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# Impact of Transparency of Public Finances on the Level of Corruption in Ukraine

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## INTRODUCTION

Corruption in Ukraine substantially exceeds the European average level, which makes this problem one of the key obstacles for effective reform of socio-economic relations to promote European values and ensure sustainable economic growth. In our view, corruption should be interpreted as a complex phenomenon, the content of which is determined by both economic laws and socio-political processes.

Given the complexity of the interpretation of corruption, the tools to combat this phenomenon can be divided into two large groups. First, direct measures of repression, which mainly relate to the sphere of activity of anti-corruption bodies: The Supreme Anticorruption Court of Ukraine, the National Anti-Corruption Bureau, the Specialized Anti-corruption Prosecutor's Office, the National Anti-Corruption Agency and the State Bureau of Investigation. Second, strategic integrated preventive measures. These measures form the prerequisites for changing the minds of participants in economic relations and introduce systemic safeguards for committing corruption. One of the key instruments of the second group is to increase the transparency of the functioning of public finance institutions, as well as to ensure the transparency of all components of state economic policy, which are mediated by the movement of financial resources.

This monograph examines the methodological foundations for ensuring transparency of public finance in Ukraine; as well as methodological approaches to increase the transparency of the functioning of individual entities (banking groups, state-owned banks, non-bank financial intermediaries) and systems (counteraction to the laundering of illegal income, credit information) in this field.

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## **1. BASICS OF PROVIDING TRANSPARENCY OF PUBLIC FINANCE OF UKRAINE**

Combating corruption is one of the priorities facing Ukraine's development and integration with the European community. The EU states, first and foremost, focus on preventative measures to prevent corruption and not on combating this phenomenon as an integral part of the political and political system. Yes, according to Transparency International's 2017 rating, the least corrupt countries are Denmark, Finland, Norway, Switzerland, Singapore, Sweden, Canada. Ukraine is in 130th place.

The experience of such European countries as Latvia is indicative of ensuring transparency of the public finance sphere. Thus, one of the priority areas of the fight against corruption in the 1990s, this country has chosen to provide citizens with transparent information.

The question of transparency of information about the activity of public authorities and its implementation is a topical issue for both scientists and practitioners today. Forming a categorical apparatus in this aspect requires a definition of the semantic framework of concepts such as transparency, openness and transparency, as a progressive tool in the fight against corruption. D. Spivak emphasizes that the principle of transparency of public administration for broad public control is enshrined at the level of legal norms in more than 20 countries, which in turn is also an indicator of the need to implement this principle in national legislation.

Transparency from English is translated as «transparent». Domestic science is inclined to believe that transparency is the openness of legal institutions, the accessibility of information. Scientists such as E. Afonin, O. Sushi, M. Moskovskyi and others are inclined to identify the meaning of «transparency», «openness», «transparency» as interchangeable basic categories.

We believe that the concepts are not identical. The openness category implies unrestricted news, unconcealedness, or accessibility, in turn, transparency – above all, the ease of access to information.

Schoer analyzes transparency in four «forms»: as a regulatory measure, as a means of accountability to the government, as a means of improving efficiency, and as a theory of cognition. As a regulatory tool, transparency is a form of control (openness of information requires those who provide this information to follow rules and regulations). It should also be noted that transparency as a means of accountability to the authorities is not a completely positive phenomenon since the public does not always make better decisions than public authorities. In turn, the free circulation of information does not always lead to positive consequences.

McMillan's dictionary explains the term «transparent» as simple, clear, easy to understand, and the term «Open» as an honest way of saying, while trying to hide nothing. In this context, we consider it expedient to define openness as an effective mechanism for influencing public authorities and transparency as open access to information that reflects the activities of public authorities.

It should be noted that the Institute of Transparency is not a new concept in European practice, for example, for the first time, this issue was settled at the legal level in Sweden in 1766 with the adoption of a law on freedom of publication, later in Norway (Publicity in Administrative Management Act, 1970 France) (Access to Administrative Documents Act, 1978).

Summarizing the different approaches to defining the principle of openness of public power, we can conclude that openness of public power includes such basic characteristics as the level of the political culture in society, the existence of a regulatory framework and the effectiveness of mechanisms for

implementing public access to power by providing a mechanism access to information.

To date, the issue of transparency of the activity of public authorities and local self-government in the field of public finances has not been resolved in the practical part of this issue. Yes, the level of transparency of this information remains a problem.

OA Music argues that the principle of transparency and publicity of the budget is applicable in all countries of the world, however, with certain peculiarities of individual countries and limitations. For example, in Canada, a budget message is being prepared in a highly secretive manner, the disclosure of which can lead to adverse consequences.

Transparency of the activities of local self-government bodies is not a novelty but is reflected in the European Charter of Local Self-Government, which proclaims the right of citizens to participate in the approval of the local budget. In our opinion, this right is a clear manifestation of the principle of transparency, namely, it reflects the openness of local self-government. The recommendations state that traditionally, budgetary information on extra-budgetary activities of the government is not included in the budget. The same applies to real and financial assets and liabilities. Also, the budget does not show quasi-fiscal transactions (operations that lead to hidden subsidies and government lending to entities, implicit transfer of government spending to other entities). Therefore, budget transparency is not a holistic picture of government activity. In this respect, it is quite reasonable in our view that L. Gladchenko's position is that this problem is being solved, in particular, by the requirement to consolidate budget data and extra-budgetary activities of the government, thus extending budgetary boundaries.

In its turn, the OECD puts in the category of «budget transparency» not only the openness of information as the

completeness of content but also such a sign as timeliness, systematic disclosure of all relevant budgetary financial information. The transparency of public finances is not considered to be limited solely to budget information. In international practice, the term «fiscal transparency» is often used. The IMF defines fiscal transparency as the completeness, clarity, reliability, timeliness, and timeliness of government financial reporting and the openness of the financial decision-making process to the public. In this aspect, the emphasis is on access to information, its qualitative characteristics, which allows evaluating the financial position of the government and the real costs and benefits of the government's activities, including their present and future economic and social importance.

Improvements in the implementation of the principles of transparency and fairness of the budget, as well as taxes and duties, as a means of combating corruption, are reflected in the anti-corruption strategy in the field of public finances of the World Bank, International Code of Conduct for Public Officials and others.

The international standards for transparent regulation of public finances include the following: the ten basic principles of information sharing disseminated by the Big Seven Ministries of Finance; Basic principles of effective banking supervision as defined by the Basel Committee; Basic principles of insurance of the International Association of Insurance Supervision Bodies; Goals and principles of securities regulation, defined by the International Organization of Securities Commissions; The Organization for Economic Co-operation and Development Agreement on the Exchange of Information on Taxation; The G20 statement on transparency of information and exchange of information for tax purposes; Forty Recommendations and Nine Special Recommendations on Combating FATF Terrorism

Financing. It should be noted that key aspects of the FATF's activities are: progress in the implementation of anti-money laundering measures; analysis and reporting of laundering trends, methods and countermeasures; promote the adoption and implementation of FATF standards against money laundering worldwide.

The FATF's recommendations emphasize the importance of ensuring that every person has access to information of public interest, that is, which is held by public information providers. Thus, the Law of Ukraine «On Access to Public Information» and a number of other legal documents are in force in Ukraine: The Law of Ukraine: «On Information», «On State Secrets», «On the Procedure for Reporting the Activities of State Authorities, Local Self-Government in Ukraine by Means the Presidential Decree «On Ensuring Public Participation in the Formation and Implementation of State Policy, etc., which are intended to regulate this issue. However, at the legislative level, the mechanism of disclosure of this information is insufficiently regulated. It is quite difficult for the average citizen to find the necessary information about the activities of a financial market.

According to the rating of the International Budget Partnership in 2017, Ukraine ranks 39th out of 115 countries. The countries with the most transparent budgets are New Zealand, South Africa, Sweden, Norway, Georgia. The major drawbacks are inadequate public involvement in budgeting.

It should be noted that in the national scientific works, the transparency of the state budget plays a significant role and the problems related to other issues of public funding are often overlooked. In particular, the activities of financial institutions or information, the income of public officials, the activities of insurance companies.

So, recently in Ukraine, the system of electronic declaring, the purpose of which is electronic the declarations of officials,

has started working. However, if we take into account the statistics – how many cases were filed according to this information, then their number is negligible, not even considering that according to the NAPC was actually checked about 10 percent of the total amount of filed declarations, which indicates the low efficiency of this systems and that further the mechanism of verification of declarations also needs improvement.

There is also the question of the practical implementation of the prosecution of relevant persons by public authorities, as some of whom have not even been dismissed.

The separate place should be given to the transparency of activities of local self-government bodies. According to the changes introduced in the Budget Code of Ukraine, local governments have received a more independent budget, but in practice, there is a problem of inadequate interaction of local authorities and the community in the process of budget formation and use.

A. Demianyuk notes that the problem of interaction in the process of budgetary decision-making is new to both the authorities and members of territorial communities. The main reason for the crisis of interaction between local authorities and the population is the deep gap between the unreformed bureaucratic and the new democratic systems. The bureaucratic system of government can neither produce nor implement effective budgetary decisions democratically since it allows itself to disregard the opinion of the community. In turn, the community is not sufficiently aware of its capabilities.

Undoubtedly, public involvement in the budget process is an important factor in the implementation of the principle of transparency, but in our opinion, it is not enough, it is also important for the public to have leverage in budget decision

making. This may need to be implemented through community representatives.

The implementation of the principle of transparency is one of the important challenges facing scholars and practitioners in Ukraine. Achieving the implementation and implementation of this principle at the international level is an integral part of achieving the leading goal of Ukrainian society – the fight against corruption. The transparency of public funding should be ensured at all stages of its implementation. In the budget process, it involves public participation in the preparation of budget projects, their discussion, and practical implementation of access by the general public to information on budget spending at all levels, whether it is the state or local budget. Unfortunately, to date, even though appropriate bodies have been set up to monitor the transparency of this system, it is still not functioning effectively.

The current economy of Ukraine is in a difficult situation, one of the reasons being the laundering of the proceeds of crime. The latter has an impact on production volumes, prices of goods and services, savings and employment, and economic growth. This factor has a significant impact on the operations of enterprises, compromising their liquidity, financial sustainability, profitability, and reputation. Public finances also suffer losses, as massive tax evasion causes a reduction in state budget revenues. Illegal money laundering causes capital outflows, interest rates, and exchange rates to rise.

First of all, to find out the consequences of money laundering, it is necessary to consider the reasons for such an operation, which include the low level of financial support of the population, unemployment, high tax burden on individuals and legal entities. Illegal money laundering has a direct negative impact on the real sector of the economy, causing its shadowing, which exists not only in production but also in the sale of

products and impedes the processes of globalization (since the countries of the world are not ready to have an unreliable partner), deterioration of the country's investment attractiveness, outflow investment capital, deterioration of the country's international image, non-controllability of pay and corruption. In turn, a high level of the shadow economy contributes to cash transactions without accounting, illegal payment of wages, bribery, fraud, and underground production.

The activities of the country's financial institutions, which include banks, non-bank financial institutions, and the securities market, are important for economic growth, which is explained by the fact that they accumulate funds and their effective placement guarantees economic development. Money laundering itself impairs the performance of these financial institutions, as the client's trust in the financial institution is the guarantor of its successful operation and the risk of fraud and corruption by investors, which is an obstacle to such trust.

Besides, the laundering of criminal proceeds harms investment, since the perpetrators of it pursue the purpose of avoiding control. The most «attractive» sector for money laundering is the trade sector, which is explained by the constant cash flow and payments with it. The next one in terms of «attractiveness» is the transport sector, since billing for transport services is quite common in the shadow economy. Thus, significant resources are being diverted from highly profitable sectors (light, food, engineering) to the property, precious metals, and stones sectors. The financial market is not very popular in money laundering, which can be explained by the underdevelopment of the Ukrainian stock market and financial instruments. However, financial institutions are a major intermediary in the laundering of proceeds of crime.

The dirty money laundering operations do not change the value of imports and exports positively. Persons who are



profitable buyers of «dirty» money laundering consume more imported goods, which causes the problem of a negative balance of payments. Such imports do not create a domestic economic activity or employment and are a factor in reducing domestic prices by diverting money into foreign trade, which implies a decline in the productivity of national enterprises.

Another consequence of the laundering of illegal income is a decrease in the effectiveness of the fiscal policy, which is since the tax base is reduced. Accordingly, there is a decrease in the level of tax payments, which causes a decrease in revenues to the State Budget of Ukraine, which is a negative trend, as the volume of expenditures decreases. Monetary policy is most negatively impacted, as the laundering of illicit income forms the sphere of «black» cash circulation, which causes a deterioration in monetary policy. Uncontrolled cash inflows increase demand for it, causing financial inflation to rise. The outflow of funds from the system threatens the stability of the national economy and the international financial system.

Also, money laundering is a threat to the currency security of the country, as it facilitates the dollarization of monetary aggregates, which facilitates the mechanism of withdrawing money from the country. There is a devaluation of the national currency relative to the freely convertible currencies, as demand for the latter increases, leading to a deterioration of the debt service.

Thus, the negative impact of money laundering has on the country's economic growth indicators, including GDP, export and import volumes, household and state income, employment, population, country, and financial institutions. Given the above effects of money laundering, steps must be taken to prevent money laundering. To do this, it is necessary to create favorable conditions for doing business by reducing the tax burden and streamlining the flow of documents, improving control over the

efficient use of public funds, reducing cash flow through the introduction of modern technologies, developing a system of means of controlling the legalization of proceeds of crime, and adopt a system for ensuring economic security against crime and corruption.

## **2. ANALYSIS OF TRANSPARENCY OF PUBLIC FINANCES AT THE CURRENT STAGE OF DEVELOPMENT OF UKRAINE**

In Ukraine, since independence, access to most of the data of state registers has been open exclusively to state structures. Only some of the registers were publicly available (for example, the Unified State Register of Legal Entities and Individual Entrepreneurs, which is still operational today). To obtain the necessary information, it was necessary to submit a request to a government agency, however, most of the data remained closed to the public. Thus, there was limited ability to monitor the activities of the authorities and it was difficult to detect the facts of corruption.

For a long time, public information was also kept private. The Ministry of Finance and the State Treasury have released some data on the implementation of state and local budgets, but there was no complete information on the financing of many items of the state budget. The situation with local budget execution data was not better. Authorities had the opportunity to use public funds to their advantage, which led to the existence of many corruption schemes. It is the need to combat such schemes that are a prerequisite for launching open data in Ukraine.

There are many approaches to understanding the nature of open data. In accordance with the Law of Ukraine «On Access to Public Information» of January 13, 2011 No. 2939-VI, it should be noted that public information is displayed and documented by any means, on any media, information received or created in the process of fulfillment by the authorities of their duties provided for by the current legislation, or which is in the possession of the public authorities or other managers of public information. The reason for the introduction of open data in

Ukraine was the rating of Open Data Barometer (international organization World Wide Web Foundation), compiled on the results of 2014, which shows the degree of development of open data in the world. Ukraine ranked second in Morocco and ranked 55th in 86 countries. Also, the rating reflects the number of points received by a country by certain criteria. Thus, according to the Open Data Barometer, Ukraine did not perform well, so in 2015, preparations began for the implementation of open data by adopting several new legal acts and amending existing ones. The main innovations in the legislative acts regarding the provision of information on the activities of public authorities in the form of open data are listed in Table 1.

That is, it can be considered that the legislative changes indicated in Table 1 were the first and significant step towards the start of open data in Ukraine, which in turn caused the need for the formation of a new executive body. This body became the State Agency for Electronic Governance (established based on the State Agency for Science, Innovation, and Informatization of Ukraine) whose purpose is to introduce open information, electronic document circulation, information systems and development of the information society through the functioning of the National Open Data Portal.

During 2015-2016 the Unified State Open Source Web Portal, Official Public Finance Portal of Ukraine E-Data was created and launched, as well as a test version of the Open Data Portal of the Verkhovna Rada of Ukraine (Parliament of Ukraine). Changes have occurred and state structures. For example, the State Treasury now publishes monthly information on the implementation of state and local budgets on its website. The State Fiscal Service of Ukraine publishes data on the volume of tax revenue collection and the single social contribution, as well as the number of audits by region. Open

access to public finance data ensures better use of public funds and reduces the likelihood of misuse of budgets at various levels.

The next phase of the transition to open data was Ukraine's accession to the International Open Data Charter in October 2016 at the Annual International Open Data Conference in Madrid. The Charter was created in 2013 by the leaders of the G8 to promote democracy, fight corruption and promote the economic growth of participating States.

The key conditions for accession to the Charter are the standardization of the process of collecting and publishing information by the public authorities, the legislative definition of a clear list of information to be made public and the timely publication of reliable and complete data.

Table 1. Key changes/innovations in the legislation on open data implementation in Ukraine since 2015

Chronology	Legal act	The essence of change/innovation
11.02.2015	Law of Ukraine «On Openness of Use of Public Funds»	The law regulates issues regarding the publication of information on the use of public funds
09.04.2015	Law of Ukraine «On Amendments to Certain Laws of Ukraine on Access to Public Information in the form of Open Data»	According to the requirements of the law, the Unified State Open Data Web Portal was created, and the Institute of Open Data was established (State Agency of Electronic Governance of Ukraine)
09.04.2015	Law of Ukraine «On Amendments to Article 28 of the Budget Code of Ukraine on Access to Budget Information in the form of Open Data»	Thanks to the law the opportunity for the population to get acquainted with the information concerning the implementation of the state and local budgets of Ukraine is opened

Chronology	Legal act	The essence of change/innovation
14.07.2015	Law of Ukraine «On Amendments to Some Legislative Acts of Ukraine on Increasing Transparency in Property Relations to Prevent Corruption»	The law opened access to registers of property rights and the land cadaster, which made it possible to expand the fight against corruption
21.10.2015	Decree of the Cabinet of Ministers of Ukraine «On approval of the Regulation on data sets to be disclosed in the form of open data»	The decree specifies the list of data to be published, as well as the basic requirements for their format, structure, and procedures for data disclosure.
25.12.2015	Law of Ukraine «On Public Procurement»	The law ensures efficient and transparent procurement, promotes a competitive environment and fair competition and prevents corruption in this area.
05.10.2016	Ordinance of the Cabinet of Ministers of Ukraine «On Some Issues of Corruption Prevention in Ministries and Other Central Authorities»	The ordinance provides for the release of publicly important sets of information in the form of open information
30.11.2016	Decree of the Cabinet of Ministers of Ukraine «Some issues of public information disclosure in the form of open data»	Approves the mechanism for maintaining a single state open data portal for public access to open information in the form of open data and interaction with users regarding open data

In addition to these legislative changes and adherence to the Charter, an important achievement on the path to transparency and openness of information was the launch of ProZorro's

electronic procurement system, which now allows monitoring public procurement finances, evaluating their effectiveness and preventing possible corruption schemes.

An important achievement of Ukraine in the anti-corruption sphere is also the provision of public access to information about the ultimate owners (beneficiaries) of domestic companies through the adoption of the relevant law. Over time, the law has been refined: the term «ultimate beneficial owner (or controller)» has been used instead of «ultimate beneficial owner», and private equity entities have been required to provide information about ultimate owners by the end of September 2015. Already in 2017, information about the final owners was added to the database of the Unified State Portal of Open Data.

It is also worth noting that Ukraine became the first country to join the Global Register of beneficial owners. According to experts from the Open Government International Initiative, this step is a significant achievement for the implementation of the principles of transparency and accountability.

An important achievement of Ukraine was the improvement of positions in the Open Data Barometer rating. Since the rating was created in 2013, country position data has been published since 2014. Since 2015, Ukraine has been steadily improving its position in the field of open data. And according to the results of 2017, the state received 47 points (points take into account a set of factors from four spheres: state regulation, actions of authorities, public rights and ease of doing business) and 17th place out of 30 countries taken for analysis. It should be emphasized that in 2017 only 30 countries that have signed the International Charter of Open Data are included in the rating.

In terms of individual criteria, there is also a significant improvement in Ukraine in 2017: on the «readiness» criterion – 60 points (23 points more than in 2014), on the

«implementation» criterion – 52 points (29 points more on 2014) by the impact criterion – 28 points (22 points more than in 2014).

Open Data Barometer analysts stressed the progress of implementing open data in Ukraine, in the areas of the state budget, business registration, primary and secondary education, as well as crime statistics. However, Ukraine has shown a negative result regarding the openness of land ownership information, maps, health system operation, etc.

Improvements in the field of open data for Ukraine were also recorded in the ranking of the Global Open Data Index (Open Knowledge International). According to the rating, Ukraine ranked 31st out of 94 countries in 2016 (in 2015, ranked 54th out of 122 countries). Of the 15 categories that the Global Open Data Index includes, Ukraine ranks 1st in data openness by category: state budget, national legislation and company registration (which is in line with the findings of the Open Data Barometer experts). The high level of data openness is observed in such categories as public procurement (85 %), draft laws (85 %) and national statistics (80 %). But the zero percentage of data openness in Ukraine still exists by categories: water and air quality, maps, government spending, and so on.

