key indicators	Recommended threshold values
Common for MIP Scoreboard in 2011 and 2018.		
External/ country competitive capability implementation	1. *Average current account balance for the last 3 years (in% to GDP)*	from -4% to +6% GDP
	2. *Net international investment position (% to GDP)*	-35% GDP
	3. *Change over the last 3 years of the real effective exchange rate (REER), calculated on the basis of the GDP deflator against the currencies of 35 (in MIP 2011) / 42 (in MIP 2018) developed countries*	from +5% to -5% for the Eurozone member-states; from +11% to -11% for all other EU countries
	4. Change of the country's export share in the world export over the last 5 years (in%)	6%
	5. Change of the nominal value of labour force per unit of output over the last 3 years (%)	+9% for the Eurozone member-states; +12% for all other EU countries
Internal	6. Annual deflated (real) change in the harmonized housing price index (%)	+6%
	7. *Loan financing to the private sector (non-financial corporations, households, non-profit organizations) on a consolidated basis (% of GDP)*	15% (in MIP 2011) / 14% GDP (in MIP 2018)
	8. *Private sector debt (value of loans and securities other than shares), calculated on a consolidated basis (% of GDP)*	160% (in MIP 2011) / 133% GDP (in MIP 2018)
	9. *Total public debt (% of GDP)*	60% GDP
	10. The average unemployment rate for the last 3 years (%)	10%
Special (additional) in MIP Scoreboard in 2018		
Internal	*Annual change in financial sector debt on an unconsolidated basis (%)*	16,5%
Sphere of employment	The change in the level of activity of the population aged 15 to 64 over the last 3 years	-0,2 point
	The change in the level of long-term unemployment (in%) of the active population aged 15 to 74 over the last 3 years	0,5 point
	The change in the unemployment rate of young people aged 15 to 24 over the last 3 years	2 points

Source: authors' own based on [5; 6]

These 7 indicators are financial, as they relate to the general condition of financial assets and liabilities, namely: investments, loans, debt obligations, and national currency. At the same time, they are macroeconomic, given that they reflect the proportions of the entire national economy. Therefore, they are designed to provide representations and evaluations against the background of such macroeconomic variables as: achieved GDP, overall price level, the interaction of institutional sectors, etc.

The analysis of changes in the evaluation of imbalances – from the Maastricht criteria 1992 [7] to the MIP Scoreboard 2011 and the MIP Scoreboard 2018 – provides grounds for important generalizations about the evolution of the content of the «macrofinancial» concept. In particular, it is impossible not to notice the fact of shifting the emphasis in the scoreboard from indicators, mainly with the financial content in favor of indicators that characterize the state of the real sector of the economy. This change is a reaction to the events related to the financial crisis of 2008 – 2010 and the realization of the unjustified overestimation of the role of the financial sector in the development of national and world economies. It is significant that the Scoreboard 2018 presents 4 new indicators, 3 of which relate to the employment of the active population, youth employment, and the duration of unemployment. Thus, it is a matter of shifting the emphasis on the labor potential of the real sector of the economy.

We conclude that processes (phenomena) should be considered as macrofinancial, respectively, a set of indicators, the core of which is made by those related to the movement of financial assets / liabilities. However, this list should also cover (implement) those indicators of the real economy that are directly related to and determine this movement. These are, for example, the indicators, among which there are:

- total costs in general and net exports in particular;
- general price level;
- the ratio of wages and overall productivity;
- unemployment and employment.

An important point in interpreting the meaning of the «macrofinancial» concept is the recognition that the set of indicators for assessing macrofinancial imbalances cannot remain unchanged. It is significant, for example, that in the early 1990s, as a part of the 4 Maastricht criteria, one concerned *the general price level* determined by the inflation rate. In terms of modern criteria – the MIP Scoreboard – it is only about *the housing price index*. The reason for this change of emphasis is probably the loss of the urgency of the problem of excessive inflation for the EU countries in the 2010s. Instead, in the early 1990s, this problem was relevant to them as a threat to macroeconomic stability. Nevertheless, the general level of prices, in whatever way it is reflected, – through various forms of assessing inflation, through deflation of nominal indicators on the price index, etc. – is a part of the «macrofinancial» phenomenon.

In our opinion, indicators from the EU MIP Scoreboard should be used to assess imbalances to more accurately identify the content of the concept of macrofinancial security institutional design. It is undeniable that under the specific conditions of individual countries, in particular in Ukraine, these indicators will need some modification with the aim of better adaptation. For example, permanent threats of dangerous levels of the Ukrainian inflation will necessitate the implementation of its direct indicators in a special «Scoreboard of Ukrainian imbalances». It is probable that the «specifically Ukrainian» indicator of imbalances should be an indicator of the level of shadowing of the economy, given the current incomparably significant share of the shadow economy in the structure of the national economy compared to other countries.

