MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
V.N. KARAZIN KHARKIV NATIONAL UNIVERSITY

Karazin Banking Institute

Department: **Banking Business and Financial Technologies**

Specialty: **072 Finance, banking and insurance**

Educational program: **Financial technologies and banking management**

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QUALIFYING MASTER'S THESIS

on the topic:

THE CONCEPT OF "FINANCIAL STABILITY OF BANKS": ESSENCE AND FEATURES

submitted by the applicant of higher education

Yu Shuang

The qualifying master's thesis was accepted for defense by the decision of the Department of Banking Business and Financial Technologies

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MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
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Head of department of
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ASSIGNMENT
FOR A QUALIFYING MASTER’S THESIS
assigned to
Yu Shuang

1. The topic of the thesis: "THE CONCEPT OF “FINANCIAL STABILITY OF BANKS”: ESSENCE AND FEATURES"
Scientific advisor - Doctor of Economics, Professor Nataliia Pohorelenko
approved by the orders of the University dated: "17" September 2024, No. 4601-3k/1025 and "15" November 2024, No. 4601-3k/1491.
2. Deadline for submission of thesis by the student: 18.11.2024
3. List of questions to be researched:
In chapter 1: to analyze the banking system from the perspective of the essence and principles of organization; the main approaches to the formation of a strategy for managing the financial stability of banks are presented; the mandate of the Central Bank in terms of financial stability is determined.
In chapter 2: analysis of transformation processes in the monetary policy of the National Bank of Ukraine; the tools for monitoring and assessing the financial stability of banks are outlined; risk management is characterized in the context of the financial stability management framework.
In chapter 3: the use of stress testing to diagnose the level of financial stability of banks is proposed; financial security as a component of the system of ensuring financial stability of banks is substantiated; systematized approaches to the management of problem assets of banks.

4. Plan of qualifying master's thesis

№	Name of work stages
1	Selection of the topic
2	Approval of the plan and tasks of thesis
3	Implementation of thesis
4	Submission of thesis to the department to check for the presence of borrowings from other documents
5	Completion of the admission procedure for the protection of thesis
6	Defence of thesis

5. Date of assignment issuance 25.09.2024

Student Yu Shuang Yu Shuang

Scientific advisor Nataliia Pohorelenko

ABSTRACT
ON QUALIFICATION MASTER'S THESIS
"THE CONCEPT OF "FINANCIAL **STABILITY OF BANKS": ESSENCE AND FEATURES" OF**
YU SHUANG

Qualification Master's Thesis contains 83 pages, 20 tables, 13 figures, 80 references.

Object of research is the banking system.

Subject of research is theoretical and practical principles, aspects and approaches to ensuring the financial stability of the banking system.

Purpose of qualification master's work is to examine the theoretical foundations of banks' activities, analyze approaches to organization, and search for directions for further development of the system of ensuring financial stability of banks in the current environment.

Tasks of qualification master's work are:

- to analyze the banking system from the perspective of the essence and principles of organization;
- the main approaches to the formation of a strategy for managing the financial stability of banks are presented;
- the mandate of the Central Bank in terms of financial stability is determined;
- analysis of transformation processes in the monetary policy of the National Bank of Ukraine;
- the tools for monitoring and assessing the financial stability of banks are outlined;
- risk management is characterized in the context of the financial stability management framework;
- the use of stress testing to diagnose the level of financial stability of banks is proposed;
- financial security as a component of the system of ensuring financial stability of banks is substantiated;
- systematized approaches to the management of problem assets of banks.

According to results of the research, a systematized study, which is a synthesis of theory and practice, has been formed, and which represents a "road map" for the formation of an effective system for ensuring the financial stability of the banking system.

The obtained results can be used when formulating components that will help ensure the financial stability of the banking system to bring the national economy to a qualitatively new level.

KEY WORDS: BANKING ACTIVITIES, FINANCIAL STABILITY, CENTRAL BANK, RISK MANAGEMENT, STRESS TESTING, FINANCIAL SECURITY, PROBLEM ASSETS.

CONTENTS

INTRODUCTION

The banking system plays a key role in the formation and development of the country's economy and affects the sustainability of interaction between business entities. This is due to the functional responsibilities assigned to the banking system, which it performs in the overall structure of economic relations and, above all, its ability to generate additional and redistribute free funds for the needs of all participants in these processes - the state, individual banks, and bank customers.

The main condition for the development of any banking system is its efficiency and functional orientation towards the needs of the country's economic development, ensuring the functioning of individual business entities, meeting obligations to bank customers and providing necessary services to the population. In turn, achieving these goals requires a stable and efficient banking system.

This issue is receiving considerable attention from leading Ukrainian scholars and practitioners. Among them: Galchynskyi A.S., Baranovskyi O.I., Moroz A.M., Pshyk B.I., Lesik V.O., Epifanov A.O., Dovgan J.I., Kovalenko V.V. and many others. The issue of ensuring financial stability is the subject of scientific interests of many foreign researchers, including Borio C., Crockett A., Daley J., Demirguc-Kunt A., Gonzales-Hermosillo B., Jacobson T., Minsky H. P., Mishkin F. S., Padoa-Schioppa T., Schinasi G. and many others. Their works are comprehensive, but it is the constant dynamism of the conditions in which the banking system operates and the constant internal and external influences caused by these conditions that justify the need for constant research and monitoring of the functioning of the banking system and the system of ensuring its financial system.

It is these peculiarities that have necessitated this study.

The purpose of the study is to examine the theoretical foundations of banks' activities, analyze approaches to organization, and search for directions for further development of the system of ensuring financial stability of banks in the current environment.

To achieve this goal, the following research objectives were formulated in the paper:

- to analyze the banking system from the perspective of the essence and principles of organization;
- the main approaches to the formation of a strategy for managing the financial stability of banks are presented;
- the mandate of the Central Bank in terms of financial stability is determined;
- analysis of transformation processes in the monetary policy of the National Bank of Ukraine;
- the tools for monitoring and assessing the financial stability of banks are outlined;
- risk management is characterized in the context of the financial stability management framework;
- the use of stress testing to diagnose the level of financial stability of banks is proposed;
- financial security as a component of the system of ensuring financial stability of banks is substantiated;
- systematized approaches to the management of problem assets of banks.

The object of research is the banking system.

The subject of the study is theoretical and practical principles, aspects and approaches to ensuring the financial stability of the banking system.

The content of this study was revealed using general and special research methods, namely: graphical method, methods of system-structural and comparative analysis; methods of scientific abstraction, classification, systematic generalization; methods of statistical and economic analysis and other methods.

The scientific novelty of the qualifying master's thesis is to summarize the basic foundations of the system of ensuring the financial stability of banks, which makes it possible to use its results as an appropriate practical tool.

This important issue is sufficiently regulated by the relevant regulations, both national and international, which constantly adapt their components in accordance with external and internal changes.

The information base of this study is based on statistical and scientific sources of the National Bank of Ukraine, international regulators on this issue, and financial statements of banking institutions.

The implementation of the theoretical and practical results presented in this master's thesis will contribute to a comprehensive view of this issue, and may well be used as a roadmap for those interested in this issue.

CHAPTER 1
THEORETICAL ASPECTS OF FINANCIAL STABILITY OF THE BANKING SYSTEM

1.1. Financial Stability of the Banking System: Essence, Characteristics and Importance for the Development of the Banking Sector

The banking system of each country, regardless of its economic model and organization of social relations, plays a crucial role in ensuring the flow of cash flows.

It participates in performing the main functions of the financial system by

- ensuring the stability of the currency;
- ensuring the movement of financial resources in time, across state borders and between certain industries, etc;
- developing and providing risk management methods;
- providing a mechanism for pooling financial resources and their distribution among individual business entities;
- ensuring the smooth functioning of payment systems, in particular by improving clearing and settlement methods to facilitate trade;
- Ensuring that the market is saturated with price information that allows for the coordination of decentralized decision-making in certain sectors of the economy.

The stability of the banking system is characterized by the reliability, balance, and proportionality of its structural elements, and the ability to maintain a stable balance and reliability over time.

Stability is a multifaceted concept that characterizes the qualitative state of a system in dynamics, stable equilibrium is one of the components of stability, and resilience is a narrower concept than the previous ones.

In the economic literature, some authors equate the concepts of “sustainability”, “stability” and “reliability” when characterizing the state of a bank.

Identifying them or considering them as separate concepts, they nevertheless contain differences. These concepts are closely interrelated and in combination allow achieving an effective level of functioning of the object, since they characterize its state from different sides (table 1.1).

Table 1.1.

Differences between the economic concepts of
“stability”, “reliability” and “sustainability” of a bank

	Reliability	Stability	Sustainability
Essence of the concept	The ability of the object to inspire confidence in the subjects cooperating with it to realize their interests	The ability of an object to maintain a state of equilibrium for a long time or return to it in the event of a short-term disturbance	The ability of an object to develop and function under the influence of endogenous and exogenous factors
Assessment subjects	The range of subjects is limited to those interested in realizing their interests (customers, employees, shareholders, potential investors)	A wide range of micro- and macro-level stakeholders (customers, employees, shareholders, the state represented by the national bank and other institutions)	The range of subjects is limited to specialists (business analysts, risk managers, top managers)
Evaluation criteria	A wide range of criteria depends on the goal and the group of evaluators	The only criterion for maintaining the sustainability of indicators	A standardized set of criteria that includes financial indicators with thresholds

Source: [1]

Thus, the stability of the banking system is a comprehensive characteristic of the state of the banking system, in which its essence and purpose in the country's economic system are realized, its functions are adequately and efficiently performed, and its ability to maintain equilibrium and restore its condition after external shocks or increased imbalances, any deviations from safe parameters caused by crisis phenomena (economic downturn, financial crisis, economic transformation, etc.) is ensured.

The very concept of “stability” (among those being compared) has two important characteristics: “stable equilibrium” (a balanced state in which there is no tendency to change) and ‘reliability’ (fig. 1.1) [2].

The stability of the banking system is the ability to withstand external and internal influences while maintaining a stable balance and reliability over time.

characteristics:

Sustainable equilibrium is the ability of a system to perform its inherent functions and operations, subject to its integrity and financial stability of its elements, which allows the system to return to a state of equilibrium after the impact of external and internal forces.	Reliability - the ability to perform the functions assigned to the system and ensure the fulfillment of obligations to customers and partners.
↓	↑

Sustainability, on the other hand, is a narrower concept, since at a particular moment in time (in static or comparative static based on historical data) it determines the ability of a system to perform its inherent functions and meet the main regulatory indicators.
In the analysis of sustainability, internal time, the present and the past, is crucial. This implies that the banking system's resilience can be assessed only in a probabilistic manner, since the assessment is performed in static (at a specific point in time) or comparative statics (based on historical data) and does not take into account the possible impact of external and internal factors on the internal state in the future.

↓ ↓

“Sustainability” ≠ ”Reliability”

Common features: express the qualitative state of the banking system, its internal structural balance between total assets and liabilities, liquidity and profitability, the operating conditions of commercial banks and the level of their management, etc.
Differences: define different levels and aspects of the qualitative state of the banking system.
“Sustainability” is an objective reflection of the actual state of the system, taking into account the state of balance of all its structural elements, which indicates its ability to fulfill its functional purpose.
“Reliability is based on the institution of trust of depositors, investors, creditors, borrowers, and bank employees and is a subjective characteristic of the banking sector.

“Resilience” → ”Reliability”

Only a reliable banking system can be sustainable. And a reliable banking system does not always mean a resilient one.

Source: [2]

Fig. 1.1. Interrelation and mutual influence of the main characteristics of the studied concepts

The stability of the banking system is seen as a situation when (and/or):

- there are no bank failures in the national banking system;

- the banking system is stable and profitable, and also complies with: the established requirements of current legislation and the risk management principles established by the Basel Committee.

A banking system is considered stable if it:

- ensures the distribution of financial resources;

- allows for the assessment, quotation, distribution and management of financial risks;

- retains the ability to perform these essential functions even in the face of external shocks or increased imbalances.

Since the banking system is perceived as a dynamic system, its stability is considered in terms of compliance with a specific state that it should reach after certain changes, transformations, or shocks. The stability of the banking system is a factor in ensuring the stability of the financial and economic systems and the economic security of the state. Today, promoting or ensuring the stability of the banking system is one of the main functions of central banks.

Conceptual changes in the views on the importance and role of financial stability of banks in the financial market, monetary circulation and the country's economy in general have been influenced by four basic groups of factors: general economic; institutional and legal; social; and information, which characterize and determine socio-economic relations in a market economic system.

For each of the stages, the qualitative and structural characteristics of each of the factors had their own peculiarities. Let’s consider them.

1. General economic factors are a set of qualitative and quantitative indicators that give an idea of the general principles of the country's economy at a certain stage of historical development. If we consider the role of financial stability of banks for the development of the financial market, we can note that:

- the first stage was characterized by capital accumulation under free market conditions;

- during the second stage, state regulation of national economic systems was strengthened, aimed at preventing monopolization and cyclical economic development;

- the third stage was characterized by the growing influence of the globalization phenomenon on the behavior of economic agents, which led to the global distribution of productive forces, the integration of world financial markets, and the growth of transnational capital flows.

2. Institutional and legal factors make it possible to assess the principles and directions of activity of public authorities aimed at creating and improving the legal framework within which banks operate, increasing the transparency of their activities for society, and strengthening the level of coordination of public authorities to ensure the financial stability of banks. In the context of determining the role of financial stability of banks, it should be taken into account that:

- at the first stage, the main efforts of public authorities were aimed at improving banking activities and the money market, with the goal of creating a single state-issued bank;

- during the second stage, central (or national) banks were empowered to conduct monetary policy and supervise commercial banks, which together was aimed at maintaining the financial stability of banks;

- the third stage is characterized by the strengthening of international cooperation and, as a result, the development of international law governing the activities of banks, the corporate sector and governments in international financial markets.