Therefore, more efforts should be made to promote openness of information in areas that are virtually inaccessible to the public, according to the Open Data Barometer and Global Open Data Index ratings. Increasing access to open data, in addition to reducing the possibility of corruption, will contribute to the economic growth of the country. According to some national experts, in 2017 open data already brought \$ 700 million to the Ukrainian economy. The USA. And if the pace of development of this sphere does not decline, by 2025 the economic effect could increase to \$ 1.4 billion. The USA. Therefore, further dissemination of information should be one of the main tasks in



the fight against corruption, directly or indirectly contributing to economic growth in Ukraine.

Given the high level of corruption in Ukraine, there is a need to manage large amounts of information around public finances to identify committed, existing and prevent future misuse of resources. According to Ukraine 2020 Sustainable Development Strategy, almost all reforms have an impact on public finances, and all ministries must use information technology to counteract corruption. The openness of information has a powerful anti-corruption effect and has a beneficial effect on economic development. Therefore, transparency of public finances is a factor in the successful implementation of the reform of all spheres of the Ukrainian economy.

The State Agency for Electronic Governance of Ukraine is responsible for creating the most important sets of information for the population of state structures. With the assistance of the Agency in Ukraine (for the second time in 2018), the largest annual national competition for innovative IT projects is held based on the Open Data Challenge. The purpose of the competition is to develop open-source data and services for participants in services and products that can solve certain social problems. In 2018, 190 applications from 27 cities were submitted for competition in Ukraine, and according to the results of the competition, 6 winners were identified (Table 2), which divided the prize pool for 2.5 million UAH. The winners were evaluated based on the criteria for the use of open data, anti-corruption and social impact, innovation and prospects of the project development. The implementation of the projects listed in the table in Ukraine will help to solve many problems of society, business and the state (Regulatory Map of Ukraine – in the field of local public finances), as well as help, to earn or save millions of hryvnias for the Ukrainian economy.

In addition to potential open data development initiatives, existing public finance transparency programs in Ukraine should also be considered.

A progressive step towards openness of information was the implementation in 2014 of the Unified State Open Web Portal of Ukraine, modeled on similar portals of other countries (e.g. data.gov USA), which enables searching of data by groups (Table 3) and managers. information, as well as keywords and data formats.

Table 2. Project Winners of the 2018 National Open Data Challenge Competition in Ukraine

Project name	Short description of the project
Regulatory map of Ukraine	an online service for the processing and visualization of information regarding the regulatory activities of local governments
Monitor.Estate	a web service for the collection of open real estate data and legal risk assessments in the case of purchase/lease
Transparent infrastructure	an open data portal for infrastructure that provides information on planning and execution of work
Greenval	a service for farmers to help find safe agricultural products
NORA	open-source data analysis service and detection of non-obvious links between construction market participants
LvivCityHelper	a chatbot that provides information about the activities of utilities, cultural, educational and healthcare institutions. Can completely replace telephone hotlines

Such a small number of kits is since in 2018 the software of the Unified State Open Web Portal was updated. All datasets published before August 8, 2018, are publicly available on the old version of the portal (<http://old.data.gov.ua/datasets>). However, information sets are now being published on the new portal.

In 2015, the Single Web Portal for the Use of Public Funds «E-Date» was launched (in 2017 the portal was transitioned

from a test mode to a full-fledged one), which became an important tool for combating corruption. The portal is open source, is free of charge and contains data on the use of the Pension Fund, the compulsory state social security funds, the State Fiscal Service and other structures. Instead, all fund managers are required to publish the necessary information on the portal. This enables continuous monitoring and evaluation of the efficiency of public funds use.

Table 3. Number of datasets of the Unified State Web Portal of Ukraine’s open data by groups as of the end of January 2019

Number of portal data sets per group					
Construction	3	State	39	Ecology	7
Economy	11	Land	5	Youth and sports	1
Education and culture	1	Health care	1	Taxes	7
Agriculture	1	Social Protection	1	Standards	1
Transport	2	Finances	7	Justice	19

The portal also allows you to track the largest transactions made by fund managers in Ukraine (Table 4).

Today, E-Date is one of the largest open databases in Ukraine. The statistics of its activities in 2018 confirm this.

The E-Date partner is .007 Search and Analytics, a web-based processing service that provides visually easy-to-use public money information that is affordable and easy to use.

.007 provides the following basic features for its users:

- tracking of payments made by budgetary institutions, that is, transactions going through the State Treasury;
- Search for transactions for a certain word for payment (for example, «salary», «electricity», etc.);

Table 4. Top-5 largest transactions of funds managers in Ukraine in January 2019

№	Payer	Recipient	Date	The amount, UAH.
1	Pension Fund of Ukraine	Head Office of the Pension Fund of Ukraine in Kyiv	04.01.2019	447 157 160
2	Odessa Customs of the State Fiscal Service	Office of the State Treasury Service of Ukraine in Odessa	14.01.2019	380 456 377,79
3	Pension Fund of Ukraine	Headquarters of the Pension Fund of Ukraine in Donetsk Region	04.01.2019	366 889 970
4	Ministry of Social Policy of Ukraine	Main Department of the State Treasury Service of Ukraine Kharkiv Region	22.01.2019	338 565 485,11
5	Odessa Customs of the State Fiscal Service	Office of the State Treasury Service of Ukraine in Odessa	15.01.2019	311 025 718,09

– Contract payment control function available by the State Treasury through the integration of «E-data» and «ProZorro» («.007» collects data from «E-data» and displays them to ProZorro users. On the ProZorro site, the completed tenders contain a «Check Payment» link that directs users to .007, which lists transactions with dates, amounts, payment appointments, and other information);

– available information on the number of spending units reporting on the official public finance portal E-data (in 2019 – 44 774 out of 64 165 in Ukraine) and on the volume of reporting

published on the E-data portal. Additionally, the service includes an ongoing E-Investigative Journalism Investigation Contest, where you can review the work of journalists and active citizens in investigating corruption related to the use of public funds. This increases the level of transparency in public finances.

An open resource is currently operating in Ukraine – the ProZorro e-Procurement System, which provides access to e-tendering data that has been launched since July 31, 2016. The resource includes the ProZorro portal, an electronic auction module (<http://bi.prozorro.org>) and a central database. Governmental organizations publish tenders for ordering, and the participants of the auction tenders through the electronic module (pre-registering). The module also performs the function of sending information to the central database and making it public on the public procurement portal and all sites.

As of the end of January 2019, ProZorro has 52,252 tenders and 208,034 active suppliers. And in 2 years of work at ProZorro 2.7 million purchases were made. With the launch of the e-procurement system, there has been a significant increase in public sector transparency, which has been reflected in international rewards: International Award «World Procurement Awards» to the Ministry of Economic Development and Trade of Ukraine for the development and implementation of an electronic system with a unique structure (London, May 18, 2016); ProZorro won the annual Open Government Partnership Open Government Initiative Award at the Open Government Partnership Summit (Paris, 08.12.2016); The European Bank for Reconstruction and Development has named ProZorro as the recommended model of public procurement reform.

ProZorro has been operating an electronic system, ProZorro since 2016, for the sale of state-owned property, which in April 2018 left the pilot project and received the status of a state-owned enterprise. ProZorro.Sales provide transparency of

bidding and provide control over sales to the state, business, and the public.

To remedy the problems and shortcomings of the ProZorro system, a monitoring portal for public procurement of DoZorro was also launched, where comments or complaints can be left. The templates of applications for the appeal to various state structures are available on the portal (Antimonopoly Committee of Ukraine, State Audit Service, Accounting Chamber of Ukraine, Department of Economy Protection of the National Police of Ukraine, etc.).

In 2016, the State Fiscal Service of Ukraine upgraded the Taxpayer's Electronic Cabinet, which has an open and private part. It should be noted that the closed part of the cabinet also contains information from the registers of transactions and transactions Electronic VAT Administration System, where users can find information about all transactions registered in the system, a list of all transactions with VAT invoices with a description (transaction type, total amount of replenishment bills, debits, arrears, actual account balances, etc.) and data on the amount of VAT overrun.

The electronic VAT administration system has become a significant step in the fight against corruption, as it has made it impossible to create bogus tax credits to obtain illegal VAT refunds while increasing this tax revenue.

At the Ministry of Justice of Ukraine, there is a Cabinet of electronic services, where you can get information from different state registers and make a free search for data from the Unified State Register of Legal Entities, Individual Entrepreneurs and Public Formations. For information, some of the search criteria are required.

The National Anti-Corruption Agency of Ukraine has created the Unified State Registry of Declarations of Persons Authorized for State or Local Government Functioning, which

is intended to simplify the filing of property status by employees of the public finance sector, to provide access to them to registry users and to facilitate the procedure of verification of declarations.

TAPAS Project/Transparency and Accountability experts in public administration and services have forecasted open data by 2025 for three development scenarios: stagnation – open data status will not develop; moderate progress – most datasets will be made public, their quality and number of users will increase slightly, and usability will be moderately improved; significant progress – all datasets will be made public, their quality and convenience will be significantly improved, and the number of users will increase significantly.

Thus, in recent years, Ukraine has achieved great success in publicizing open data and facilitating its effective use, and domestic experts predict the further development of this field. Today, a significant amount of information (business registers, court decisions, public transactions, etc.) has become available to citizens, public organizations, business representatives and government institutions. For all these entities, open information provides more opportunities to access the data that can be used to develop national or regional development programs. Such programs will not only improve the standard of living of citizens but also improve the image of Ukraine among other progressive states in which the field of open data is developing quite successfully. Furthermore, further dissemination of a culture of openness of information will help to counter corruption and prevent official abuse of officials.

The development of open data is also important to ensure the stable growth of the state's economy. For example, using the ProZorro e-procurement system, public procurement efficiency is increased, and public money is saved. Openness and transparency in the relations between economic entities reduce

the likelihood of money laundering and corruption. And with increased access to market information, there is equal competition between its subjects, supply and demand are balanced. That is, the introduction of the open data concept in Ukraine can help solve many problems of society, business, and the state and can save considerable amounts of money for the economy of Ukraine.



### **3. UKRAINIAN PRACTICE AND INTERNATIONAL EXPERIENCE IN AML/CFT**

The fight against money laundering from illegal or unethical sources are measures designed to end the practice of generating income from illegal activities and further legalizing them. The purpose of money laundering is to provide them with a legitimate origin, and such attempts appeared almost simultaneously with the development of banking and money as a way of tax evasion. However, the modern anti-money-laundering approach took its toll on the 20th century, gaining momentum in the US dry law (linked to money laundering from illicit alcohol sales) and the 1980s (due to the legalization of drug proceeds ).

The practice of combating money laundering in the world is called AML/ CFT (Anti Money Laundering and Counter-Financing of Terrorism).

The need for international co-operation and systematic action on AML/CFT necessitated the creation of international organizations and international standards.

The most influential organization is the International Anti-Money Laundering Group – FATF, Financial Action Task Force (on Money Laundering), which was established in 1989. on the initiative of G7. And following the terrorist attacks in the United States on September 11, 2001 (9/11 events), the FATF mandate has been expanded to counter-terrorism financing.

The FATF has the following tasks:

- tracking of world-wide methods and schemes of money laundering;
- development of AML/CFT countermeasures, recommendations, and standards; promote the effective implementation of legislative, regulatory and operational

measures on AML/CFT and other related threats to the integrity of the international financial system;

- monitoring AML/CFT law enforcement, law enforcement, and financial authorities, keeping all stakeholders informed of compliance;

- Tracking progress in the implementation of FATF recommendations by countries around the world, compiling expert reviews (so-called «mutual evaluations») of member countries.

The FATF also has the task of putting pressure on governments around the world to improve the surveillance and control of financial transactions and to share this information between countries.

So, since 2002, governments around the world have modernized money laundering laws and systems for supervising and controlling financial transactions. The main burden of combating money laundering lies with financial institutions, which has influenced not only the processes of service delivery but also the cost. And recent years have been marked even by the imposition of huge fines on financial institutions-violators.

The FATF's main document is Forty Recommendations that have had several transformations of content:

- 1990 – the first list of Forty recommendations that were intended to provide a comprehensive plan of action needed to combat money laundering;

- 2001 (after the events of 9/11) – the development of 8 standards in the fight against terrorist financing was added to the FATF mission;

- 2004 – publication of 9 special recommendations, harmonization of 40 + 9 recommendations as international standards for combating money laundering and terrorist financing;

– 2012 – FATF Recommendations 2012 – International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation (FATF Recommendations 2012) Objective: Strengthen global safeguards and further protect the integrity of the financial system by providing governments with stronger tools to tackle financial crimes. Recommendations have been expanded to address new threats (funding for the proliferation of weapons of mass destruction, etc.) and to fight corruption more effectively and rigorously. The 9 Special Recommendations for Combating Terrorism Financing have been fully integrated with anti-money laundering measures.

The concept of the crime of money laundering was introduced before the creation of the FATF Recommendations, in the texts of the Conventions: Strasbourg, Palermo, Vienna.

– Convention on the Laundering, Search, Seizure, and Confiscation of Proceeds from Crime (1990) – Strasbourg,

– United Nations Convention against Transnational Organized Crime (2000) – Palermo,

– United Nations Convention against Narcotic Drugs and Psychotropic Substances (1988) – Vienna.

Predicate crimes are crimes that precede money laundering. They can be described by reference to all crimes or a threshold related to the category of serious crime, or a sentence such as imprisonment for a predicate crime (threshold approach), or a combination of predicate crimes, or by combining these approaches. It:

1. participation in organized criminal groups and racketeering;
2. Terrorism, including terrorist financing;
3. Trafficking in human beings and smuggling of migrants;
4. sexual exploitation, including sexual exploitation of children;
5. illicit trafficking in drugs and psychotropic substances;

6. illicit arms trade;
7. illicit trade in stolen goods and other goods;
8. corruption and bribery;
9. fraud;
10. currency counterfeiting;
11. counterfeiting and piracy of goods;
12. crimes in the field of environmental protection;
13. murder, grievous bodily harm;
14. kidnapping, unlawful restraint of liberty and hostage-taking;
15. robbery or theft;
16. smuggling (in customs and excise duties and taxes);
17. tax crimes (related to direct and indirect taxes);
18. (criminal) extortion/extortion;
19. forgery;
20. piracy;
21. Insider trading and market manipulation.

To reduce the scale of laundering and the consequences, there are several measures outlined in the text of the FATF Recommendations, and to familiarize themselves with the content of the recommendations is a task for students to work independently.

Thus, the proceeds from predicate crimes are tried by the criminals to be laundered, and the process of financial intelligence of the countries, law enforcement agencies, courts, financial institutions, etc. should interfere with this process.

The most common approach to investigating money laundering is a three-phase model (minimum 3 steps): placement, masking, and integration.

Placement – criminal proceeds are placed in the financial system by depositing many small amounts into bank accounts, by purchasing money market instruments, etc. This stage is the easiest way to identify illegal income.

Masking – a series of transactions aimed at hiding/masking the sources of money origin: money is chased through a large number of bank accounts, money transfers are masked for payments for goods and services, etc.

Integration – Money is given a legitimate origin; it can be invested in the legal economy. The credibility of the legal sources of the occurrence of the wealth of criminals is created. Buying and selling real estate, luxury goods, etc. are carried out. All this is due to price distortions, the use of the services of professionals (accountants, lawyers), other methods.

In addition to FATF, we note the following international organizations active in the field of AML/CFT:

Basel Committee on Banking Supervision (Secretariat at the Bank for International Settlements), whose main task is to implement high and uniform standards in banking regulation and supervision; developed principles for financial institutions' involvement in the fight against money laundering and terrorist financing, including the following documents: Prevention of Money Laundering (1988), Know Your Client (2001), Compliance and banks' compliance function»(2005),» Effective management of money laundering and terrorist financing risks»(2016), and others.

The Wolfsburg Group is a non-governmental association of thirteen global banks (Barclays, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JP Morgan Chase, Société Générale, UBS, etc.), founded in 2000 with the aim of developing standards for the financial industry to combat money laundering and terrorist financing, and the Know Your Client policy. The Group has developed anti-corruption guides, principles for private banking and correspondent banks, etc.: Wolfsburg Anti-Corruption Guidance (2011), Wolfsburg Private Banking Principles (2012), Wolfsburg Anti-Money

Laundering Principles for Correspondent Banking (2014), Trade Finance Principles (2017);

– The Eurasian Anti-Crime Legislation and Terrorist Financing Group (EAG) is a FATF-type regional group established in 2004. Participants: Belarus, India, Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, and Uzbekistan. Ukraine has observer status, along with 14 other countries, including Italy, the USA, Turkey, Poland, France, Iran. Main objectives: to facilitate implementation by Member States of the 40 Recommendations; conducting joint activities aimed at combating money laundering and terrorist financing; implementation of a mutual evaluation program of Member States; analysis of typologies in the field of the legalization of criminal proceeds and terrorist financing and the exchange of experience in combating such crimes, taking into account the specificities of the region;

– Council of Europe Expert Committee for the Evaluation of Money Laundering Measures (MONEYVAL), a FATF-type regional group established in 1997, whose mission is to extend AML/CFT policies to European countries. 28 The MONEYVAL Member States, including Ukraine, Russia, Georgia, and Europe. Observer organizations: FATF, EAG, World Bank, IMF, EBRD, Egmont Financial Intelligence Unit Group, Interpol, UN Counter-Terrorism Committee, UN Office on Drugs and Crime, etc.;

– The Egmont Group – The Egmont Group’s Financial Intelligence Unit – created to combat illicit financial transactions in 1995, has combined the financial intelligence of nearly 150 countries. Since 2004. Financial Intelligence of Ukraine – SFMSU – has joined the Egmont Group. The Egmont Group provides a platform for the secure exchange of experience and financial intelligence for combating money laundering and terrorist financing. As the leading link in every country,

Financial Intelligence Units (FIUs) worldwide are required to collaborate on international AML/CFT standards for information sharing. This opportunity is provided by the Egmont Group;

– Interpol – An international criminal police organization whose main task is to unite the efforts of national law enforcement agencies of the participating countries in the fight against crime. A similar direction of the organization, but in their regions, is Europol. The objectives are combating illicit drug production/trafficking, terrorism, organized crime, arms smuggling, trafficking in human beings, money laundering, official crime, corruption, computer/cybercrime;

– UN Committees (UN Counter-Terrorism Committee, UN Office on Drugs and Crime, etc.). The tasks, for example, of the UN Counter-Terrorism Committee include: introducing criminal liability for terrorist financing; Immediately block any means related to persons involved in acts of terrorism; not to allow asylum, assistance or support to terrorists; cooperate with other governments in investigating, detecting, arresting, extraditing and prosecuting people involved in terrorist attacks.

All these organizations have a specific range of responsibilities in the AML/CFT area.

Thus, the BCBS Basel Committee on Banking Supervision establishes recommendations for banks to effectively manage AML/CFT risks, and states that financial institutions (especially banks) should be the front line of the fight, as the process of money laundering becomes the most extensive, rapid and cheaper (compared to other methods). According to the BCBS document, «Effective Money Laundering and Terrorist Financing Risk Management», proper corporate governance and transaction monitoring system should be established at the bank and three AML/CFT risk protection lines should be established (Table 7).

Table 7. Three lines of AML/CFT risk protection in the bank according to Basel recommendations

Who represents	The Task
The first line of defense – Responsible for identifying, assessing and controlling risks in an activity	
Bank units not related to customer service	<ul style="list-style-type: none"> <li>– clearly define AML/CFT policies and procedures in writing, and make them available to all employees;</li> <li>– existence of internal procedures for detecting and informing suspicious transactions;</li> <li>– availability of policies and processes for employee audits to comply with high ethical standards and professional standards;</li> <li>– implementation of personnel training programs for different areas of activity according to the needs and risk profile of the bank (for implementation of AML/CFT bank policies and procedures).</li> </ul>
The second line is the ongoing monitoring by the bank of all AML/CFT obligations	
AML/CFT Officer, Compliance, Personnel, or IT	<p>The AML/CFT officer shall be responsible for continuous monitoring, namely:</p> <ul style="list-style-type: none"> <li>-for compliance testing and verification of non-compliance reports to attract the attention of senior management or the board of directors;</li> <li>– He is the contact point for all AML/CFT issues, including for internal and external bodies;</li> <li>– it must report directly to senior management or the board of directors; be responsible for reporting suspicious transactions; have enough resources to fulfill all responsibilities effectively.</li> </ul>
Third line – periodic evaluations of the effectiveness of compliance with AML/CFT policies and procedures	
Internal Audit Unit	<p>The Bank’s management for an independent assessment of risk management and internal control mechanisms must ensure that IASs: are staffed by qualified staff so that the scope, frequency, and methodology of the audit are consistent with the bank’s risk profile.</p> <p>External auditors also play an important role in evaluating the internal control mechanisms and procedures of banks.</p>



Also important is BCBS 'Good Banks Attitude or Know Your Client (2001), known as KYC (know your customer) policy, which aims to reduce the likelihood of a bank becoming a victim of financial crime. The document also addresses money laundering risk management, without the proper effectiveness of the bank exposes itself to reputational, operational, legal and concentration risks that could lead to significant financial costs, especially since all these risks are interrelated. The consequences of the implementation of these risks can be: withdrawal by depositors and termination of interbank credit lines (due to the fact that poor reputation for the practice of business relations in the bank will lead to a loss of faith in the reliability of the institution), court claims against the bank and penalties, costs of investigation and arrests freezing of assets, loss of credit (which is especially important in the context of related lending), etc.