A positive answer to the question about the value of the EU countries experience to clarify the meaning of the concept of «macrofinancial» can be based on the following arguments. Firstly, the accumulated database on the quantitative values of the constructed indicators provides a basis for an objective assessment of the advantages and limitations of the approach. Secondly, the used indicators have a fairly clear meaning, which can be interpreted as macrofinancial.

The analysis of the experience of countries outside the EU is also important to substantiate changes in the institutional design of macrofinancial security. First of all, the Ukrainian application of the concept of «macrofinancial» is important for us. From the analysis of the regulatory framework, the following generalizations follow in the first place.

First, the term «macrofinancial» is absent in the laws of Ukraine, but is used by public authorities in documents of a lower (than laws) level. The most active user of this term is the National Bank of Ukraine (NBU). In modern NBU documents, the term «macrofinancial» is used in such contexts:

- «minimization of threats to macrofinancial stability» [8];
- «intensification of threats to macrofinancial stability» [9];
- «ensuring macrofinancial stability» [10].

Analysis of the content of the mentioned documents of the NBU gives grounds for the conclusion of such a general interpretation of «macrofinancial stability». This is what depends on:

- the consistency of budget filling and inflation-related budget deficits;
- the implementation of the programs regarding cooperation with the IMF;
- the economic growth;
- the coherence of actions of the NBU, the Ministry of Finance of Ukraine and other related institutions.

In the resolutions of another institution – the Verkhovna Rada of Ukraine (VRU) – the term «macrofinancial» is used, in particular, in such contexts:

- «conditions for macrofinancial stabilization» [11];
- additional macrofinancial assistance [12].

From the analysis of the content of the mentioned documents (resolutions of the Verkhovna Rada) the term «macrofinancial» is interpreted as a phenomenon related to investments, mainly foreign, and a phenomenon that significantly depends on the international financial organizations assistance.

The analysis of the NBU documents also suggests a rather skeptical attitude to the possibility of assessing stability. In particular, this skepticism is manifested in the mention of «macroprudential policy aimed at ensuring financial stability» [13]. The publication of the chief expert of the Department of Financial Stability [14], posted on the website of the Expert Platform – the NBU staff – states that there are no universal measurement indicators and a series of indicators combined into integrated indices can be used. The latter create an opportunity to assess the current state, but, as the author of the document notes, do not provide an opportunity to predict.

Instead, we consider it expedient, from a scientific and applied point of view, to find ways to assess macrofinancial security, which would be based on a sound interpretation of the term «macrofinancial».

In our opinion, a more specific interpretation of the analyzed term by the institutions of public power – stakeholders of Ukrainian economic policy – can be found in the official assessment methods. This, in particular, is the current methodology for assessing the level of economic security, approved in 2013 by the Ministry of Economic Development and Trade of Ukraine [15].

The mentioned methodology does not contain the «macrofinancial» concept, but it provides a detailed and concretized interpretation of «macroeconomic» and «financial». A brief list of indicators is given in the analytical Table 2.

Table 2. The indicators for assessing macroeconomic and financial security, according to the official methodology in force in Ukraine in 2013

Indicators	**Number of indicators**
Macroeconomic security	
The difference between the values of the labor productivity index and wages (p.p.)	1
The level of shadowing of the economy (% of GDP)	1
Current account balance (% of GDP)	1
Unemployment rate, according to the ILO methodology (%)	1
Unemployment rate – the share of unemployed for more than 12 months (%)	1
The difference between the country's economic growth rate and the corresponding average indicator for developing countries (p. p.)	1
Consumer price index (December to December) (times)	1
Population disposable income in GDP (%)	1
Propensity to save (%)	1
The correlation between the average wage and all types of assistance and social transfers (times)	1
The correlation between GDP per capita in Ukraine and in EU countries (%)	
Employment in the informal sector of the economy (%)	1
	1
Total	**12**
Financial security	
The group of banking security indicators	7
The group of indicators of the non-banking financial market	4
The group of debt security indicators	5
The group of budget security indicators	4
The group of currency security indicators	6
The group of monetary security indicators	6
Together	**32**
Total	***44***

Source: compiled by the authors based on the official guidelines for calculating the level of economic security of Ukraine as from 2013

The indicators in Table 2 are a form of current «Ukrainian scoreboard» for measuring the level of macroeconomic and financial security, similar to the EU countries' scoreboard. The fact that there is a list of such indicators and fairly clear calculation algorithms, in our opinion, is a significant achievement of the Ukrainian system of public management. A comparative analysis of the «Ukrainian scoreboard» against the background of the scoreboard of the EU countries gives grounds for such generalizations:

– some of the indicators identified in the Ukrainian assessment methodology as macroeconomic have, mainly, *socio-economic «burden»*, as they relate to the state of the social sphere. They reflect not so much the actual macroeconomic proportions as the proportions in the social sphere. This, in particular, applies to the following indicators: redistribution of income through taxes, contribution of various types of social assistance and transfers to total income, and comparative (relative) welfare of citizens. These are indicators from the list of indicators of the Ukrainian assessment methodology (Table 2), such as: the share of available (after tax) income in GDP; the correlation between the average wage and all types of benefits and social transfers; the degree of approximation of GDP per capita in Ukraine to the EU indicators (%); the share of the employed population in the informal sector of the economy;

– the level of financial indicators detailed elaboration (their number is 32) can be considered excessive. The division of financial indicators into 6 groups involves the calculation of 6 sub-indices: banking, non-bank financial intermediaries, debt, budget, currency, and monetary security. This significantly complicates the assessment of this sphere and the interpretation of results, as well as making management decisions based on this interpretation.

Despite these features, the so-called «Ukrainian scoreboard» in its current interpretation is quite applicable. Long-term application over many years (the 2013 methodology was based on a similar methodology in 2007 [16]) has created a significant information base. The current methodology, in our opinion, is suitable not only for assessing the current state and substantiation of current decisions, but also for predictions and substantiation of management decisions for the future.

Let us use the calculation data for analysis, according to the «Ukrainian scoreboard», the integrated indicator (index) of national economic security and two indicators (sub-indices) of macroeconomic and financial security (Table 3).

Table 3. The dynamics of safety level indicators, according to the Ukrainian data and the official methodology of 2013, for the period 2007 – 2018 (%)

Security indicators	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Macroeconomic	48	38	44	38	48	38	39	32	31	35	37	41
Financial	64	51	42	44	47	46	50	38	36	40	42	46
General economic	52	48	46	47	50	46	48	45	44	48	48	50

Source: developed by the authors based on [17]

The Table represents the indicators of 3 security levels: general economic and its components – macroeconomic and financial. Indicators of the level of security were assessed using the statistical tools of integrated indices according to the algorithm defined in the methodology approved by the Ministry of Economic Development and Trade in 2013.

Procedures for indicator normalization and weights application were used in calculations in line with the general statistical rules for the creation of integrated indices. In fact, this is a typical formula for integral indices:

$$I_S = \sum_{i=1}^{m} k_m n_m,$$

where I_S – integral index, in our case – security index, which is formed from m indicators; k_m – weights of variables (indicators) used to determine the index; n_m – normalized values of variables (indicators) used in index calculations.

For better visualization, the data in Table 3 has been presented by us in Fig. 1, which, in addition to the actual values of indicators (indices) of the security level, reflects five more safety zones: critical, dangerous, unsatisfactory, satisfactory, and optimal.

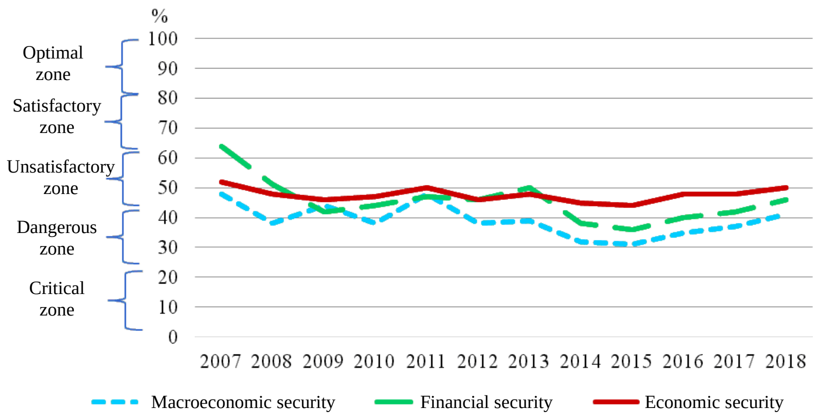

Fig. 1. The dynamics of indicators of general economic, macroeconomic and financial security within safety zones in 2007 – 2018

Source: developed independently on the basis of information from Table 3

The analysis of the information presented in Fig. 1, gives grounds for such generalizations:

– during the analyzed period, all indicators – general economic, macroeconomic and financial security – were mostly in the zone of unsatisfactory condition. The only exceptions are the financial security indicator in 2007, which fell into the zone of satisfactory condition, and the indicators of financial and macroeconomic security, which in the initial period of the Russian-Ukrainian war of 2014 – 2017 were in the dangerous zone;

– the levels of macroeconomic and financial security for all 12 studied years were lower than the level of general economic security, assessed using an integrated index with 7 more sub-indices provided by the methodology of 2013, namely: demographic, social, food, production, energy, foreign economic and investment, and innovation security;

– the level of macroeconomic security was usually lower than the level of financial security.