3. Social factors characterize the importance and role of banks in the system of social relations.

- at the first stage, the main type of banking operations was the issue of banknotes, which was provided by the banks' own capital, and their role in society was to ensure stable money circulation and financing of industry;

- during the second stage, as a result of the complete monopolization of banknote issue by central banks, the main type of banking operations was the provision of loans by banks at the expense of borrowed funds, which, in turn, led to an increase in the role of banks in society as a factor of stability;

- the third stage was characterized by the growth of international capital mobility, which created a direct link between the financial stability of banks and the sustainable development of the economy.

4. Information factors determine the results of the impact of the speed of information transmission and its content on financial stability.

- the first stage was characterized by a relatively low speed of information transmission and processing. In addition, its scope was limited to the statement of certain facts, and operational and comparative rapid analysis was not widespread;

- at the second stage, the speed and completeness of the information transmitted increased significantly. Gradually, there was a need on the part of society to accumulate, summarize and process data in order to optimize decision-making;

- during the third stage, the most important characteristic of information materials is the speed of their application in the decision-making process. In addition to information analysis tools, the means of influencing the behavior of society are being improved and spread, which generates the effect of information asymmetry. Its essence lies in the adoption of suboptimal decisions by economic entities under the influence of information flows, which leads to unjustified losses.

In general, the factors affecting the level of financial stability of banks are considered from the perspective of macro and micro levels (table 1.2).

Table 1.2

Classification of factors affecting the financial stability of banks at the macroeconomic level

External	Nationwide	In-system
- financial globalization; - integration processes; - international investments; - international capital flows; - international exchange banking technologies; - international exchange of financial information; - international standards of banking activity	- foreign policy of the country; - system of formation budget and tax policy and taxation policies; - inflation rate and economic stability and inflation rate; - investment activity; - macroeconomic situation; - level of income of the population; - development of market infrastructure	- state system of regulation of of banks; - competitiveness of banks; - level of capitalization, solvency and liquidity levels; - approaches to risk management; - anti-crisis management system; - financial security system

Source: summarized by the author

A comprehensive view can be formed by taking into account more influencing factors with subsequent analysis of their dependence and connection (table 1.3).

Table 1.3

Bank stability classification and its elements

By character	economic	is determined by relationships with shareholders and other banking institutions
	political	is reflected in compliance with laws and regulations, distance from political organizations, and the ability to withstand political pressure that is incompatible with the goals of banks and its objectives as an economic entity
	moral	provides for the formation of a monetary institution that adheres to the ideas and principles accepted by society
Given its overall assessment	real	stability that demonstrates unconditional fulfillment of goals and objectives (dynamic macroeconomic development of the banking system)
	imaginary	apparent stability (demonstration of formal development of the banking system)
By the character of balancing	balanced	individual blocks of the banking system are in an equilibrium state, correspond to each other in terms of quality, degree of development, and adequacy to the requirements of a market economy
	with unstable equilibrium	imbalance of assets and liabilities in terms of terms and volumes may lead to loss of stability of a single bank; unstable balance between information or staffing and movement of bank capital may lead to loss of stability of the banking system as a whole
By structure	financial	characterizes the results of banks' activities, its resources, capital, income and expenses, profit and loss, and funds
	organizational	characterizes the state of the structure of the management apparatus in banks that is adequate to their goals and objectives
	staffing	professional training of specialists with skills in using modern banking technologies
	operational	characterizes the provision of banking services and operations that are adequate to market needs
	business	reflects the degree of fulfillment of goals and objectives
From the point of view of uniformity	banks that are rapidly developing	sustainability with constantly growing scale of the bank's activities, growth of its assets, profitability

development of banks	banks that steadily developing	stability with unchanged, stable parameters
	banks that unevenly develop	stability with decreasing volumes of banking operations
From the perspective of adequacy in the economic environment	general	adequacy of business activity of banks to the overall socio-economic situation in the country
	selfish	decrease in business activity of banks with overall economic growth

Source: summarized by the author on the basis of scientific sources

The structural elements of financial stability are characterized as follows.

1. Capital stability (adequacy). It is based on the amount of the bank's equity capital that can be used to fulfill its obligations to customers, form the necessary reserves, finance the bank's development or overcome the negative consequences caused by force majeure.

2. Commercial stability. Reflects the level of the bank's relations with other market infrastructure participants, its inclusion in the system of interbank relations, and the quality of cooperation with creditors, debtors, and customers.

3. Organizational and structural stability. It is determined by the compliance of the bank's organizational structure and management mechanism with the functions assigned to the banking institution.

4. Functional stability. It is based on specialization or universalization of the range of banking services provided.

5. Financial stability. Reflects the effectiveness of other elements of bank stability, primarily:

- the amount and structure of own funds;
- rate of return on equity;
- level of profitability and profitability;
- compliance with the established liquidity ratios;
- multiplier efficiency of equity capital;
- the amount of value added.

6. Sustainability of information systems. Information systems are understood to be a set of information databases and information technologies that allow their processing.

The stable functioning of information systems may be impeded by intentional theft or alteration of information, negligence of employees who have leaked information, hardware and software failures, malware, external financial fraud, and hacker attacks. In other words, the system is vulnerable both internally and externally.

The introduction of this component is driven by the emergence of innovative methods of interaction between banking institutions and customers through modern service channels, as the development of technology opens up new opportunities for the distribution of banking services.

Banking innovations have gone beyond standard bank branches, moving into the virtual space, which significantly increases the vulnerability of their information systems. For example, mobile phone users have the opportunity to use such services as SMS banking, WAP banking, and telebanking.

The emergence of smartphones, which, in addition to the functions of a mobile phone, are supplemented by the functionality of a pocket personal computer, has led to the emergence of mobile banking in the payment transactions market, which allows remote management of demand and time deposit accounts, receiving notifications about their status and transactions, transferring funds and paying bills.

7. Stability of risk management systems. Understanding the essence of the concept of "risk" and its types is the basis for creating a high-quality map of banking risks that would reflect the specifics of a particular bank and a holistic view of the entire set of risks, while highlighting such characteristic features of risk as the source, the object bearing the risk and the entity that accepts it.

A high level of risks associated with financial transactions may entail both higher losses and higher potential income in case of their successful completion. Macroeconomic trends, credit risk, liquidity, capital availability, political interference, excessive regulation, profitability, derivatives, corporate governance, and the quality of risk management have the greatest impact on banking activities.

The risk management system can contribute not only to the bank's sustainability, but also to more efficient use and allocation of capital, and to improving asset quality and structure.

1.2. Main approaches to forming a strategy for managing financial stability of banks

The choice of a financial stability management strategy is closely related to the ability to make rational decisions.

The decision-making process is identical in different sectors of the economy.

In each case, to obtain an effective solution, it is advisable to

- define the nature of the problem and the goal;
- identify all factors, constraints and dependencies;
- collect the necessary data within the constraints imposed;
- analyze the data;
- Identify alternative solutions and evaluate them in terms of profitability and protection from the impact of internal and external threats;
- choose the optimal solution.

Effective decision-making is the art of choosing the best among existing alternatives.

This choice is made based on three possible states of knowledge: uncertainty, certainty, and risk. The environment in which the decision-making process takes place can be characterized through the concept of certainty, the concept of risk, and the concept of uncertainty.

The concept of uncertainty is one of the characteristics of numerous phenomena considered by the theory and practice of management:

- behavior of an individual or a group of individuals, an organization as a whole, decision-making of various types;
- evaluation of forecasts;

- strategy development.

The higher the level of uncertainty, the lower the quality of management decisions and the lower the efficiency of actions.

The concept of certainty implies a state of knowledge when a decision-maker knows in advance the specific process of implementing each alternative, i.e., he or she knows the state of the environment and the results of each possible decision.

The concept of risk implies a state of knowledge when one or more options are known for each alternative, and the probability of each option being realized is known to the decision maker.

Under risk conditions, the decision maker has objective knowledge of the state of the environment and is able to objectively predict the likely nature of the phenomena and the return on each of the possible strategies. To determine the strategy for managing the financial stability of banks, it is advisable to consider the concept of “strategy”. The development strategy should define:

- the concept and priorities of development (prospects and principles of behavior);

- an action program (plan and means) that act as a unifying link of the system (positions).

The purpose of the strategy for managing the financial stability of banks is to build a dynamic system that would allow timely determination of the strategy and tools for implementing strategic guidelines for making scientifically sound financial decisions to ensure financial stability in the context of situational states of certainty, uncertainty, and risk of bank operations.

The basic scheme of strategic management of banks' financial stability (fig. 1.2) should include the following components:

- selection of the concept depending on the levels of financial stability;

- strategic analysis of factors affecting financial stability;

- diagnostics of banks with the identification of positive and negative processes of its dynamic development;

- formulation of financial stability management goals;

The system of financial stability management strategy for banks

Choosing a concept for:
banking system as a whole, regional banking system, banking institution

Goals:
Formation of a goal tree for financial stability management

Development strategy:
Formation of a "strategic set": methodology, financial security, crisis management, risk management

Strategic analysis:
external and internal environment, financial condition, financial stability

Diagnostic conclusion:
strengths and weaknesses of banks, threats and opportunities

System:
plans, projects, implementation tools

System to ensure the implementation of the established strategic management system:
subsystems: organizational, financial and economic, information and analytical, financial security

Strategic control:
functioning of the banking system, regional banking system, banking institution, established management system

Source: created by the author

fig. 1.2. The system of financial stability management strategy for banks

- forecasting the development of banks;
- ensuring strategic control over the implementation of targets;
- ensuring financial stability.

Approaches to the formation of a strategy for managing the financial stability of banks provide for complementary solutions for the selection of standards of norms, guidelines, directions, means, and rules that ensure the management of the systemic components of financial stability, which are grouped into subsystems:

- methodological framework for ensuring financial stability
- financial security;

- crisis management system;

- risk management.

In turn, the organization of financial stability management of banks includes the following elements (fig. 1.3).

Elements of the financial stability management system of banks	
Organizing a comprehensive analysis of the financial stability of banks	Analysis of own, attracted and borrowed funds
	Asset and liability management
	Analysis of liquidity and solvency
	Analysis of income, expenses and profitability
	Comprehensive assessment of the bank's compliance with economic standards
Assessment and regulation of financial stability of banks	Coefficient method of evaluation
	Integral method
	Rating assessment
	Comprehensive banking risk assessment system and statistical models
	Macroprudential analysis
Credit portfolio management	Diversification of the structure of credit investments and setting limits
	Assessment of loan portfolio quality based on a system of ratios
	Analysis of the mechanism of forming reserves to cover losses from banking risks

Source: [3]

Fig. 1.3. The system of financial stability management strategy for banks

The subjects of financial stability management of banks are considered by the following criteria:

- external (meta-level) - international organizations, institutions of individual countries that have contractual relations with Ukraine;

- national (macro level) - state regulatory authorities that have a direct impact on the development of the banking system;

- intra-systemic (micro-level) - entities that ensure coordination of actions in decision-making on determining the criteria, indicators and methods of strategic management of the financial stability of the banking system.

Each of the above-mentioned entities at the macro level of the system for managing the financial stability of banks directly or indirectly affects:

- strategic management (forecasting and planning) of the development of the country's banking system as a whole as an element of the financial stability management of the banking system;

- management of the current functioning and development of all banking institutions by formulating rules and key qualitative and quantitative restrictions on the use of the processes of attracting and placing financial resources, which are mandatory for all banks, taking into account the requirements of international regulators, i.e. the purpose of the system;

- operational management of financial resources and assets of individual banks in a crisis situation.

The hierarchy of entities managing the financial stability of banks is as follows (table 1.4).

Table 1.4

Hierarchy of entities managing the financial stability of banks

Meta-level: International regulatory management entities	International Monetary Fund, European Bank for Reconstruction and Development, Bank for International Settlements, Basel Committee on Banking Supervision, FATF, central banks of the world, International Bank for Reconstruction and Development
Macro level: a) national management entities b) intra-systemic management entities	Verkhovna Rada of Ukraine, Cabinet of Ministers of Ukraine, Ministry of Finance of Ukraine, State Fiscal Service of Ukraine, Ministry of Economic Development and Trade, Judiciary National Commission for the State Regulation of Financial Services Markets, Deposit Guarantee Fund, National Securities and Stock Market Commission, National Bank of Ukraine, State Financial Monitoring Service of Ukraine, Antimonopoly Committee of Ukraine, State Statistics Service of Ukraine
Micro level: intra-bank management entities	Board of Directors, Management Board, Supervisory Board, risk management, internal audit, asset and liability management committee, crisis management committee

Source: summarized by the author

The main functions assigned to the mechanism for ensuring the financial stability of the banking system are:

- substantial “reset” of the macroprudential component of the state's general economic policy aimed at increasing the ability to withstand external and internal influences;

- ensuring the implementation of the principle of proportionality and intensity of supervisory strategies and procedures depending on the degree of importance of the bank in the market and the level of risk it generates;

- ensuring the adaptability of banking regulation components as well as the development of new financial instruments and business models that meet the requirements of a dynamic environment;

- increasing the level of trust in banks as a rising quality category of the institutional architecture of the banking system;

- smoothing the cyclical development of the financial and economic systems;

- minimizing the impact of internal and external threats and risks.