KYC's precautionary measures require many actions from banks, such as: developing a customer acceptance policy and a customer step-by-step program, which includes comprehensive thorough checking of high-risk accounts and preventive monitoring of suspicious activity accounts; conducting effective customer identification procedures; refusal to conduct suspicious transactions and to inform them; implementation of cooperation with law enforcement agencies; conducting measures against countries with inadequate anti-money laundering facilities; others

Therefore, the key elements of the AML/CFT system at banks are 1 – new customer acceptance policies; 2 – definition of the client; 3 – continuous monitoring of high-risk accounts and 4 – risk management.

Customer acceptance policies should aim to examine the following metrics: general client profile, country of origin,

social status or relationships with government, billing, business activity, and other risk factors.

Banks should not open an account or deal with a customer who insists on anonymity or who reports a dummy name.

More intensive monitoring should be conducted concerning increased risk accounts. Each bank should produce key indicators of such accounts, considering customer information such as country of origin and source of funds, types of transactions and other risk factors. For high-risk accounts:

- banks should ensure that they have an adequate management information system in place to provide managers and relevant officials with the regular information necessary to identify, analyze and effectively monitor increased customer risk accounts (reports of insufficient account opening records, unusual client operations, etc.) .);

- senior management responsible for providing private banking services should be aware of the personal circumstances of high-risk customers and cautious about third-party sources of information. Large operations of such clients should be approved by the senior manager;

- Banks should remain particularly vigilant in business contacts with politically exposed PEPs and high-ranking individuals or with individuals and companies that are related to them (family relationships, business relationships). Obtaining and conducting transactions with the capital of corrupt PEPs will seriously damage the reputation of the bank itself;

In general, BCBS insists that the need for strict standards of due diligence is not limited to banks, and believes that such guidance is important for all non-bank financial institutions and professional financial intermediaries such as lawyers and accountants.

The Counter-Terrorism Committee, which was established immediately after the events of 9/11 in the United States, has the

task of overseeing the implementation of resolution 1373 (2001), where countries are offered the following steps:

- introduce criminal responsibility for terrorist financing;
- immediate blocking of any funds related to persons involved in acts of terrorism;
- not provide financial support to terrorist groups in any form;
- not to allow asylum, assistance or support to terrorists;
- exchange information and cooperate with governments of other countries. countries in the investigation, detection, arrest, extradition, and prosecution of persons involved in such acts.

The Committee's components include: visits to countries to assess the nature and level of technical assistance a country may need; technical assistance; country reports with a comprehensive picture of the state of the fight against terrorism; encouraging countries to apply known best practices, codes, and standards, taking into account national conditions and needs; others The Committee does not list terrorists and do not search them, it is the task of bodies with operational and search powers.

The Eurasian Anti-Money Laundering and Terrorism Financing Group (EAG) and the Council of Europe Committee of Experts on Money Laundering Evaluation (MONEYVAL) have one of the objectives of conducting case studies on money laundering and terrorist financing, tendencies and methods of financing, terrorism, and terrorist methods also issue reports on them. The issue of laundering typologies is explained in more detail below.

Given the approximation of AML/CFT systems in individual countries to the FATF requirements, this international organization has introduced the practice of publishing a list of countries that do not co-operate in the global fight against money laundering and terrorist financing, initially called the FATF blacklist. Ukraine was on this list from 2001 to 2006, when this

list was canceled. The list is now renamed to change the substance of claims against non-FATF countries, primarily offshore to other, High-risk and non-cooperative jurisdictions (NCCTs). The FATF's High-Risk and Non-Cooperative Jurisdictions section provides an up-to-date list of countries that have FATF enhanced monitoring status that has deficiencies in their own AML/CFT systems.

In the last five years, efforts to prevent the proliferation of nuclear weapons have remained the highest priority for many countries and international organizations, especially about North Korea, Iran and Syria, on suspicion of the implication of their concealed military nuclear programs. International sanctions have been applied to these countries. These are collective or unilateral coercive measures applied by States or international organizations to a State that has violated international law. The UN Charter includes, among other UN sanctions (so-called «coercive measures»), military coercion. Economic sanctions are widely used. The most well-known cases are the use of sanctions by such international organizations as the United Nations (UN), the Council of Europe, the North Atlantic Treaty Organization (NATO), the Organization for Security and Co-operation in Europe (OSCE), and others.

UN sanctions are intermediate between verbal condemnation and the use of force. They are accepted in respect of a state (part of its territory or specifically designated persons) which refuses to fulfill the obligations arising from the legal responsibility of international responsibility. The purpose of the application is to discontinue the offense and to ensure that the offending State fulfills its obligations. Decades ago, sanctions could have been overarching and mandated a full trade embargo on the sanctioned state (Iraq and former Yugoslavia, etc.). But today, it is an embargo on arms shipments to a state subject to sanctions, or a ban on travel or freezing of assets of persons put by the

Security Council in the so-called «blacklist», i.e. «spot» sanctions.

The range of sanctions provides for: commercial or trade: full or partial embargo; financial: blocking foreign government assets, restricting access to financial markets, suspending financial assistance; sanctions on movement: ban on the movement of certain persons or groups of persons abroad; diplomatic: full or partial withdrawal of diplomats, cancellation of diplomatic visas; sports and cultural: ban on participation in sports competitions, termination of scientific, technical and cultural cooperation; procedural sanctions: termination of membership or denial of voting rights in international organizations.

Overall, the UN Security Council has applied sanctions more than 20 times. The most famous cases were sanctions against:

- Afghanistan (since 1999) – arms embargo, asset freezing, etc.;

- Iraq (since 1990) – comprehensive sanctions in 2003. changed to an arms embargo, asset freeze, etc.;

- Iran (since 2006) Embargo on the supply of sensitive materials in terms of nuclear proliferation and development of ballistic missile development programs

  - Prohibition on the export of weapons and related materials

  - North Korea (since 2006) – arms embargo, nuclear-related embargo, a ban on luxury goods exports to the DPRK, asset freezing, etc.

Sanctions may also be imposed not on a country, but individuals and legal entities. For example, individuals identified as terrorists (members of al-Qaeda, the Taliban), terrorist organizations, drug dealers, transnational criminal organizations, individuals or entities involved in the spread of weapons of mass destruction to certain citizens.

In addition to the fact that sanctions can be applied by international organizations, they can be imposed by individual countries against others. The most well-known cases are the sanctions applied by the Office of Foreign Assets Control (OFAC). The organization has implemented numerous sanctions programs, comprehensive or selective, aimed at overcoming the national threat. The most famous are sanctions against Cuba, North Korea, Libya, Iran, Syria, Sudan, Zimbabwe, Belarus, Somalia, as well as against cybercriminals, counter-terrorism, drug trafficking, the proliferation of weapons of mass destruction, against transnationals. A specific example is the sanctions against persons suspected of involvement in S. Magnitsky's death. Since 2014, OFAC has launched several personal and sectoral sanctions against the situation in Ukraine – Ukraine Related Sanctions.

Financial monitoring (this is the name for AML/CFT in Ukraine) is a new phenomenon for our country. The history of its foundation begins on June 11, 2003, when the relevant Law «On Prevention and Combating the Legalization (Laundering) of Crime Proceeds or Financing Terrorism» came into force, as defined in the preamble, to protect the rights and legitimate interests of the public, society and the state by defining the appropriate legal mechanism and ensuring the formation of nationwide multi-source analytical information that enables law enforcement agencies of Ukraine and foreign countries to identify, to investigate and investigate money laundering and other illegal financial transactions.

According to Ukrainian AML/CFT law, proceeds of crime are any gain resulting from the commission of a socially dangerous act that precedes the legalization (laundering) of income, which may consist of movable or immovable property, property, and non-property rights their value. Socially dangerous act preceding the legalization (laundering) of

criminal proceeds is an act for which the Criminal Code of Ukraine (CCU) imposes a capital punishment of imprisonment or a fine of > 3000 non-taxable minimum incomes (NMDH) or acts committed outside Ukraine if it is recognized as a socially dangerous unlawful act that preceded the legalization (laundering) of the proceeds, under the criminal law of the country where it was committed, and is a crime under the CCU, resulting in the proceeds of which were illegally obtained. Legalization (laundering) of proceeds of crime includes any act connected with committing a financial transaction or dealing with assets obtained as a result of a crime, as well as committing actions aimed at concealing or concealing the illegal origin of such assets or possession. by them, the rights to such assets, the sources of their origin, location, transfer, change of their form (transformation), as well as the acquisition, possession or use of assets obtained as a result of the crime.

This Law establishes a two-tier system of organization of financial monitoring, which includes conducting state and primary financial monitoring.

The subjects of state financial monitoring are the central body of executive power that implements state policy in this area – the State Financial Monitoring Service of Ukraine, SFMSU, and others. entities (NBU, IFI, NSSMC, National Financial Services Commission). The SFMSU carries out a set of measures for the collection, processing and analysis of information on financial transactions, submitted by the entities of primary and state financial monitoring, etc. other relevant information that may be related to the suspicion of legalization (laundering) of the proceeds or the financing of terrorism or the financing of the proliferation of weapons of mass destruction.

The subjects of initial financial monitoring – SPFM – are:

- banks, insurers (reinsurers), insurance (reinsurance) brokers, credit unions, pawnshops, and other financial institutions;
- payment organizations, participants or members of payment systems;
- commodity and other exchanges conducting financial transactions with commodities;
- professional participants in the stock market (securities market);
- business entities providing intermediary services in the course of real estate purchase and sale operations;
- lottery and gambling entities;
- Notaries, attorneys, law firms and associations, auditors, audit firms, accounting entities, legal entities;
- others.

The primary financial monitoring entity is obliged to:

- to be registered with the SFMSU as a subject of initial financial monitoring and to inform about: appointment or dismissal of a responsible employee; change of information about the subject of the initial financial monitoring and/or the responsible employee or the person temporarily performing his duties; termination of activity;
- to carry out the identification, verification of the client (the client's representative), the examination of the client and the clarification of information about the client in cases established by law;
- Ensure that financial transactions subject to financial monitoring are identified before, in the process, on the day of suspicion, after their conduct, or when they attempt to conduct them or after the client refuses to conduct them;
- provide ML | FT risk management and develop risk criteria;



– ensure the registration of financial transactions subject to financial monitoring no later than the next business day from the date of their detection;

– inform the SFMSU of:

a) financial transactions subject to mandatory financial monitoring – within three working days from the date of their registration or attempt to conduct them;

b) financial transactions subject to internal financial monitoring, as well as information about their suspicions about the activity of persons, – on the day of suspicion or attempt to conduct financial transactions, but not later than the next working day from the day of registration of such financial transactions;

(c) financial transactions suspected of being related to, related to, or intended to finance terrorism or the financing of the proliferation of weapons of mass destruction, on the day of their detection, but no later than the next working day following the registration of such financial transactions; also inform law enforcement agencies about such financial transactions;

– submit at the request of a specially authorized body an additional body, etc. information;

– take measures to prevent the disclosure of information provided to the SFMSU;

– to keep official documents, other documents on financial monitoring – not less than 5 years (after completion of the operation, termination of business relations, etc.);

– by the decision of the SFMSU to suspend or monitor the financial transaction of the respective person;

– to take on an ongoing basis appropriate training measures for staff;

– to analyze the correspondence of financial transactions conducted by the client, the available information about the

content of its activities and financial status to identify the financial transactions subject to financial monitoring;

– others.

The SPFM is obliged, based on official documents submitted by the client or certified in the established order, to carry out the identification and verification of the client:

– identification – receipt of SPFM from the client of identification data (list of information/identification data for an individual, for an individual – an entrepreneur, for a legal entity);

– verification of the client – establishment (confirmation) of the SPFM of the correspondence of the client's personality in his presence with the received by him identification data.

In recent years, attention has been paid to national and foreign public figures (PEP), as well as to the study of the ownership structure of enterprises and the identification of ultimate beneficial owners (controllers).

National public figures – individuals who have been or have been performing public functions in Ukraine for the last 3 years, namely: President of Ukraine, Prime Minister of Ukraine, members of the CMU; first deputies and deputy ministers, heads of other central executive bodies, their first deputies and deputies; People's Deputies of Ukraine; Chairman and members of the NBU Board, members of the NBU Board; presidents and judges of the Constitutional Court of Ukraine, the Supreme Court of Ukraine and high specialized courts; The Attorney General and his deputies; SBU Chairman and his Deputies; NABU Director and his deputies; Chairman of the Antimonopoly Committee of Ukraine and his deputies; Chief of General Staff – Commander-in-Chief of the Armed Forces of Ukraine, Chiefs of the Land Forces of Ukraine, Air Forces of Ukraine, Naval Forces of Ukraine; civil servants whose posts belong to category «A»; heads of regional territorial bodies of

central executive bodies; heads of administrative, management or supervisory bodies of state and state-owned enterprises, economic associations, state share in the authorized capital > 50 %; heads of governing bodies of political parties; others

Foreign public figures – natural persons who have performed or have performed certain public functions in foreign countries for the last 3 years, namely: the head of state, the head of government, ministers and their deputies; Members of Parliament; chairmen and board members of central banks; members of the Supreme Court, the Constitutional Court; extraordinary and plenipotentiary ambassadors and heads of central military administration; heads of administrative, management or supervisory bodies of state-owned enterprises of strategic importance; heads of governing bodies of political parties represented in parliament.

Different databases can be used to detect PEP, including specialized databases (LexisNexis, Factiva Dow Jones, Thomson Reuters World-Check, SAS).

The SPFM is obliged in respect of national, foreign PEPs, as well as related persons (among them are legal entities, the final beneficial owners (controllers) of which are PEPs): to identify the fact of the client's ownership in this category, to establish the ownership structure of enterprises and of the ultimate beneficial owner. The purpose is to reduce the level of corruption, as well as to meet anti-money laundering requirements.

Ukraine draws up lists of countries/territories that do not or do not properly comply with the recommendations of international, intergovernmental organizations operating in the AML/CFT field and offshore jurisdictions, which do not always coincide with the views expressed in the most reputable sources.

Yes, an offshore financial center (OFC) can be understood as classic offshore (companies are used to reduce the tax burden

on businesses and protect assets from encroachment in their country of origin. Classic offshore companies are exempt from any tax reporting and pay only fixed tax, they are prohibited from conducting any activity in the territory of the country where they are registered. Examples: Belize, Panama, Jersey Island, etc.); low tax offshore (reporting and paying taxes under a simplified tax system. Examples: UK, Cyprus, Hong Kong); Offshore tax offshore companies (companies are required to pay all taxes and submit audited reports. Examples: Austria, Switzerland).

Since, in the case of offshore, the tax rate is compared to a certain level in the country of origin, there is no single commonly accepted list. But the most reputable offshore business organizations are the Organization for Economic Cooperation and Development (OECD), which has several offshore initiatives. These include Global Forum on Transparency and Exchange of Information for Tax Purposes – Global Erosion and Profit Shifting Forum (BEPS) – Combating the Tax Base. These initiatives imply that countries may undertake the obligation to disclose tax information upon request (voluntarily). To this end, guidelines have emerged: «The fight against offshore tax evasion continues: CRS disclosure facility delivers first results» and «A Framework for Successful Offshore Voluntary Compliance Programs (OECD)».

The fight against offshore (de-offshore) has taken place in the last decade and is linked to the fact that offshore abuse is a major detriment to the economies of countries where the money flows to offshore. There are also tax losses and the inability to disclose real beneficiaries.

The OECD compiles an offshore list of more than 60 countries/territories. Almost identical to it is the IMF, the International Monetary Fund's list (for example, the IMF does

not recognize offshore Austria, Belgium, the Netherlands, USA).

There is also the Financial Secrecy Index, which includes data from 92 countries and territories and evaluates jurisdiction in terms of financial secrecy and tax evasion. Among the leaders in secrecy: Vanuatu, Antigua, and Barbuda, Brunei, Belize.

By analogy with the FATF, the Organization for Economic Co-operation and Development also compiles lists of countries that have unfair tax competition. And as of June 2017 Countries that do not meet or partially comply with the Fast-Track review procedure, a jurisdictional process that allows jurisdictions to demonstrate progress in implementing the International Standard on Information Exchange (EOIR Standard), are Trinidad and Tobago, Marshall Islands, Anguilla, Curacao, Indonesia, Sint-Martin, Turkey.

In Ukraine, the CMU Order of 23.02.11 No. 143-p «On the list of offshore zones» is currently established from almost 30 jurisdictions: Maldives, Antigua and Barbuda, Aruba, Bahamas, Bermuda, British Virgin Islands, US Virgin Islands (US), Cayman Islands, Belize, Jersey Island, Isle of Man and others.

List of countries (territories) that do not or do not properly comply with the FATF recommendations The SFMSU Order No. 139 of 01.10.2012 contains 2 countries: Iran and the Democratic People's Republic of Korea (DPRK).

Of the «blacklists» formed by Ukraine, special mention should be made of the «List of persons related to terrorist activities or subject to international sanctions», approved. Order of SCFM 07.10.2010 № 183 with constant changes. It contains not only terrorists-members of international terrorist organizations but also in recent years has been replenished by Ukrainian citizens registered in Donetsk, Luhansk, Kharkiv regions.

Among the legislative acts that define the basic rules of AML/CFT practice for banks (which are key in counteracting the money laundering process), the Law on Banks and Banking should be highlighted. Thus, following Article 64 of this Law, banks are prohibited from:

- open and maintain anonymous (numbered) accounts;
- establish correspondent relations with shell banks, as well as with banks, etc. financial institutions – non-residents, which maintain correspondent relations with shell banks;
- to enter into contractual relations (to conduct currency exchange transactions, financial transactions with banking metals, with cash (cash) with clients – legal or natural persons:
  - when there is a doubt that the person does not act on his/her behalf;
  - which are included in the list of persons related to terrorist activities or subject to international sanctions;
  - in other cases, prescribed by law.

This law also specifies the obligations of the bank to identify and verify:

- clients (except banks registered in Ukraine) who open bank accounts;
- clients who carry out financial transactions subject to financial monitoring;
- clients (persons) in case of suspicion that their financial transaction may be related to the financing of terrorism or the financing of the proliferation of weapons of mass destruction;
- clients who make transfers without opening an account for an amount equal to or exceeding UAH 15,000, or for an amount equivalent to the specified amount, including in foreign currency, precious metals, etc. assets, units of value, but UAH 150,000, or equivalent;

- clients who carry out cash transactions without opening an account for 150000 UAH. (or equivalent, including in foreign currency, precious metals, other assets);

- clients with whom the bank attracts funds on terms of subordinated debt;

- clients who enter into loan agreements with the bank, contracts for the storage of values or the leasing (leasing) of an individual bank safe, which is protected by the bank;

- persons (except banks registered in Ukraine), with whom the bank, as a professional participant in the securities market, concludes contracts for professional activity in the securities market (stock market). As of the date of the agreement, such a person is a client of the bank;

- persons authorized to act on behalf of the specified clients/persons (the client's representative);

- clients (persons) identified by the NBU regulatory act on financial monitoring.

The Bank performs the identification, verification before opening the account to the client, entering into contracts or performing the said financial transactions, which the bank has the right to request, and the client is obliged to provide the documents and information necessary for the implementation of identification and/or verification. If the client does not provide the necessary documents, the account is not opened, contracts (financial transactions) are not concluded (not carried out). The Bank has the right to request information related to the identification and study of the client by public authorities, state registrars, banks, etc. legal entities, and they are obliged to provide such information free of charge to the bank within 10 working days of receiving the request.

The requirements for the financial monitoring process at the bank are set out in more detail in the Financial Monitoring Banks Implementation Regulations, which include the need to approve

and continually update key internal regulations on AML/CFT, training of bank employees working with clients, on their workplace tasks (including identification, verification, and identification of suspicious transactions), rules for keeping a register of financial transactions subject to financial monitoring in a procedure providing information to DSFM, especially the suspension of operations and many others.



#### **4. SEMANTICS INTERPRETATION OF TERMS «FINANCIAL MONITORING» AND «FINANCIAL CONTROL»**

During the 28 years of existence of the Ukrainian economy, the development of market relations in the territory of an independent state, Ukraine has repeatedly faced with the problem of money laundering, and the growth of the shadow economy rapidly, slowing the improvement of the socio-economic situation in the country. The conditionality of such a situation lies in the imperfect legal provision of financial monitoring and financial control. Since control is an integral part of the governance process, the state must ensure the financial basis of its operations by creating an adequate system of financial control. At the present stage, the understanding of financial control differs by purpose and variety of tasks performed.

Understanding the concept of financial control in different researchers has its differences (Table 5).