Assuming that the information presented in Fig. 1, is objective and relevant, it implies at least the following *predictions (prognostic conclusions):*

– indicators of the macroeconomic and financial security level should be more in the center of attention – monitoring, analysis, public discussion, use of instruments of influence – of national regulators, than other components of security;

– under the conditions of the actual absolute decline of the Ukrainian economy in 2019 – 2020, macroeconomic and financial security indicators may decrease to the level observed in 2015, when the deepest economic downturn in the research period occurred.

Our intermediate conclusion regarding clarifying the meaning of the «macrofinancial stability (security)» concept for the formation of the appropriate institutional design is embodied in such interpretation of the «macrofinancial» concept. «Macrofinancial» is a combination of macroeconomic (primarily related to the movement of tangible assets) and financial (related to national financial assets). The criterion for the organic nature of such a combination is a compliance, in which the state of the financial sector does not pose a threat to the real sector of the economy, and the state of the real sector – threats to the financial sphere.

Based on the experience of using the EU countries Scoreboard and the practice of assessing economic security in Ukraine, we assume the possibility of creating an updated «Ukrainian scoreboard». It is probable that the Ukrainian design of macrofinancial security could be formed around it. If we proceed from the expediency of determining a limited range of 10 indicators, they, in our opinion, could be as follows:

1. Annual current account balance of the payments (in % to GDP).
2. Annual change in the real exchange rate (p. p.).
3. Annual inflation rate (%).
4. Sufficiency of official foreign exchange reserves (in months of import).
5. Net international investment position (in% of GDP).
6. Public debt (in% of GDP).
7. The ratio of total payments for servicing and repayment of public debt to state budget revenues, interest (%).
8. Unemployment rate, according to the ILO methodology (%).
9. Correlation between labor productivity index and real wage index (times).
10. The level of the economy shadowing (the share of the shadow economy in% of GDP).

The proposed list of indicators of the so-called «Ukrainian scoreboard» is shortened compared to the list of dozens of indicators provided by the current Ukrainian methodology for assessing macroeconomic and financial security.

The list of indicators of the proposed «shortened Ukrainian scoreboard» for assessing the level of macrofinancial security has the following features caused by the peculiarities of the current state of the Ukrainian economy and society:

– contains 7 relative indicators of the state of national financial assets and 3 indicators (unemployment, the correlation of changes in total labor productivity and wages, the share of the shadow economy), which characterize the state of the real sector. A significant share of the total number of indicators (30%) directly related to the state of the real sector can be explained by the permanent and long stay of the Ukrainian economy in the descending part of *the real economic cycle*. Consequently, the weight of such indicators as employment of resources, productivity, and the share of the economy in the shadows is growing;

– provides for the use of annual (rather than average for a certain period, as in the EU Scoreboard) indicators, with regard to the significant economic volatility, the lack of sufficiently long periods of stable dynamics. Therefore, it becomes objectively necessary to monitor and control short-term (annual) changes;

– consists of a limited range of indicators to simplify the procedure for identifying functions and the division of powers between public authorities within the institutional design. After all, the formation of the design of public management is objectively complicated by a larger list of indicators.

In the context of the issue we are studying, after having outlined the processes, phenomena, and, accordingly, indicators around which institutional design should be formed, it is important to clarify the actual meaning of the concept of institutional design. Modern political science offers many approaches to its interpretation. Let us focus on just a few, namely those, that, in our opinion, may have the greatest practical application.

In Robert E. Goodin's book on the theory of institutional design [18], the latter is interpreted as an effective *form of promoting value outcomes* in a specific context. The practicality of this emphasis in determining the content of institutional design, in our opinion, is associated with the recognition of the importance of understanding the objective values of society and creating an effective form of their implementation.

Josep M. Colomer [19] defines institutional design as «*the choice of rules* for collective decision-making». It emphasizes the fact that institutions can create constraints on collective decisions and therefore reduce uncertainty. Instead, design, according to the author, has to create a harmonious environment for interaction in society.

In David L. Weimer's book [20] on institutional design, given the problems of public policy implementation, institutional design is defined as a relatively stable *set of interrelated rules and incentives* that form coherent *procedures* designed to achieve substantive goals.

Among the definitions of institutional design proposed by Ukrainian researchers, at least the following are important for our study:

– «purposeful combination of institutions with the aim to order the rules regulating the relationships between people in the intended direction with the aim to meet existing needs and changes» [21];

– «the dynamic process of transformational changes of existing traditional institutions into new ones» [22].

The practical value of the last two definitions by Ukrainian researchers is explained by the emphasis on the need to change forms and rules insofar as the needs of design users change. In fact, it is a dynamic approach to determining the institutional design content.

The current legislation of Ukraine does not contain a definition of the «design» term either in the general sense or in the sense of design for national macro-financial security. But it uses the concept of «product design». It is «a set of processes that convert legal, technical, functional, market, security, or other requirements, that a product must meet, into a technical specification for such a product» [23]. The practical orientation of this definition is that it recognizes the need for compliance between design and objective requirements, including safety, and that the design provides for certain standards (specifications).