The key “pillars” of the organizational and instrumental component based on the risk-based approach to banking supervision are as follows

- macroprudential regulation (macroprudential analysis, macroprudential supervision (including SREP), and macroprudential policy). The basis of macroprudential regulation is macroprudential analysis, which the NBU (with reference to the IMF [4]) defines as a method of continuous monitoring, comprehensive analysis of the state of the financial system, its internal interrelations, interaction with the real sector, the budget sphere, as well as trends in the development of global financial and commodity markets in order to ensure stable functioning. As for the content of macroprudential policy, the NBU defines it as [5] a policy aimed not only at identifying and assessing, but also at minimizing systemic risks to financial stability;

- risk management system in banks (including: risk analysis and assessment system, system of compliance with economic standards of banks' activities, CAMELSO rating system). Today, risks are the “core” around which the entire system is built. This thesis is confirmed by the fact that banks have recently changed their approach to analyzing their operations from a formal one to a risk-oriented one. Risk-based supervision was chosen by the NBU as an internal process to ensure greater consistency and efficiency in inspections of banking institutions;

- Basel Capital Accords, which are of particular importance for improving the risk management system and strengthening financial stability. Important innovations of the new capital standards include improving the quality of the equity structure, a significant change (upward) in the required capital quota, reducing systemic risk, and sufficient time for the transition to the new regulatory standards.

Although banking experts express concern about economic development and a drop in global GDP growth as a result of banks' compliance with the new standards (which will lead to lower profitability and higher borrowing costs), the Basel Committee insists on strengthening market discipline of banking institutions and, accordingly, improving the capital side of balance sheets;

- Early Warning System;
- annual assessment of the financial stability of banks and the banking system;
- standardization and detailing of methodological procedures;
- work to improve the quality of audit services;
- corporate governance reform in banks (primarily state-owned banks);
- simplification of procedures for reorganization and capitalization of banks;
- approval of bank managers;
- supervision of banking groups;
- supervision over the transparency of banks' ownership structures;
- diagnostics of persons related to banks.

The NBU's organizational components are implemented by the relevant structural units, which operate within the limits of their powers and functions, which are regulated by internal regulations [6] and are subordinated to the declared mission of the NBU - to ensure price and financial stability in order to promote sustainable economic development of Ukraine.

An analysis of the distribution of functions and powers of the created structural units that form the path for the development of the financial stability system in Ukraine [7] was conducted, which indicates that the attention of key regulators to this issue is systemic and comprehensive.

1.3. Mandate of the Central Bank in terms of ensuring financial stability

We will consider the components within which central banks implement this area of their activities. It should be noted that the scope of the issues discussed below is in the legal plane, and therefore, when disclosing certain components, we will operate exclusively in accordance with the rules and components prescribed in the above-mentioned regulatory documents.

The basic framework that shapes the implementation of this area of central bank activity is the macroprudential regulation system. It is based on macroprudential analysis, which the NBU, citing the IMF [8], defines as a method of continuous monitoring and comprehensive analysis of the financial system, its internal interconnections, interaction with the real sector, the budgetary sphere, and trends in global financial and commodity markets to ensure stable functioning.

Macroprudential analysis is based on market research and analysis of macroeconomic information: major asset markets, financial intermediaries, macroeconomic development, potential imbalances and systemic risks.

The NBU includes in its macroprudential policy [9] a set of measures aimed at identifying, assessing and minimizing systemic risks to prevent their impact on financial stability in general.

The consensus among the world's leading central banks and financial market regulators on the need to introduce a new area of their work - macroprudential policy - emerged after the global crisis of 2008-2009 and the EU debt crisis.

The Basel Committee on Banking Supervision [10] has developed regulations on the practice of prudential regulation. In turn, macroprudential policy is based on the fact that systemic risks are a consequence of the action of exogenous and endogenous factors, often as a consequence of the actions of individual banks.

If banks comply with individual capital and liquidity standards, this does not guarantee that systemic risks will be minimized. This is the reason for the development of other risk management tools [11].

Scientists [12] note that it is necessary to clearly distinguish between macroprudential analysis, supervision, and policy as components of the macroprudential regulatory system in the context of implementing the concept of a post-crisis regulatory order (fig 1.4).

Macroprudential analysis	→	Macroprudential supervision	→	Macroprudential policy
continuous monitoring and comprehensive analysis of the financial system to identify risk areas		identification of risks to maintain financial stability of the entire financial system		developing a set of principles, rules, and instruments that can reduce the contribution of each institution to the overall systemic risk and smooth the financial cycle

↓

Macroprudential regulation
Reducing the amplitude of the financial cycle and intensifying macroeconomic stability as opposed to the spread of endogenous and exogenous shocks
provides for higher standards for institutions, markets, and instruments, that are recognized as systemically important

Source: compiled based on NBU data

Fig 1.4. Components of macroprudential regulation.

Other scientists [13], when considering the conceptual framework of macroprudential supervision and regulation of banking activities, continue this idea and note that special attention in this system should be paid to systemic banks and interconnections in the financial market. This is because the risk of systemic stability depends on the collective behavior of financial market participants, which makes the risks in the financial system endogenous to the regulator.

As for financial stability, which is mentioned among the goals and objectives of central banks in about half of the world's countries, they do not consider the concept of financial stability to be absolute - it is obvious that financial indicators are variable, and moreover, they must be flexible and constantly changing, as economic realities require. Moreover, sometimes such changes are quite abrupt and unpredictable. That is why the central banks of the world's leading countries are constantly introducing updated tools for analyzing the financial state of the economy, i.e. financial stability [14].

Due to the general understanding of regulatory shortcomings that manifest themselves during crises, the current trend is to grant broader powers in these matters. The global experience of developed countries and geopolitical entities, which objectively act as drivers of modern changes and trends, shows that most regulators pay considerable attention to ensuring financial stability, which is reflected in their program documents [15-28].

Instead, the real task is to create the conditions that would allow [29]:

- first, to maintain the inflation rate in the country within the limits that stimulate, rather than restrain, the pace of economic development and are controlled by the regulator exclusively through monetary instruments;

- second, to return to price stability as soon as possible in the event of an intensification of destabilizing factors.

That is why it is advisable to consider the level of consumer price indices of the countries under consideration as one of the fundamental elements of calculations for determining the index of central bank independence [30] (table 1.5).

Taking into account the development of globalization processes and international relations, let us compare the data obtained by using the methods of determining the level of target and instrumental independence of central banks (described in detail in the works of such world-renowned scholars as M. Parkin, R. Bade, A. Zuckerman and F. Dumiter [32]) and the data of the CIA WorldFactbook and Eurostat [33], which relate to the average annual dynamics of consumer prices in 40 countries of the world and Eastern Europe in particular.

The approach to comparing these two statistical samples is based on the idea of effective functioning of the national regulator through building trust between it and the government. This can be achieved through a high level of central bank independence and an effective inflation targeting regime. Based on this, the individual components of the Central Bank Independence Index (hereinafter referred to as the CBI) indicate the following:

Table 1.5

Average annual inflation rate in the countries of the world and Eastern Europe in 2023

Country	CPI, %		Country	CPI, %
Austria	0,86		Albania	1,28
Belgium	1,98		Armenia	-1,27
Canada	1,43		Cyprus	-1,43
Denmark	0,25		Bosnia	-1,25
France	0,18		Bulgaria	-0,8
Germany	0,48		Croatia	-1,12
United Kingdom	0,64		Czech Republic	0,64
Greece	-0,83		Estonia	0,15
Ireland	0		Hungary	0,4
Iceland	1,69		Latvia	0,12
Israel	-0,54		Lithuania	0,91
Japan	-0,12		Macedonia	-0,24
Luxembourg	0,3		Moldova	2,4
Malta	0,58		Poland	-0,61
Norway	3,55		Romania	-1,54
New Zealand	0,54		Russia	7,05
Spain	-0,2		Serbia	1,12
Sweden	0,98		Slovakia	-0,52
Switzerland	-0,44		Turkey	7,78
USA	1,26		Ukraine	13,9

Source: compiled by the author based on World Bank statistics [31]

- PLCBI - is responsible for the political and legal independence of the central bank;

- CBGCMP - refers to the central bank's governance and conduct of monetary policy;

- CBTA - characterizes the transparency of the central bank's activities;

- ICBIIT - is the weighted average of these components.

The boundaries of the elements are in the range [0;10]. The results of the calculations are shown in table 1.6.

Table 1.6

Independence indexes of central banks in the world

Country	Rating			
	PLCBI	CBGCMP	CBTA	ICBIIT
Austria	6	9,33	8,93	8,09
Belgium	8,55	9	9,29	8,95
Canada	7,55	6,67	10	8,07
Denmark	8,88	7,8	8,93	8,54
France	9,44	9,33	9,64	9,47
Germany	7,22	9,33	9,64	8,73
United Kingdom	8,33	7,13	9,64	8,37
Greece	6,66	9,33	10	8,66
Ireland	8,55	9,33	9,64	9,17
Iceland	5,11	7	8,57	6,89
Israel	5,11	9,33	9,29	7,91
Japan	4,33	4,33	5,71	4,79
Luxembourg	8,88	9	8,93	8,94
Malta	6,55	9,33	9,29	8,39
Norway	6,11	5	9,64	6,92
New Zealand	7,11	4,66	10	7,26
Spain	8,33	9,33	9,64	9,1
Sweden	9,44	7	10	8,81
Switzerland	6,11	9	9,29	8,13
USA	8,88	7,13	8,21	8,07
Albania	6,66	8,66	8,93	8,08
Armenia	6,33	7,13	8,93	7,46
Belarus	6,33	5	7,14	6,16
Bosnia	9,44	7,66	5,36	7,49
Bulgaria	6,66	6,13	6,79	6,53
Croatia	6,66	7,66	4,64	6,32
Czech Republic	8,33	7,33	8,93	8,2
Estonia	7,11	8	6,79	7,3
Hungary	7	7,66	9,64	8,1
Latvia	8,88	7	5,36	7,08
Lithuania	7,44	7,66	4,64	6,58
Macedonia	8,88	7,33	7,5	7,9
Moldova	8,88	7,33	8,93	8,38
Poland	7,77	6,33	8,93	7,68
Romania	8,22	8	8,93	8,38
Serbia	4,55	6,47	9,64	6,89
Slovakia	7,11	9	9,29	8,47
Turkey	3,77	6,67	9,29	6,58
Ukraine	6	4,33	4,64	4,99

Source: calculated by the author on the basis of table 1.5

This data allows us to analyze the correlation between the CPI and central bank independence by its individual components, i.e., to determine the degree of correlation.

Using the mathematical apparatus (correlation analysis), the relevant data were obtained (table 1.7).

Table 1.7

Empirical results of the study of the correlation between the CPI and the PPI

The element of the CIB	Correlation value	The direction of the relationship	Correspondence on the Chaddock scale (qualitative characterization of the quantitative measure of the relationship)
PLCBI	-0,32068	reversed	moderate
CBGCMP	-0,41936	reversed	moderate
CBTA	-0,13448	reversed	weak
ICBIIT	-0,41051	reversed	moderate

Source: created by the author

The obtained correlation coefficients indicate the presence of:

- a moderate inverse relationship between the political and instrumental independence of the central bank and price stability in the country, which means an inverse relationship between the variables.

- a more tangible link: between transparency and price stability, since transparency is a consequence of achieving publicity and openness of the central bank as a monetary regulator;

- a quantitatively weak link between transparency and accountability of the central bank.

The place of the NBU in the coordinate system of global experience in the field of financial stability, as an indisputable goal of any central bank, remains controversial, although attention to financial stability issues is growing.

According to the NBU [34], “financial stability is the state of the financial system when it can efficiently perform its main functions and withstand crises. The financial system is considered stable if:

- resources are effectively redistributed from depositors to investors;
- financial risks are qualitatively assessed and managed;
- the financial system is able to absorb shocks without destructive consequences”.

Recently, for the central banks of the countries - the task of ensuring financial stability has become the most important. In particular, the Law of Ukraine “About the National Bank of Ukraine” [35] defines ensuring financial stability - both of the financial system in general and the banking system in particular - as one of the key functions of the NBU.

According to the Law, the National Bank of Ukraine promotes financial stability [36] (including - the stability of the banking system) - if this does not prevent the achievement of price stability. This is the reason why the state of the financial system (including - the analysis and prevention of risks) is given such close attention.

The NBU promotes financial stability by:

- conducting macroprudential analysis and macro stress testing of the banking system to identify systemic risks;
- developing and implementing macroprudential policy tools [37] to prevent crises;
- participation in the preparation of legislation regulating the banking sector;
- supporting the banking system as a lender;
- monitoring the financial stability of banks, including through stress testing;
- supervising payment and settlement systems;
- coordinating efforts with other regulators that ensure financial stability.

In addition to its mandate to promote financial stability, the NBU has tools for regulating the banking system, access to financial sector microdata, and analytical and forecasting models, all of which allow it to respond quickly to crises. Thus, the NBU is the body that actually carries out micro- and macroprudential regulation.

Based on the results of the analysis of risks to the financial system as a whole, the NBU publishes the Financial Stability Report [38] every six months, a key public document of the world's central banks that aims to identify financial stability risks in Ukraine, analyze their impact on the financial system and the country's economy, and provide recommendations for strengthening financial stability.

CHAPTER 2
ANALYSIS OF APPROACHES TO ENSURING FINANCIAL STABILITY OF BANKS

2.1. Study of Transformation Processes in the Monetary Policy of the National Bank of Ukraine

The NBU implements activities and responsibilities for ensuring and managing financial stability with other key regulators of the financial market of Ukraine.

In addition, during the period of restructuring its organizational structure, the NBU reformed its decision-making system at the committee level [39]. The NBU Board delegated some of its powers to nine specialized committees. This shifted from sole decision-making to collegial decision-making by committees, which helped improve the quality of decisions and the efficiency of the Board's work, and created opportunities for cross-functional exchange of information and analysis.

In terms of their functionality, the established committees were divided into:

1. Strategic level (policy making).
2. Tactical level (policy execution).
3. Support.

The distribution of functions and powers of the NBU structural divisions, whose responsibilities include responsibility for financial stability, is clearly spelled out in the organizational structure of the NBU.

The changes that were initiated in terms of restructuring the NBU's organizational structure also affected other areas:

1. Revision of approaches to the components of macroprudential policy instruments.
2. Transition to clustering-based banking supervision by grouping banks with similar business models for supervision purposes.
3. Changing approaches to stress testing.