Table 5. Approaches to the interpretation of the concept of «financial control»

Author	Definition
N. Malein	The activities of bodies and organizations regulated by the law are aimed at ensuring the financial, budgetary, credit, settlement and cash discipline in the process of implementation of plans
E. Voznesensky	The activity of state and public bodies, which consists of checking the validity of the processes of formation and use of centralized and decentralized monetary funds to maintain the planned proportions in the expanded socialist production.
L. Savchenko	The activities of state bodies and non-governmental organizations, endowed with the relevant powers, aimed at ensuring legality, financial discipline,

Author	Definition
	rationality in the course of mobilization, distribution, and use of financial resources of the state»
N. Khimicheva	Control over the legality and purposefulness of actions in the sphere of formation, distribution, and use of state funds and municipalities for effective socio-economic development of the state and its regions
I. Belobzhetsky	The result of the practical use of the controlling functions of finance by the state, that is, intrinsic to them, is the ability to act as a means of controlling the production, distribution, and use of the aggregate social product and national income.
Yu. Voronin	The activity of state bodies of local self-government, regulated by the legal norms, in checking the formation, distribution of targeted efficient and rational use of state and communal property following the current legislation to identify and prevent deficiencies in the operation of controlled objects
L. Voronov	The activity of state and municipal and other public bodies, empowered with the relevant powers, which aims at ensuring the legitimacy, financial discipline in the implementation of public financial activities.
I. Stefanyuk	System of active actions carried out by state authorities, local self-government bodies, economic entities and citizens of Ukraine, to monitor the functioning of any management object in terms of the formation, distribution and use of financial resources to assess the economic efficiency of economic activity, detection and blocking in it of deviations, which impede the legal and effective use of property and funds, extended reproduction of production, satisfaction of state, collective private interests and needs and improve economic management.
V. Melnychuk	One type of state control carried out by specially created state bodies and services. their territorial representations, executive bodies, control and audit services of enterprises, institutions, organizations, entities of independent financial control on behalf of the state power in order to check the legality and

Author	Definition
	efficiency of the formation, ownership and use of the consolidated budget of Ukraine, other financial resources, state property, financial activity of enterprises, institutions, organizations, regardless of ownership.

L. Savchenko emphasizes the direct dependence of financial control on financial activity, its purpose, and purpose, but in the definition, there is no indication of the subject, which in turn leads to uncertainty.

It should also be noted that the definition of financial control has changed with the development of society. In the writings of E. Voznesensky, who referred to the socialist period, financial control was explored as one of the mechanisms of control of the ruble at all stages of expanded socialist reproduction, the lever of state supervision of the distribution and production of the social product. But today, the definition of financial control has changed somewhat. The scientist Yu. Voronin noted that financial control should be taken as regulated by legal norms of the activity of state bodies of local self-government to check the formation, distribution of targeted efficient and rational use of state and communal property following the current legislation.

L. Voronova believes that financial control is a purposeful activity of legislative and executive bodies of public authorities and non-governmental organizations, aimed at ensuring legality, financial discipline, and rationality in the course of mobilizing, distributing and using the funds of centralized and decentralized funds of the state for the sake of the most socially effective state funds. economic of all subjects of financial relations. Based on this definition, we can conclude that financial control is one of the key mechanisms for the functioning of the state, which works through the exercise of powers and powers following the

Constitution of Ukraine and the laws of Ukraine, and is an instrument of public administration.

The concept of monitoring is an integral part of research and observation of a phenomenon or process in various fields of scientific and practical activity. The purpose of the monitoring is to confirm the expected outcome or development trends to elaborate and develop appropriate measures to improve or eliminate certain processes and phenomena. However, there is no clear definition of the concept of financial monitoring in national legislation, and there is no single point of view regarding the definition of «financial monitoring» and «financial control».

Scientists have a different understanding of the concept of financial monitoring (Table 6).

Table 6. Approaches to the interpretation of the concept of «financial monitoring»

Author/source	Definition
A. Klimenko	A special form of financial control, which is carried out by authorized state bodies in the field of financial control and subjects of the primary financial monitoring and aimed at detecting transactions related to the legalization of proceeds of crime.
O. Tereshchenko	A control component that is implemented at all its stages, namely at the stage of preliminary, current and final control
O. Orlyuk	Specific form of state financial control, conducted by authorized state bodies and institutions servicing financial transactions, monitors and records financial transactions that meet, according to the Law of Ukraine «On Prevention and Counteraction of Legalization (Laundering) of Proceeds of Crime» and to analyze the information obtained on suspicious transactions to identify schemes and mechanisms for the legalization of proceeds of crime and the financing of terrorism.

Author/source	Definition
Law of Ukraine «On Prevention and Counteraction to Legalization (Laundering) of Proceeds of Crime, Financing Terrorism and Financing the Proliferation of Weapons of Mass Destruction»	A set of measures undertaken by financial monitoring entities in the field of preventing and counteracting the legalization (laundering) of proceeds of crime, terrorist financing and the proliferation of weapons of mass destruction, including conducting state financial monitoring and primary financial monitoring;
I. Plikus	Specially organized, systematic and continuous monitoring of the financial position of the object and its prompt assessment.
A. Zavgorodniy	A system of constant monitoring of the most important current results of the financial activity of the enterprise in the conditions of constantly changing financial market conditions.
G. Vozniuk,	A system of measures for continuous monitoring of the commercial bank's activity, collection and systematization of data on its financial status to assess the current state of affairs in the banking sector and to forecast its development in the future.
T. Smovzhenko	Special system of organized systematic and continuous monitoring of the financial state of the object and its prompt assessment
O. Kostyuchenko	An element of business management, the essence of which is a comprehensive and systematic analysis of the cause and effect relationships of their activities, the study of the state of affairs.
K. Krivul	A set of measures of financial monitoring entities to identify, analyze and verify financial transaction information to attribute it to those that may be related to the legalization (laundering) of proceeds of illicit origin for transmission to law enforcement agencies.

Author/source	Definition
N. Chalenko	A system of statutory information, control and enforcement procedures implemented by authorities and agents aimed at preventing the use of the financial system to legalize criminal proceeds and terrorist financing and to minimize the risk of financial monitoring agents being involved in the legalization (laundering) of criminal terrorism and financing.
I. Moiseenko	A set of measures of financial monitoring entities to identify, analyze and verify information on financial transactions related to their attribution to those that may be related to the legalization (laundering) of proceeds of illicit origin and subsequently passed on to law enforcement agencies.
V. Berizko	It provides ongoing monitoring to predict the risk of legalization.
M. Proshunin	A component of the financial planning system of the bank, based on which is formed a single database of planning activities in the continuous collection, systematization, and processing of information.
A. Gavrilishin	A system that includes a set of elements that interact and are influenced by internal and external factors. covering bank stability monitoring, analysis, evaluation and forecasting of long-term sustainability.
I. Paututa	A system of constant monitoring of the most important current results of the financial activity of the enterprise in the conditions of constantly changing financial market conditions.
B. Surkalo	A monitoring system developed by any enterprise should become an effective mechanism for the continuous monitoring of controlled financial performance, determine the magnitude of deviations from actual results, and be used to identify the reasons for such deviations to avoid them in the long run.

Researchers such as J. Dovgan, K. Kostyuchenko, O. Krivulia, B. Syurkalo, I. Blank, M. Proshunin, N. Chalenko, and I. Plikus consider financial monitoring as a system of financial monitoring. Author G. Biryukov delimits the scope of definition only for enterprises, and scientists K. Kostyuchenko, O. Krivulia, B. Syurkalo consider financial monitoring exclusively in the field of banking institutions. Authors such as A. Klimenko, O. Tereshchenko, O. Orlyuk are considered as a component of financial control. Therefore, the difference between the definition of financial monitoring by different authors explains the deep essence of this concept. By analyzing the understanding of financial monitoring by different researchers, we can summarize the definition: financial monitoring is a system that provides tracking, recording, and prevention of financial transactions carried out criminally or improperly with the aim of timely prevention of negative consequences in the field of socio-economic development.

In scientific practice, there are different concepts of interpretation, both the relationship of financial monitoring and financial control and the difference between these concepts. Researcher I. Patyuta believes that financial control has some commonality with the concept of financial monitoring, but the broader concept is inherent in financial monitoring since it is essentially an ongoing observation that allows for the possibility of risks associated with the legalization of funds.

Therefore, having analyzed the above concepts of financial control, we can conclude that financial control is the exercise of the activity of public authorities, authorized bodies and persons in accordance with the laws on such activities and rules of law, which aims at ensuring the law, financial discipline and consistency in the formation process., allocation and use of financial resources.

## **5. DEVELOPMENT OF CREDIT INFORMATION SYSTEM IN UKRAINE**

In recent years, much attention has been paid to the development of the credit information system in Ukraine. The key objective of this system is to help to reduce the level of bad credit debt, which is an obstacle to the rapid transition of the banking system to a new level of functioning. Besides, the problem loan portfolio reduces the profitability of banking, links bank capital and increases financing costs.

The main element of the credit information system should be the state credit registry, whose activity is aimed at collecting credit information from various sources and providing credit reports to individual consumers for credit risk assessment. Improving the analytics and reliability of information about the borrower will help to develop ways to improve the bank's management reporting in terms of credit risk analysis.

Limited access to financial resources and credit is one of the most critical obstacles to business development, especially for individual entrepreneurs and small and medium-sized enterprises (hereinafter referred to as SMEs).

A large part of the population in the emerging markets is employed in the informal (shadow) sector of the economy. Accordingly, they cannot provide official financial statements to confirm their sources of income as borrowers. Lenders also often lack the necessary information to evaluate the creditworthiness of prospective clients objectively. Borrowers can obtain credit from multiple lenders, potentially leading to the inability to service their credit debt and creating conditions for manipulation of collateral.

The above-mentioned problems will be facilitated by the creation and efficient functioning of the Credit Bureau (hereinafter referred to as the BIC), which should provide the



banking institution or another lender with reliable information about the borrower, which in turn will help to improve the protection of creditors and strengthen the credit markets. Unlike credit registers, BKIs are non-state owned.

The effective functioning of the CCI contributes to reducing the time and financial costs of applying for loans, reducing the cost of credit, extending access to SME lending, reducing the risk of default by market participants, and reducing information asymmetry, thereby reducing default rates. In turn, it should lead to lower average interest rates, increased competition in the credit market and, ultimately, improved access to credit.

In general, there are two main types of credit information registers: public and private, as well as various combinations of these basic forms. Thus, in Ireland, Italy, Germany, Sweden, private credit registers (credit bureaus) established by financial institutions function effectively. In the UK, Spain, the Netherlands, Portugal, there are private credit registries created by non-profit organizations. In the countries listed, both positive (on-time credit) and negative (on breach of obligations) provide information about the borrower. Regarding state registers, in countries such as Belgium, Finland, and France, they exchange only negative information.

An important difference between registers is the principle on which their work is based, so the state register is based on the obligation, this rule is defined by law, and in the case of failure to submit information, late submission or misrepresentation is punishable by financial penalties. Private registries, on the other hand, are based on the principle of voluntary reciprocity, the essence being that information in the form of credit reports is provided only to those members who provide the bureau with ongoing information, and the advantage is the provision of paid services while maintaining confidentiality. Private registries

offer a wider range of services than public registries, such as assigning a personal rating to a borrower.

Public and private credit registers in Ukraine should facilitate the provision of reliable credit information by the service provider to the borrower. The information they provide – the number of current borrower loans, repayment history, previous bankruptcies, etc. – will allow lenders to manage their credit risks more effectively.

Credit registers are a typical reaction to information asymmetry problems between lenders and borrowers. Many studies show that good credit information helps lenders better anticipate a borrower's default. Kallberg and Udell found that historical information collected through the Credit Registry had significant predictive properties. A study by Barron and Staten found that lenders can significantly reduce their default levels by including more complete information about borrowers. A similar study, specific to Brazil and Argentina, found that the loan rate decreases as more information about borrowers become available.

The theory assumes that data exchange institutes solve asymmetric information problems in the following ways:

- counteracting negative selection. By reducing information asymmetry between lenders and borrowers, credit registers allow lending to secure borrowers;

- Fight against moral hazard. Credit default institutions can increase borrowers' default rates, thereby increasing debt repayment;

- counteracting information monopoly. For example, banks with long-standing relationships with their borrowers know the credit history of these borrowers, while other credit institutions do not have access to this information. This allows the bank to charge higher interest rates and receive other payments from high-quality borrowers.

Thus, countries with less efficient credit information systems should establish a strong regulatory body to enforce data protection laws and monitor credit exchange institutions. Such authority should be provided with the appropriate legal instruments to monitor misconduct in this field to safeguard the rights of consumers of banking services.

Governments need to examine not only the domestic private sector but also the expertise of representatives of large international private credit registers before implementing any regulations or institutions related to information sharing. Many overseas companies have years of experience working with legal and regulatory conditions regarding the exchange of information and can provide particularly useful information about potential obstacles or consequences that may create new conditions for the exchange of credit information.

For further work, you need to define the terminology used in the reporting of Doing Business, a project that allows you to objectively evaluate credit information systems in about 190 countries. Doing Business measures the legal rights of borrowers and creditors to secure transactions through one set of indicators and the reporting of credit information through another.

The first determines if any features facilitate lending in the relevant laws on security and bankruptcy. The second measures the coverage, volume and availability of credit information available through credit report providers such as credit bureaus or credit registers. The rating of economies by the ease of obtaining a loan is determined by sorting their points for obtaining a loan.

A credit bureau coverage is defined as a private firm or non-profit organization that maintains a database of creditworthiness of borrowers (individuals or firms) in the financial system and facilitates the exchange of credit information between creditors.

Many credit bureaus support banking and general financial supervision in practice, although this is not their primary purpose.

A credit registry coverage is defined as a database managed by a governmental body, usually a central bank that collects information about the creditworthiness of borrowers (individuals and firms) in the financial system and facilitates the exchange of credit information in the environment of banks and other financial institutions (although their primary purpose is to promote banking supervision).

The Legal Rights Index measures the extent to which mortgage and bankruptcy laws protect the rights of borrowers and creditors and thus facilitate lending. The Credit Information Depth Index measures the policies and practices that affect the coverage, volume, and availability of credit information that can be obtained through a credit bureau or credit registry.

Credit Coverage Index is based on the determination of the proportion of individuals and legal entities recorded in the credit bureaus database at the reporting date.

Thus, starting in 2014, Moldova began to improve the credit information system by adopting a new law on credit bureaus, the main purpose of which was to facilitate the creation of private credit bureaus. The Russian Federation has improved access to credit by creating a modern mortgage register.

In turn, Hungary has improved access to credit information by adopting its first law on credit bureaus in 2013, which provides for the creation of a database of positive credit information about individuals. In 2018, the Hungarian Government submitted proposals for the evaluation of commercial loans. Also, a survey conducted by ACCIS in Hungary during 2017 indicates the need for increased data sharing. That is, in addition to «traditional» credit data, which ideally should include positive and negative credit information,

there is potential for the use of alternative sources, such as social media data.

Poland has strengthened its lending system by allowing all legal entities, including foreign legal entities, to provide collateral in the form of collateral and improve access to credit information, starting with the collection and dissemination of business information.

Table 8. Credit Information Indicators by Country in 2018

Country	Strength of legal rights index (0–12)	Depth of credit information index (0–8)	Credit bureau coverage (% of adults)	Credit registry coverage (% of adults)
Ukraine	8	7	45,9	0,0
CIS countries				
Belarus	4	7	0,0	48,8
Kazakhstan	6	7	59,3	0,0
Russia	9	7	88,0	0,0
Moldova	8	6	15,8	0,0
Eastern European countries				
Poland	7	8	98,1	0,0
Czech Republic	7	7	80,5	7,2
Hungary	9	6	31,2	0,0
Lithuania	6	8	96,8	51,6
EU countries				
USA	11	8	100,0	0,0
UK	7	8	100,0	0,0
Denmark	8	6	7,4	0,0
Germany	6	8	100,00	2,0

In 2015, Ukraine improved access to credit information by collecting data on firms from financial institutions and then increased its rating through accessibility to credit by individuals and the development of regulatory support for the functioning of

the Credit Registry. Next, let's take a closer look at the development of the national credit information system.

#### 1. Formation of credit information systems in Ukraine

The beginning of the BCI development in Ukraine can be considered 2003 when the National Bank of Ukraine (hereinafter referred to as the NBU) registered the draft Law of Ukraine (hereinafter referred to as the ZU) «On the Organization and Formation of Credit Histories».

Thus, following the draft Law «On the Organization of the Formation and Circulation of Credit Histories», the use of two variants of the organizational and legal form was considered, the first was to create a BCI with the NBU or with its participation. This option eliminated the need to build logistical capacity, as the NBU has a well-established network of electronic information exchange, broad supervisory powers, as well as access to detailed information about banking institutions. However, the main disadvantage of this concept is that credit institutions can only be individuals and legal entities that use bank loans, thus would remain unprotected users of other non-banking institutions. Therefore, the second concept was chosen, which was the exchange of information between pawnshops, banks, insurance companies, sellers of goods on credit, issuers of payment instruments, leasing companies, and credit unions through BKI.

In 2005, the draft law was adopted, the main goal of which was to be achieved as a result of the establishment of the CCI – to solve urgent tasks that confronted the credit system of Ukraine, in particular: increasing the number of consumer loans; increasing lending to the real economy; raising capitalization and increasing public confidence in credit institutions.

However, in the context of the financial crisis experienced by Ukraine in the period 2008-2016, loss of confidence in the national banking system, both from the main domestic investor

– individuals and from foreign investors, was negative. In 2005, the share of overdue debt on loans amounted to only 2.2 % of the total amount of loans granted, and at the end of 2016, this indicator increased to 51.8 %.

As a result of the crisis, the volume and deterioration of the quality of bank capital decreased, and therefore its ratio to GDP in 2016 reached a minimum value of 5.0 %. The ratio of bank loans to GDP was only 35.8 %, and the profitability of banking activities in 2009-2010 and 2014-2015 was negative, which significantly impeded the development of domestic banks. For the period from January 1, 2007, to January 1, 2012, the formed reserves for bank credit operations increased from UAH 13289 million. up to UAH 157907 million

Credit risk management is one of the priorities of the NBU. For this reason, special attention should be paid to non-performing loans (i.e., non-performing loans or «bad loans»), which are a significant part of Ukrainian banks' balance sheets.

Non-performing loans (NPLs) adversely affect banks' profitability and absorb capital, limiting their ability to lend new loans. Bad credit is also an important signal for society, as problems in the banking sector can quickly spread to other areas of the economy, adversely affecting employment and GDP growth. Since May 2017, the methodology for calculating non-performing loans has been changed. During 2018-2019, there is a moderate trend towards a decrease in NPLs.

A significant amount of non-performing loans, in particular, was due to a lack of information about the credit history of the borrowers, about the current status of debt service to other creditors and the level of credit burden on them at the time of obtaining a loan from a particular bank.

The main disadvantages of the primary credit information legislation include:

- The law did not oblige all, without exception, banking and non-banking institutions to provide credit information about the borrower;
- The law did not specify a single, standardized and regulated credit report;
- the absence in the Law of liability for accidental or deliberate error in the credit history of the borrower.

Therefore, to ensure the financial stability of the banking sector of Ukraine, it became necessary to amend the regulations on the creation and maintenance of the NBU Credit Register. The next stage was the introduction of changes in the BKI to the following legislative acts: the Law of Ukraine «On the NBU», the Law on Banks and Banking, the Law on the Organization of the Formation and Circulation of Credit History, the Law on the System of Guaranteeing the Deposits of Individuals, Of the Law on the Collection and Accounting of the Single Contribution to Compulsory State Social Insurance, Code of Ukraine on Administrative Offenses. In line with these changes, the NBU has created a centralized Credit Registry, which collects information about borrowers' credit operations.

In accordance with the mechanism specified in the NBU Resolution No. 50 on the procedure for submitting information to the Credit Registry by the Bank/Fund (Individual Deposit Guarantee Fund), it should be noted that the Bank/Fund must ensure timely and reliable information provided on the debt of borrowers if the amount of debt exceeds 100 minimum wages to the Credit Registry. In turn, the Bank/Fund is entitled to apply to the National Bank for a request (using the form specified in Annex 2 of NBU Regulation No. 50) to obtain information contained in the Credit Registry. The Bank receives information from the Credit Registry in the form of a debtor's credit report. The Inquiry Register is an integral part of the Credit Registry



and is maintained to store data on banks' «requests/applicants» requests for information.

The last stage of the BIP work was developed by the NBU Board of May 4, 2018 «Regulations on the NBU Credit Register», which defined the main issues of the Credit Registry functioning and the procedure for providing and receiving information from it.

The Bank requests the NBU to provide information about the borrower, and within five working days of receiving the application, the National Bank provides information from the Credit Registry. In case the applicant does not agree with the information received from the Credit Registry due to the inaccuracy of the data, he/she shall apply for removal and correction of the information from the Credit Registry. The Bank/Fund is obliged, within 15 working days of the request of the National Bank, to submit the specified information to the Credit Registry or to provide a reasoned refusal to amend the Credit Registry.

As of January 1, 2019, all banks submit information to the NBU Credit Register, as stipulated by the Law of Ukraine «On Amendments to Certain Laws of Ukraine on Creating and Maintaining the Credit Register of the National Bank of Ukraine and Improving the Process of Credit Risk Management of Banks». For its part, the NBU monitors banks' compliance with the requirements of the current legislation governing the functioning of the Credit Registry and checks the accuracy of the data provided.

Thus, today there is a State Credit Registry of the NBU in which information is available on more than 80 thousand borrowers – individuals (53.2 thousand) and legal entities (27.2 thousand). Eight private credit bureaus are also registered, but three bureaus have a significant database of borrowers: the

Ukrainian Credit Bureau; International Credit Bureau; The first All-Ukrainian Credit Bureau.

Thus, the concept of credit registers is not a new phenomenon – in developed countries, there is a practice whereby individuals and organizations can check the credit before participating in any credit agreement, even using only the Internet. This is because the exchange of credit information allows financial institutions to better manage their credit risk and distinguish between solvent and insolvent borrowers.

