“Implementation of the “bail-in” mechanism in the banking system of Ukraine”

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IMPLEMENTATION OF THE "BAIL-IN" MECHANISM IN THE BANKING SYSTEM OF UKRAINE

Abstract

One of the important tasks of the National Bank of Ukraine is to implement the Directive 2014/59/EU namely to introduce the "bail-in" mechanism, which will enable to resolve insolvency of banks or high probability of its occurrence at the expense of internal sources of banks in order to improve the Ukrainian banking system functioning and adapt it to the requirements and standards of the European Union. The foreign experience of the "bail-in" implementation shows that central banks succeeded in restructuring the balance sheets of banks and significantly reduced the risks of their activities. Thus, the purpose of the study is to substantiate the expediency of the "bail-in" mechanism introduction in banking system of Ukraine. The essence of the "bail-in" mechanism is the involvement of shareholders and lenders of the bank in order to restore its solvency by offsetting shareholders' equity, subordinated debt, and/or converting/writing off other long-term unsecured and unprovided liabilities in a subordinated debt or shares of the bank. In the process of scientific research, using the comparative method, the method of analogies and methods of logical generalization and scientific abstraction, the structure of the "bail-in" mechanism is determined, which consists of methods (conversion of liabilities into capital, liabilities write-off, capital write-off), provision (normative and legal, financial, organizational and institutional, technical and technological, informational) and levers (incentives, sanctions). Using the expert estimation method, it is proposed to evaluate the effectiveness of the "bail-in" mechanism by comparing the quality of the assets of the bank prior to its implementation and after the completion of the action. The results of the study show that, firstly, the implementation of the "bail-in" mechanism in Ukraine will enable the National Bank of Ukraine to interfere with the activities of banks at an early stage of the problems and to take all necessary measures to restore their solvency. Secondly, the "bail-in" mechanism implementation in Ukraine will increase banks' resilience to shock, crisis and contribute to long-term financial stability.

Keywords "bail-in" mechanism, bank insolvency, equity, subordinated debt, unsecured non-guaranteed bank liabilities, National Bank of Ukraine

JEL Classification G21, G28, G29

INTRODUCTION

Worldwide practice demonstrates that lately much attention has been focused on the raising of doing business responsibility of bank owners, that problems of banks functioning should be solved primarily the expense of funds of shareholders. Certainly, there are mechanisms of a preventive character (written warning, fines, financial rehabilitation, etc.) in Ukraine. However, taking into account global experience, there is a need to expand them and introduce new mechanisms that would allow restoring the banks' solvency, primarily at the expense of internal sources of the bank.

Thereby, there is a need to apply the "bail-in" mechanism, which has preventive character and allows to solve problems of banks' functioning at the expense of the funds of shareholders and lenders. On the

one hand, it will increase management responsibility of bank's owners and motivate them to pay more attention to the efficiency of doing their business, on the other hand, it will ensure confidence of banks' clients that the bank will be able to resume its solvency and continue its activities in the financial market.

The essence of the "bail-in" mechanism is the involvement of banks' shareholders and lenders into its solvency restoration by offsetting shareholders' equity, subordinated debt, and/or converting/writing off other long-term unsecured and non-guaranteed liabilities in a subordinated debt or shares of the bank.

The preconditions and implications of the "bail-in" mechanism implementation are detailed in the World Bank Group Document Bank resolution and "bail-in" in the EU: selected case studies pre and post BRRD (Bank resolution and "bail-in" in the EU: selected case studies pre and post BRRD, 2016). In particular, the way how central banks of Austria, Denmark, Italy, Spain, Greece, Cyprus, the Netherlands, Portugal, and Slovenia managed to successfully restructure banks' balances and significantly reduce the risks of banks with the help of the "bail-in" mechanism was analyzed.

During the crisis period (2014–2016), National Bank of Ukraine applied the following mechanisms in order to restore functioning of the Ukraine's banking system: "bail-out" (refinancing of banks, state assistance); a requirement for banks to capitalize their institutions; forced "business sale"; creation of "bridge banks"; withdrawal of banks from the market through liquidation.

At the same time, the National Bank of Ukraine has begun the implementation of anti-crisis mechanisms with delay, which were based on the use of internal sources of banks and which could contribute to the settlement of the banks until they were declared insolvent. This led to a rapid increase of the risk level, to banks withdrawal from the market and an increase of the burden on the State Budget of Ukraine.

From 2017, there was made a decision to use the "transformation of the bank into a legal entity for the continuation of activities in the non-banking sector" and "the bank's accession by a simplified procedure", which has a temporary character, as the regulatory document regulating its use is terminated on August 1, 2020 (The Law of Ukraine on the Simplification of Bank Restructuring and Capitalization Procedures, 2017).

1. LITERATURE REVIEW

Crises that constantly arise in the financial markets and extend to the banking system lead to the fact that even "too big to fail" banks become bankrupt. Thereby, scientists, economists and financiers began to pay considerable attention to development of mechanisms that would enable solving banks' insolvency at the expense of their internal sources.

Dewatripont (2014) indicated the benefits to countries using "bail-in" approach and justified the minimum requirement for own funds and eligible liabilities (MREL) and which should support banks in accordance with the requirements set by central banks.