Let us consider this in more detail.

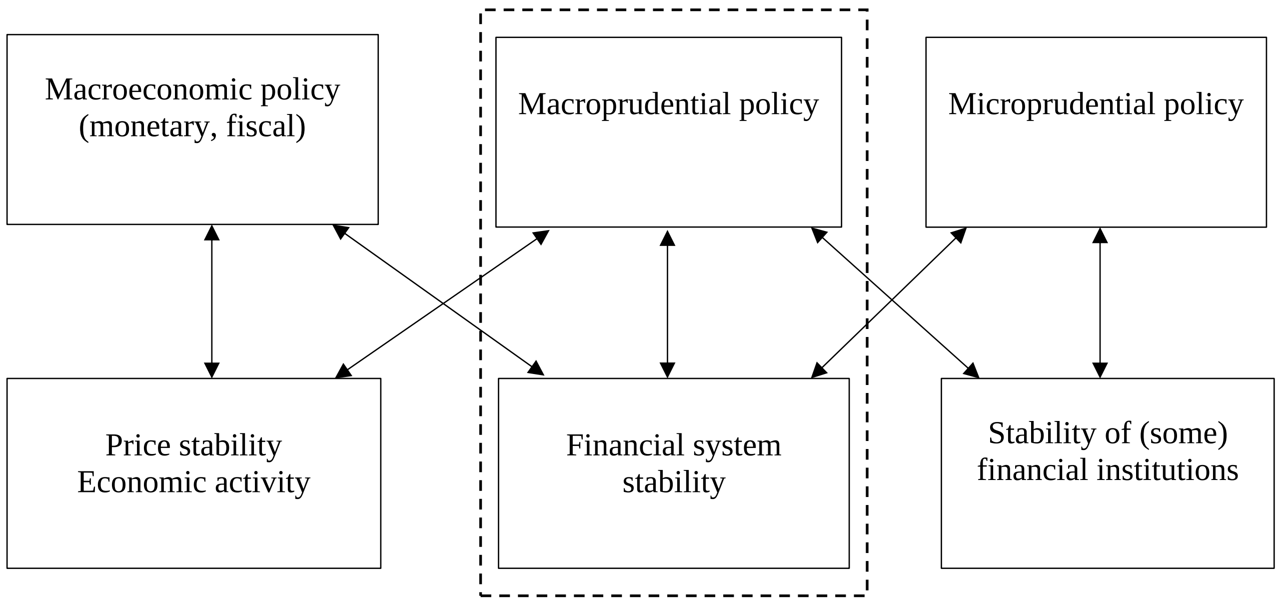
1. Changing approaches to macroprudential policy instruments. According to the new global paradigm, central banks (financial regulators) must coordinate three policies [40]:

- macroeconomic (monetary, fiscal), which is aimed at ensuring price stability and economic activity

- macroprudential, which is aimed at ensuring the stability of the financial system;

- microprudential, which is aimed at ensuring the stability of banks and protecting depositors, creditors, and investors).

This is shown graphically in fig. 2.1.



Source: compiled by the author based on NBU materials

Fig 2.1. The mutually reinforcing impact of the three policies on financial system stability.

Macroprudential policy closely overlaps with macroeconomic and microprudential policies, which in general have a significant impact on financial stability. However, the NBU defines monetary policy as a “heavy-caliber” weapon, since it is too expensive to use its tools to cool down an overheated market. That is why there is a need to develop components of microprudential policy.

At the same time, macroprudential policy can create synergies, as a more stable financial system means a more efficient monetary policy transmission mechanism. Micro- and macroprudential policies can reinforce each other through effective information exchange.

Taking into account that the Ukrainian financial system is bank-centered [41] (the share of the banking system is about 80% of the assets of the financial sector of Ukraine), almost all innovations of the proposed changes relate primarily to the banking system.

As for the list of macroprudential policy instruments, the ESRB [42] has defined an indicative list of macroprudential policy instruments that should be used to achieve its goals.

A more simplified view of the entire list of these instruments allows us to group them into three groups: capital, liquidity, and other (table 2.1).

The group of instruments related to capital has made the most progress in the application of macroprudential policy instruments. Capital buffers are already provided for by the Instruction on the Procedure for Regulating the Activities of Banks in Ukraine, approved by the NBU Board Resolution No. 368 (as amended) dated August 28, 2001 [43], although their formation began in 2020.

The main methodological measures taken recently have been the improvement of capital regulations in terms of developing new requirements for its quantity, quality, and strengthening of the requirements for deductions.

The main difference between the capital structure in Ukraine and the capital structure in accordance with EU regulations is the proportions between the Tier 1 (core) and Tier 2 (additional) capital levels:

- in Ukraine (with H2 > 10%): 50%/50% (according to Basel II), from 01.01.2019: 70%/30%;

- in accordance with EU regulations (minimum value of 8% with a conservation buffer of 10.5%): 75%/25%.

Table 2.1

Macroprudential policy instruments of the National Bank of Ukraine

Tool group	Components	Characteristics	
Capital tools	strengthening the capital base (compared to Basel II)	Improving the quality and transparency of capital, primarily of Tier 1 capital	- stricter criteria for capital instruments; - less acceptable capital instruments; - increased capital charges.
		raising the minimum level of capital	- Level 1 quality assurance: 4.5% (vs. 0%) - Tier 1 capital 6% (vs. 4%) - capital 8% (vs. 8%) - capital conservation buffer: 2.5% (vs. 0%)
	introduction of capital buffers (above the level 1 CCR)	capital conservation (reserve) (0.625-2.5%)	to cover losses in times of instability
		countercyclical buffer (0-2.5%)	to limit excessive lending activity during periods of economic boom
		systemic risk buffer (0-5%)	to prevent and mitigate systemic and macroprudential risks
		buffer of systemic importance (1-3.5%)	for systemically important banks that pose higher risks to the banking system (the larger of the two established buffers: systemic risk or systemic importance must be observed)
	introduction of leverage ratios	Tightening capital requirements regardless of the level of asset risk	
		limiting the debt that a bank can take on	
Tools liquidity	Liquidity coverage ratio (LCR)	short-term liquidity ratio, which shows the proportion of the bank's liquid assets to the amount required to cover the increased outflow of funds arising in the banking system in a crisis within 30 days)	
	Net Stable Funding Ratio (NSFR)	Long-term liquidity ratio, which measures the bank's liquidity in the period up to 1 year. This encourages banks to rely on stable sources of funding and minimizes the tendency to attract short-term funding. The NSFR ratio prevents excessive maturity mismatches between banks' assets and liabilities)	
Other tools	Assets: DTI (debt-to-income), LTI (loan-to-value): restrictions / additional requirements for lending to certain sectors		
	Reserves: tightening of requirements for standard reserves, dynamic provisioning.		
	Structural: imposing restrictions on the size, structure, and scope of activities of a financial institution.		

Source: compiled from NBU data.

Since 2019, regulations have been developed, after which test calculations were made with pilot banks (with discussion by the banking community), on the basis of which the new requirements were implemented.

With regard to liquidity instruments, the NBU [44] implemented the LCR standard. To study the international experience of implementing the standard, the NBU held consultations with experts from the Basel Committee, the World Bank, and the central banks of Georgia, Poland, and Germany. A working group of NBU and bank experts was set up to develop the concept of LCR calculation in Ukraine. Later, the NBU drafted a template for calculating the ratio and a regulation on it.

In accordance with the Concept of Internal Transformation [45], the NBU developed a number of steps that allowed it to both restructure its institutional structure and facilitate the implementation of the Comprehensive Program for the Development of the Financial Sector of Ukraine [46].

An important component of the NBU's transformation is the emphasis on reengineering the NBU's regulatory processes, which included a transition to clustering-based banking supervision by grouping banks with similar business models (their transparency and riskiness), risk profiles, the nature of their operations, or other characteristics for supervisory purposes.

The changes made were as follows:

- banks of different sizes, but with common owners, will be grouped into one supervisory cluster;

- specific supervisory regimes were defined for each of these supervisory clusters and respective supervisory groups were assigned;

- depending on the cluster, different options for supervision of banks are envisaged - from standard to enhanced regime with numerous restrictions (appointment of a supervisor, restrictions on active and passive operations, enhanced control over the formation of loan loss provisions, updating of the business model);

- banks of groups III and IV for banking supervision purposes will be allocated based on the results of the assessment of business models, risk profiles and the nature of their operations, but information on the bank's affiliation with such a supervisory cluster will remain a banking secret.

The use of new supervisory clusters allows for

- optimize the workload of supervisors and supervisors;
- identify the most relevant areas for analyzing bank operations;
- coordinate the activities of supervisory units, financial monitoring, currency control, etc.

Further, according to the decision of the Committee on Supervision and Regulation of Banks, Supervision (Overnight) of Payment Systems [47], the following groups were provided for new criteria for certain groups of banks, the number of which changed slightly from year to year:

- banks with a state share;
- banks of foreign banking groups;
- banks with domestic private capital.

The NBU used this division to present the results of its analysis of the Ukrainian banking system.

2.2. Tools for monitoring and assessing the bank's financial stability

The establishment, active use, further development and improvement of financial stability assessment systems in modern banking practice is extremely important for

- society as a whole
- real and potential clients of banks
- bank shareholders;
- banks (interest in preliminary diagnosis of possible problems; interest in reliable assessment of the financial condition of in assessing the financial condition of counterparty banks);
- state regulatory and supervisory authorities.

Some countries are developing supervisory systems that include an assessment of the financial condition of banks. In particular, Italy and Argentina have established bank rating systems that are largely borrowed from the practice of US supervisors and are part of a comprehensive banking supervision system.

A wide range of information is used to assess financial stability:

- internal - based on financial statements, bank balance sheet, and bank archives;

- external information obtained from reports of external auditors, specialized rating agencies, and statistical compilations through the exchange of information with other banks.

An analysis of the sources related to the assessment of banks' financial stability suggests that methods for assessing financial stability are components of monitoring the financial condition of banks.

One of the important tasks faced by bank analysts is to timely diagnose the likelihood of a bank's crisis. This makes it possible to develop a plan of adequate actions to improve the bank's financial condition.

Management and founders of the bank, the regulatory authority (the NBU) and external users (customers, depositors, representatives of research centers on the state and prospects of the banking sector) are interested in providing such information.

It is important for the bank to choose existing or develop its own early warning tools based on insider and public information, which would allow it to assess the level of stability of the banking institution.

External users are interested in the possibility of making such an assessment remotely in conditions of limited information.

In domestic and international practice, there are many generally recognized tools for monitoring and assessing financial stability that can be used by the country's bank supervisor and banks.

In addition, banks and rating agencies have their own methods.

The types of tools for assessing a bank's financial stability can be classified as follows:

- rating systems;
- systems for analyzing financial ratios and homogeneous groups;
- comprehensive assessment systems;
- statistical models of early warning;
- macro- and microprudential analysis tools.

The name of each of the above systems consists of the initial letters of the elements to be monitored and assessed for financial stability research.

A summary of the tools for monitoring and assessing a bank's financial stability is presented in table 2.2.

Table 2.2

Tools for monitoring and assessing the financial stability of banks

Tool type		Tool name	Implementing country	Year of implementation
1. Rating systems	Remote models of banking supervision	CAEL	USA	1985
		PATROL	Italy	1993
		ORAP	France	1997
	Non-remote models of (internal) banking supervision	CAMELS	USA	1980
		BOPEC	USA	1987
		CAMEO	USA	1988
		PEARLS	USA	1990
		CAMEL	Austria	1995
		CAMELSO → SREP	Ukraine	1998 → 2018
2. Systems for analyzing financial ratios and homogeneous groups		UBSS	USA	1980
		Peer group analysis	Austria	1995
		BAKIS	Germany	1997
3. Integrated risk assessment system		RATE	United Kingdom	1998
		RAST	USA	1999
4. Statistical models of early warning	Models for predicting a rating downgrade	SEER rating	USA	1993
		SCOR	USA	1995

	Models for predicting losses	SAABA	France	1997
	Statistical models for predicting the probability of bankruptcy and the term to it	SEER risk rank	USA	1993
		Logit model	Austria	2004
		Cox model	Austria	2004
5. Tools for macro- and micro-prudential analysis	Financial Stability Indicators System	FSIs	IMF member countries	2006
	Systems stress testing of the bank	Stress testing	IMF member countries	2009

Source: compiled by the author

Among the tools presented in the table, we will consider the tools used by the NBU in its regulatory practice after the revision of its mandate.

On October 1, 2020, the NBU began applying a single procedure and methodology for the supervisory review and evaluation process - the SREP.

The practice of assessing banks' performance according to the CAMELSO rating system, as shown in table 2.3, is no longer carried out.

The purpose of the CAMELSO rating system, which was introduced in Ukraine in 1998, was to assess the capital, assets, management, income and liquidity of the bank. The system was not static, it was constantly adapting - in accordance with the requirements of the present.

But, in 2018, the National Bank of Ukraine began to introduce SREP supervisory tools focused on assessing risk and the quality of risk management in banks.

By the way, the SREP system has in a certain way inherited the components of CAMELSO - it is based on the assessment of:

- risks;

- strategy;

- the bank's business model;

- the bank's potential behavior in the future.

As noted in the "Organizational Structure of the Risk Management System", built on the implementation of the requirements of the Regulation on the Organization of the Risk Management System in Ukrainian Banks and Banking Groups, and presented to the NBU on September 18-19, 2028, the SREP assessment process is continuous and is carried out simultaneously for all banks.

Unlike the CAMELSO assessment, the SREP assessment is conducted annually as of January 1. It may be updated on a quarterly basis to reflect changes in quantitative indicators and new material information discovered, in particular, during an on-site inspection.

The On-Site Inspection Department will no longer use the CAMELSO system, but will provide proposals for the SREP assessment based on the results of the relevant inspection inspections.

In the future, it is planned that the SREP scores will be public.