Approval of the NBU Resolution № 50 in 2018 completed the process of creating the NBU Credit Register, which contains credit information about more than 80 thousand borrowers. This will have a positive impact on non-performing loans, as it will improve credit information exchange and reduce the degree of information asymmetry. Sharing information also reduces the moral hazard of borrowers. Customers expect their arrears to be handled separately, but the pooling of information will improve discipline in servicing credit, thereby reducing late payments and bad credit.

## **6. THEORETICAL FUNDAMENTALS OF FUNCTIONING OF BANKS AS INTERMEDIARIES ON FINANCIAL MARKET**

In order to determine the role and place of banks in the country's financial market, the peculiarities of the impact of their activities on market indicators and indicators, we will compare the existing characteristics and scientific approaches to understanding the content of such categories as «financial system», «financial market», «financial intermediary», «financial institution», «financial sector», find out the relationship between them. We believe that the substantiation of their essence is important in terms of defining the entity of banks as intermediaries.

It should be noted that the financial system is the basic concept of the science of finance, which is most often defined in the domestic scientific literature «as the set of separate and interconnected spheres and units that characterize financial relations and financial institutions. The spheres and units mainly include public finances, finance of enterprises and households, foreign finance. In contrast to the domestic, post-Soviet scientific school, foreign scientists, including Z. Bodi, R. Merton, characterizes the financial system through the lens of markets and other market institutions that function to conclude financial transactions, exchange of assets and risks. Scholars identify the financial system with a network of financial markets and institutions, various business structures, population finances, and government. As the set of markets and institutions that act as intermediaries between savers and borrowers, determines the essence of the financial system of J. Boyd.

Regarding the concept of the «financial market», analysis of domestic scientific sources showed that the financial market is often considered an element of the financial system. The reason

for this is – a long period of the planned economy in Ukraine, where the leading role was assigned to the public finances, and the financial market as such was represented only by a set of state banks and played only the servicing role of the transfer of monetary resources. This situation completely contradicts the essence of the market, which in its essence is a system of economic relations for the operations of buying and selling goods. Note also that in a market-oriented economy, all markets are interconnected. That is why the efficiency of each country's financial market depends on the openness and development of the market for goods and services, the labor market and the means of production. The profitability of the real sector creates the preconditions for the development of banks as intermediaries in the market.

In the context of our study, we consider it necessary to provide some interpretations of scholars regarding the financial market.

Thus, B. Reisberg argues that the financial market reflects the demand and supply of financial resources, that is, money, currency, stocks, bonds, and other securities. Instead, Yu. Kovalenko claims that the financial market is represented by a system of socio-economic relations dedicated to the transformation of non-working cash into borrowed capital through a system of credit and financial institutions, taking into account the supply and demand for money.

V. Oparin defines the financial market as the set of exchange and redistribution relations that arise in connection with the processes of purchase and sale of financial resources for the realization of production and financial activity.

However, O. Ivanytska argues that the financial market is a network of specialized banking and financial institutions that mediate supply and demand for money as a specific product. Thus, the researcher focuses more on financial institutions than

on economic relations in characterizing the financial market. T. Andrushkiv emphasizes the role of financial intermediation, characterizing the financial market. According to the scientist, the financial market is a system of organizing the movement, distribution, and redistribution of funds through the intermediary services of financial institutions, which change in the light of supply and demand for these resources from various economic entities.

Contrary to the position of previous researchers, V. Khodakivska believes that the financial market is a system of economic relations that arise between its participants as a result of the demand and supply of financial services related to the processes of sale, distribution, redistribution of financial assets. In support of these positions, V. Sheludko emphasizes that the financial market can be characterized as a system of economic and legal relations related to the purchase and sale or issue and circulation of various financial assets.

O. Smolyansky emphasizes the fact that there is an organized or informal system of trading in financial instruments, including bonds, bills, treasury obligations, stocks, as a basis for the exchange of money, credit, and capital, characterizing the financial market.

In our opinion, the most successful is the definition of I. Shkolnik. The researcher defines the financial market as a set of economic relations regarding the redistribution of temporarily free financial resources between the population, economic entities and the state through the system of financial institutions based on the interaction of supply and demand.

The analysis of the scientific literature showed that the financial market of the country mainly performs such functions as:

- mobilization of temporarily free financial resources of households, businesses, enterprises, and institutions, the state, foreign investors and transformation into financial capital;
- creation of preconditions for the interaction of buyers and sellers of financial resources;
- setting an equilibrium price for financial assets, taking into account available supply and demand;
- redistribution of financial resources between sectors and sectors of the economy;
- analysis of the volume and structure of potential demand for various financial assets and instruments;
- increase of liquidity of financial assets in circulation;
- creation of a network of financial institutions for realization of financial assets;
- acceleration of the turnover of the capital of enterprises, which contributes to the activation of economic processes.

It should be noted that the main institutions of the financial market that implement the function of mobilization of financial resources are financial institutions of the credit system, mutual investment institutions, insurance companies, and pension funds. Along with financial and credit institutions, specialized organizers of trade on it – stock exchanges and trading information systems also provide for the movement of financial resources in space. Market liquidity and risk management are implemented by banks and non-banking financial institutions, investment managers, insurance, leasing, factoring, forfeiting and other financial companies.

It should be noted that there are several approaches in the scientific literature regarding the structuring of the financial market. Thus, depending on the groups of financial assets, the financial market is divided into:

- foreign exchange market (exchange and use of foreign currencies);

- precious metals market;
- securities market;
- money market (short-term deposit and loan operations);
- capital market (medium– and long-term loan capital);
- insurance market;
- real estate market.

Another approach was proposed by O. Smolyanskaya, who determined the peculiarities of the circulation of financial instruments as a criterion for structuring the financial markets. According to the approach of the scientist, the financial market is divided into 2 large groups of components:

- equity market (stock and debt markets are components of this market);
- loan capital market (consists of medium– and long-term lending and money market, of which the interbank, accounting and currency markets are part.

Instead, Garmash O. identifies four major markets that shape the financial market as a whole:

- currency (cash and term);
- monetary (monetary and loan capital);
- securities (equity, debt, and derivatives) market;
- insurance and retirement savings (savings and risk insurance) market.

It should be noted that because there are no clear boundaries between the different components of the market, and at the same time there is a constant process of development of market instruments, the only established structure that scientists do not have. At the same time, there are several ways to classify financial markets according to the classification feature:

- based on turnover: debt and equity markets;
- the nature of the movement of financial assets: primary and secondary;
- in the form of organization: organized and distribution;

– in terms of money supply: money market and capital market, i.e. investment funds.

From an institutional point of view, the financial market is represented by a system of financial and credit institutions directly operating in the financial market as financial intermediaries. Thus, O. Smolyanskaya identifies 2 large groups of participants in the financial market:

– a system of specialized credit and financial institutions, which includes the central bank and commercial banks, as well as credit unions, insurance companies, investment companies, financial companies, leasing companies, factoring companies, pawnshops.

– a system of stock institutions, of which members are intermediaries, which issue their debt and intermediaries that carry out their circulation (stock exchanges, dealers, brokers).

In general, the financial market can be conditionally represented as a set of interacting and interconnected markets the money and capital markets. An efficient financial market guarantees equal access of its participants to financial resources through the intermediary services of institutional investors and financial institutions.

It should be noted that, unlike the domestic scientific school, which, characterizing the financial market is more focused on understanding the relationships between different markets, which can be attributed to the financial, foreign approaches are more focused on the role of intermediaries, which are components of the financial market, in different markets, financial intermediaries are more easily structured depending on their core functions. That is why in the context of our study we consider it necessary to analyze the nature, role, and importance of financial intermediaries and financial intermediation in general.



Thus, Z. Bodie and R. Merton argue that financial intermediaries are companies whose primary mission is to provide their clients with financial services and products that are more profitable than they could obtain on their own from personal transactions in the financial markets. A. Orlyuk notes that financial intermediaries are institutions whose specialization is to provide financial services and facilitate the movement of financial resources by transforming mobilized resources into various financial assets». Supporting the ideas of A. Orlyuk, V. Zimovets, and S. Zubik, they also emphasize the role of financial intermediaries in securing the movement of financial resources, instead of placing financial instruments of own issue among individual investors to invest in financial assets».

In general, financial intermediaries in the scientific literature are defined as:

- organizations that raise funds by opening check, savings, insurance accounts to grant loans, buy loans and securities of enterprises and the state;

- legal entities acting based on a license to conduct a commercial (investment funds and investment companies), the representative (trust companies) or intermediary activities (securities traders, commercial banks) defined by the legislation of Ukraine;

Specialized professional financial market operators who offer and provide financial services as a special commodity in the context of special and combined activities.

Note that the term «financial intermediation» is derived from the category «financial intermediary» and is a system of indirect financing in the form of attracting financial institutions financial resources with the purpose of their further transformation into financial assets. Financial intermediation is a professional and specialized activity of banking and non-banking financial

institutions and is designed to meet the economic needs of different economic entities through the provision of financial services and products that result from the pre-allocation and redistribution of financial resources in the economy. In the context of classifications, the I. Shkolnyk approach is interesting, which distinguishes two groups of financial intermediaries: specialized financial intermediaries (banks and non-banking financial institutions) and integrated financial intermediaries (financial supermarkets). This approach considers the current trends of merging the bank with other intermediaries of the financial market (insurance, investment, leasing, management, consulting companies).

Thus, some generalization of scientific approaches has shown that a financial intermediary is a legal entity, organization, institution or institution whose sole activity is to satisfy the financial interests of different economic entities of the country in financial services.

Interestingly, in domestic law the concept of financial intermediary is represented through the term «financial institution», which according to Article 1 of the Law of Ukraine «On Financial Services and State Regulation of Financial Services Markets» is a legal entity that provides one or more financial services under the law, as well as other services (operations) related to the provision of financial services, in cases explicitly defined by law, and entered in the appropriate register in accordance with the procedure established by law.»

In the composition of financial institutions, the legislator includes:

- banks;
- credit unions;
- pawnshops;
- leasing companies;
- trusts;

- insurance companies;
- institutions of funded pension provision;
- investment funds and companies;
- other legal entities whose sole activity is the provision of financial services, and in cases directly defined by law, other services (operations) related to the provision of financial services.

Financial institutions should be understood to mean certain institutions that provide financial services and integrate elements of the financial system and actors of the real economy. Financial institutions, providing the functioning of the financial market, create a resource base for expanded reproduction in the country, stimulate economic growth in the country. Working closely together, financial institutions together form the country's financial sector.

Financial services under domestic law are such as:

- issue of payment documents, payment cards, traveler's checks and/or their servicing, clearing, other forms of payment support;
- trust management of financial assets;
- currency exchange activities;
- the attraction of financial assets with the obligation of their subsequent return;
- financial leasing;
- the lending of funds, including on the terms of financial credit;
- providing guarantees and guarantees;
- money transfer;
- services in the field of insurance and the system of funded pension insurance;
- professional activity in the securities market, which is subject to licensing;
- factoring;

- administration of financial assets for the purchase of goods in groups;
- other transactions that are consistent with the nature of the financial service defined by law.

It is important to note that financial services are the result of the professional activities of financial intermediaries with financial assets priced at the financial market. At the same time, the demand and supply for financial services, because of the activities of financial intermediaries with financial assets, is emerging in the financial services market.

Most scholars believe that the financial services market consists of a variety of financial institutions that form separate markets for banking, insurance, securities-related services, co-investment services, non-state pension services. In general, the essence of the financial services market by scientists can be revealed through the prism of the following approaches: institutional (the main ones in the market are financial institutions and intermediaries); resource (the purpose of market existence is the transformation of financial resources); commodity (financial intermediaries are investigated as groups of producers of financial services and products); market (financial intermediaries are the entities that shape the supply and demand for financial services, being both providers and recipients of services in the market).

In the context of our study, we consider it necessary to determine the nature of the financial sector, since this concept is used quite a bit in scientific works devoted to the functioning of financial intermediaries. According to scientific sources, the concept of the «financial sector» is a generalization to refer to the totality of all financial institutions, the purpose of which is financial intermediation in the financial services market and transactions in the financial market. Thus, the financial sector acts as a single link between the financial market and the

country's financial services market. Although this category is used mainly in the context of comparison with the real economy, the development and efficiency of the financial sector are closely related to the development of real sector entities (enterprises, households, government).

Therefore, financial intermediaries, represented by the activities of banks and non-banking financial institutions and, as an integral part of the financial sector of the country, provide and realize the demand and supply of financial sector entities for financial resources, providing a wide range of financial services on the basis of which financial assets are formed at the financial market of the country, which generally contributes to the formation of public finances, business finance, and household finance.

Awareness of the many roles that banks play in the financial system is one of the major problems of theoretical economics and finance. Banks play an important role in the entire economic and financial activities of modern society, ensuring the activity of various sectors and spheres of economic life. The advantages of banks as financial intermediaries in the country's financial market are:

- banks account for the largest share of the redistribution of borrowed capital in the money market than for any other type of financial intermediaries combined;
- banks, by their functional purpose, are involved in the formation of money supply and can directly influence the market conditions and economic growth of the country, while other intermediaries do not have such an opportunity;
- Banks can provide a broad range of services to economic entities, while other financial intermediaries specialize in separate, often limited, financial transactions.

Despite a clear understanding of the nature and purpose of the bank, there are some differences between scientists in terms of

defining its nature and defining the current goals of banks, which needs additional analysis.

The word «bank» is derived from the Italian word «banco», which means a table or bench by which, in the Middle Ages, Italian coins exchanged coins from different countries. With the development of industry and capitalism, the role of bankers has changed significantly. They have evolved into financial institutions that make money settlements, accumulate cash and other valuables, providing loans and receiving deposits. The Bank is an institution whose purpose is to accumulate cash and savings and to carry out credit and settlement operations. The scientist claims that banks arise based on commodity-money relations, which determines their existence in different socio-economic formations. In support of these ideas, O. Reverchuk emphasizes that a bank (translated from the French «Banque») means a financial company) is a financial institution that acts as a subject of credit relations through the accumulation of funds. The Bank manages and uses the borrowed funds for profit.

According to a foreign scholar M. Chin, the bank is a universal name for a business (institution) specializing in money trading, monetary and capital mediation. K. Drakos states that the bank is a business whose professional activity is to obtain funds from the public in the form of deposits or other means on its account and use them in discount, credit, and other financial transactions.

In general, according to O. Orlyuk's research, there are differences in approaches to understanding the meaning of the term «bank» between the Roman-Germanic (continental European) and Anglo-Saxon systems of law. Thus, in the legislation of most continental European countries, the essence of the bank is revealed mainly through the totality of the functions performed by it. Preferably, the bank is defined as a credit institution that has the exclusive right to carry out such a

range of banking transactions as attracting funds into savings accounts; placement of borrowed funds on behalf of the bank, assuming financial risk, subject to return, payment, timeliness; provision of services for opening and maintaining bank accounts; making calculations. In contrast to the continental approach in countries with the Anglo-Saxon system of law, the main focus of the essence of the bank is shifted to the system of contracts and rules that regulate and regulate banking activities.

Interestingly, the basic principles of banking in the countries of the European Union are set out in Directive 2000/12/EC of the European Parliament and of the Council of 20 March 2000. This regulation is dedicated to the establishment and operation of credit institutions. The lawmakers included the list of credit institutions that conduct business concerning receiving deposits from clients on the condition of repayment, as well as providing loans at their own expense or the expense of borrowed funds. The relevant Directive gives an explanation and substance of a financial institution, which is a credit institution, the principal activity of which is the acquisition of assets or the pursuit of one or more other financial activities. These include lending, financial leasing, money transfer services, guarantees, and more.

According to the Law of Ukraine «On Banks and Banking» of 2000, «a bank is an institution whose function is to lend to economic entities and citizens by attracting funds from enterprises, institutions, organizations, individuals and other credit resources, cash and settlement services. the national economy, execution of currency and other banking operations provided for by this Law». At the same time, according to the new version of the Law, a bank is a legal entity that has the exclusive right under the license of the National Bank of Ukraine to carry out the following operations in the aggregate:

- the attraction of deposits of individuals and legal entities into deposits;

- the placement of these funds on their behalf, on their terms, and at their own risk;
- opening and maintaining bank accounts of individuals and legal entities.

The above list represents the content of banking activities that can only be aggregated by banks (some transactions may be carried out by non-banking financial institutions). This indicates that domestic banking legislation relies on the classical continental approach in approaches to understanding the essence of the bank.

At the same time, in the opinion of banking professionals, despite the presence in the regulatory documents to a greater extent of the concept of the bank, the legal consequences of business activities are more related to the category of the credit institution. Analyzing the essence of the bank, A. Dzublyuk defines it as «an institution of the credit system, which is an intermediary in credit, settlements, and issues credit instruments of circulation». Hence, the financial institution is recognized by the bank in performing at least one of the above functions. Unlike non-bank lending and financial institutions that provide a limited range of services, the bank can perform many other functions beyond its core functions, which are defined by the needs of its clients and its development strategies.

As noted above, banks are the most active intermediaries in the financial market. They can act as issuers, investors and professional participants in this market. The bank's financial market activity is realized through the execution of banking operations, which may be:

- Active – related to the placement of funds by banks on their behalf, on their terms, and at their own risk:
  - a) granting loans to legal entities and individuals;
  - b) investments in securities;
  - c) formation of cash balances and reserves;



- d) formation of other reserves;
  - passive – involve accepting deposits (deposits) from legal entities and individuals:
    - a) raising funds from legal entities;
    - b) attracting funds from individuals;
    - c) obtaining loans from other banks or the NBU;
    - d) issue of bank bonds, promissory notes, and other obligations;
      - commissions – provide for opening and maintaining current accounts of clients, transferring funds, crediting funds;
      - Other banking services – operations that can be performed by non-banking financial institutions subject to a non-banking license:
        - a) guarantees;
        - b) trust (trust) operations;
        - c) factoring operations;
        - d) leasing operations;
        - e) other operations

Therefore, the most sought-after bank transactions, as well as those most associated with various entities with banks, are lending operations. According to S. Kuznetsova, T. Bolgar and Z. Pestovskaya, a bank loan is a bank's loan capital in cash, which is transferred to temporary use based on timeliness, repayment, payment, security and purposeful use.

Bank loans are:

- by borrowers: loans to legal entities; loans to households; loans to other banks; loans to public authorities;
- by purpose: consumer; production;
- by the terms of provision: short-term; long-term;
- depending on the provision: secured by a pledge; unsecured collateral;
- by methods of giving: one-off; open credit line; guaranteed;

- depending on the number of creditors: provided by one bank; consortiums; parallel;
- by the degree of risk: standard; under control; substandard; doubtful; hopeless

To ensure lending activity, banks raise capital in the financial market in the following forms:

- deposits of legal entities and individuals;
- deposits of other banks;
- funds from the issue and sale of bank bonds and bills;
- loans received from the NBU and other credit institutions

The activities of banks as issuers of securities are related to the issue on their behalf and the placement on the primary market of shares (for the formation and increase of equity) or bonds (to attract borrowed capital). Banks can also issue bank certificates and promissory notes – to expand the volume of attracted resources. Additionally, the activities of banks as issuers may include purposeful activities to exercise the rights of investors, certified by securities issued by banks: payment of interest and dividends; repayment of debt securities at maturity; creating conditions for the participation of shareholders in the management of the bank.

As investors in the financial market, banks invest part of their resources in financial instruments for profit. The activities of banks as investors include:

- carrying out operations on the purchase and sale of securities;
- attracting loans secured by purchased securities,
- transactions for the realization by the investment bank of the rights attested by the purchased securities: receipt of interest, dividends, and amounts due in the redemption of the securities;
- participation in the management of the issuing company;
- participation in the bankruptcy procedure as a creditor or a shareholder;

– obtaining a proper share of the property upon liquidation of the enterprise.

Not only securities, but also other financial assets such as foreign currency, precious metals, and derivatives may be the object of a bank's financial investments. In the role of investors, banks compete in the financial markets with large institutional investors – insurance companies, pension funds, investment funds, which, unlike Ukraine, have large portfolios of financial assets abroad, conduct large transactions in financial instruments.

As professional participants in the financial market, banks can perform several types of professional activity in the securities market

– brokerage – implementation of civil legal agreements with securities as a solicitor or commission agent, acting based on a contract of commission or commission, as well as a commission for the implementation of such agreements in the absence of instructions for the power of attorney or commissioner in the contract;

– dealership – concluding securities purchase and sale agreements on their behalf and at their own expense by publicly announcing the purchase price and (or) selling certain securities with an obligation to buy and (or) sell these securities at their declared prices;

– securities management – the implementation on its behalf of the remuneration during a certain period of trust management transferred to him and owned by another person in the interests of this person securities; cash intended for investing in securities; cash and securities received in the course of securities management;

– clearing – activities for determining mutual obligations (collection, reconciliation, adjustment of information on transactions with securities and preparation of accounting

documents on them) and their offsetting of securities deliveries and payments on them;

- depository – provision of services for the storage of securities certificates and (or) accounting and transfer of rights to securities.