Research by Eliasson, Jansson, Jansson (2014), Schäfer (2016), and Montanaro (2016) are devoted to the study of the "bail-in" impact on the increase of banks' resilience to crisis and on maintaining financial markets stability in the long run. The researchers, while considering problems of banking system and assessing the "cost of financial instability", came to the conclusion that owners and lenders should take responsibility for the problems of banks.

Andersen (2015) in his work substantiated the feasibility of implementing the Bank Recovery and Resolution Directive (BRRD) and determined that applying of "bail-in" in Denmark had given the opportunity to reduce banks' risks.

Munevar, Filoni (2016), while studying the problems of banks functioning in Italy (in particular, their low profitability and close to insolvent status), also identified the benefits of using "bail-in" in dealing with crisis situations of Italian banks.

It is worth to pay attention to the papers of Boccuzzi (2016) who was investigating the preconditions for emerging banking crises and ways to solve the problems of banks functioning. This scholar supports the position of Eliasson, Jansson, Jansson (2014), Schäfer (2016), Montanaro (2016) regarding the fact that settlement of banks insolvency should happen not only at the expense of public funds, but also through preventive mechanisms (the author justifies the importance of implementing the Bank Recovery and Resolution Directive (BRRD)).

Research by Micossi, Bruzzone, Cassella (2016) also confirms the appropriateness of the Bank Restoration Directive (BRRD) using and suggests that implementation of "bail-in" approach will ensure the successful completion of bank restructuring, will remove factors that encourage bankers to be over-risky, and will contribute to strengthening the financial system of European Union.

Lucchini, Moscianese, De Angelis, Benedetto (2017) indicate that implementation of the Bank Recovery and Resolution Directive (BRRD) will reduce the burden on public budgets of the countries and will allow other funds to be used to save insolvent banks. Scientists also believe that the primary financial responsibility for solvency recovery should lie with shareholders and subordinated creditors.

Worthy of note is the work of Honohan (2017) and **Imeson** (2017), where academics justify the benefits of "bail-in" compared with "bail-out", and insist that the problems of banks should primarily be addressed at the expense of their internal sources. They point out that implementation of "bail-in" will increase the security and reliability of European banking system. At the same time, **M. Imeson** (2017) substantiates the importance of the "bail-in" implementation and offered the Bank of England to take into account the minimum requirement for own funds and eligible liabilities (MREL) in order to make banks more resilient to financial turmoil. At the same time, the scientist does not idealize "bail-in", because MREL may not be enough to save the bank on the brink of bankruptcy. Under such conditions, state budget funds will be used to resolve the banks' insolvency.

The purpose of the article is to substantiate the expediency of implementing the "bail-in" mechanism in the banking system of Ukraine.

2. RESULTS

The best practices of European countries show that in order to increase banks' solvency, it is necessary to apply new mechanisms of influence on their activities, in particular, to implement the mechanism of "bail-in" (Bank resolution and "bail-in" in the EU: selected case studies pre and post BRRD, 2016). This was facilitated by the adoption of the Directive 2014/59 / EU of the European Parliament and the Council establishing a framework for the recovery and resolution of credit institutions and investment firms (2014).

Implementation of the Directive 2014/59/EU in Ukraine should be started with the introduction of the "bail-in" mechanism, which will help to solve problems of banks, primarily at the expense of internal sources, without increasing the burden on the State Budget of Ukraine.

Today almost all Ukrainian banks have a significant gap between economic capital (EC) (also called internal capital) and regulatory capital (RC). And forecasting assessments give grounds to assert that this gap is going to grow in case of not reducing EC or increasing RC. For this purpose, the National Bank of Ukraine has introduced a requirement to increase the minimum RC level, which can only partially reduce the gap as EC volumes in banks are large, but the increase of RC occurs gradually.

Another and more effective way to reduce the gap is to reduce EC, which is quite large in banks due to big volumes of non-performing loans in loan portfolios, but realization of this option is difficult, because it is necessary to write off the capital by the amount of NPL (NPL – non-performing loans). In addition, there are certain reasons that prevent the write-off of capital: the "bail-in" mechanism has not been implemented in Ukraine and, accordingly, there are no legislative documents regulating the conversion/write-off of liabilities/capital. Therefore, the decision to increase the size of regulatory capital is more rational now.

The loans' restructuring process, which is used today by banks to reduce EC, does not solve the issue of NPL reducing. Therefore, the task of the National Bank of Ukraine is to ensure the write-off /conversion of capital/liabilities and thus reduce banks' risks.

In our opinion, this problem can be solved by using the "bail-in" mechanism. Its implementation in Ukraine will allow interfering in banks' activity at the early stages of the problems emergence. As a result, the National Bank of Ukraine will be able to respond for the prevailing growth of EC over RC in a timely manner, since a significant excess of risks over the capital indicates an increase in the probability of bank insolvency.

Consequently, the main purpose of the "bail-in" mechanism is to restore bank solvency that has been recognized insolvent, or to prevent it from becoming insolvent without creating a burden on the State Budget of Ukraine. In fact, introduction of the "bail-in" mechanism is a preventive (preservative) measure, since it is implemented at an early stage of problems identification. Diagnostics and stress testing of banks are other preventive measures that help to identify a high probability of banks becoming insolvent and are regularly performed by National Bank of Ukraine.

The basis for using the "bail-in" mechanism is the decision of the National Bank of Ukraine based on the following conditions:

1) a bank is or is likely to become insolvent;

2) use of any alternative insolvency mechanisms is impossible;

3) liquidation of an insolvent bank will increase significant risks to financial stability and threaten public interest.