These changes are provided for by the decision of the NBU Board dated September 30, 2020. The general approaches to assessing banks according to the SREP methodology by 4 elements are shown in fig. 2.3.

The overall SREP score is set from 1 to 4 points and “F”, where 1 is low risk and 4 is high risk. The scores correspond to the following:

- “1” - the bank's activities do not have any significant inconsistencies in risk management;

- “2” - the bank's activities have certain inconsistencies in risk management, but they do not pose a threat to the interests of the bank's depositors and creditors;

- “3” - the bank's activities have inconsistencies in risk management, which, if not eliminated, may pose a threat to the interests of depositors and creditors;

- “4” - the bank's activities have significant inconsistencies in risk management that pose a threat to the interests of depositors and creditors;

- “F” - there are reasonable grounds for classifying the bank as troubled, insolvent or liquidating it, or on the assessment date the bank is classified as troubled

1. Business model analysis and evaluation (BM)

Assessment of the bank's business model involves evaluating the viability of the business model and determining the sustainability of its development strategy.
The viability of the bank's business model is determined based on an assessment of its ability to generate an acceptable level of income over the next 12 months, taking into account the value of performance indicators, compliance of the bank's financing structure with its business model, and risk appetite (risk appetite).
The sustainability of the bank's strategy is determined based on an assessment of its ability to generate an acceptable level of income for at least the next 3 years in accordance with the approved bank's strategy and business plan, including the implementation of the bank's strategy in the past.

↓

2. Assessment of the level of organization of corporate governance and internal control (CG)

The assessment of the level of organization of corporate governance and internal control of the bank is based on the results of the assessment of the efficiency of functioning, in particular the following elements: corporate governance system in general; corporate culture and risk-taking culture; organizational structure and functioning of governing bodies (supervisory board and management board); remuneration policy and practice; risk management system; internal control system; AML risk.

↓

3. Capital adequacy (CAP)

The purpose of the capital risk assessment is to determine the adequacy of capital (its size and structure) to cover the main types of risks inherent in the bank's activities, in particular credit, interest rate, market and operational risks over the next 12 months, as well as to identify the necessary measures to address potential capital shortfalls.

↓

4. Liquidity adequacy (LIQ)

The purpose of the liquidity assessment is to determine the adequacy of liquid assets to cover liquidity and funding risks inherent in the bank's operations, as well as the necessary measures to address potential liquidity shortages.

Source: based on NBU data

Fig. 2.3. General approaches to assessing banks according to the SREP methodology by 4 elements.

Based on the analysis and the assessment, a supervisory strategy for a particular bank is formed, taking into account the risks inherent in its activities and the bank's category. The NBU also determines the need for scheduled and unscheduled inspections. The Banking Supervision Committee is informed of the assessment results [48].

2.3. Characteristics of the risk management system in banks

The formalization of the system for ensuring the financial stability of a bank depends significantly on the development of the system for analyzing and assessing banking risks, an indicator around which the entire system is built.

This thesis is confirmed by the fact that banks have changed their approach from formal to risk-oriented when analyzing their operations. Risk-based supervision was chosen by the NBU as an internal process to ensure greater consistency and efficiency in inspections of banking institutions.

The basic document that regulates supervisory procedures for determining the methods used by the NBU in its activities to determine the level of risks is the Guidelines for Inspection of Banks “Risk Assessment System” approved by the Resolution of the Board of the National Bank of Ukraine No. 104 dated March 15, 2004 [49].

Risk-based supervision was an extension of the risk-based supervisory function. This approach allowed the NBU to develop and propose for use unified definitions of risks, a framework for assessing these risks, and an integrated procedure for conducting risk assessment in the in the supervisory process.

According to the document, the NBU's banking supervisors must determine how certain existing or potential problems faced by a bank or the banking system affect the nature and level of risks in that bank. Based on the results of the risk assessment, supervisors draw up plans and determine supervisory actions.

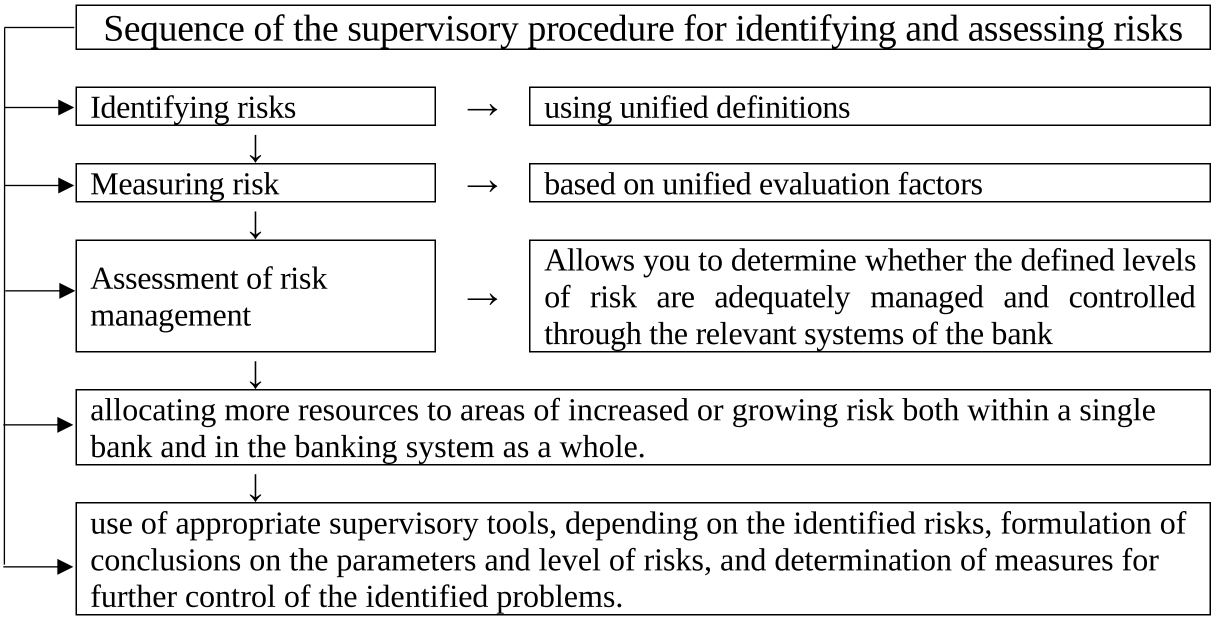
The purpose of regulatory procedures in this area is to ensure a high-quality procedure for managing the risks to which the bank is exposed in its activities. An additional option is to identify the areas of activity (high-risk or those that have become risky due to market conditions) of an institution that, in aggregate, may pose an unacceptable level of risk to the banking system.

As for the definition of risk, the NBU distinguishes between the following risks:

- justified - if they are understandable, controllable, measurable, and consistent with the bank's ability to respond quickly to negative circumstances;

- unjustified - if they result from intentional or unintentional actions.

High-risk areas and spheres require the allocation of more resources to them. The NBU achieves this by taking the following actions (fig. 2.4).



Source: compiled by the author based on NBU regulatory materials

Fig 2.4. Sequence of the supervisory procedure for identifying and assessing risks

At the same time, the NBU emphasizes that both market conditions and bank structures are different, so there can be no single standardized risk management system. It only offers a general framework of supervisory procedures and recommends that banks develop their own systems with the following elements (fig. 2.5).

The NBU has identified nine categories of risks for supervision based on risk assessment. Of course, these categories are not mutually exclusive. The reason: any product or service of a bank can expose the bank to several risks at the same time. At the same time, for the convenience of analysis, the NBU monitors and assesses these risks separately.

Mandatory elements of risk management system		
Risk identification	→	recognizing and understanding existing risks or risks that may arise in connection with new business initiatives
Risk measurement	→	an important component of effective risk management based on developed and adequate risk management tools (both in terms of operations and portfolios)
Risk control	→	Setting limits and communicating them to employees through policies, standards, and/or procedures that define the responsibilities and powers of employees.
Risk monitoring	→	Continuous risk monitoring to ensure timely tracking of risk levels and exceptions to certain rules.

Source: compiled by the author based on NBU regulatory materials

Fig. 2.5. Mandatory elements of the bank's risk management system.

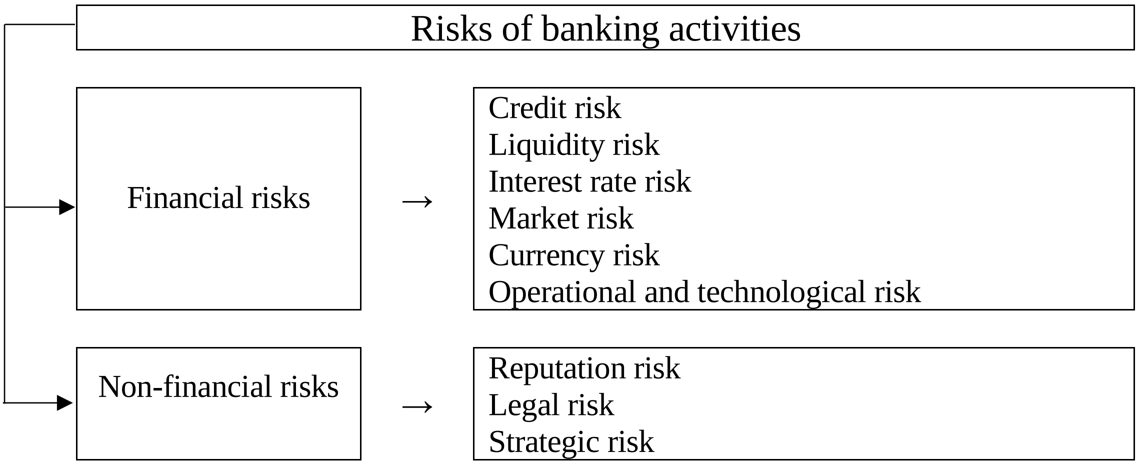
The system for assessing each risk category is presented as follows (fig 2.6).

Components of the risk assessment system				
The amount of risk	→	the level or amount of risk to which the bank is exposed	→	- insignificant - moderate; - significant.
Risk management quality	→	how well risks are identified, measured, controlled and monitored	→	- high - requiring improvement; - low.
Total risk	→	reflects the level of supervisory concern - in terms of quantity and quality of risk management	→	- high - moderate - low
The direction of risk	→	the likely change in the aggregate level of risk over the next 12 months.	→	- growing; - stable; - declining decreasing.

Source: compiled by the author based on NBU regulatory materials.

Fig. 2.6. Components of the risk assessment system.

Internal risks include nine risk categories, which are divided into two groups (fig 2.7).



Source: based on NBU regulatory materials

Fig 2.7. Risks of banking activities

In accordance with the Regulation on Organization of the Risk Management System in Ukrainian Banks and Banking Groups, banks establish a risk management system that ensures risk analysis on an ongoing basis in order to make timely and adequate management decisions to mitigate risks and reduce related losses (damages).

The Bank organizes a risk management system based on the division of responsibilities between the Bank's divisions using the three lines of defense model:

- first line - at the level of the bank's business units, including trading desks, and bank support units. These units accept risks and are responsible for them, carry out ongoing risk management and submit reports on the ongoing management of such risks;

- the second line is at the level of the risk management unit and the compliance unit;

- the third line - at the level of the internal audit unit to verify and evaluate the effectiveness of the risk management system.

The bank's risk management system should at least include:

- an organizational structure that clearly defines the duties, powers and responsibilities of persons in charge of risk management
- risk management culture and code of conduct (ethics)
- internal bank documents on risk management;
- risk management and reporting information system;
- tools for effective risk management.

Thus, banking risk management is a process by which a bank identifies risks, assesses their magnitude, monitors and controls its risk positions, and takes into account the interrelationships between different categories of risks. These are the tasks that the banking system must address in today's environment.

CHAPTER 3
DIRECTIONS FOR FURTHER DEVELOPMENT OF THE SYSTEM FOR ENSURING FINANCIAL STABILITY OF BANKS

3.1. Stress testing as a tool for diagnosing the level of financial stability of banks

Stress testing involves a number of methods used to assess the vulnerability of a bank's portfolio to major changes in the macroeconomic environment or an exceptional but plausible event.

The regulatory basis for their conduct is the Methodological Recommendations on Stress Testing in Ukrainian Banks, approved by the Resolution of the Board of the NBU No. 460 dated August 06, 2009 [50], according to which stress testing is defined as a method of quantitative risk assessment, which consists in determining the amount of uncoordinated position that exposes the bank to risk and in determining the shock value of changes in an external factor - exchange rate, interest rate, etc.

The most common objects of stress testing are the following:

- sharp changes in interest rates on internal or external borrowings, loans, securities, etc;

- significant fluctuations in foreign exchange rates;

- credit risk in loan portfolios;

- sharp changes in the amount and structure of a financial institution's capital, the value of mortgage collateral;

- reduced liquidity and the possibility of a bank default;

- the possibility of systemic risk based on a sharp decline in liquidity or loss of capital, etc.

The need for stress testing is driven by the presence of threats that may affect a banking institution's operations, the need to identify risks and assess their impact in order to determine the bank's ability to withstand financial market shocks and prevent significant financial losses.

In other words, the main objective of stress testing is to prepare proactive strategic and tactical measures that will help resolve problematic or tense situations that may arise in the future and mitigate the impact of various risks on banks' operations.

The guidelines serve as a basis for an effective and reliable stress testing practice, and the NBU does not restrict the right of banks to develop their own procedures and models for stress testing, which may be more individualized and take into account the specifics of the activities and environment of an individual bank.

The input characteristics of stress tests may include

- macroeconomic (level of economic, geopolitical and political stability, fluctuations in the national currency exchange rate against other currencies, openness of the interbank market, stability of the financial market, changes in interest rates, probability of impairment of pledged property)

- microeconomic (e.g., the bank's access to external sources of liquidity, the bank's competitive position) categories.