It should be noted that based on professional activity in the securities market, a special direction of the modern banking business in the financial market is formed – investment-intermediation services, which include: underwriting, intermediary operations in the secondary market, depository services and financial consulting. These services are not related to the attraction and placement of resources by banks on their behalf, they generate commissions, whose value is constantly increasing in ensuring the profitability of the banking sector.

In the role of professional participants, banks compete in the market with independent brokerages, financial and investment companies, which manage companies, independent depositories, and registrars, which, based on licenses, provide market participants with various intermediary and related services. The competitive advantage of banks lies in the presence of a broad client base, an extensive branch network, professional managers and stock market analysts. According to their role in the economy, large volumes of market and customer information are concentrated in the economy, facilitating their professional activity in the securities market.

Banks also operate in the foreign exchange market with the relevant license of the National Bank of Ukraine. Banks can conduct transactions in the foreign exchange market in the interests of clients (intermediary) and their interests (investment). For clients (residents and non-residents), banks carry out operations on servicing export-import and other foreign economic transactions; make international payments; provide loans in foreign currency; buy and sell foreign currency

and other currency values on behalf of clients; provide consulting and information services. In their interest, banks conduct interbank operations to attract and disburse foreign currency loans and deposits; for the sale and sale of foreign currency and other currency values, including for speculative purposes, as well as operations for insurance (hedging) of risks of foreign economic activity. Commercial banks' operations in the foreign exchange markets are characterized by large volumes and significant risks. At the same time, they allow banks to scale their operations, range of operations and revenue, expand their customer base, diversify assets.

## **7. PROSPECTS OF DEVELOPMENT OF BANKING OVERVIEW ON CONSOLIDATED BASIS IN UKRAINE**

The starting point of our study was the assumption that certain banking groups implement similar business structure models and risk concentration zones (threats to the stability of the banking system) that can be statistically identified.

The main purpose of our study was to improve the efficiency of banking supervision on a consolidated basis to identify typical for the Ukrainian economy clusters (business models) of banking groups, to assess specific combinations of «Risk-Stability» for different banking business models and to determine the recommended banking supervision regime for them.

The source of the statistics is the reporting of banks, published on the website of the National Bank of Ukraine, consolidated reporting of banking groups for the period January 1, 2014 – July 1, 2018. The indicators calculated by the authors because of the above statistics were used as arguments for functional modeling. methods are normalized. The analysis of economic indicators of business models of banking groups is based to a large extent on the statistics of banks – centers of banking groups, since the proportion of assets of such banks in the assets of the group is 94.2 – 100.0 % for the vast majority of the sample.

Data clustering methods were used to identify business models of banking groups; to assess the risks of banking group sustainability – canonical correlation analysis; fuzzy logic methods were used to determine the mode of supervision of participants in the banking group. The calculations were made in the STATISTICA 10 and MATLAB R2017a software environments.

The study was carried out in three stages:

1. Determination of specific business models of banking groups in the Ukrainian financial market.
2. Banking Group Stability Assessment.
3. Determining the mode of supervision of members of the banking group.

At the descriptive stage of the study of banking groups, the data clustering method carried out their clustering. A banking group is described as a clustering object, which is described by a vector (metrics) of general form:

$$X = \{x_1, x_2, \dots, x_8\},$$

- where  $x_1$  – share of gross loans in gross assets, %;  
 $x_2$  – share of corporate loans in the amount of loans (on a gross basis), %;  
 $x_3$  – share of funds of individuals in liabilities, %;  
 $x_4$  – share of legal entities in liabilities, %;  
 $x_5$  – bank’s characteristics on the interbank market (the difference between active and passive transactions on the interbank market up to the amount of liabilities, %);  
 $x_6$  – share of debt in liabilities, %;  
 $x_7$  – share of T-bills in the balance sheet currency;  
 $x_8$  – ROA, % (annualized).

Given the number of observations and  $p = 8$  variables, we have a hypothesis about the number of clusters: there should be no more than 4. As of 01.01.2014, we have 29 banks from the current 30, which are the centers of banking groups.

For clustering, grouping was applied using standard statistical methods (considering the levels of factors  $x_1$ –  $x_8$ ) with the following logic of building a banking business model:

- cluster 1 – the universal model – brings together banks with approximately equal shares of loans to individuals and corporate

clients (40-50 %), the same proportions typical of the resource base; the bank has little reliance on subordinated debt or liabilities other than those of individuals and legal entities;

- cluster 2 – corporate model – peculiar to banks, where the share of corporate loans in loans (on a gross basis) is more than 85 %, but at the same time the share of individuals' funds in liabilities is less than 30-35 %;

- cluster 3 – corporate finance model with retail financing – typical for banks where the share of corporate loans in assets is more than 40 %, but at the same time the share of corporate assets in liabilities <50 %;

- cluster 4 – retail model – share of individuals' liabilities in liabilities more than 50 % and share of corporate loans – less than 5 %.

- cluster 5 – atypical functional – unites banks for which the share of gross loans in assets is less than 50 %; the assets structure is dominated by atypical assets for the banking business (a significant amount of fixed assets, investment real estate, more than a third of assets – securities, etc.).

Comparison of k-means clustering results on different statistical dates gives unstable clusters (pendulum change of positions of separate banking groups) and cannot be attributed only due to change of business model of bank-member of banking group.

Besides, the disadvantage of the clustering method was the fact that banks with different approaches to financing and placement of funds, including PJSC «Megabank» and PJSC «Bank Forward», got to one cluster (cluster 4). The first is that it invests mainly in lending to corporate clients, and the second is an example of an exclusively retail business.

Therefore, the method of mathematical clustering, based on the minimization of the Euclidean distance, does not allow to



achieve the goal of the study, because the obtained results are difficult to explain from an economic point of view.

The results of clustering by the method of statistical grouping in the environment STATISTICA 10 contains in table. 9.

There are reasons to consider the latest clustering of banking groups (by business models) as a more apt description of the type of economic behavior of their participants, reflects the specifics of the formation of the resource base and the way assets are used, a potential model of financial risks (Table. 10).

Its data show that the universal model of banks in Ukraine is characterized by generally the best profitability indicators (ROA) compared to other models. This model is characterized by almost equal share of funds of individuals (46.33 %) and legal entities (43.08 %) in liabilities. At the same time, banks in this business model rely on government bonds for almost 10 % of their assets.

Table 9. Statistical grouping of banks participating in banking groups as of 01.07.2018

The name of the business model and the number of banks in it	Names of banks responsible of banking groups
Universal (8)	JSC CB Privatbank, JSC Raiffeisen Bank Aval, JSC UkrSibbank, JSC OTP Bank, JSC Alfa-Bank, PJSC PUMB, JSC Tuscombank, PJSC Kredobank
Corporate (7)	JSC VTB Bank, PJSC IHG Bank Ukraine, Joint-Stock Bank Pivdennyi, JSC Ukrbudinvestbank, JSC Bank Alliance, PJSC Crystalbank, PJSC Bank Vostok
Corporate with retail financing (9)	Oschadbank, PJSC Megabank, JSC Bank Sich, PJSC Bank Ukrainian Capital, JSCB Industrialbank, JSC Bank Grant, JSC Asvio Bank, JSC KIB, Cominvestbank JSC
Retail (1)	Bank Forward JSC (formerly Russian Standard Bank)
Atypical Functionality (5)	PJSC Bank $\frac{3}{4}$ , JSC Motor-Bank, JSC Unex Bank, JSC Bank Avangard, PJSC JSCB Trust Capital
In total (30 banks)	x

Corporate model banks and corporate finance retail models place most of their assets in corporate loans. In the interbank market, they have less relative activity than other models. The corporate with retail financing model is cost-effective (ROA on average 2.63 %), corporate – loss-making (ROA on average minus 2.13 %).

Table 10. Average values of factor indicators by business models as of July 1, 2018

Model Type	Share of gross loans in gross assets, %	Share of loans of legal entities in the amount of loans, %	Share of funds of natural persons. persons in liabilities, %	Share of funds of legal entities. payables, %	Bank's performance in the interbank market	Share of sub-debt in liabilities, %	Share of government bonds in balance sheet currency, %	ROA, % (year-on-year)
Universal model	62,49	74,25	46,33	43,08	11,99	1,76	9,68	5,54
Corporate model	64,69	94,99	30,38	52,53	-0,25	0,21	1,82	-2,13
Corporate retail finance model	60,07	95,48	51,42	38,36	6,29	0,68	7,92	2,63
Retail model	72,81	2,47	77,28	1,00	13,77	0,00	0,00	-8,22
Atypical functional	32,88	82,20	28,85	57,30	15,45	0,00	17,53	1,72

The model of atypical functionality is the least in banking, but it is a profitable business (ROA averages 1.72 %). These banks are the most active on the interbank market, have the largest share of government bonds in the balance sheet currency (17.5 %) among business models and do not attract subordinated debt.

The need to assess the stability of banking groups stems from the legislative definition of consolidated supervision in the Banking Law as an oversight carried out by the National Bank of Ukraine for a banking group to ensure the stability of the banking system and limit the risks to which the bank is exposed by participating in a banking group through regulation. and control of banking group risks in the NBU order.

To assess the stability of banking groups, we apply a canonical correlation analysis to a set of «RISK-STABILITY» variables. In particular, the RISK set includes the following indicators: H4 (Instant Liquidity Ratio), H7 (Maximum Credit Risk Per Counterparty), Analogue of the L13 Limit (Open Currency Position Limit), Prov/As (Proportion of Reserves in total assets, %). The set of «STAB» is formed from indicators: the standard of H2 (standard of sufficiency (adequacy) of regulatory capital), ROA (return on assets in %), Share (index of market share). The canonical dependence described by us has the form:

$$\begin{aligned}
 STAB &= f(RISK) \\
 a_0 + a_1 \cdot Z_{H2} + a_2 \cdot Z_{ROA} + a_3 \cdot Z_{Share} &= \\
 &= f(b_0 + b_1 \cdot Z_{H4} + b_2 \cdot Z_{H7} + b_3 \cdot Z_{Prov/As} + \\
 &\cdot b_4 \cdot Z_{L13-a})
 \end{aligned}$$

where  $a_i$  – parameters for the parameters of the left set of the canonical equation;

$b_i$  – parameters for the parameters of the right set of the canonical equation.

Before the calculations, all variables were normalized. Emissions have a significant impact on the results of canonical analysis, so they are excluded from the calculations. The result is the production of canonical equations (Table 11), the basis of

which are the so-called «canonical scales» – the contribution of a variable to its value of the canonical variable.

The calculations show that the canonical RISK variable for the entire data set and most groups is most influenced by the Prov/as variable (except for the Non-typical Functional group, where H4 liquidity comes first and Prov/As is the least affected).

Table 11. «Canonical scales» for the RISK and STAB sets

Type	RISK (right set)			Type	STAB (left set)		
	root 1	root 2	root 3		root 1	root 2	root 3
The whole array							
H4	-0,1128	-0,9450	0,0917	H2	-0,1100	-1,0064	0,2998
H7	0,0129	0,1916	-0,5671	ROA	0,8809	0,2499	0,4535
Prov/As	0,9568	-0,0408	-0,3506	Share	-0,4777	0,0519	0,9169
L13-a	-0,2372	-0,2088	-0,7404				
Universal model							
H4	-0,1049	0,4833	-0,1502	H2	-0,5194	-0,5702	-0,7367
H7	0,2073	0,8738	0,3286	ROA	0,7326	-0,6061	0,4826
Prov/As	0,8124	0,1145	-0,6117	Share	-0,6663	-0,3377	0,6685
L 13-a	0,3964	-0,3877	0,7472				
Corporate model							
H4	-0,1236	-1,0281	-0,0282	H2	-0,0446	-1,0190	-0,3036
H7	0,2803	0,3132	-0,8972	ROA	-0,9525	0,2756	-0,3752
Prov/As	-0,5714	0,4040	-0,0042	Share	0,1008	-0,0022	-1,0937
L 13-a	0,3670	-0,1268	1,0162				
Corporate retail finance model							
H4	0,0534	-0,6105	-0,8005	H2	0,0917	-0,7405	-0,8298
H7	0,1240	0,3851	-0,2676	ROA	0,0066	-0,5272	1,0437
Prov/As	0,9922	0,0971	0,1505	Share	-0,9683	-0,4940	0,1513
L 13-a	-0,0960	-0,7475	0,5982				
Atypical functional							
H4	0,6760	-0,1534	-0,7585	H2	0,9465	-0,5280	-0,3286
H7	-0,4698	0,1725	0,1209	ROA	0,0646	0,1024	1,0374
Prov/As	0,0862	-0,8918	0,5090	Share	-0,0871	-1,0968	-0,0784
L 13-a	0,3240	0,3331	0,9604				

The canonical variable STAB is the biggest contributor to Return on Assets (ROA) for most groups, except for the last two:

- The Corporate Retail Financing Model;
- The Atypical Functionality.

The maximum number of canonical roots corresponds to the smallest number of variables in two sets, in our case three. Significance verification by  $\chi^2$  criteria and significance level (p-level) was performed in the Canonical Factors tab  $\chi^2$ -squared statistics for canonical roots. For all business models, the p-level is within the range 0.001 – 0.032, which is less than the accepted limit for economic studies  $\alpha = 0.05$ .

This conclusion about the significance of the obtained results can also be given by the criterion  $\chi^2$ , which for any business model did not acquire a value less than 22.5 (or even much higher), which at the critical/tabular level at 12 degrees of freedom is  $\chi^2_{\text{tab.}(0,05; 12)}=21,0$  actually confirms the proper quality of the calculations (Table 12).

Table 12. Quality indices of the canonical models obtained

Plural	Canonical R	$\chi^2$	p-level	Dispersion extracted (right set), %	Dispersion extracted (left set), %
The whole array	0,7369	208,1	0,0000	78,6	100
Universal model	0,7097	38,7	0,0001	76,8	100
Corporate model	0,9578	118,6	0,0000	85,6	100
Corporate retail finance model	0,8295	73,3	0,0000	72,5	100
Atypical functional	0,6911	22,5	0,0322	77,1	100

In terms of banks, the «risk-stability» ratios for their business model are worse for the universal model – Alpha Bank, Bank PUMB; for corporate model – VTB Bank; for corporate with retail financing model – Oschadbank, Bank Sich; for atypical functional – Bank  $\frac{3}{4}$ .

The share of the explained variance of one set at the expense of another is 50 % in all business models. For a large number of observations ( $n > 200$ ), the result is considered acceptable when the canonical correlation is  $R = 0.30$  ( $R^2 = 0.09$ ), that is, in fact, only a tenth of the canonical variable fluctuations is explained. The verification of the normal type of swings of the canonical model indices was confirmed by the «Swing Chart» in the package «Canonical Analysis» (Fig. 1).

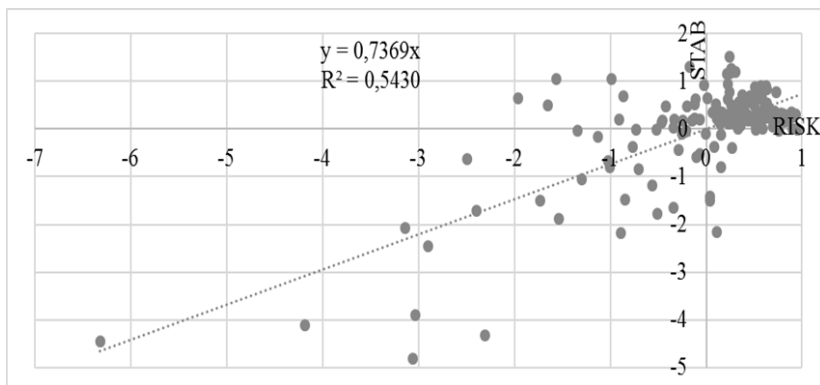


Figure 1. Canonical correlation of RISK and STAB for the entire data set

The need for priority control of the risks of individual banks – centers of banking groups justified above requires a systematic approach to determining the regime of supervision. According to the established practice, the National Bank of Ukraine performs in the form of inspections and visa-free supervision. The frequency of inspections depends on the size of the bank – a member of the banking group (its value to the system) and the risks involved in the activity (but not more than once a year). Off-site supervision – analysis of bank indicators according to

statistical reports (daily, monthly, quarterly), trend analysis and comparison with peer group, and since 2018 – on an annual basis under SREP system (the effectiveness of the last system for prudential supervision in Ukrainian practice is still unknown) .

Based on the above suggestions, we have developed a new scientific and methodological approach to assessing the risk level of BG functioning, based on the application of four interrelated procedures. The application of this approach will promote the development of risk-oriented banking supervision on a consolidated basis, aimed at preventing the implementation of high-risk BG activities, as well as preventive identification of risks (potential problems) in the activities of the BG to ensure timely regulatory impact.

Based on the principle of proportionality in terms of volume, frequency and intensity of banking supervision (Section 2.4. SREP, 2014) within a homogeneous cluster, we formalize the decision-making process using the fuzzy logic approach in the MATLAB R2017a numerical analysis software package.

The statistical base of this part of the study will be formed by the following criteria: (1) bank size (large, medium and small); (2) change in regulatory capital; (3) change in the amount of deposits from individuals.

The first indicator is defined by the SREP methodology as the criterion for determining the categories of banks, the other two are the most indicative of the system of rapid response to the deterioration of the financial condition of a banking institution. For a long time, there has been a consistent practice of non-travel supervision by the National Bank of Ukraine – immediate intervention of the regulator in the bank's operations in the event of a sharp ( $\geq 10\%$ ) decline in the regulatory capital within a month. At the same time, a rapid ( $\geq 10\%$ ) increase in attracting deposits from individuals (at higher interest rates) is indicative

of the bank's efforts to «fill the holes» in liquidity. The latter is also a signal to the NBU's early response.

We will consider three fuzzy linguistic variables as inputs: we use the set of terms  $T1 = \{\text{«large»}, \text{«medium»}, \text{«small»}\}$  for the first variable «size» with corresponding interval values of the bank's share in the bank  $\{\text{«more than 5 \% »}, \text{«From 1 \% to 5 \% »}, \text{«Less than 1 \% »}\}$ ; for the second variable, «change in % of regulatory capital»/capital, we use the set  $T2 = \{\text{«catastr\_decrease»}, \text{«decrease»}, \text{«growth capital»}\}$  subject to a corresponding change in regulatory capital  $\{\text{«fall more than 10 \% »}, \text{«fall from 0 to - 10 \% »}, \text{«growth»}\}$ ; for the third variable «change in % of the amount of attracting deposits of individuals»/deposits we use the set  $T3 = \{\text{«decrease\_deposits»}, \text{«medium\_growth\_deposits»}, \text{«fast\_growth\_deposits»}\}$  provided  $\{\text{«decrease»}, \text{«Growth from 0 to 10 \% »}, \text{«Growth of more than 10 \% »}\}$  (table. 13).

The original surveillance variable had the following terms: «enhanced surveillance» – or «frequent»; oversight of the normal «normal» procedure; monitoring of control indicators – «less\_often\_than\_usual».

Gauss2mf is a two-way Gaussian membership function (4) with two input arguments to describe the distribution:

$$y = gauss2mf(x, params)$$

where  $x$  – vector for which the degree of belonging is to be calculated;

$params$  – vector of parameters of membership function. The order of setting the parameters is (a1 c1 a2 c2).



Table 13. Description of variables to fuzzy logic model

The type of variable	Variable Name	Term	Value Term	Value Interval	Value Indicator
Inbox	size	T1	«large»	>0.05	Bank's share in the banking system
			medium	[0.01;0.05]	
			small	<0.01	
Inbox	capital	T2	catastr_decrease	<-0.1	Increase of regulatory capital
			decrease	[-0.1;0]	
			growth capital	>0	
Inbox	deposits	T2	decrease_deposits	<0	Increase in individual deposits
			medium_growth_deposits	[0;0.1]	
			fast_growth_deposits	>0.1	
Outgoing	supervision		frequent	[0.75;1.00]	Enhanced supervision
			normal	[0.25;0.75)	Oversight of the normal procedure
			less_often_than_usual	[0;0.25)	Monitoring of control indicators

The statistical data set is generated monthly for the period from 01.09.2017 to 01.09.2018, which is 13 dates and 12 periods for comparison. Data on balances of individuals 'term deposits (account 2630) were obtained from banks' current account balances; NBU regulatory capital data; the bank's share in the banking sector's assets is calculated according to the NBU.

The results obtained are illustrated in Table 14.

Table 14. Estimated frequency of oversight (fragment of the largest values) on 09.01.2018

Names of banks responsible of banking groups	Bank share in sector assets, %	Bank size	Regulatory capital growth rate, %	Retail deposits growth rate, %	Calculated frequency of supervision
JSC Bank Alliance	0,12	small	-2,6	12,89	<b>0,845</b>
JSC Asvio Bank	0,06	small	1,0	6,86	0,500
JSC Cominvestbank	0,10	small	-4,7	1,99	0,500
PJSC Bank Ukrainian Capital	0,06	small	0,3	3,52	0,500
JSC Unex Bank	0,06	small	-1,2	1,27	0,500
JSC KIB	0,06	small	0,1	11,05	0,500
PJSC Bank Vostok	0,61	small	1,8	21,69	<b>0,840</b>
JSCB «Trust-Capital»	0,02	small	0,3	2,18	0,500
JSC «Ukrbudinvestbank»	0,07	small	0,0	16,44	0,535
PJSC Bank ¾	0,08	small	2,4	1,02	0,500
JSC Bank Sich	0,07	small	2,0	-2,65	0,500
PJSC Kristalbank	0,09	small	13,9	0,99	0,500

Thus, two banks have the highest indicator of supervision indicator: Bank Alliance PJSC (0.845) and Bank Vostok Bank (0.840). They need a comprehensive risk analysis. At the same time, as of the last date (01.09.2018), none of the banks – centers of banking groups have a value of fuzzy control variable near 1.0, which indicates their stability and viability of business models.