Taking into account that the National Bank of Ukraine will have the right to take a decision regarding the introduction of the "bail-in" mechanism in banks where the likelihood of becoming insolvent is high, there is a need to extend the regulator' powers, so that NBU has a right to interfere with the activities of banks on early stages of the problem in order to prevent them from being classified as insolvent.

Such an early intervention would greatly facilitate the regulatory process, since in this case implementation of the "bail-in" mechanism will not be large in scale (under the scale we mean the amount of funds to be written off/converted), since it will only involve the write-off of capital (losses will be borne only by shareholders). In addition, economic entities' confidence in the bank will remain. If the bank is already recognized as insolvent (and its liquidation endangers financial stability and public interest), the scale of the "bail-in" will be significantly larger and the conversion/write-off of liabilities cannot be avoided.

The generalization of results of the "bail-in" mechanism implementation in banks activities of foreign countries has allowed to distinguish its advantages and disadvantages (Table 1).

In our opinion, the introduction of the "bail-in" mechanism in Ukraine is a relevant and timely step, since firstly, financial stability will be ensured; secondly, banks' resilience to shock will increase; thirdly, the burden on the State Budget of Ukraine on rescuing insolvent banks will be minimized; fourthly, the National Bank of Ukraine will be able to respond quickly to certain financial problems of banks at an early stage of their occurrence and take all necessary measures to prevent banks liquidation (provided that bankruptcy of banks threatens financial stability and violates public interest).

The "bail-in" mechanism, on the one hand, will have a positive effect on the development of banks, as the volume of NPL and, accordingly, the size of EC will decrease. On the other hand, its implementation may lead to the dispersion of shares, changes in the bank's management, the increase of the burden on creditors and some other structural changes, which can cause dissatisfaction of owners and creditors.

It should be noted that the National Bank of Ukraine should be the body that initiates the implementation of the "bail-in" mechanism. Thereby, there is a need to expand the powers of the National Bank of Ukraine in terms of supervision and regulation (to amend the Law of Ukraine on the National Bank of Ukraine) to improve prudential supervision approaches in order to timely identify problems of banks at the initial stages of their occurrence.

Table 1. Advantages and disadvantages of implementing the "bail-in" mechanism

Advantages	Disadvantages
1. Reducing the burden on the State Budget conserning rescuing insolvent banks, as solving banking problems is primarily done at the expense of their internal sources.	1. Possible reduction of customer confidence in banks because of their unsecured and non-guaranteed liabilities may be converted into capital or written off.
2. Increasing the motivation of bank shareholders to control business and ensure the creation of effective risk management, as in case of financial problems, losses will be borne firstly by shareholders, what will significantly reduce the proportion of their shares.	2. The emergence of moral hazard associated with the fact that the owners of assets (depositors, creditors) and shareholders may be deprived of the right to their assets.
3. Ensuring the continuity of banking operations, which will minimize the negative impact on financial stability, prevent the destruction of the value of banking business.	3. Probable complications with the placement of convertible bonds on the stock market, as well as possible difficulties with the search for investors who will agree to purchase these convertible bonds.
4. Ensuring banks' resilience to the occurrence of shocks and crises.	4. Complications with the implementation of the "bail-in" mechanism in those banks whose liabilities consist mostly of retail/corporate deposits, or if banks' liabilities are in a particular segment of the market.
5. Growing of confidence among banks clients, because even if crises situations occures, the bank will be able to resume its solvency and continue its activities in the banking market.	

Figure 1 presents the structure of the "bail-in" mechanism as an interconnected set of specific methods, levers and necessary provision, through which the impact of subjects on objects is made, as well as principles on the basis of which it should be implemented, and functions, which should be provided by this mechanism.

It should be noted that there are several options for using the "bail-in" mechanism. The first one is related to the fact that the implementation of this mechanism should be carried out by the Deposit Guarantee Fund (DGF), i.e., without creation of the Banks Financing Fund. In fact, this means that banks will not make appropriate contributions to the Banks Financing Fund, which means they will not have additional expenditures. In this case, it will be necessary only to maintain MREL by banks, which is established by the National Bank of Ukraine and to amend the Law of Ukraine on the National Bank of Ukraine, the Civil Code of Ukraine and the Law of Ukraine on Households Deposit Guarantee System.

The second option concerns the creation of the Banks Financing Fund that will foresee making relevant contributions by banks, and justify the target level of funds that should be settled on the account of the Banks Financing Fund and the amount of funds that can be provided to banks as financial aid to complete the implementation of the "bail-in" mechanism.

At the same time, the sequence of write-off/conversion of capital/liabilities in these two cases remains unchanged. The only difference is that the second option will require additional deductions to the Banks Financing Fund, which increases banks' expenditures.

Given the financial situation of banks in Ukraine, it is more rational to transfer functions of the "bail-in" mechanism implementation to the DGF now, since additional banks' deductions (in case of the Banks Financing Fund creation) will only exacerbate their problems. So, in order to introduce the "bail-in" mechanism in the banking system of Ukraine the first version of its implementation should be choosen.