The Guidelines also state that banks should conduct stress testing for such risks as credit, liquidity, market (currency, interest rate), and operational.

The International Monetary Fund recommends conducting stress testing in two stages:

- identification of the most vulnerable and problematic areas and further construction of a scenario within the macroeconomic framework;

- performing numerical analysis, considering secondary factors, and summarizing and interpreting the results.

The IMF distinguishes between three methods of stress testing (table 3.1).

Unlike the IMF, in domestic practice, according to the Guidelines, stress testing is proposed to be conducted in several stages:

- updating the parameters for stress testing;

Table 3.1

Methods of stress testing in accordance with IMF recommendations

sensitivity analysis	the aim is to determine the reaction of bank portfolios to changes in relevant economic variables, such as interest rates and exchange rates
scenario analysis	the purpose is to assess the resilience of a financial institution and the financial system to an exceptional but probable scenario (optimistic or pessimistic)
“infection spread” analysis	which aims to determine the impact of shocks from individual risks on the entire financial system as a whole

Source: summarized by the author

- development of a stress testing model by identifying the main risk factors and performance indicators and criteria;

- conducting stress testing.

- interpreting the results and preparing conclusions on the stress test.

The National Bank of Ukraine recommends using the following as basic risk factors:

1) macroeconomic indicators:

- economic stability;

- fluctuations in the national currency exchange rate;

- the state of the interbank market;

- political stability;

- stability of financial markets;

- the probability of changes in the price of property provided as collateral for credit transactions;

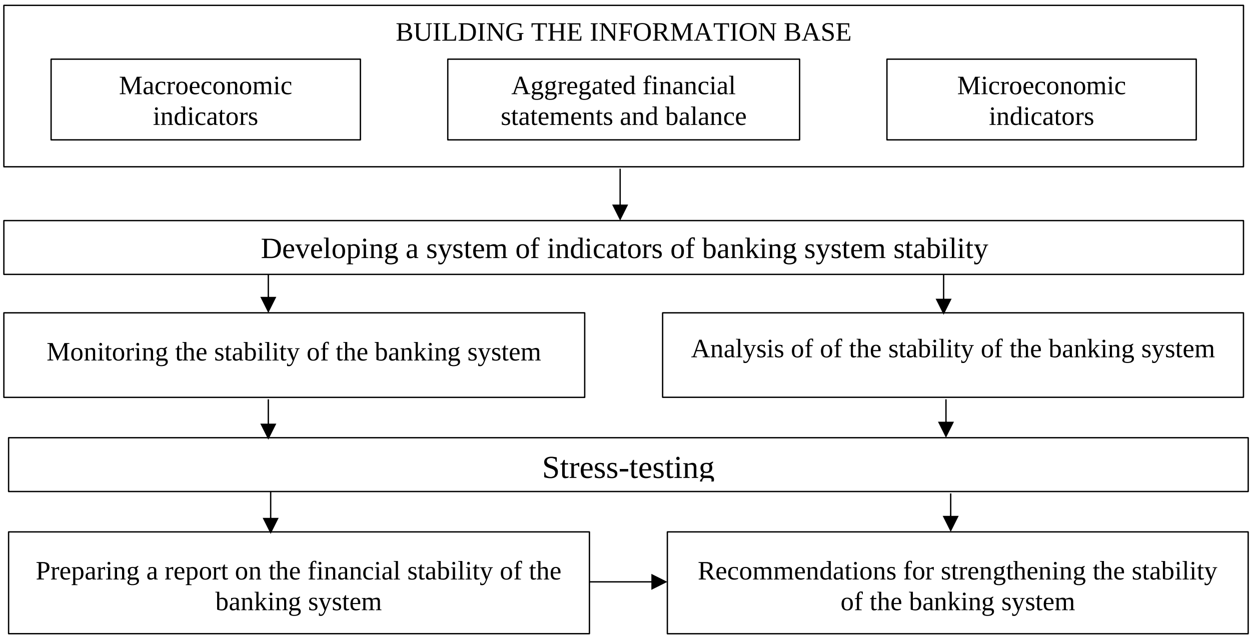
- fluctuations in energy prices;

2) microeconomic indicators:

- the bank's ability to access external sources of liquidity support;

- competitive position of the bank.

The place of stress testing in the system of ensuring financial stability is shown in fig. 3.1.



Source: based on NBU data.

Fig 3.1. Stress testing as a component of ensuring the financial stability of the banking system.

The diagnostic procedure (which is usually often identified with the stress test itself) consisted of two parts (table 3.2):

- stage 1: diagnostics (on-site supervision (inspection) conducted at banks to verify the actual quality of assets and the accuracy of information submitted by banks to the NBU);

- stage 2: Stress test (a stage in which the inspection made very significant adjustments and corrections to credit risk data due to underreporting by banks).

The forecast of key macroeconomic indicators is used in 3 models:

- large borrower stress test model

- NPL model (non-performing loans on a portfolio basis)

- balance sheet model of the bank.

Based on the results of this analysis, the NBU identified capitalization needs and prepared a report on the results, on the basis of which the Banking Supervision Department worked with banks to develop capitalization plans with a clear timeframe.

Table 3.2

Procedure of diagnostic examination of banks

<table>
<tr><th>Procedural components</th><th>Content</th><th colspan="2">Incoming information</th></tr>
<tr><td>Forecasting horizon:</td><td>3 years</td><td>- checking the quality of assets;
- extrapolation of results</td><td rowspan="2">The first stage: Diagnosis</td></tr>
<tr><td>Stress-testing scenario:</td><td>basic macroeconomic scenario</td><td>- results of the 1st stage of Diagnostics;
- data from banks</td></tr>
<tr><td>Stress-testing result:</td><td>capital forecast for each bank (core capital and regulatory capital) for 3 years and projected capital needs</td><td>- portfolio assessment of the remaining loans;
- stress-testing model for large borrowers of the bank</td><td rowspan="3">The second stage: Stress-testing</td></tr>
<tr><td rowspan="2">The ultimate goal of Diagnostics:</td><td>- gradual adjustment of each bank's capital adequacy to regulatory requirements (0% - 5% - 7% - 10%)</td><td>- balance sheet;
- basic macroeconomic scenario</td></tr>
<tr><td>- capitalization plans for banks that lack capital</td><td>- assessing the adequacy of regulatory and core capital</td></tr>
<tr><td colspan="4">Report on diagnostic results (stages I + II)</td></tr>
<tr><td colspan="4">Developing plans for the bank's recapitalization</td></tr>
</table>

Source: compiled from NBU materials

Thus, as described above, the credit risk stress testing model looked like this (table 3.3)

Table 3.3

Credit risk stress-testing model

<table>
<tr><td rowspan="3">Legal entities persons</td><td>Large borrowers</td><td>Stress tests are conducted on an on an individual basis</td><td rowspan="5">Credit risk (= expected loss)</td></tr>
<tr><td>Public sector loans</td><td>Not stress-tested</td></tr>
<tr><td>Other loans</td><td rowspan="3">Analyzed on a portfolio basis</td></tr>
<tr><td rowspan="2">Individuals</td><td>Mortgage loans</td></tr>
<tr><td>Other loans</td></tr>
</table>

Source: compiled from NBU materials

The main approach is to separate large and other borrowers in the entire sample. Among legal entities, the portfolio of “Public sector loans” was separately identified, but they were not stress-tested, since a priori these companies cannot go into default, as they are supported by the state.

“Other loans to legal entities” and ‘Loans to individuals’ were stress-tested on a portfolio basis using econometric models.

Based on the analysis of “Large borrowers” and “Other loans”, the amount of credit risk was determined to be actually equal to the expected losses on these two portfolios.

A comparative description of the methods for assessing the financial stability of banks in the practice of Ukraine and foreign countries is shown in table 3.4.

Table 3.4

Comparative Characterization of Methods for Assessing the Financial Stability of Banks in the Practice of Ukraine and Foreign Countries

Criteria	National practice	Foreign countries' practices
Indicators to be assessed	Groups of analytical indicators are defined quite clearly; a wide range of possible evaluation criteria and thresholds for indicators not regulated by the NBU.	The most important performance indicators of banks and their evaluation criteria are clearly defined; it is possible to assess the dynamic change of indicators and the availability of their normative and limit values.
Consideration of risk	Almost complete absence of a system for taking risk into account when assessing financial stability.	Comprehensive consideration of risk factors in different market segments using clear indicators.
Bank ranking mechanism	Conducting a rating assessment taking into account the NBU's assigned rank.	Compliance with the ranking of banks in accordance with the assigned rank.
Using data for analysis	Limiting the range of internal information, using mainly external information.	Use of external and internal information
Ability to predict the situation	Almost nonexistent.	Widespread use of forecasting in the early warning system.

Source: summarized by the author

Thus, modern approaches to organizing stress testing as a basis for diagnosing the level of financial stability of banks can be classified as follows:

- coefficient analysis and analysis of homogeneous groups (Germany, USA);
- rating systems that provide for the ranking of banks (USA, Italy, France, Ukraine, Poland, Czech Republic, Slovakia, Turkmenistan, Kazakhstan, Uzbekistan, Armenia, Baltic countries);
- comprehensive banking risk assessments (UK, Netherlands);
- statistical models (early warning systems) of the United States;
- macroprudential analysis (IMF member countries).

3.2. Financial security as a component of the system of ensuring financial stability of banks

Given that the financial stability of banks is affected by external and internal factors, the financial security of banks should be aimed at neutralizing their negative impact and achieving a certain effect from the measures taken. To ensure security, it is necessary to create targeted counteraction to all criminal and illegal actions.

When characterizing the financial security of banks, it is necessary to focus on the key parameters:

- financial security ensures a balanced and stable financial position of the bank;
- financial security contributes to the efficient operation of the bank;
- well-organized financial security allows identifying problem areas in the bank's operations at an early stage and neutralizing the impact of crises to prevent bankruptcy.

The main criterion for the effectiveness and quality of a bank's security is the stability of its financial and economic development in accordance with plans and objectives, regardless of changes in the situation.

The purpose of the financial security system is to constantly monitor the environment in which the bank operates in order to ensure timely, justified and adequate management decisions. This task can be implemented only by integrating the financial security system into the overall bank management system.

Financial security of a bank is:

- a set of conditions under which potentially dangerous actions or circumstances for the financial condition of the bank are prevented or reduced to a level where they are not capable of causing damage to the established procedure of the bank's functioning, preservation and reproduction of its property and infrastructure and prevent the bank from achieving its statutory objectives;

- the state of protection of the bank's financial interests, its financial stability, and the environment in which it operates.

The banking security system can be defined as an organized set of special bodies, funds, methods, and measures that protect activities from the impact of internal and external threats. In organizing an effective financial security system, the following principles should be followed (table 3.5).

The purpose of the bank security system is to prevent losses from:

- disclosure of confidential information

- theft of financial and material assets;

- disruption of information systems.

Objectives of the financial security system:

- protection of the rights of banking institutions, their structural units and employees;

- preservation and efficient use of financial, material, and information resources;

- improving competitiveness and increasing profitability by ensuring the quality of banking services and security for the customer base.

Objectives of the financial security system:

- timely detection and elimination of threats, factors and conditions that cause financial, material and moral damage to the banking system;

- classifying information as restricted;

- creating a mechanism and conditions for prompt response to security threats and negative trends in the functioning of the banking system;

Table 3.5

Principles of organizing an effective financial security system

compre-hensiveness	ensuring the security of personnel, material and financial resources from possible threats by all available legal means and methods; ensuring the security of information resources throughout their life cycle, at all technological stages of their processing and use, in all modes of operation; the system's ability to develop and improve in accordance with changes in the conditions of the entity's operation;
timeliness	preventive nature of security measures. Setting tasks, forming integrated security at the preliminary stages of security system development based on the analysis and forecasting of circumstances and security threats, as well as developing effective prevention measures;
continuity	the use of legal and illegal methods by criminals to combat security measures that ensure the safety of operations;
activity	protecting the interests of banking institutions by using standard and non-standard methods;
legitimacy	a security system based on the legal framework that regulates the process of banking activities;
validity	measures and means of protection that should be implemented at the current level of security development and comply with the established requirements and standards;
specialization	involvement of specialized departments or institutions in the development and implementation of security measures and means;
interaction and coordination	implementation of security measures based on clear cooperation of all interested departments and services, as well as third-party specialized institutions;
improvement	measures and means of protection based on their own experience, new technical means, taking into account changes in intelligence methods and means, money laundering, terrorist financing and financial espionage schemes;
centralization of management	independent functioning of the security system based on unified organizational, functional and methodological principles with centralized management of the security system.

Source: summarized by the author

- creating conditions for the maximum possible compensation and localization of losses incurred on the basis of illegal actions of individuals and legal entities to mitigate the negative impact of security breaches on the achievement of strategic goals.

Objects of financial security:

- the monetary market;

- the system of banking regulation and supervision;
- system of control over legalization of proceeds of crime;
- banking risks;
- investment flows;
- information resources.

Subjects of financial security:

- banking system;
- state authorities regulating the development of the banking system;
- legal entities and individuals associated with banking activities.

The objects of protection in a bank are diverse and require different security conditions (table 3.6).

Table 3.6

Diversity of protection objects in the bank

Object of protection in the bank	Characteristics	Security conditions
Financial resources (national and foreign currency, commercial transactions and agreements of the bank, jewelry, financial documents)	High cost, systematic, mobile, secretive, multidirectional	Physical and technical protection, forecasting, control and regulation of flows and directions
Material assets (buildings, storage facilities, equipment, transport, information technology tools and systems)	High cost, low ability to modernize, cumbersome, inertia	Physical and technical security, repair, replacement, modernization
Information resources of the bank with restricted access (information that is a bank's banking and commercial secret and its confidential information)	Secrecy, complexity of transmission, processing, storage and backup	Technical security, access restriction, access delimitation, control and regulation of flows and directions
Bank staff (management and senior management of the bank, persons who have access to its secrets, other bank employees)	Human qualities, moral attitudes, financial status, work experience	Thorough inspection, constant monitoring, physical security
Clients of the bank (individuals and legal entities)	Human qualities, moral attitudes, financial status	Confidentiality, constant monitoring, thorough checks, physical security

Source: [51]

Customers of the bank's results have diverse financial interests. All of them are interested in their fastest and most complete realization. However, the interests of financial security require the introduction of certain restrictions on users' rights to achieve a balance of their satisfaction (table 3.7).