In view of all the above, in the future we will use the following definition as a working hypothesis: *«Institutional design is a form of implementation of designed procedures, algorithms of interaction, rules, incentives and restrictions that provide value orientations of society (communities) in certain spheres».* It is clear that the institutional design in the public sphere, which is the sphere of national economic security, should be based on the institutions of power, in the relationship between which and between which and society there is a normalized distribution of powers and responsibilities.

The generalizations about the appropriateness or, conversely, the inexpediency of a particular institutional design of macrofinancial security can currently be based on the analysis of the EU institutions activities. This is primarily the Macroeconomic Imbalance Procedure (MIP) we have already mentioned and related documents and regulatory practices [23-32].

The main relationships in the formation of the institutional design of macrofinancial security, according to the EU regulations, are formed between such institutions of this entity:

- the European Commission;
- the European Council;
- the Council of the EU (Council);
- Member States;
- the European Parliament.

The institutional design of the EU macrofinancial security is quite complex. It is extremely simplified and presented by us in the form of the so-called «matrix of the EU institutions interaction». Moreover, these are two stages of the general procedure, namely the detection of imbalances and response (actions after diagnosing excessive imbalances). These two stages, respectively, the two interaction matrices, are represented in Table 4 and Table 5.

The implementation of the functions of the EU institutions represented in the analytical Table 4, ends with the establishment of the fact of excessive imbalances. Further actions of the institutions are aimed directly at correcting the situation (Table 5).

Table 4. The matrix of special functions of the EU institutions to identify macro-financial imbalances

The European Commission	The European Council	The Council of the EU (Council)	Member States	The European Parliament
November **The annual strategy of sustainable growth**: priorities for the EU governments **The notification mechanism report**: monitoring of the situation, according to the Table of Indicators, to identify countries for **in-depth review** and application of **the Excessive Imbalance Procedure** **The assessment of draft budgets** of the Eurozone countries for compliance with the Stability and Growth Pact. ***February*** **The reports of countries on general economic and social changes**: progress assessment in structural reforms, preventing and correcting imbalances and the results of in-depth reviews on the possible application of the **Excessive Imbalances procedure regarding** **Informing** the European Parliament and the Council of the EU ***May*** **Recommendations for countries** based on the analysis of national programs and plans	***November*** **The organization of a discussion** on the Annual Sustainable Growth Strategy and the Notification Mechanism Report for the Coordination of the EU Economic Policies ***March*** **The guidelines** on the priorities of national reforms in programs and budget plans. ***June-July*** **Approval of the final Recommendations for each country**	***November*** **The participation in the discussion** on the Annual Sustainable Growth Strategy **The discussion** of the European Commission's assessment of the draft budgets of the Eurozone countries ***December-January*** **Approves Recommendations for the Eurozone** based on the November discussions of the EU documents, the Annual Sustainable Development Strategy and the Notification Mechanism Report ***June-July*** **The Participation in the discussion** on the implementation of the Recommendations for the Eurozone in individual EU countries	***October*** **Draft budgets** for the next year **The participation in bilateral negotiations** with the European Commission on budgetary issues and development priorities ***December*** **The adoption** of budget plans ***April*** **The National** Reform and Stability / Convergence **Programs**, identifying ways to prevent / correct imbalances, adhere to fiscal rules and development priorities ***August-September*** **The Implementation** of the Recommendations recognized by the EU institutions into national legislation and annual budgets	***November*** **The organization of a discussion** on the priorities outlined in the Annual Sustainable Growth Strategy **Participation** in the discussion of the Notification Mechanism Report ***February*** Adopts the Annual Sustainable Development Strategy and the Notification Mechanism Report ***May*** **The Discussion on the Recommendations** published by the European Commission for the EU member states

Source: authors' own

Table 5. The matrix of special functions of the EU institutions, which are implemented after the detection of excessive macro-financial imbalances

The European Commission	The European Council	The Council of the EU (Council)	Member States	The European Parliament
June **Decision** to initiate Procedures for limiting excessive imbalances, informing other EU institutions about systemic risks and **Report** on the acceptability of the Action Plan **Recommendations** on the application of sanctions, their planned or early cancellation		***June*** **Recommendations to countries** on measures for the Corrective Action Plan **Recommendations** for the elimination of excessive imbalances in case of acceptability of the **Plan** and **Recommendations** for changes to the Corrective Action Plan, based on the findings of the **monitoring missions** **Decision** on the application of sanctions to countries and their cancellation	***June*** **Development** of Specific Action Plans with deadlines and their submission for analysis by the European Commission **Development** of updated Corrective Action Plans (if required) **Execution of sanctions** in case the Council declares the Plans inadmissible or when Eurozone country does not follow them. **Reporting** to the European Commission and the Council on progress in overcoming imbalances	