Nevertheless, given the fact that developed European countries, in particular Luxembourg (Law of 18 December 2015 implementing BRRD and DGSD), the Netherlands (Resolution funds: Die Nederlandische Bank), Sweden (Magnusson, Carlstrom, 2017), Portugal (45% increase in the rate for the Resolution Fund in 2017, 2017), etc. are working on the creation of the Banks Financing Fund (in the European practice it has an alternative name – the Single Resolution Fund), as well as taking into account Ukraine's European integration, in future (strategically), there will also arise a need for the Banks Financing Fund creation. In accordance with this, the "bail-in" mechanism and its implementation will be set out in the light of the Banks Financing Fund creation.

We believe that the operation of the "bail-in" mechanism is more successful, provided that it complies with the Directive 2014/59/EU, which foresees Banks Financing Fund creation, which is directly an object of the mechanism itself and in terms of organizational, legal and economic content, it may be a non-state institution, which is funded only at the expense of bank contributions and which disposes funds only within received contributions. The activities of the Banks Financing Fund should be governed by relevant regulations to be developed.

At the same time, it is necessary to amend existing legal and regulatory documents (in particular, the Law of Ukraine on Banks and Banking, The Law of Ukraine on the National Bank of Ukraine, Instructions on the Regulating of Activity Banks in Ukraine, etc.) in the part which determines the amount to be paid to the Banks Financing Fund, as well as the frequency of such payments. In addition, the National Bank of Ukraine, the same as in the case of MREL establishment, should formulate a plan according to which the level of interest on contributions will gradually increase and determine the period during which the target amount of funds on the account of the Banks Financing Fund should be reached.

The effectiveness of the "bail-in" mechanism depends on the correctness of the appropriate method choice. In particular, in order to use the first two methods, depicted in Figure 1, namely, the conversion of liabilities into capital and write-off of liabilities, it is necessary to have at their disposal the necessary amount of subordinated debt and unsecured non-guaranteed liabilities of the bank.

At the same time, during write-off/conversion it is possible to disregard:

- individual deposits guaranteed by the DGF (up to UAH 200,000);
- secured liabilities (including secured bonds, liabilities applicable to hedging);
- obligations based on the fiduciary relations between the bank and another entity in case that this subject is protected by law, even in case of a decision on bank insolvency;
- obligations to systems (including estimated ones) or their participants, whose term of payment will be less than 7 days;
- obligations to employees in terms of payment of their wages, retirement benefits, fixed remuneration (except for variable remuneration);
- obligations to creditors, who provide the bank with goods/services (including IT-services, utilities, lease services, services for premises of the bank);
- obligations to tax authorities and social security bodies, DGF regarding contributions to be paid regularly by banks.

In order to protect the deposits of individuals exceeding UAH 200,000, microenterprises, small and medium enterprises, it is possible to recommend to the National Bank of Ukraine and the DGF to consider the possibility of giving such deposits a higher priority, compared to ordinary unsecured creditors' liabilities.

The use of the third method of the "bail-in" mechanism implementation (the write-off of bank's capital) implies the availability of 1st and 2nd levels capital, information on which is contained in the Instructions on the Regulating of Activity Banks in Ukraine (Instructions on the Regulating of Activity Banks in Ukraine, 2001).

The main types of the "bail-in" mechanism provision are:

- normative and legal – existence of the relevant legislation, which is guided by the National Bank of Ukraine while implementing the "bail-in" mechanism;
- financial – availability of sufficient amount of equity/liabilities required for the write-off/conversion of the minimum requirement for own funds and eligible liabilities (MREL) and availability of sufficient funds on the account of the Banks Financing Fund;