The nature of the bank's financial security is twofold:

- on the one hand, the need to perform bank services as soon as possible to achieve the financial interests of users of the results of its activities;

- on the other hand, careful compliance with the requirements of the current legislation and the procedure for conducting banking operations, preservation of commercial secrets and implementation of measures to authenticate and delimit access to information.

The peculiarities of banking security are as follows:

- constant strict control by the state over the state of affairs in the bank and regulation of its activities;

- direct connection between banking and national security;

- a wide range of interests of the bank in both production and non-production spheres and, as a result, a greater number of external and internal threats and destabilizing factors compared to other business entities;

- the presence of an additional and equal object of protection - bank customers;

- predominance of the security goal (fulfillment of obligations to customers and partners and ensuring their interests) over the strategic goals of the bank (maximizing profit as a business entity).

When assessing the banks' compliance with the financial security criteria and strategy, three interrelated aspects are distinguished

- general assessment of the system's viability;

- assessment of the role of the central bank in the banking system, its legislative functions and the reliability of the mechanism for their implementation

- assessment of the banking system's ability to interact both between its individual entities and with government and public centers in terms of developing strategic and short-term goals for economic development.

Table 3.7

Types, financial interests and restrictions on the rights of users of the bank's performance results

Results users	Financial interests of users	Limitations
Shareholders	Increase in the bank's market value and shareholder return, strengthening of financial stability, growth of performance indicators, investment attractiveness and competitiveness.	Disposal of the bank's funds is restricted by laws and regulations. Restrictions on access to information containing state secrets and certain commercially sensitive information (e.g., customer information). The impact on the bank's operations depends on the number and quality of shares
Investors	Investment attractiveness of the bank, efficiency of investments and their risk level, efficiency of use of the bank's own and borrowed funds, financial stability, solvency.	Limitations in the amount of information about the bank's financial condition, inability to influence the management of its resources.
NBU	Strengthening the resilience of banking institutions, improving the quality of their functions of accumulating funds and transforming them into loans and investments, and strengthening the confidence of depositors and other creditors	Impact on the bank's operations and resources is limited by the laws of Ukraine.
Financial and economic control authorities	Timeliness, completeness of payments of taxes and duties to the budget and extra-budgetary funds, stability of cash flows	Limitations in the amount of information about the bank's financial condition, inability to influence the management of its resources.
Local governments	Creation of new jobs, economic support of the region, focus on local counterparties, stability of tax payments to local budgets	Access only to public reporting data, the ability to influence the activities and resources of the bank only through the “administrative resource”.
Creditors	Timeliness and completeness of fulfillment of obligations under the loan, credit, and deposit repayment	Restrictions on the amount of information about the bank's financial condition, inability to influence the management of its resources.
Customers	Timeliness and completeness of meeting financing needs, profitability and reliability of free funds placement, payment terms	Access only to public reporting data. Inability to influence the bank's activities.
Employees of the bank	The bank's ability to pay salaries on time, ensure employment, social guarantees, stability and profitability of operations	Access to information related only to the direct performance of duties. Inability to influence the bank's activities.
Management staff	Strategic and tactical planning, management of financial and credit resources, ensuring investment attractiveness, competitiveness and high efficiency of activities, making operational management decisions	Access to information related only to the direct performance of duties, influence on the bank's activities is limited by job descriptions and other regulatory documents

Source: [52, 53].

The defined criteria and strategies form the main threats that harm the system of strategic management of financial stability of banks and its main element - financial security.

Threats to bank security are real actions of intruders or competitors that can cause material or moral damage to the bank, manifested by a combination of factors and conditions that pose a danger to the normal functioning of the bank in accordance with its objectives and interests.

The main interests of banks, if considered vital, are the acquisition, accumulation and distribution of funds in accordance with the charter objectives. All other areas of bank activity are subordinate and derive from the main goal of making a profit.

The security of banks' profit-making activities is the state of protection of the bank itself and its customers from the threat of possible risks (losses). The fact of making a profit in relation to the security of banks should be considered as an optimal ratio of the level of existing threats (risks) and profitability of banking activities. Such a state is achieved by timely identification of existing types and factors of banking risks, their qualified assessment and effective management.

The functioning of the financial security service in a bank involves the development of certain provisions for identifying threats for each object subject to examination and control.

First and foremost, this problem is paid attention to by the bank's owners and shareholders, who are concerned about the development of their own business and bear material, moral and social responsibility for it.

Bank security should be based on the security of the bank as an organization, bank personnel, and banking operations (table 3.8).

These areas should constitute the main complex of ensuring the security of any market participant, regardless of its specific activities.

When considering bank security through the prism of an organization, it is important to focus on both its external and internal environment.

Table 3.8

Threats to the financial security of the banking system

External threats (macro-level)	Internal threats (micro-level)
Global banking crises. Causes: financial globalization; reduction in production, deterioration of solvency of borrowing companies; excessive credit expansion during a prolonged economic recovery; impact of inflation on the banking sector; sharp fluctuations in commodity prices, prices for financial assets, interest rates; impact of external economic factors.	Imperfect organization of the financial management system in the bank: unqualified management; errors in strategic planning and forecasting of banking activities; unreliable assessment of profitability from the bank's activities and capital, identification of sources of replenishment of equity capital; conflict of interest between shareholders; significant investment in fixed assets; unreasonably high dividend payments or repayment of funds raised on the terms of subordinated debt by the bank.
The mechanism of using monetary instruments: the level of required reserves, the volume of NBU refinancing, interest rate policy, exchange rate policy, currency interventions, management of gold and foreign exchange reserves.	Inadequate organization of core banking operations: lending process: share of overdue interest and extended loans in the loan portfolio; inaccurate information about borrowers; imperfect credit risk assessment; securities: reckless policy related to insufficiently calculated subscriptions to securities; investment in inefficient projects; use of fake promissory notes, securities and letters of guarantee.
Imperfection of banking supervision and regulation: availability of economic standards governing banking activities, their validity and unconditional compliance; application of capital requirements to banks; system of measures for preliminary response to bank problems and application of prudential measures.	Non-compliance with the liquidity of a banking institution: irrational structure of departments conducting active operations, failure to take into account all the peculiarities inherent in the conduct of operations in internal regulations and procedures when determining the quality of assets; irrational structure of assets; imbalance between raising and placing funds.
Failure to ensure the financial stability of banks due to distrust in the banking and monetary systems and the purchasing power of the national currency.	Lack of highly qualified and honest bank staff: embezzlement of funds by bank employees; misappropriation of income; manipulation of expenses; misuse of real assets of the bank or client; actions beyond the authority of the bank's management staff; forgery of documents or entering fictitious data into them, illegal accounting records.
The competitive environment in the banking system: methods used in competition, the problem of the presence of foreign banking capital.	Weakness of the bank's marketing policy: lack of thorough analysis of the situation in the financial market; inability to choose partners; ineffective advertising policy to promote banking products in the banking services market.
The system for preventing and combating money laundering and terrorist financing.	Ineffective financial monitoring system in the bank: lack of a responsible employee, internal rules and programs for financial monitoring, unreasonable “Know Your Customer” policy.

Unstable tax, credit, and insurance policies.	Existence of channels of information leakage from the bank: insufficient or inadequate information systems; lack of a reliable inter-branch information network.
Unfavorable macroeconomic conditions: the general economic situation in the country and regions.	Problems related to market risks: an unexpected threat of currency, interest rate and other risks; shallow understanding of the nature of systemic risks by the bank's employees.

Source: based on [54, 55].

The external environment includes actions by customers, partners, competitors, government agencies, and the criminal environment.

The internal environment is the actions of bank personnel represented by specialists and managers of bank departments, informal groups, and bank administration.

Threats to the security of a banking institution - internal and external - are described in detail in table 3.9 and table 3.10.

Table 3.9

Threats to the security of a banking institution from the external environment

Threats from the bank's customers	- whether they are real customers, i.e. whether they need specific banking services and make their payments through the bank; - whether they are customers whose business philosophy coincides with the tasks and goals they are trying to achieve in the market; - whether they are customers who cannot cause damage to the bank or take possession of the bank's values;
Threats from the bank's partners	- whether they are real partners of the bank in the market, fulfill agreements and obligations, maintain neutrality and refrain from joining groups that compete with the bank; - whether they are partners for whom the bank's philosophy coincides with the philosophy of their business and does not contradict the achievement of their goals and objectives; - partners who do not take any action to deliberately involve the bank in illegal transactions.
Threats from the bank's competitors	- the bank's direct competitors who participate in the competition against the bank in specific areas of activity; - real competitors who, by their position in the market, can compete with the bank, taking into account the weaknesses and strengths of the bank's activities; - doubtful competitors - market participants that are not actually able to compete with the bank, but undermine the bank's authority by their own actions.

Threats from criminal groups	- real crime and its specific organizations; - professionals posing as criminal groups but only imitating such behavior.
Threats from the government	- actions against the bank are legal or illegal; - private or corrupt; - qualified or unqualified; - with a criminal inclination or from the point of view of personal interest; - performed professionally within the scope of their authority or intentionally using their official position.
Threats from citizens of the government	- whether such customers are citizens of the state; - whether they perceive the role and importance of the bank as an object for “downloading” money; - whether they have psychophysiological problems; - whether they are involved in criminal activities.

Source: [56]

Table 3.10

Threats to the security of a banking institution from the internal environment

Threats from owners	- whether they are law-abiding individuals who conduct their business transparently; - whether their business is permanent or for profit and self-liquidation; - for what purpose the bank was established: to financially support its own structures; to save financial resources in internal settlements and payments or to create its own economic empire; - to disguise the criminal nature of the core business.
Threats from the bank's administration	- professionalism and competence in performing bank management activities or vice versa; - whether temporarily available funds are used for personal enrichment through the acquisition of various institutions; - the administration works only for high salaries and other forms of incentives; - the administration understands its own reputation and links it to the reputation of the bank.
Threats from departmental managers	- professionalism and competence in performing bank management activities or vice versa; - managers who are interested in working in the bank or only in salary; - managers who have extensive practical experience in the bank, are able to manage and professionally supervise bank specialists and the operations they perform; - managers who work in the bank and are not affiliated with other banks or criminal organizations.
Threats from bank employees	- professionalism and competence in performing bank management activities or vice versa; - specialists who are interested in working in a bank or only in salary; - specialists who know how to keep bank secrecy; - specialists who are trying to obtain personal benefits at the place of work and position; - professionals who are inclined to establish informal contacts with clients; - professionals who are ready to agree to any agreements with competitors; - employees who undermine the corporate culture and reputation of the bank in the market by their own actions.

Threats from informal groups	- controlled by the bank's administration and management; - act spontaneously, contrary to the bank's business philosophy; - oppose specific tasks of the departments in relation to the goals set; - are inherently more social or are largely created on the basis of private interests, hobbies of bank personnel; - act as an entity that can resolve conflict situations in the team.

Source: [56]

The specifics of banks' activities are as follows:

- capital flows between industries and regions of the country;
- influence on the money circulation;
- the ability to actively participate in investment projects;
- providing credit and financial services to clients;
- the role of a center that informs about the financial condition of market participants;
- organization of cashless and cash circulation.

Organizational and functional crimes against banks include

- crimes against bank property (unlawful acquisition of property (money) by fraud or breach of trust in obtaining a loan;
- theft of property (money) of the bank in the field of circulation of payment instruments, theft and illegal use of cash and cash equivalents;
- crimes that encroach on economic activity;
- crimes of violation of the bank's functioning (abuse of authority, commercial bribery, encroachment on information constituting bank secrecy, illegal encroachment on the bank's computer information, illegal encroachment on the bank's personnel, illegal encroachment on the bank's intangible assets).

The purpose of financial security is to

- Ensuring stable functioning of the banking system in the context of its interaction with the exogenous and endogenous environment, which is constantly changing;

- identification and neutralization of external and internal threats to the stable functioning of the banking system, organization of counteraction to these threats, and minimization of the consequences of their impact.

The main and functional objectives determine the formation of the necessary structural elements and the general scheme of financial security organization. The general scheme of the financial security organization includes actions (measures) carried out sequentially or simultaneously, namely

- formation of the necessary resource potential (capital, personnel, rights, information, technology and equipment);
- general strategic forecasting and planning of financial security by functional components;
- strategic forecasting to ensure financial stability of the banking system;
- general tactical planning of financial security by functional components;
- tactical forecasting in the system of ensuring financial stability of the banking system;
- operational management of the financial stability of the banking system;
- functional analysis of the financial security level;
- general assessment of the achieved level of financial security.

Only if the above measures are implemented to the required extent can an adequate level of financial security of the banking system be achieved. Financial security should be based on the identification of the following aspects and their features

- interpretation of security as a means of ensuring long-term stable development and protection against strategic threats (within the framework of strategic management);
- interpretation of security as financial security (within the framework of risk management);
- allocation of specific activities to protect the interests of shareholders (within corporate governance).

These aspects are interconnected and determine a certain list of specific characteristics of the strategy as an important component of the overall financial stability management system. Considering the organizational side of the financial security system, it is a continuation of the risk management system in banks.

The risk component of the financial security system of banks is due to the fact that the concepts of "security" and "risk" are interconnected. Accordingly, the levels are also: a higher level of financial security organized at the bank level allows for a more simplified risk management model - and, accordingly, vice versa.