Source: authors' own

From the analysis of the information presented in the tables, the following generalizations can be made regarding the content of the institutional design of EU macro-financial security:

1. Instruments for influencing the situation on the part of the main EU institutions, through which macro-financial stability (security) is supported, can become:

– general development strategy with outlining priorities;

– general rules, represented primarily by certain macro-financial indicators;

– permanent monitoring of events and risk assessment;

– public discussion of monitoring results;

– analysis of national programs and countries development results to identify deviations (imbalances);

– official recommendations for corrective action plans to limit imbalances identified in the monitoring process;

– reports on the results of the approved corrective action plans implementation;

– identification, application and cancellation of sanctions against countries violating the established rules.

2. Institutional design provides for clearly defined powers and responsibilities of government institutions. Institutions are involved in certain stages of the procedure of limiting imbalances, only on the basis of the purpose (goals, powers) of each of them.

Therefore, two of the five EU institutions – the European Council and the European Parliament – are not directly involved in the implementation of the final stage of sanctions application to eliminate imbalances.

3. The use of imbalance regulation tools is clearly fixed and agreed over time throughout each year. Therefore, compliance with time limits is an important rule for regulating imbalances.

To substantiate the proposals on the formation of the institutional design of macro-financial security in Ukraine, in particular in the application of the EU experience, it is necessary to objectively assess the existing design.

It is primarily about fixing gains and problems in the organization of the public security management system.

In our opinion, the main *achievements* in the Ukrainian institutional design formation include the following:

– the existence of official methods for assessing the level of economic security, developed at the initiative of the Ministry of Economic Development of Ukraine in 2007 and in 2013, and the availability of primary information sources for calculations and official results of calculations;

– creation of two Draft Decrees of the President of Ukraine in 2015 and 2018, which laid the foundation for a clearer outline of the content of government institutions activity, delineation of their functions and responsibilities for the formation of information base, monitoring, results publication, and action plans [33].

In our opinion, the main *disadvantages (limitations)* in the formation of the Ukrainian institutional design of macrofinancial security include the following:

– lack of safeguards to stop publishing the results of calculations of economic security levels in free access and transition to limited availability of information in the form of official requests to the relevant ministry;

– complication of own calculations, according to the official method, due to partial lack of official information;

– discreteness (inconsistency) of design formation processes, in particular, due to non-approval of drafts of the two mentioned (2015 and 2018) Decrees of the President of Ukraine, which were aimed at creating a basis for normalization of interaction of public authorities in ensuring economic (macrofinancial) security.

Some fragments of the potential institutional design of macro-financial security can be found in the legislation on the activities of certain institutions of the Ukrainian government. They can hardly be interpreted as elements of the existing design of macro-financial security due to the fact that they are built into other algorithms. In particular, it is an algorithm for adopting the annual state budget or an algorithm for controlling debt indicators. Some fragments that may form the basis of the future institutional design of macrofinancial security are presented in the Matrix of special functions (Table 6).

Table 6. The matrix of special functions of the Ukrainian public authority institutions potentially related to macrofinancial security

Public authority institutions of Ukraine	Functions related to the regulation of macrofinancial imbalances
The Verkhovna Rada of Ukraine (including profile committees) (VRU)	1. Participates in the preparation of proposals for the annual budget plan. 2. By December 1: approves the budget for the next year. 3. Until July 15: considers the Budget Declaration. 4. Approves changes to the budget during the year.
The Cabinet of Ministers of Ukraine (CMU)	1. By September 15: approves the draft state budget and its submission to the Verkhovna Rada and the President, taking into account the limit requirements of the Budget Code. 2. By June 1: approves the Budget Declaration (local budget forecasts). 3. Approves the Average Annual Public Debt Management Strategy.
The President of Ukraine	By December 15: can submit proposals to the approved draft budget.
The Ministry of Finance of Ukraine (Ministry of Finance)	1. Draws up the draft state budget and makes proposals on the terms and procedure for its consideration. 2. By May 5: submits the Budget Declaration (forecast of local budgets) for consideration to the Cabinet of Ministers for the next two periods. 3. Develops the Average Annual Public Debt Management Strategy. 4. Monitors and analyzes the implementation of the strategy, determines priorities. 5. Formulates recommendations (without deadlines, specification of performers).
The Debt Agency of Ukraine	Implements a policy in the field of debt management, taking into account the medium-term strategy of public debt management and the conditions of compliance with the maximum amount of public debt at the end of the budget period.
The National Bank of Ukraine (NBU)	1. By March 1: develops and submits a macroeconomic forecast to the Ministry of Finance for budget policy approval. 2. Within the limits of the powers analyzes the financial system condition. 3. Develops and publishes the annual Financial Stability Report.
The National Security and Defense Council of Ukraine (NSDC)	1. By April 15: on the basis of the volume of expenditures and the provision of loans for national security and defense for the medium term prepares and submits reasonable proposals for their distribution among the main managers of the state budget to the Ministry of Finance. 2. Prepares proposals for the draft Law on the State Budget of Ukraine for its approval by the Cabinet of Ministers of Ukraine on articles related to national security and defense of Ukraine (with a reasoned justification).
The Ministry of Economic Development of Ukraine (Ministry of Economic Development)	1. By March 1: develops and submits a macroeconomic forecast to the Ministry of Finance for approval of budget policy for the following periods. 2. Develops a mechanism to ensure the economic security of the state. Twice a year it calculates the level of economic security, but does not publish it in free access.
The Financial Stability Council of Ukraine	Identifies threats to financial stability and develops recommendations.
The Ministry of Social Policy of Ukraine (Ministry of Social Policy)	By March 1: Develops and submits a forecast of social indicators to the Ministry of Finance for approval of budget policy for future periods.