It is further suggested to review the bank's activity monitoring mode with a high fuzzy variable oversight supervision (0.75-1.0) from normal to enhanced, i.e. make appropriate changes to the supervisory actions, including setting requirements for bank activity, providing recommendations for

improvement, initiating inspection inspections, appointment of a curator, etc.

The proposed measures will allow you to quickly respond to problems with banks with high supervision value.

The results we have obtained are expected to have a positive effect on improving the efficiency of banking supervision on a consolidated basis.

The results presented above allow the regulator to assign new identified banking groups to a cluster according to the algorithm described and implemented by us. With a great deal of probability, we can expect them to have some (inherent in this business model) financial behavior and a risk-stability ratio.

It should be noted that the use of different modes of supervision is sometimes applied in the practice of banking supervision on an individual basis (Table 15).

The difference between our proposed methodology is the mathematical and statistical approach to risk category estimation, devoid of the subjectivity of analysts' estimates, the possibility of automated sampling of statistics and the calculation of normal or enhanced supervision.

Table 15. Implementation of risk-oriented principle in state control (supervision) in the Russian Federation

Risk categories	Hazard classes	Features of implementation of control measures
Extremely tall	1	Scheduled inspection is carried out once in the period stipulated by the regulation on the type of state control (supervision)
High	2	
Considerable	3	
Average	4	Scheduled inspection shall be carried out not more than once in a period stipulated by the provision on the type of state control (supervision).
Moderate	5	
Low	6	Scheduled inspections are not carried out

Depending on the risk category, the nature of verification and monitoring by the regulator differ (Table 16).

Table 16. The nature of monitoring checks based on the level of risk in the Russian Federation

Risk assessment	Level of risk	
	Increased	Reduced
The nature of the monitoring	Daily monitoring, manual monitoring, frequent analysis of information, detection of warning signs, bringing monitoring results to management	Setting limit values, lower monitoring frequency, use of automated systems
The nature of the check	Obtain and study additional information, use it for risk assessment	Obtaining less information and/or conducting less in-depth verification, later verification

The graphical interpretation of the dependencies of the variable of supervision on the size of the size of the financial institution that the banking group is formed of, its regulatory capital (capital) and the rate of change of deposits of individuals (deposits) is presented in the form of 3D models in Fig. 2-4.

Thus, our method of estimation of business models of banking groups allows us to correctly identify the type of banking group, considering their size, composition and number of elements of the group, specific banking regulation.

It is proved empirically that the method of mathematical clustering (minimizing the Euclidean distance) produces results that are difficult to explain from an economic point of view.

The method of statistical grouping by factor values makes it more likely to identify groups whose averages confirm the affiliation of a given banking group to a typical business model.

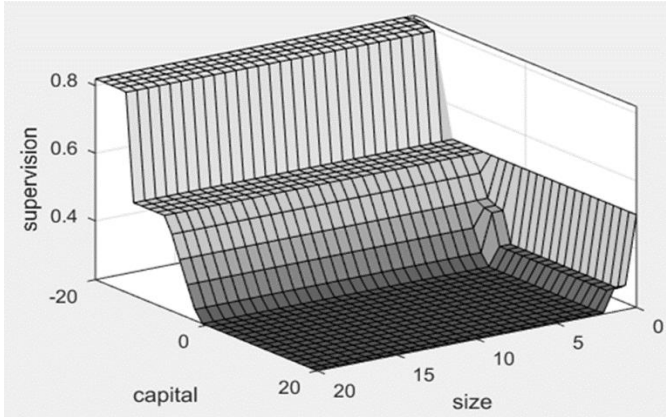


Figure 2. Dependence of the supervisory regime on the change in the bank's regulatory capital and the size of the banking group member

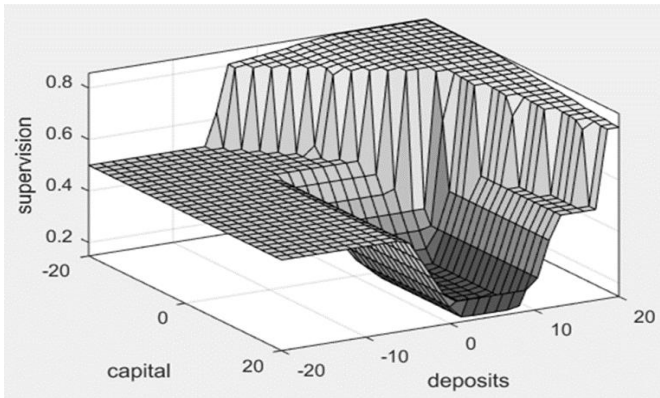


Figure 3. Dependence of the frequency of supervision on the change of the regulatory capital of the bank – member of the banking group and the rate of change of its deposits of individuals

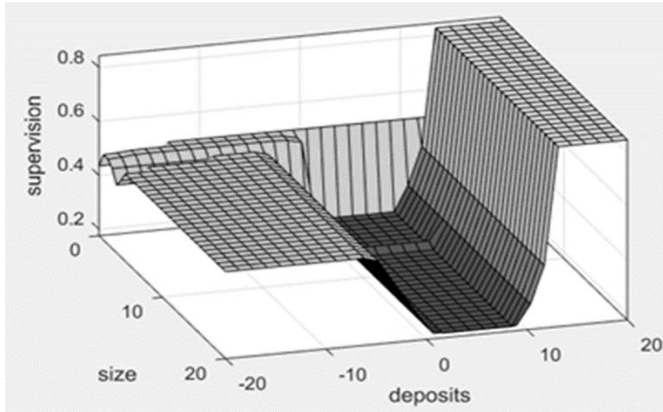


Figure 4. Dependence of the frequency of supervision on the size of the bank – member of the banking group and the rate of change of its deposits of individuals

The data sample we obtained canonical models were used to determine the impact on the stability of the risk index for different business models (the largest in the Corporate model) and to identify banks with characteristics worse than the tendency for the banks of their model.

Statistical calculations of the fuzzy control variable can provide an early response to negative trends in the early stage of financial institutions by reviewing the oversight regime (from normal to enhanced). The proposed measures will result in the timely implementation of supervisory actions to avoid or overcome undesirable consequences in the institution's activities and to prevent systemic risk in general.

Currently, the NBU exercises consolidated oversight of national banking groups (Oschadbank, Vanguard, East, Grant and others) and international banking groups such as Privat, which include banks/branches operating outside Ukraine.

Effective cooperation between the supervisor of the host country (in this case the NBU) and the parent country's parent body is the main prerequisite for overseeing the international activities of the banking groups. However, bilateral or multilateral cooperation between the supervisory authorities (Ukraine, Lithuania and the Republic of Cyprus) is limited to signed bilateral agreements on cooperation and coordination.

To comply with the Basel Principles on International Banking Group Activities, to increase the requirements for effective consolidated supervision of international banking groups, to understand the risks and vulnerabilities of the banking group, we propose to expand cooperation between supervisory authorities and introduce supervision of international banking groups in the following forms:

- conducting international colleges for supervision of the banking group;
- creation of a platform/mechanism for exchange of information on the activities of members of the banking group;
- regular monitoring based on the financial status template and risk assessment of the members of the banking group.

As an effect of the proposed changes, we expect that regular exchange of supervisory information will improve our understanding of the risks of the banking group, help us better understand the risk profile and vulnerability of the banking group. International contacts will facilitate the exchange of information, views and assessments between the banking supervisors in order to improve the performance and effectiveness of consolidated supervision, as well as the supervision of the members of the group on an individual or sub-consolidated basis, to take timely action in current and emergency situations; achieving coordination of banking supervision and risk assessment, developing a risk mitigation program, assigning tasks and organizing joint field inspections.

Regarding the form of oversight in the form of information sharing mechanisms, the proposed change may be through the establishment of secure online communication channels, including secure websites, to inform the banking group members about the financial status of individual group members and their risks in their activities. Additionally, this form of surveillance can be implemented through bilateral/ multilateral meetings, video and/or audio conferences, communications including through electronic communications and official correspondence.

#### C.1. Increasing the independence of the regulator

The issue of cross-sectoral exchange of information between supervisors, as well as the division of powers between regulators of different financial sectors, which is usually done between them based on information sharing agreements.

As a rule, information exchanges for supervisors among banking supervisors and functional regulators are authorized by law and may not be subject to a general ban on the disclosure of confidential commercial and financial information by public servants. The cooperation between the supervisors is still maintained at an informal level and there is no coordination between them: there are no detailed protocols or systems for the exchange of information. In the last decade, the issue of creating a mega-regulator, i.e. consolidation of supervisory functions, including supervision on a consolidated basis, has been debated in Ukraine over the last decade. And in the world, the transition to mega-regulation is the dominant tendency to reform financial regulation. The sectoral model in the world has long been effective, but with the emergence of financial conglomerates cannot cope with the management of systemic risks, so the tendency to switch to mega-regulation. To effectively oversee the activities of the group, the supervisory authorities must maintain operational independence from undue influence. Supervisors must have clear and open goals that are responsible



for the performance of their duties and a sound professional reputation.

### C.1. Banking Supervision and Licensing Departments of the NBU

A prerequisite for effective development of consolidated supervision is its resource and human resources, especially in terms of the knowledge, abilities and skills of NBU experts. It should be noted that the institute of consolidated banking supervision is a new generation and there are practically no professionals in this field. Forming them requires more than one year of professional activity of the body, the formation of national legislation in the field of consolidated banking supervision, the adoption by the business community of the standard of professional conduct of the expert on consolidated supervision. Let's reveal the main aspects of its formation:

1. Knowledge/Skills/Skills. The basic requirements for controllers in the field of consolidated supervision are knowledge of national and foreign regulatory acts, understanding of the dynamics of concentration of financial market assets, knowledge of accounting and regulatory consolidation methods. As analysts, consolidated oversight experts need to know national and international accounting standards, be stress-resilient, and handle significant amounts of statistical information.

2. Continuous development of professional competences. Consolidated supervision, as a regulatory mechanism, may apply benchmarking technologies, new risks in concentrated banking capital. The main way to gain this knowledge is through benchmarking technologies (studying the best practices of leading mega-regulators) and personal contacts with similar experts from the European Banking Authority, the British Prudential Regulatory Authority, the American Association of Supervisors of Banks of the Americas, Hong Kong Monetary

Authority and other supervisory authorities in regulation of groups with the participation of banks.

Principles of professional suitability and integrity. In the process of appointing a supervisor/target for a particular institution, their professional skills/experience should be taken into account, which should be appropriate to the number, size, complexity of the institutions they oversee. Ethical standards and material encouragement of the expert. Control over the sphere of significant concentration of financial resources and the extraordinary price of confidential information requires not only the crystal honesty of the observer, but also the provision of an adequate level of financial remuneration for his work.

1. Formalization of the institution of the expert on consolidated supervision. Completion of the NBU reorganization, clear assignment of the powers of the Consolidated Supervision Department in the Regulation on the Department of Banking Supervision. These changes are expected to have a positive impact on the quality of banking group supervision and risk control. Conversely, the lengthy and bureaucratic hiring process, tight budget constraints on the remuneration fund of such narrow-minded professionals, and the restriction of funding for their continuing specialized training can nullify the regulator's efforts in effective consolidated oversight.

## **8. IMPROVEMENT OF THE REPORTING PROCESS IN THE STATE BANK AS A DIRECTION TO IMPROVE THE TRANSPARENCY OF ITS ACTIVITIES**

Information transparency of the bank or any sector of the economy is of great importance to investors and clients seeking to invest their funds most effectively. Disclosure is a process where information and communications about strategic decisions, through timely dissemination, are made available to all market participants.

Banking information can be defined as banking information. First and foremost, it is the data that characterizes the bank itself, its activities, degree of reliability, financial position and stability, as well as compliance with and compliance with legal requirements. The Bank publishes such information in its annual reports, articles of association, licenses, balance sheet, income statement, statistical reporting and more. Banking information also reflects information about specific banking transactions, it characterizes not only the bank itself, but also those persons with whom the bank enters legal relationships. These include information on the presence of accounts or deposits and transactions with them, the assets held by the bank, the board of directors and shareholders, the placement of bonds and the sale of shares.

Next we consider the term «transparency» and the concept of information transparency, its principles and propose our definition of the term.

In foreign literature, the concept of «transparency» emerged in the 20th century and was important – transparency (transparency) of economic processes, relationships, plans, projects, programs, agreements, supported by law; direct, explicit display in them of all meaningful elements. This definition has become one of the main concepts of the modern

theory of information society, proposed by R. Barbrook and E. Cameron, the main term of the postmodern social theory of J. Baudrillard and P. Virillo.

Transparency means the ability to fully represent public entities and individuals in the general field of information/information about each of them, whether family, political institutions, education or business. Historically, opacity to information societies has been interpreted as a lack of focused and systematic collection and processing of information (databases, high-speed data transmission tools, etc.). Often, the desire of information societies for transparency is interpreted as a reflection of fear of chaos, instability, hidden, unknown, incomprehensible.

Regarding Ukrainian theory, there is no precise concept of information transparency today; it is rather a qualitative characteristic, a characteristic, than a narrow economic concept.

Because the legislation provides for different forms and procedures of obligatory disclosure of information, namely reporting to regulatory bodies, responses to information requests of shareholders and stakeholders, disclosure of material events, we formulated this definition of information transparency.

Transparency (information transparency) is the timely provision of access to reliable information, which is important for stakeholders (investors, shareholders, clients, the state) in order to obtain a comprehensive view of the organization by preparing, verifying and disclosing information on ownership structure, financially -economic activity, shareholder rights, composition of the board of directors, committee and management, as well as changes that are relevant to shareholders and regulators on the basis of legislative norms.

This definition was based on the disclosure structure proposed by Yu. Frolov, in which he identified the following disclosure features:

1. Provision of information to interested parties.
2. Increasing the cost effectiveness of obtaining the necessary information about the activities of the organization.
3. Creating conditions for investment.
4. Investor protection.
5. Development of competition between enterprises of the industry.
6. Protection of clients and creditors.
7. Structuring of investors.
8. Improving economic integration and cooperation opportunities.
9. Improving the efficiency and responsibility of management.
10. Establishment of additional control by the state.
11. Reflection of development of economic relations in the country.

In his work, he also notes the following principles by which disclosure is envisaged:

1. **Credibility.** All information provided for disclosure must be true, substantiated by financial or other reporting. Not only customers but also shareholders and investors as well as regulators need to provide reliable information.
2. **Accessibility.** It is not just an opportunity to receive information on request, namely its disclosure and availability at any time, either through a formal request or through any available resource and for any interested user.
3. **Efficiency.** One of the key features of information disclosure that provides timely disclosure.
4. **Completeness and regularity.**
5. **Neutrality of information.** When disclosing information, it is necessary to exclude the benefits of its provision, it should be the same for all: clients, investors, shareholders and regulators.

The structure of information disclosure is proposed by Yu. Frolov:

1. Disclosure when registering the issue of securities (primary market)

1.1 Placement Decision

1.2 State registration of issue

1.3 Start of placement

1.4 Completion of placement

1.5 State registration of release reports

2. Disclosure of current financial and economic activities in the form of annual and quarterly reports (secondary market)

2.1 Financial Information

2.2 Information on the objectives of the activity

2.3 Information on members of executive bodies

2.4 Information on significant risk factors

2.5 Information for employees and other interested parties

2.6 Corporate Governance Information

2.7 Issuer's quarterly report

2.8 Annual Report

3. Disclosure of events and changes in the corporation that are relevant to shareholders and regulators

3.1 Notification of significant factors

3.2 Messages sent by regulatory authorities

4. Disclosure of information for the prevention of insider agreements on affiliates 'shares in the issuers' capital, on changes in those shares, on profit from securities transactions

5. Disclosure of all material facts about which shareholders are requested to cast votes for proxy voting

6. Disclosure of information about ownership of shares of the issuer

It should be noted that the concepts of «disclosure» and «transparency», although related, but not the same. The former means that any information is disclosed, but it may not always

be of value and value to investors or clients, and important information may remain private or unavailable at all. The disclosed information may not be relevant to the case or, moreover, the disclosure can be manipulated to conceal a true picture of what is happening in the company.

To judge how successful a bank is, it should not just disclose information about its business, but disclose reliable and up-to-date information. Transparency or transparency means the disclosure to all interested parties of the goals of the bank's activities, its legal, institutional and economic bases, fundamental decisions and their justification, data and information related to monetary policy and banking regulation, as well as conditions accountability in its entirety, in an accessible form and on a timely basis. Transparency is counteracted by uncertainty when market participants do not have a fair understanding of the market environment and the actions of the regulator and cannot make the right decisions about consumption and investment. Uncertainty can be modeled as «noise» in terms of signals received by market participants. Transparency has four main characteristics.

- accessibility (openness) of information – the bank must, in the open access or at the first request, provide information about its activities;

- comprehensive coverage – enough information should be provided to explain both past and future monetary policy measures;

- timeliness of information – information should be provided with minimal delay in time, it should include forecasts of the future state of the economy and actions of the authorities;

- information integrity – the tools and channels of information policy must be compatible with each other and coordinated; otherwise, less transparency is more acceptable.

We have considered all of the above in the context of the information transparency of the banking sector, which is not much different from the disclosure of information by any other company, industrial enterprise or commercial firm. But it is worth noting that there are several distinctive features.

Any organization should be as transparent as possible. Regarding the banking sector, information transparency stimulates competition and improves the quality of banking services and helps to mitigate crisis phenomena. It is also worth noting that lack of transparency reduces confidence in the bank and does not allow the bank capital to operate fully and as a result, reduces the efficiency of the banking system as a whole. But as the analysis of the information transparency of the banking sector in different banking ratings shows, today the level of disclosure leaves much to be desired. Banks do not seek to openly provide additional information about their activities and disclose it briefly and only by Ukrainian law and corporate governance standards.

Reliable and complete information enables its users to properly assess the financial position and performance of the bank, its risk structure and methods of managing them. It is a key element in maintaining the reliability of each bank and the banking system of the country as a whole, by establishing an effective feedback system between banks and market participants and ensuring effective oversight of their activities by supervisory authorities. Maintaining the transparency of a bank's operations at an enough level is a competitive advantage. With a high level of transparency, the possibility of identifying the most effective investment projects increases, preventing abuse by the bank's management through the realization by shareholders of their property rights; Increases the ability of market participants to make sound economic decisions under



stressful conditions; systemic effects of market destabilization are limited or their negative effects are significantly reduced.

Thus, next we will look at the basic requirements of the legislation and supervisory authorities that apply to the disclosure and transparency of information in the Ukrainian banking sector.

To date, the Basel Committee, established in 1974, is the main controlling body for transparency, and all banking.

It was established at the Bank of International Settlements by the Presidents of the Central Banks of the G10 countries in Basel, Switzerland. The Basel Committee on Banking Supervision is an association of central bank representatives with the Bank for International Settlements, which meets four times a year to develop banking standards.

Today it includes representatives from the Central Bank of Argentina, Australia, Belgium, Brazil, the United Kingdom, Germany, Hong Kong, India, Indonesia, Spain, Italy, Canada, China, Korea, Luxembourg, Mexico, the Netherlands, Russia, Saudi Arabia, Saudi Arabia, South Africa, Sweden, Switzerland, USA, Turkey, France and Japan.

The Basel Committee deals with the issues of improving the quality of banking supervision in the participating countries, organizes the exchange of information between central banks, develops common approaches to banking supervision, develops its common standards and basic principles, gives recommendations to the Central Banks.

The Committee reports to the presidents of central banks and heads of banking oversight departments of the ten largest industrialized countries and actively cooperates with non-member countries.

The Basel Committee's main documents are:

– Basic Principles for Effective Oversight (1997 revised in 2006) Basel-I (introduced in 1988) whereby bank regulatory

capital should be divided into two categories – Tier 1 and Tier 2 capital, and all bank assets for regulatory goals are divided into 5 groups depending on the degree of risk.

– Basel II (adopted June 26, 2004). The Basel II approach is based on three components: minimum capital requirements (Basel I basis), supervisory procedures and market discipline. Also, since the adoption of Basel I, the mechanism of calculating the minimum level of capital adequacy, which has already proven effective, has been supplemented by a system of supervision and interaction between banks and supervisors, as well as an extensive system of disclosure.

– Basel III (adopted in December 2010), the standards of which are introduced from 2013 to 2018. The major changes in Basel III, compared to Basel II, are mainly included in the calculation of banks' capital, in prudential capital requirements and liquidity. Basel III also introduces additional capital buffers: a conservation buffer (a 2.5 % reserve stock of risk to be maintained by the bank outside the stress period) and a countercyclical buffer. In addition to the analysis of financial indicators, Basel III also highlighted the transparency of bank reporting. In general, the analysis of bank ownership structure, share issue procedures, corporate organization and more is included. Subsequently, the world banks began to pay more attention to these criteria and to increase transparency and accessibility of information. The Ukrainian legislation also drew attention to the new regulations and started working towards increasing the transparency of domestic banks.