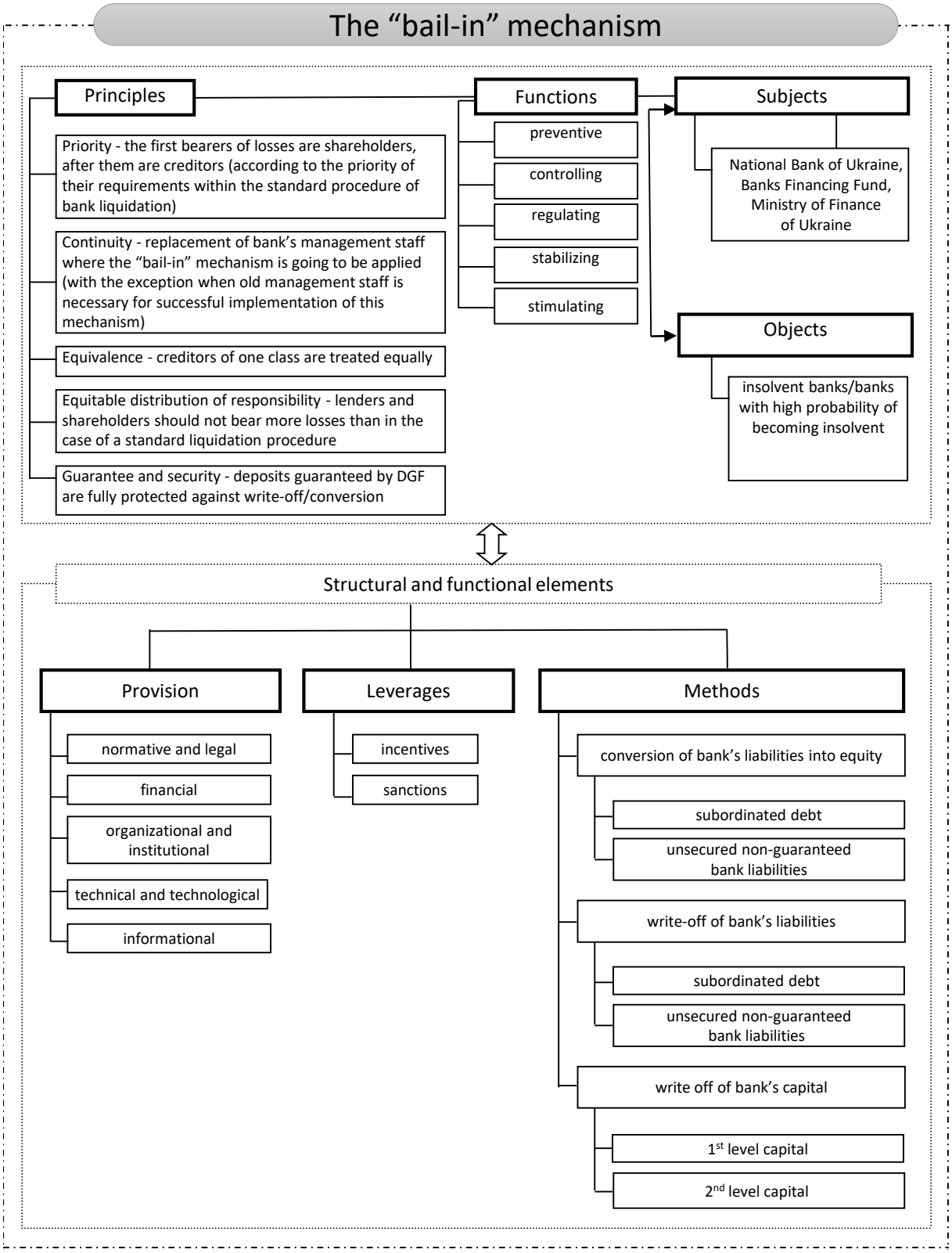

Figure 1. The structure of the "bail-in" mechanism

- organizational and institutional – existence of a special office in the organizational structure of the National Bank of Ukraine (perhaps even at the Department of Banking Supervision) that would initiate the introduction of the "bail-in" mechanism, as well as creation of the Banks Financing Fund, a non-government institution that in case of lack of the minimum requirement for own funds and eligible liabilities (MREL), is able to provide monetary assistance to banks for successful implementation of the "bail-in" mechanism;

- technical and technological – availability of the latest competitive software, innovative technologies for the prompt, uninterrupted and effective implementation of the "bail-in" mechanism;

- informational – availability of sufficient amount of collected and processed data in order to make a decision on the necessity to use the "bail-in" mechanism, notification of the relevant economic entities (DGF, National Commission for State Regulation of Financial Services Markets, etc.) about the beginning and completion of this mechanism implementation.

The main levers that ensure the success of the "bail-in" mechanism are incentives and sanctions, among which economic, financial, legal and social ones should be distinguished. The essence of economic levers is to ensure stability in financial markets and not to increase risks in the industry, whose liabilities are subject to write-off/conversion after the implementation of the "bail-in" mechanism.

Financial leverages provide avoiding unnecessary destruction of business value; the amount of losses of shareholders/creditors should not exceed the amount of losses that they may incurre in case of bank liquidation.

Legal leverages mean that the write-off/conversion of equity/liabilities should be in accordance with the regulatory documents, which provides the development and adoption of regulations on the organization of the activities of the Banks Financing Fund, making the amendments to the Civil Code of Ukraine, the Law of Ukraine on Banks and Banking, the Law of Ukraine on the National Bank of Ukraine, the Law of Ukraine on Households Deposit Guarantee System, the provisions on the withdrawal from the market of the insolvent bank, Instructions on the Regulating of Activity Banks in Ukraine, etc.

It is necessary to understand that social leverages include protection of bank depositors, state funds from inaction/inappropriate behavior of the bank management, support of the bank confidence as an institution, which can restore its solvency even in case of recognition of its insolvency or in case when the probability of becoming insolvent is high. If liabilities of creditors are not protected by law and the National Bank of Ukraine does not exclude them from the "bail-in" mechanism, then they can be converted into capital.

In order to ensure the effective performance of the "bail-in" mechanism, the National Bank of Ukraine may be offered undertake the function of controlling maintenance of the minimum requirements for eligible liabilities and own funds (MREL) and payment of established amount of contributions by banks to the Banks Financing Fund.

The main reasons that determine the appropriateness of maintaining the minimum requirements for eligible liabilities and own funds (MREL) by banks at the level set by the National Bank of Ukraine are:

1. Guarantee that in case of the "bail-in" mechanism realization the amount of MREL funds is sufficient to restore bank' solvency and it continues its activities in the banking market.

2. If some liabilities would be eliminated from the conversion/write-off mechanism, the bank has the required amount of other liabilities that enables to convert/write off the amount of money determined by the National Bank of Ukraine.

As mentioned in the Directive 2014/59/EU of the European Parliament and the Council in order to

calculate the minimum requirements for eligible liabilities and own funds (Directive 2014/59/EU of the European Parliament and the Council (May 15, 2014) establishing a framework for the recovery and resolution of credit institutions and investment firms, 2014), the following formula is used:

$$MREL = \frac{Eq + L_{write\ off}}{L_{general} + Eq} \cdot 100\%, \quad (1)$$

where Eq – equity of the bank; $L_{write\ off}$ – liabilities that can be written off; $L_{general}$ – general liabilities.