Source: developed by the authors based on [34]

From the analysis of the information represented in the form of the analytical Table 6, it is possible to draw a conclusion about the lack of temporal and semantic coherence of actions between separate institutions of public power. This, in fact, gives grounds for concluding that there is a lack of integrity in shaping the design of economic security. Nor is it about the integrity of the institutional design of macro-financial security, or the security formed around the so-called «Ukrainian scoreboard».

Given all the above about the content of the «macrofinancial security» concept (phenomenon), the scoreboard for its assessment, as well as about the institutional design in general and its current Ukrainian implementation, we conclude that such an approach to Ukrainian institutional design can be substantiated (Fig. 1).

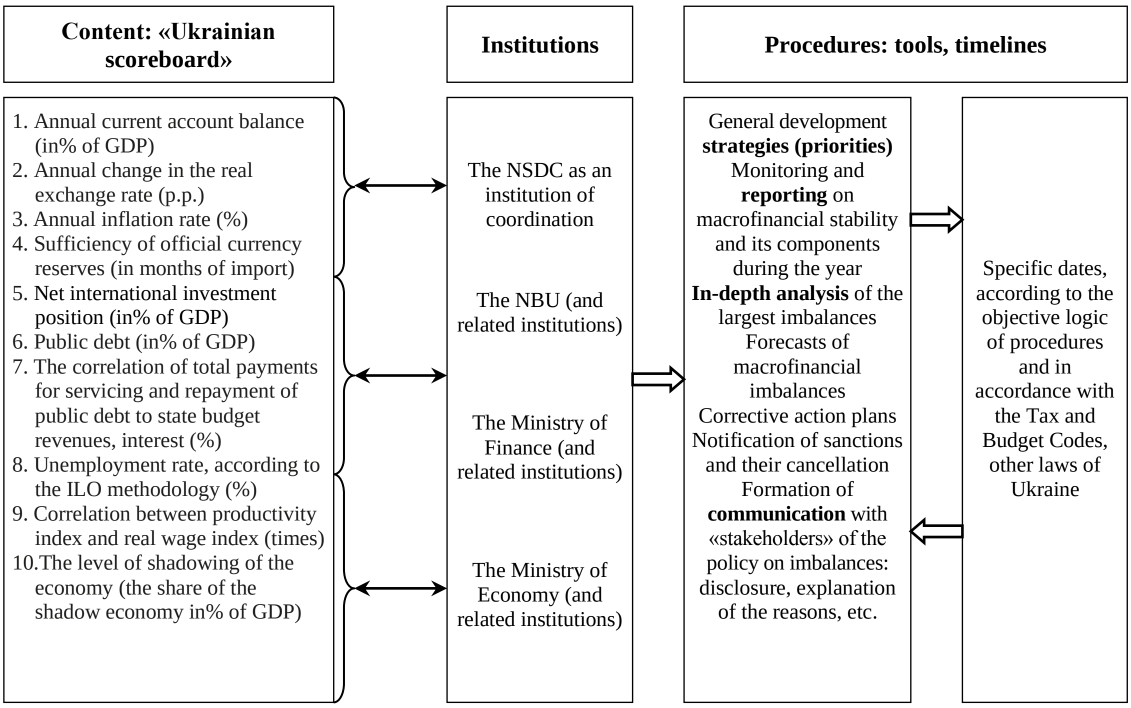

Fig. 1. The fundamentals of the Ukrainian institutional design of macrofinancial security

Source: authors' own

Fig. 1 presents the following ideas for the formation of the foundations of an integral design of macrofinancial security of the Ukrainian economy:

– among the key components of institutional design there are three elements: the content of activities (economic parameters, respectively, indicators through which macrofinancial stability and security are revealed), ***institutions*** (public authorities whose activities and interaction ensure macrofinancial stability), **procedures** (tools and timelines, using which institutions provide macrofinancial stability);