In Ukraine, the requirements for transparency of banking information are regulated by the NBU. For the NBU, the level of transparency of banks is a very important indicator for assessing their reliability and financial soundness. The NBU defines the concept of transparency as disclosing by banks to all interested persons information related to the goals of the activity,

legal, institutional and economic bases, principled decisions and their substantiation, data and information directly or indirectly related to the activity of the bank accountability terms in full, in an accessible form and on a timely basis.

The NBU has adopted several legislative documents that regulate the procedure and content of public information on the level of risks and their management system. Thus, the NBU Resolution No. 98 of March 28, 2007 approved «Methodical Recommendations for Improving Corporate Governance in Banks of Ukraine». This regulation provides that material information to be disclosed in the bank's financial statements includes information on risk management practices, namely: a description of the risks that may arise in the activities of the bank and the techniques and methods for their identification and quantification; strategy, risk management policies; bodies involved in risk management.

The same document states that banks should disclose information about the policy and amount of remuneration of supervisory board members and the board of directors (remuneration policy information, remuneration of all supervisory board and board members, including bonuses, stock options). Though, this regulation contains requirements that meet the internationally recognized standards of disclosure of banks' compensation practices, but only partially. In particular, the NBU's existing regulations do not require disclosure of the amount and procedure for calculating compensation and remuneration to heads of departments and employees who incur significant risks in the course of their activity. However, it should be borne in mind that this document was of a recommendation nature, because of which most banks ignored it.

This problem was partially solved with the entry into force of the «Instructions on the Procedure for Preparation and

Publication of the Financial Statements of Banks of Ukraine», which was approved by the resolution of the NBU Board №373 of 24.10.2011 (as amended). According to the instructions in the relevant note «Financial Risk Management», banks should disclose detailed information on risks and methods of managing them, including the goals, policies, risk management mechanisms and methods used to assess the level of risk; results of sensitivity analysis for each type of risk; a description of the methods and assumptions used in the sensitivity analysis and the impact of the risk parameters on the bank's financial performance and equity. This information should be disclosed in terms of risks: credit, market (including currency and interest), other price, geographical and liquidity. Also, an important step towards strengthening the NBU's requirements for disclosure of information on the risks of banks' activities was the adoption of the resolution of the NBU Board dated August 31, 2017 No. 85 «On the publication of separate information on the activity of Ukrainian banks».

The NBU requires banks to disclose information that is disclosure of information about the financial and accounting activities of the bank, their results, structure of organization and risk management. The exception is confidential information containing business and banking secrecy.

Theoretical studies conducted abroad show that the transparency of the banking sector provides:

- efficiency of allocation of resources in the financial market by eliminating information asymmetry;
- reducing the frequency of banking crises and the costs associated with overcoming them;
- in the post-crisis period rapid recovery of banks;
- support of high market discipline and culture of banking.

At the same time, the transparency of the banking sector has several negative points:

- at first disclosure there is a risk of bank destabilization;
- the likelihood of panic among depositors of more open banks, compared with closed ones;

- rates of shares of transparent banks are more volatile;

As a rule, many banks provide the following information in their information materials:

- the structure of the bank's owners;

- on the management board, members of the board of directors and the board of the bank;

- priority areas of the Bank's activity;

- the structure of bank income by sources;

- on the level of capital adequacy, the amount of reserves for doubtful loans and other assets certified by the auditor (by NBU requirements);

- the adequacy of the Bank's capital and reserves as part of the annual consolidated report;

- on the composition of foreign partner banks, if any.

Usually, the shadow contains information that contains the following information:

- the degree of influence on the bank of owners with at least 5 % of votes or the quantitative distribution of shares in the bank's capital;

- description of the bank's activity in terms of segmentation of the client base by industry;

- the structure of the bank's liabilities, including the maturity and currency structure of deposits;

- bank assets (information about them can be obtained only from the official balance sheet);

- off-balance sheet liabilities (only stipulated in formal reporting, guarantee structure unknown);

- the degree of risk of a financial crisis spreading to a given bank, as the consolidated group or affiliated organizations are not disclosed;

– the specific risks of the banking organization, their management, the methods of their assessment (free access to this information is one of the most important requirements of the Basel Committee).

Increasing transparency is possible primarily through the disclosure of financial risks, active and passive transactions, as well as corporate structure.

Various factors influence the increase in the level of banking information transparency. These include:

- location of the bank;
- solid bank age;
- presence of a single owner;
- participation in the deposit insurance system.

Analyzing the relationship between the level of transparency and the size of the bank, we can conclude that the greater the volume of working assets of the bank, the higher its transparency. As the bank's openness grows, its confidence in it grows, allowing it to grow its assets. Therefore, banks with higher levels of transparency are more attractive and have more resources than others.

Taking into account international transparency standards and the practice of foreign banks in this field, the National Bank of Ukraine has also developed several legislative documents regulating the list of risks that must be disclosed by banks in the official financial statements, and the procedure for its disclosure.

However, despite the increased attention of supervisory authorities to the level of transparency of banks, there has not yet been developed a single methodology for assessing the level of transparency of the risks of their activities.

Existing approaches based on the research of research institutes or rating agencies, on the one hand, are too general and not adapted to the specifics of national legislation governing the disclosure by domestic banks of the risks of their activities in

official sources. On the other hand, if the individual methodologies also take into account the fact and completeness of disclosure by banks of the risks of their activities in determining the overall level of their transparency, the assessment approaches are too superficial and involve only an analysis of the disclosure of major balance sheet items related to certain types of risk.

Currently, there are several rating agencies in the world market whose ratings are considered by almost all subjects of international financial activity. The most influential among them are currently considered Standard & Poor's (S&P), Moody's and Fitch Ratings. Each of the listed agencies has its methodology for assessing information transparency and a rating system.

Each of the techniques discussed below has both pros and cons, but it should be noted that although the methods for assessing information transparency are different in each rating, the disadvantages are the same.

First, we will look at the methodology for assessing the transparency of the foreign agency Moody's Investor Service – one of the most reputable rating agencies in the world. This agency has been active for many years, since 1909 and its ratings have enjoyed a reputation as a reliable source of potential risks.

Today, Moody's has more than 30 different rating systems, not including individual rating systems for each country. These include, for example, general credit ratings. They evaluate long-term, medium-term and short-term debt of banks and other financial institutions.

Appropriation techniques take into account factors such as the bank's financial performance, market position and prospects, diversification of activities and assets, and risk factors associated with the bank's operating environment (sustainability and prospects for the economy, structure and degree of

vulnerability of the financial system, the quality of banking regulation and supervision).

The methodology involves an integrated sub-factor evaluation of each of the five key factors. Market share and position stability, geographical diversification, income stability, income diversification, and vulnerability to adverse factors are highlighted to assess market position and prospects.

It is important to note the rating of financial stability of banks by which the agency determines the position of the bank by category (table 17).

Table 17. Classification of banking institutions by the level of transparency and reliability used by Moody's

Evaluation	Characteristics
A	Independent and stable banks, have stable and successful market positions
B	Sufficiently independent and stable banking institutions with strong market positions and stable environment
C	Banks with relative autonomy, strong market positions, stable environment
D	Banks with limited autonomy, weak market positions, uncertain working environment
E	Limited autonomy and stability of banking institutions, high probability of third-party support

A more detailed study of the transparency of the banking sector is conducted by the rating agency Standard & Poor's. Today, Standard & Poor's credit ratings are an essential tool for determining insurance prices, interest rates on loans, the likelihood of timely payment of liabilities, and more.

The Standard & Poor's study considers the information contained in the three main sources of publicly available information: the annual reports, the websites and the reporting provided to regulators, which is published on the NBU's official website.



The research methodology is based on the principle of continuous and fair disclosure following the definition of Standard & Poor's, which means indiscriminate and timely disclosure of all material information to all groups of investors and the public at large.

Overall, the Standard & Poor's survey consists of 102 items about: ownership structure and shareholder rights; financial and operational information; composition and procedures of the Board of Directors and Management.

Part of the research project is also the study of ownership concentration and the practice of disclosure of ownership structure. The assessment of these indicators complements the information transparency survey based on the data, offering a more detailed analysis of the concentration of ownership and the practice of disclosure by banks of property information. Besides, a more accurate analysis of the timing of the financial statements and analysis of the availability of audit committees at boards of directors may be included.

The agency also has its rating system. Ratings fall into two categories: long-term and short-term.

Long-term ratings can count from AAA (exceptionally high credit repayment opportunities) and ending with a D (default) rating. The following categories are in between: AA (high debt repayment opportunities), A (high debt repayments but dependent on economic situation), BBB (satisfactory solvency), BB (solvency satisfactory but unfavorable economic conditions effect on payments), B (similar to the previous one, but the likelihood of the impact of adverse economic situation is even higher), CCA (difficulties with debt payments), SS (serious difficulties with debt repayment), C (with severe difficulties the bankruptcy procedure is being initiated vigorously). There are still SD ratings – non-payment of certain liabilities – and NR –

no rating. Intermediate grades are represented by the minus and plus signs.

The rating system for short-term ratings is much simpler: A-1, A-2 and A-3 ratings are like the first three long-term ratings. Rating B means that the debt is speculative, and the chances of its repayment are highly dependent on the market situation. Rating C means that the issuer has limited chances of repayment of debt and that they are completely dependent on the economic situation. A rating of D means that a default is declared.

Particularly interesting are the Standard & Poor's ratings provided to banks. The BICRA (bank industry country risk assessment) is responsible for this. They reflect the strengths and weaknesses of a country's banking system compared to other countries' banking systems. The risk of non-return on investment is again assessed. Risk banks are divided into 10 groups. Of these, the most reliable are in group 1, the most unreliable are in group 10.

Completes the top three rating agencies Fitch, founded in the United States in 1913. This agency was the first to offer a rating scale by letters, which is currently used in many variations by many rating organizations. This scale indicates the credit rating by combinations of Latin letters, which determine the reliability of the obligations of the issuer, as well as its position in the world market. Ratings can be supplemented by «+» and «-» characters that determine their position within the main category.

Fitch Ratings defines high ratings as F ratings, category B ratings are considered speculative, C is assigned if there is a real default risk, and D is assigned to the issuer in default.

Besides, Fitch also defines for banks a support rating, which is an opinion on whether the bank will be supported by its owner or the state.

Each technique has its advantages and disadvantages. In general, the advantages of these methods are the maximum

detail in terms of coverage of the criteria by which banks are disclosed. These techniques involve evaluating multiple information sources based on each criterion score, considering the usefulness of the information for the international investor and the fact of disclosing data in several languages.

The disadvantages of the above methods are the opacity from the point of view of scoring and weighting factors for each criterion, the commercial nature of the assessment, the inability to carry out the assessment by the market entity on its own, the failure to take into account the specifics of national legislation governing the transparency of banks, is not sufficient transparency. of banks, as disclosure of risk management practices covers only a few criteria without enough detail.

In Ukraine, the most well-known agency, which determines the level of transparency of domestic banks, is the Credit Rating Agency. Since 2009, the domestic rating agency «Credit Rating» conducts its transparency of banks every year. In 2009, «Credit Rating» and AFI have joined forces and developed a common methodology for analyzing the transparency of banking institutions, which contains generally accepted international assessment criteria, supplemented and refined by domestic experts. Following the new methodology, the information base of the study was significantly expanded. While in previous years, Credit Rating experts focused primarily on the analysis of banking site data, they have now begun to monitor the quality of disclosure by several sources: annual reports of banks; their sites; regulators and stock exchanges. The third group of sources included: publicly available information bases of the State Securities and Exchange Commission – now the National Securities and Exchange Commission (including the ESCRIN site), Infrastructure Development Agency website f Ukrainian market, the National Bank’s website and the sites of the PFTS Stock Exchange and the Ukrainian Stock Exchange.

The inclusion in the methodology of additional criteria and the extension of the boundaries of the analytical base was prompted by the desire to retain the ability to compare data with the results of studies conducted with the participation of Standard & Poor's in 2006-2009.

In 2014, for the first time in five years, such surveys found a decrease in transparency across virtually all information blocks and all data sources. For the first time, the results of leading banking institutions were worse than the results of the previous year.

In 2015, the level of transparency of domestic banks, as in previous periods, was far from the highest international indicators. Considering the importance of the quality of the corporate governance mechanism, to work effectively in the financial market by banking institutions, financial circulation and credit should strive to comply with international standards of data disclosure as one of the important elements of corporate governance systems.

The main advantages of the methodology for determining the level of transparency of banks proposed by domestic rating agencies are the adaptation to local legislation in terms of criteria and information sources for assessing the transparency of banks, taking into account additional criteria to resolve disputes in the ranking of banks by level of transparency. The disadvantages of this system are the opacity of the methodology in terms of scoring and weighting factors for each criterion, the commercial nature of the valuation, the inability to carry out the valuation by the market entity on its own, disclosure of risk management practices covers only a few criteria without sufficient detail. Despite the drawbacks, the methodology is still used and allows to obtain general information on transparency of domestic banks.

Thus, in 2014, a decrease in the level of transparency was observed in virtually all information blocks and all data sources.

In 2015, the level of transparency of domestic banks, as in previous periods, was far from the highest international indicators. Considering the importance of the quality of the corporate governance mechanism, to work effectively in the financial market by banking institutions, financial circulation and credit should strive to comply with international standards of data disclosure as one of the important elements of corporate governance systems.

In 2016, the average level of disclosure of banking institutions was 56.58 %, which indicates a lack of transparency of the banking system of Ukraine in comparison with the developed countries of the world.

To date, a large amount of information that could serve to objectively assess the risks of a bank's activity is not open to interested users.

In our opinion, the proposed methodology for assessing the transparency of domestic banks' risks has the following advantages:

- 1) Complexity of assessment, due to the optimal combination of national and international disclosure requirements by banks about the risks that accompany their activities, with the establishment of significance level for each of them.

- 2) A broad base of valuation based on the use of multiple information sources, taking into account the usefulness of each of them in terms of the ability of market actors to make informed economic decisions based on them.

- 3) Multidimensional analysis, which provides maximum coverage of the types of risks that domestic banks face in the process of their activity, taking into account their national and international classifications, as well as assessing the level of disclosure by banks of capital adequacy and availability of

reserves in the bank to cover all available and potential risks. At the same time, according to our proposed methodology, not only the amount of information but also its qualitative characteristics is taken into account, so the mere fact of disclosure of data according to each of the defined criteria does not guarantee the bank maximum score on it.

4) Ability to apply to assess the level of transparency of all domestic banks, regardless of ownership and scale of activity, since the method provides for a modification of the order of calculation of the integral index depending on the nature of the bank's activity and its ownership structure.

5) Dynamics of analysis, which provides ratings to banks on the level of transparency of risks of their activity not only on the basis of Actual problems of the sectoral economy of the calculated value of the integral index at a specific point in time, but also taking into account its dynamics over several periods, which is an important aspect from the point of view encouraging banks to maintain a consistently high level of risk disclosure on an ongoing basis.

6) Transparency of the methodology from completeness of disclosure of the criteria and approaches to assessment and the possibility of its use for conducting appropriate analysis of the level of transparency of risks of domestic banks by all market actors.

Thus, domestic legislation to regulate the preparation and publication of bank statements and the requirements for their content was explored. The content of the concept of transparency was considered, different approaches of scientists to its definition were analyzed, the main components of transparency were identified and the methods of determining the transparency index of banking activity were investigated.

A more detailed analysis of public policies on the transparency of banks is also using content analysis. The essence

of the content analysis method is to fix certain units of the content being studied, as well as to quantify the data obtained. The statute, the findings of independent auditors and comments on reporting to international standards of state-owned banks were taken as the basis. The study was conducted using text-mining technology using ABBYY FineReader 9.0 software, ATLAS.ti 7, QDA MinerLite. QDA MinerLite (CodingRetrieval) has been used to encode the report text with a coding rate. Based on this rating, word clouds were generated using WordItOut software.

The first stage of the study identified a list of sources of information. It includes:

- the statute;
- IFRS financial statements with auditors’ comments and conclusions for 2016;
- manifests of banks;
- banks’ social position is indicated on their official websites;
- accounting policy;
- provisions on the procedure for preparation, submission, and publication of reports.

In the second stage of the analysis, the information was translated into a single text format, clearing the text of characters, numbers, stop words and replacing synonyms.

In the third stage of the study, the keywords in the text of their coding were searched and the results were presented in the form of Table 18.

As can be seen from the content analysis of the main provisions on the activities of banks and their reporting, nowadays the analyzed documents have relatively common words: law, legislation, control, supervision, approval, etc. Therefore, we can conclude that the regulatory documents of banks are designed to include all requirements of domestic law and are oriented to their implementation.

Table 18. Content analysis of the main provisions and reporting of the largest state-owned banks in Ukraine

Main terms	Privatbank	Oschadbank	Ukreximbank	Ukrigasbank
	Number of words in the text			
Law	118	164	98	105
Control	34	38	29	31
Disclosure	25	33	28	22
Available	10	11	8	3
Promulgation	8	11	5	6
Clear	3	3	1	0
Integrated	0	0	0	0
Transparent	0	0	0	0

Regarding the transparency of data, this issue is covered very superficially in the regulations and reporting of banks. This is evidenced by the low frequency of use of words such as accessible, transparent, open, publicized, etc., and in general lack of transparency. This indicates a low level of regulation of openness of information, the disclosure of which is not provided by domestic legislation. As noted in the previous section, domestic banks should pay attention to the development of internal provisions on the information policy of the bank and disclose them to interested users. Also, the normative documents do not mention the concept of integrated reporting, and therefore it can be concluded that state-owned banks do not intend to prepare and use integrated reporting yet.

There was also a general content analysis of the official site of Oshchadbank JSC in search of keywords. According to the results of the analysis, a «word cloud» was formed, which allows us to compare the frequency of use of some keywords on the site and in the published bank documents. The most commonly used terms on the site and in regulatory documents are the terms «finance», «report» and «law». The frequency of the use of the words «NBU», «assets» and «expenses» is positive. These terms



are directly related to the financial and statistical reporting of the bank, so they are very commonly found in the information analyzed. However, as can be seen in the figure, the terms «accessible», «timely» and «complete» are found only once in the context of general accounting principles. The term «transparency» is found in the context of describing the principles of working with clients and the procedure for providing them with information, but no explanation is given as to what this concept should include.

It can be concluded that public information provided by domestic state banks does not give full opportunity to interested persons to make effective management decisions. The introduction of higher transparency requirements for banks will help to curb excessive risks in advance, as well as reduce the likelihood of banking crises that could destabilize the financial system. That is why the state banks and the NBU are now facing the challenge of expanding the list of information required for mandatory disclosure to better comply with the Basel Committee's global requirements.

## CONCLUSIONS

Approaches to ensuring transparency of the public finance sphere in Ukraine, as well as its components in the context of the formation and implementation of anti-corruption instruments of preventive nature, were considered in the monograph. The study concludes that over the past five years, Ukraine has made significant progress in publicizing economic information in general and in the area of public finance in particular.

First, financial monitoring procedures have been aligned with the best international practice. In particular, the recommendations of the FATF and other relevant international organizations were taken into account when developing the current regulatory framework. The most successfully and comprehensively these processes take place in the banking system of Ukraine.

Second, the credit information exchange system has been improved. In particular, along with the private credit bureaus in 2018, the state Credit Registry, which is managed by the National Bank of Ukraine, has started operating. In this register, as of mid-2019, information is available on more than 80 thousand borrowers - individuals (53.2 thousand) and legal entities (27.2 thousand). Improving credit information exchange will have a positive effect on non-performing loans (by reducing the level of information asymmetry) and will complicate the use of credit transactions in corruption and shadow schemes.

Third, the effectiveness of consolidated banking supervision is improving. Currently, one of the most pressing tasks is to develop approaches to differentiate banking group supervision based on a better study of their strategies and operating models. In particular, this monograph proposes a methodology for assessing business models of banking groups, which allows you

to correctly identify the type of banking group, given its size, composition, and specificity of banking activities. However, further consideration is needed to create effective mechanisms for overseeing financial and industrial groups, within which shadow schemes related to the illegal withdrawal of financial resources from Ukraine are often implemented.

Fourth, it is concluded that state-owned banks play a significant role in Ukraine's public finances. However, they do not disclose sufficient information for a comprehensive qualitative analysis of their activities. The introduction of higher transparency standards by state-owned banks will limit the risks of their employees' corruption.

Ukraine's financial system is bank-centric because the vast majority of its financial resources are redistributed through the banking system, and other financial intermediaries play a supporting role in the execution of specific financial transactions. Besides, banks have a broad customer base, an extensive network of branches, quality information systems, and professional staff. As a consequence, huge amounts of economic information are concentrated and processed in banks, some of which (unrelated to bank secrecy) should be made public to increase the transparency of the national financial system.

Further dissemination of a culture of openness of economic information in Ukraine will enhance the effectiveness of preventive anti-corruption instruments. For example, the operation of the Prozorro e-Procurement system provides significant cost savings for the state budget. Openness and transparency in relations between economic agents will gradually reduce opportunities for money laundering, the implementation of shadow schemes and the commission of corruption.

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## **Impact of Transparency of Public Finances on the Level of Corruption in Ukraine**

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