We should note that the numerator in formula (1) includes equity and liabilities that can be written off, including subordinated debt securities and unsecured debt liabilities with a maturity of at least 12 months. Thus, liabilities that can be written off and, accordingly, may be included in the numerator in formula (1), must satisfy certain conditions, namely:

- the instrument is released and paid in full amouunt;
- the obligation does not belong to the bank, it is not secured and not guaranteed by the bank;
- the purchase of this instrument directly/indirectly is not funded by the bank;
- the maturity of the obligation is 1 year or more;
- the obligation does not arise from the derivative instrument;
- the obligation is not a deposit that has priority in the hierarchy of claims satisfaction during the standard liquidation procedure of the bank (although in certain cases the bank may be allowed to include non-guaranteed deposits under the decision of the National Bank of Ukraine).

According to the Directive 2014/59/EU, the minimum requirement for own funds and eligible liabilities (MREL) is 8% of the liabilities and equity of banks. In order to objectively determine which level of MREL should be in Ukraine, it is necessary to analyze the reporting data of banks. In this case, MREL must be set individually for each bank.

The factors that affect the establishment of the minimum requirement for own funds and eligible liabilities (MREL) by the National Bank of Ukraine are:

- size of the bank;
- business model of the bank;
- riskiness level of the bank;
- amount of deposits guaranteed by the DGF;
- degree of connection of the bank with other entities;
- consequences of the negative impact of the bank liquidation on financial stability.

Taking into account that compliance with MREL must be regulated by a legislative act, it is necessary to amend the relevant regulatory acts (in particular, the Law of Ukraine On Banks and Banking, Instructions on the Regulating of Activity Banks in Ukraine, the Law of Ukraine on Households Deposit Guarantee System, etc.).

If we consider the size of MREL components in European countries, we can say that equity and another subordinated debt make up almost 6% of total liabilities and equity. The share of unsecured debt (with a maturity more than 1 year) is about 6.8% in the total amount of liabilities and equity.

At the same time, unsecured liabilities (maturing more than 1 year), other than bonds, partly uncovered deposits with a maturity of more than one year may also be included in MREL. They make up only 2.8% of total liabilities and equity. Thus, the average MREL is in the range between 6% and 16%. This means that subordinated debt and equity capital is within 6% of the total liabilities. If unsecured and non-guaranteed liabilities (maturing more than 1 year) and non-guaranteed deposits with maturity not less than 1 year are included, then MREL will increase to 16% (EBA FINAL Draft Regulatory

Technical Standards on criteria for determining the minimum requirement for own funds and eligible liabilities under Directive 2014/59/EU, 2015).

Consequently, MREL structure has several levels:

Level 1 includes banks' equity capital and subordinated liabilities that are not included in equity;

Level 2 - Level 1 funds plus other unsecured and non-guaranteed liabilities (excluding non-guaranteed deposits) with a maturity not less than 1 year;

Level 3 - Level 2 funds and unsecured non-guaranteed deposits of legal entities with maturity over 1 year, non-guaranteed deposits of individuals with maturity over 1 year.

At the same time, before making the decision about including level 3 in MREL, there should be an analysis conducted aimed to predict all possible negative consequences of reducing the banks' deposit base, since depositors can significantly reduce the amount of funds placed in deposit accounts and, as a result, it will worsen the functioning of the banking system of Ukraine. In case three-level structure of MREL violates normal functioning of banks, it is sufficient to use the two-level structure.

According to the Directive 2014/59/EU (Directive 2014/59/EU of the European Parliament and the Council (May 15, 2014) establishing a framework for the recovery and resolution of credit institutions and investment firms, 2014), the contribution of each bank to the Banks Financing Fund should be caclulated by the following formula:

$$C_{ontrib}B_{(i)} = \frac{L_{general(i)} - Eq_{(i)} - D_{guaranteed(i)}}{L_{general(\sum i)} - Eq_{(\sum i)} - D_{guaranteed(\sum i)}}, \quad (2)$$

where $C_{ontrib}B_{(i)}$ – bank's contribution; $L_{general\ (i)}$ – general liabilities of the bank; $Eq_{(i)}$ – equity of the bank; $D_{guaranteed\ (i)}$ – guaranteed bank deposits; $L_{general\ (\Sigma i)}$ – general liabilities of the banking sector, $Eq_{\ (\Sigma i)}$ – equity capital of the banking sector; $D_{guaranteed\ (\Sigma i)}$ – guaranteed deposits of the banking sector.

In addition, bank's contribution should be weighed against the riskiness of the bank's activity. As stated in Your Contribution to the Single Resolution Fund (2015), weighing the risk factor takes into account four risk indicators and varies from 0.8 to 1.5. These indicators are also indicated in the Directive 2014/59/EU (Directive 2014/59/EU of the European Parliament and the Council (May 15, 2014) establishing a framework for the recovery and resolution of credit institutions and investment firms, 2014), in particular: the risk to which the bank is exposed, including the importance of its trading activities, off-balance-sheet risks and the level of leverage; the stability and diversity of sources of financing and non-leveraged highly liquid assets; financial condition of the bank; probability of initiating bank's insolvency; the degree of state financial support to the bank in the past; the importance of the bank in ensuring stability of the financial system in the country.