– the main content of the institutional design should form a limited range of indicators, which, in our case, is offered as a part of 10 positions. This list covers most of the indicators used by the EU countries, but also contains special indicators that reflect the peculiarities of the Ukrainian economy (9th and 10th positions). It is possible that the range of 10 indicators may expand due to additional specific measuring tools of macro-financial stability and security spheres;

– the core of macrofinancial security design is formed around the activities and interaction of three institutions of public power – the NBU, the Ministry of Finance and the Ministry of Economy. This follows from the natural functions of these institutions, given the spheres in which they act as national regulators. According to the content of the activities of the three mentioned institutions, reflected in the current regulatory framework and existing practice, they are objectively related to specific indicators of the «Ukrainian scoreboard». Accordingly, the content of balance (imbalance) sheet management activities should be distributed as follows: the NBU – 1st, 2nd, 3rd, 4th, 5th indicators, the Ministry of Finance of Ukraine – 5th, 6th and 7th indicators, the Ministry of Economy of Ukraine – 8th, 9th and 10th indicators. The «cross-responsibility» or co-responsibility of the NBU and the Ministry of Finance regarding the «Net international investment position» (in % to GDP) indicator is probable. If such an assumption is justified, it would involve the formulation of additional requirements for delimitation of liability, and therefore – for the coordination of procedures;

– state agencies, committees, special commissions (interaction centers), etc. can act as «connected» with the main institutions that are in this institutional design – the NBU, the Ministry of Finance of Ukraine and the Ministry of Economy of Ukraine. It is likely that «related institutions» may include either existing or newly created ones with new powers, subordination, competencies, etc.;

– the formation of a relevant institutional design of macrofinancial security could include the following tools tested in the practice of public management: strategies with corresponding priorities for the development of the economy and its individual spheres, scoreboard reports, in-depth analysis of imbalances with the largest deviations from the normative values, short-term forecasts of imbalances, corrective action plans, notification of sanctions, communication with stakeholders and beneficiaries of government monetary, financial, innovation, employment, etc. policies;

– the terms regarding the application of tools by individual institutions requires a deeper analysis, with regard to the current legal documents, to justify the necessary changes, as well as to justify the algorithms of interaction of these institutions;

– in our opinion, the subjects to which institutional design tools should be applied – reports, performance analysis, performance forecasts, notification of sanctions, etc. – should be not only direct subjects of economic (macrofinancial) sphere, local authorities, but also the actual institutions of public management in the person of specific managers, units of related government institutions, etc.

As a result of the research of the defined scientific issue according to the outlined purpose, such ***conclusions*** can be drawn:

– the following interpretation of the «microfinancial sphere» concept content corresponds to the task of forming the institutional design of macrofinancial security to the greatest extent: «This is a segment of the national economy, within which the interconnectedness (consistency) of financial and real assets is realized»;

– macrofinancial stability (security) of the national economy can be represented by the actual values of the expedient (substantiated) range of indicators, the use of which helps to identify imbalances in the relationship between the financial and real sectors, which may threaten the integrity of the national economy. The range of these indicators and the algorithms for their calculation may partially change due to new economic circumstances and challenges facing society and national regulators;

– currently, it is advisable to use 10 indicators to assess macrofinancial stability (security) in the composition of: the annual balance of the current account, the annual change in the real exchange rate, the annual inflation rate, the sufficiency of official currency reserves, public debt to GDP, net international investment position, state budget deficit, unemployment rate, the correlation between the productivity index and the real wage index;

– the most acceptable for the formation of institutional design is the following interpretation of its content: «It is a system of designed algorithms, rules, incentives and constraints that provide the values of society (communities) in certain spheres»;

– the main elements of the institutional design of macro-financial security can be considered: 1) the actual indicators for assessing macro-financial security, 2) public authority institutions, 3) procedures – tools and timelines – using which it is possible to identify and correct excessive imbalances;

– the three main national regulators – the NBU, the Ministry of Finance and the Ministry of Economic Development of Ukraine, as well as related public authorities are objectively involved in the regulation of the macrofinancial sphere, with regard to its content. Development strategies, monitoring and assessment, general and special reports, imbalance forecasts, corrective action plans, notification of sanctions application and cancellation, communication between national regulators and society (communities) on excessive imbalances should be the main tools for the formation of macrofinancial security within the established institutional design;

– further research in the field of macrofinancial stability (security) institutional design formation should be carried out in the following directions: improvement of methods (techniques) for macrofinancial imbalances assessment, content analysis of legal documents on the regulation of functions, tools, timelines, division of powers and responsibilities between government institutions, qualitative and quantitative analysis of the efficiency of the existing system of public management based on the results of macrofinancial stability, designing the necessary changes in all elements of institutional design.

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