3.3. Approaches to managing banks' distressed assets

The management of banks' distressed assets, in particular NPLs, is an extremely important issue for the banking sector. Banks are currently facing increased macroeconomic risks, such as inflation and currency devaluation, which, in turn, affect the ability of borrowers to meet their financial obligations. Effective management of non-performing assets is critical to ensuring the financial stability of banks and maintaining their ability to continue lending to the economy.

Reducing the level of NPLs helps to improve the creditworthiness of banks, reduce the risk of a systemic crisis, and preserve the confidence of depositors and investors. Implementation of new technologies for risk monitoring, reform of the legal system, and creation of specialized structures for dealing with non-performing assets are key strategies for effective NPL management. These actions will allow banks to clean up their balance sheets, focus on their core business, and support economic recovery [57].

That is, the management of distressed assets is not only a means of ensuring the stability of the banking sector, but also an important factor for sustainable economic growth in the future.

Resolution of the NBU Board No. 97 dated 18.07.2019 “On Approval of the Regulation on the Organization of the Process of Managing Problem Assets in Banks of Ukraine” defines [58].

- a list of problem assets (potentially problematic assets; non-performing assets; repossessed property that has become the property of the bank on the basis of the exercise of the rights of the pledgee)

- components of the process of managing problem assets (early response system; introduction of debt settlement instruments for non-performing assets; management of repossessed property);

- requirements for organizational aspects of distressed asset management.

The introduction of these requirements is aimed at creating a comprehensive process for managing problem assets, which should be controlled by the bank's board.

Potentially problematic assets are assets that have signs of potential problematicity if the bank has proved, based on its judgment, that there is no need to take measures to settle the debtor's/counterparty's debt by the non-performing assets unit/responsible person for non-performing assets;

Problem assets: the aggregate amount of potentially problematic assets, non-performing assets, and repossessed property [59].

The Bank organizes the process of managing distressed assets in compliance with the following principles:

- principle of economic feasibility;

- the principle of priority;

- principle of timeliness;

- principle of structuredness;

- principle of adequacy;

- principle of comprehensiveness and complexity;

- principle of efficiency;

- monitoring principle.

In the strategy for managing distressed assets, the bank determines:

- ways to ensure the achievement of targets in the short-term (up to one year) and medium-term (one to three years) forecast period, taking into account the assessment of the operating environment that affects the bank's ability to reduce the level and volume of non-performing assets and repossessed property

- approaches that ensure the functioning of the early warning system aimed at early detection of potentially problematic assets, implementation of timely and effective corrective measures to prevent the level and volume of non-performing assets in the bank.

The bank implements the process of managing problem assets, which covers all stages of the life cycle of a problem asset, including (fig. 3.2) [59].

Stage 1	→	early detection of debtors/counterparties with signs of potential problems and debtors/counterparties that do not intend to cooperate with the bank on debt repayment.
Stage 2	→	restructuring/procedure for financial restructuring of debtor/counterparty debt.
Stage 3	→	taking measures aimed at terminating relations with the debtor/counterparty, using out-of-court and/or court debt recovery instruments.
Stage 4	→	management of repossessed property.

Source: [59].

Fig. 3.2. Stages of the distressed asset management process

The main methods of managing distressed assets are presented in table 3.11.

During restructurings, banks often agree to very favorable terms:

- prolongation of the loan for more than ten years;

- lowering interest rates to non-market levels (often less than 1%) with very slow recovery in the future.

According to banking institutions, foreclosure or sale in most cases could provide compensation for no more than a third of the total debt Despite all efforts, restoration of the quality of restructured NPLs remains rare. The total amount of NPLs decreased by UAH 20.6 million over the month, while the total amount of loans granted by banks showed an upward trend by UAH 17.7 billion [61, 62, 63].

Table 3.11

Methods of managing distressed assets

Restructuring methods		Methods of liquidation	
Short-term restructuring	Long-term restructuring	Intra-bank methods	External banking methods
1. Deferred repayment of the principal on the loan. 2. Reduction of principal payments. 3. Grace period/moratorium on debt service. 4. Full or partial capitalization of accrued and unpaid interest and overdue principal on the loan.	1. Reducing the interest rate on the loan. 2. Extension of the debt repayment period. 3. Providing additional collateral. 4. Sale of the pledged property by agreement. 5. Changing the debt repayment schedule. 6. Currency conversion of debt. 7. New lending. 8. Debt consolidation. 9. Partial or full debt forgiveness. 10. Other changes in contractual terms	1. Claims and lawsuits (foreclosure on collateral, foreclosure on other property). 2. Write-off of a problem loan at the expense of the insurance reserve. 3. Repayment of the debt through the insurance company's reimbursement of the consequences of the insured event.	1. Transferring distressed assets to a third party (collector) without optimizing the balance sheet. 2. Transfer or sale of distressed assets to a related financial company on the basis of balance sheet optimization. 3. Sale of distressed assets to an unrelated financial company on a factoring basis. 4. Securitization of assets.

Source: [60]

Thus, the problem of NPLs is a serious challenge for Ukraine's banking system, as it can significantly undermine the financial stability of banks and the economy as a whole. To effectively address this problem, banks can use several strategies.

First, they need to improve their risk management and credit analysis processes to prevent the issuance of risky loans.

Second, debt restructuring can help restore borrowers' solvency by allowing them to reduce payments or extend repayment terms.

Third, the sale of NPLs to specialized companies or investors can reduce risks and free up capital. Finally, regulators can play an important role by implementing policies that encourage banks to cleanse their balance sheets of NPLs and provide support through recapitalization programs or government guarantees. Several additional aspects should also be taken into account, namely, the introduction of effective mechanisms for collecting information on the creditworthiness of borrowers can significantly reduce the risk of default. This includes:

- using advanced analytical tools to assess risks and monitor the loan portfolio in real time;

- engaging independent auditors and consultants to assess the quality of banks' assets can provide an objective view of non-performing loans and help develop action plans.

Innovative financial instruments can also help reduce the burden on the banking system. This allows banks to transfer risks to investors willing to accept them and thus reduce the amount of non-performing assets on their balance sheets.

CONCLUSIONS

The research conducted in the master's thesis leads to the following conclusions.

Effective functioning of the economy in today's dynamic environment is impossible without a stable banking system. The banking sector is not only the largest and most revolutionary segment of the financial market, but also absorbs threats and challenges from the external environment, turning them into new opportunities for growth. The financial stability of the banking system is determined by the synergy of risks inherent in banking activities, as well as the financial stability of individual banks that are part of this system. It serves as the foundation for building resilience to financial crises, minimizing risks, transparency, and, as a result, the confidence of economic agents in the banking system.

Banking is an independent type of economic activity that can be considered as a separate sector of the economy. For this purpose, it has all the necessary attributes: it employs a significant amount of labor; it accounts for a significant share of social capital and a significant number of firms (banks); it has its own special market segment where it sells its products; it creates added value and participates in the production of GDP; it pays taxes to the budget, etc. Therefore, banking institutions: on the one hand, are sellers of services; on the other hand, they are institutions that ensure the normal functioning of the market mechanism itself, providing the economy with the necessary funds and redistributing them among individual economic entities.

In a constantly changing financial market environment, the most crucial part of bank management is the formation of a bank's strategy for a long future period, which forms the main prospects for the bank's development, starting from the emergence of a fundamental idea to its implementation in plans for specific measures and quantitative (digital) indicators. A bank's strategy is usually understood as a fundamentally meaningful line of behavior of the bank, as well as actions of its governing bodies based on a long-term strategy. The content of the strategy is individual for each bank, but the bank's strategy or strategic policy is based on a strategic vision of what results the bank should achieve over a long period of time. Given the current conditions of banking development, the basis of banking activity today is the creation of an effective system to ensure the financial stability of the banking system, as the basis that is truly capable of ensuring the dynamic development of the economy.

Any fluctuations in financial markets in recent times always demonstrate the crucial role of the state in the person of the Central Bank in maintaining financial stability. It is the Central Bank that in such periods takes on the function of a coordinator of possible actions and a developer of necessary regulations, the implementation of which will contribute to the elimination and containment of problems in the financial sector, and therefore - the entire banking system and the economy as a whole. The number of central banks for which ensuring financial stability is one of their core functions is constantly growing. When assuming responsibility for the stability of the financial system, central banks emphasize that the banking system is the main institutional component of the financial sector, which plays a significant role in the financial system.

Traditionally, the main goal of the central bank is to maintain monetary and price stability in the economy. Its powers in this area are usually enshrined in the law on the central bank. However, the work of central banks is largely focused on maintaining financial stability in the economy.

Central banks are institutions that play an extremely important role in ensuring financial stability. This is primarily due to the fact that central banks, along with maintaining the stability of the national currency, have always been responsible for the stability of the banking system, and banks are a central element of the financial system, and the emergence of systemic instability in the banking sector has a negative impact on financial stability and has extremely negative social and economic consequences for the country as a whole. However, central banks cannot bear full responsibility for maintaining financial stability. Ensuring the stability of the financial system is a complex issue and requires the solution of many tasks, coordinated efforts of a wide range of government agencies, including central banks, ministries of finance, financial supervisors and regulators.

The process of ensuring the financial stability of banks is extremely complex and regulated. It includes, in addition to determining objective criteria for the existing and desired state, also a clear and coordinated management of all aspects of the bank's activities, as well as the formation and selection of such management decisions that would ultimately ensure the achievement of the strategic goal - a financially stable banking system that is able to perform its functional purpose without interruption. This mechanism is not static, but is triggered under the influence of constant dynamic factors. The task of management is to constantly adjust the components of the mechanism - to the existing variables of the economic environment in which the banking system operates.

Bank risk management is one of the key areas of modern banking management (both at the system level and at the level of an individual bank), which solves the formulated management tasks, including the creation of an effective risk management system, the elements of which interact in accordance with the approved rules and in an agreed sequence, based on certain concepts, laws, principles and methods. The financial stability of banking activities is highly dependent on risks, which must be adequately addressed and associated with both additional income and additional losses. The purpose of risk management is to ensure maximum management efficiency, taking into account uncertainty factors that may have both a negative and positive impact on the achievement of the declared goals. The priority here is to ensure financial stability, security and stability of the banking system, and to create, protect and increase the market value of banking institutions.

The analysis of the above issues shows that the issue of financial stability is extremely important for both the banking system and the economy as a whole. This necessitates constant attention to these issues in order to protect banks and their customers from potential imbalances and obstacles. The paper suggests the following areas for further development of banks.

First. Constant turbulence, which largely determines the conditions for the development of banking systems, necessitates the use of scenario-based behavior by banks, which allows them to ensure not only stability in a high-risk environment, but also to create conditions for increasing public confidence. In view of this, it is advisable to monitor the resilience of financial institutions in advance, using stress testing as one of the methods that allows not only to assess possible losses of individual banks but also to prepare for potential crisis situations in advance. Stress tests are used by the world's leading central banks as an incentive to improve the quality of internal audit and risk management in banks, shifting the focus of banking supervision from the traditional analysis of the current state of liquidity and capitalization to their possible values in the future under the influence of extreme events.

Second. The issue of ensuring the financial security of banks is driven by the importance of this phenomenon and the increased desire of each government to achieve a safe measure of the financial component, which is so important in the context of complex transformation processes and globalization economic imbalances. The level of banking security will increase if the banking system is stable, profits increase, and its resources are optimally utilized for the country's socioeconomic development. Ensuring and maintaining the financial security of the banking system will be facilitated by the following: stable lending to the real sector of the economy, availability and efficient use of credit resources of banking institutions, and low dependence of the capital of national banks on non-resident participants.

Third. The inability of borrowers to repay loans increases during financial and economic crises and subsequent recessions. As a result, many banks around the world accumulate NPLs. High levels of NPLs have a negative impact on economic growth, reproduction processes in the economy, and macroeconomic dynamics, as they reduce banks' profitability and their ability to serve as an additional channel of financial and credit support for business entities (especially micro, small, and medium-sized businesses). The effectiveness of ways to overcome this problem largely depends on the depth of government intervention, the level of development of the securities market, the consistency of legal and regulatory frameworks, and the transparency of the judicial system. It is promising to use the securitization mechanism to resolve the high level of NPLs in the current environment.

To properly ensure the financial stability of the banking system, a clear organizational and economic mechanism is needed, which should include regulation; external and internal actors; objects of the mechanism. Its practical significance will lie in the combination of methodological, organizational, instrumental, information and analytical, and methodological support and in directing their action to ensure the banking system's ability to maintain financial equilibrium, withstand the negative impact of external and internal factors, neutralize risks and crisis trends, and effectively perform its functions.

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Онлайн сервіс створення та перевірки кваліфікованого та удосконаленого електронного підпису

ПРОТОКОЛ
створення та перевірки кваліфікованого та удосконаленого електронного підпису

Дата та час: 10:09:25 18.05.2025

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П.І.Б.: АЗАРЕНКОВА ГАЛИНА МИХАЙЛІВНА
Країна: Україна
РНОКПП: 2571514226
Організація (установа): ФІЗИЧНА ОСОБА
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Сертифікат виданий: КНЕДП АЦСК АТ КБ "ПРИВАТБАНК"
Серійний номер: 5E984D526F82F38F04000000E4DA710112DF3D05
Тип носія особистого ключа: Незахищений
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Підписувач - 2: Омеляненко Денис Олегович
П.І.Б.: Омеляненко Денис Олегович
Країна: Україна
РНОКПП: 3634714115
Час підпису (підтверджено кваліфікованою позначкою часу для підпису від Надавача): 13:20:45 03.01.2025
Сертифікат виданий: "Дія". Кваліфікований надавач електронних довірчих послуг
Серійний номер: 382367105294AF9704000000EF5A070007064B03
Тип носія особистого ключа: ЗНКІ криптомодуль ІІТ Гряда-301
Серійний номер носія особистого ключа: Не визначено
Алгоритм підпису: ДСТУ 4145
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Версія від: 2025.01.15 13:00