Banks Financing Fund may provide funds to banks for: compensation of funds to shareholders/creditors in case they incurred more losses than during the standard liquidation procedure; compensation of funds in case of full/partial exclusion of some liabilities from the write-off/conversion procedure. The maximum amount of funds that may be provided by the Banks Financing Fund under Directive 2014/59/EU is not more than 5% of the aggregate liabilities and equity of the bank, though, such the level is not justified for Ukraine.

The main condition that would allow banks to apply to the Banks Financing Fund is the complete cancellation of MREL funds by the bank. The bank cannot seek assistance from this institution if it has not completely written off MREL funds.

In addition, the National Bank of Ukraine must also mathematically substantiate the amount of funds that should ultimately be accumulated on the account of the Banks Financing Fund. This is due to the fact that the amount defined in

Directive 2014/59/EU (Directive 2014/59/EU of the European Parliament and the Council (May 15, 2014) establishing a framework for the recovery and resolution of credit institutions and investment firms, 2014) is at least 1% of total guaranteed deposits in all banks, but it may not correspond to the level that should be in Ukraine. At the same time, the National Bank of Ukraine should take into account the influence of the relevant factors, in particular, the number and size of "too big to fail" banks in Ukraine, riskiness of their activities, etc.

If the target level (for example, set by the National Bank of Ukraine at 1%) is reached, then contributions to the Banks Financing Fund can be suspended. If the amount of contributions has decreased, then it is necessary to restore payment of funds to this institution again.

The algorithm for implementing the "bail-in" mechanism provided that the Banks Financing Fund is created is presented in Figure 2. Upon completion of its implementation, the National Bank of Ukraine should assess the effectiveness of the "bail-in" mechanism, that is to compare assets quality of the bank before and after its completion. If assets quality is not significantly improved, then there is a need to improve the "bail-in" mechanism itself.

It should be noted that MREL at the level of 8% (Figure 2) and the maximum amount that can be provided by the Banks Financing Fund (5% of the total liabilities and equity of the bank) is taken from the Directive 2014/59/EU. It's likely that both indicators should be different in Ukraine. At the same time, only those bodies with access to a closed database will be able to calculate its size. Given the limitation of information that may be public, we can not count the above indicators in our study.

For a better understanding of the "bail-in" mechanism implementation algorithm, which is presented in Figure 2, it is necessary to make the corresponding clarifications:

1) before the implementation of the item (3), the National Bank of Ukraine decides to dismiss the bank's management staff (in certain cases it may leave the old management staff only if it's necessary to complete the implementation of the "bail-in" mechanism);

2) in case of implementation of the item (3.1), the National Bank of Ukraine may require the bank to issue 1st level capital instruments to holders of those instruments (shares);

3) during the implementation of the item (3.4), the National Bank of Ukraine allows writing-off/conversioning of liabilities arising out of derivative financial agreements (forward, futures, swap agreements), provided that they will be closed. In case they are open, the National Bank of Ukraine have the power (authority) to close them. If such liabilities do not belong to those liabilities, that may be converted/written-off, then they may be left open;

4) during the implementation of the item (3.4), the National Bank of Ukraine may exclude some of the liabilities from the conversion/write-off mechanism fully or partially, if this can not be done within a specified time. Their exclusion is necessary in order not to violate the main functions of the bank and not to create a threat that violates the bank's main activities, as well as to prevent shock and imbalances in financial markets, or if losses of shareholders/creditors exceed those that they would have incurred in case of bank liquidation. There are two ways to compensate the amount of excluded liabilities: first one is to seek assistance from the Banks Financing Fund; the second one is to increase the amount of conversion/write-off of other liabilities that can be converted/written off;

5) while implementing the items (3.1)-(3.4), the National Bank of Ukraine assesses the acquisition/increase of a significant share in the bank's capital by a buyer as a result of conversion / write-off, but does not prevent the implementation of the "bail-in" mechanism;

6) while implementating the items (3.1)-(3.4), the National Bank of Ukraine verifies that shareholders and lenders have not suffered more than in case of bank liquidation. If these losses are higher, then it is possible to contact the Banks Financing Fund for compensation of excess amount.

First, it is necessary to make amendments to existing regulatory documents.

Second, to expand the powers of the National Bank of Ukraine in the field of supervision in order to obtain early intervention in bank activities, which will ensure the "bail-in" mechanism usage not only in case of bank insolvency, but also when its likelihood of becoming insolvent is high.

Third, to improve the evaluation criteria, which can be used to conclude that the bank is likely to become insolvent.

Fourth, to create the Banks Financing Fund and to determine its management staff.

Fifth, to calculate the target level of funds to be accumulated on the account of the Banks Financing Fund and the maximum amount of funds that can be provided to banks by this Fund.

Sixth, to justify the amount of contributions to the Banks Financing Fund and its frequency.

Seventh, to establish MREL, which should support banks; draw up a schedule according to which banks must achieve MREL established by the National Bank of Ukraine, as well as to determine the capital/liability instruments that will be included in MREL calculation.

Therefore, before starting to use the "bail-in" mechanism, a lot of preparatory work should be done.

CONCLUSION

Consequently, the results of the study show that the aim has been achieved. The study of the experience of European countries demonstrates that central banks were able to successfully restructure their bank balances with the help of "bail-in" mechanism and significantly reduce risks in their operations. The latest crisis in Ukraine (2014–2016) proved that there were insufficient mechanisms at the disposal of the National Bank of Ukraine to resolve insolvency of banks and, accordingly, reduce risks. Therefore, the introduction of the "bail-in" mechanism in Ukraine is a very topical issue today and, of course, it will become one of the effective ways to improve the functioning of Ukrainian banking system.

The "bail-in" mechanism is the involvement of shareholders and lenders of the bank in restoring its solvency through the write-off of shareholders' equity, subordinated debt, and/or conversion/write-off of other long-term non-guaranteed and unsecured liabilities in a subordinated debt or shares of the bank.

If we consider the current (short-term) and strategic period of Ukrainian banking system functioning, it is substantiated that in the current period, it is expedient to transfer the function of implementing the "bail-in" mechanism to the DGF, but in the strategic one, it is necessary to create the Banks Financing Fund by analogy as in developed countries.

Summarizing the above study, we can affirm that introduction of the "bail-in" mechanism in Ukraine will be an effective instrument for resolving banks insolvency or its high probability at the expense of domestic sources of banks, for increasing banks' resilience to shock effects, crisis, as well as for promoting long-term financial stability in the long run.

Further research is needed on the issue of substantiating the size of MREL in banks; providing that the Banks Financing Fund is established the size of bank contributions, as well as the amount of funds to be collected in the account of the Banks Financing Fund must be defined; also it is necessary to determine the maximum level of funds, according to which the Banks Financing Fund will be able to provide financial assistance to banks in order to complete the implementation of the "bail-in" mechanism.

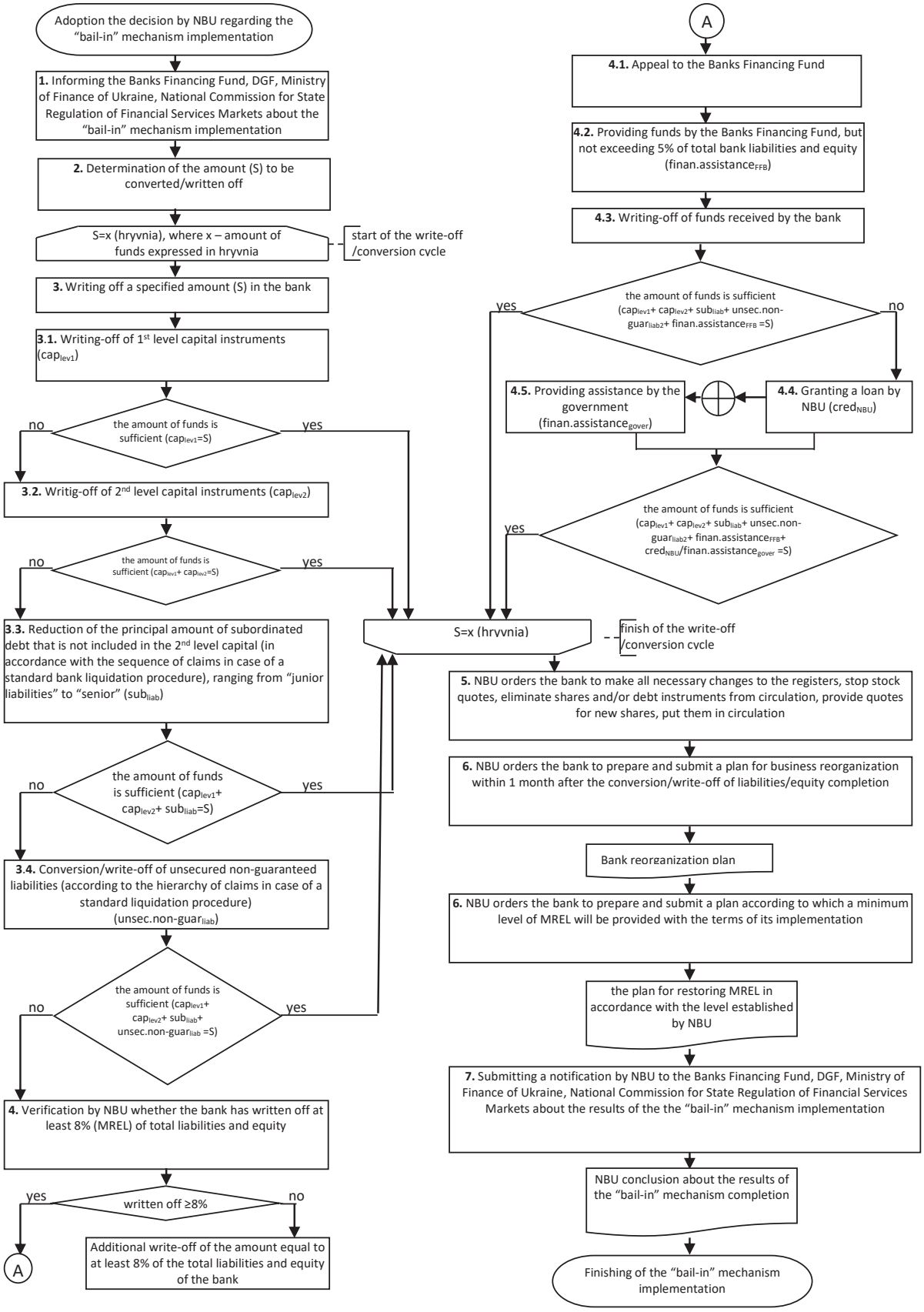

Figure 2. Algorithm for implementation of the "bail-in" mechanism in Ukraine under the condition of the Banks Financing Fund creation

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