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FOR SUSTAINABLE DEVELOPMENT**

Collective monograph

Edited by Maksym Slatvinskyi

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Authors:

Inna Berzhanir, Mykola Biloshkurskyi, Tetyana Demchenko, Olesia Demianyshyna, Liudmyla Chvertko, Nataliia Gvozdej, Marianna Kichurchak, Tetiana Korniienko, Andrii Makurin, Yuliia Melnychuk, Nataliia Osadchuk, Roman Shchur, Maksym Slatvinskyi (editor), Oksana Vinnytska, Olha Yemets.

Reviewers:

Nazarii Popadynets, Doctor of Sciences (Economics), Lviv Polytechnic National University, Lviv, Ukraine;

Mykola Rudenko, Doctor of Sciences (Economics), Associate Professor, Cherkasy Educational and Scientific Institute of Banking University, Cherkasy, Ukraine;

Oleksandr Svitovyi, Doctor of Sciences (Economics), Associate Professor, Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine.

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The monograph represents the results of research of the scientific and pedagogical staff of the Department of Finance, Accounting and Economic Security of Pavlo Tychyna Uman State Pedagogical University on the research topic “Problems of financial support of economic and social sphere” (state registration number 0116U000117).

Theoretical & methodological provisions and practical recommendations on the formation of conceptual framework and applied tools for assessing, monitoring and financial management at the global, national and micro levels in the permanent conditions of risks, threats and challenges to the security of sustainable development are given in the monograph.

Recommended for readers interested in economic issues, academics, professionals, postgraduates, educators and students.

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INTRODUCTION

The inability of many governments to finance the sustainable development draws the attention of top management of the business world and the financial industry. Leading high-yield financial tycoons, including development banks and private banks, had developed a wide range of innovations that can support sustainable development. Sustainable development goals can be achieved only when there is coherence between market actors and authorities. Therefore, the issues of financial and security policy directly affect sustainable development and are extremely important for the achievement of its goals.

All stakeholders must adhere to policy coherence and enhance a favourable environment for sustainable development at all levels. Achieving a balance of all stakeholders' interests, increasing the coherence of financial policy is an urgent challenge for international development. The solution to this problem is to create institutional mechanisms and processes for the harmonization and management of the often-competing goals and interests of financial policy. The purpose of the mechanisms is to reconcile domestic and foreign policies, which they support or at least do not undermine the development aspirations of developing countries. In this case, there is a special need to adjust security policy in close coexistence with fiscal policies that are consistently aimed at sustainable development.

Such mechanisms need constant adjustment and improvement, and especially should have a scientific basis that will comprehensively assist in making a number of management decisions on security and financial policy. Promoting policy coherence for development has been going on for two decades and is gaining a straightforward obvious movement, with institutional arrangements at its core starting point. Therefore, they need to be reconfigured periodically to effectively meet modern visions and needs.

Sustainable development mechanisms should be formed on a scientific basis and they need deeper research in the following areas:

- financial management of united territorial communities;
- the budget funding of the cultural sphere at the subnational level in the context of sustainable development of Ukraine;
- the old industrial regions ranking in the context of sustainable development security;
- the development of the financial potential of the insurance market;

- the sustainable development in the lending activities of Ukrainian banks;
- the financial resources of enterprises;
- the management of venture capital as a type of financial resources;
- the accounting aspects of cryptocurrency operations management;
- financial security of the enterprise in the context of sustainable development.

Local funds are important for the society as the objective form of economic relations at the level of administrative territorial units and at the same time they are the main tool for implementing the policy of socio-economic development of regions.

The issue of monitoring the current state of the security of sustainable development of old industrial regions of Ukraine is the need for structural modernization of the industrial sector, i.e. the transition from extensive use of resources of industrialized areas in the past to intensive production based on technical progress in the future.

The main part of the strategy of sustainable economic development of Ukraine is the reform of government policy in the culture sector. Implementation of a set of government measures involves modification of the current model of budget funding of cultural activities at the national and subnational levels. In view of this measures, it is necessary to assess the budget funding of the culture sector in the regional context and to identify its features in the context of modern requirements that have arisen in connection with the implementation of the strategy of sustainable development of the Ukrainian economy. These issues involve the need of the formation of scientific and methodological approaches to assessing the budget funding of the culture sector at the subnational level in terms of changing the imperative of Ukraine's development.

The insurance market in each country is an indicator of the economy and sustainable business development. When the stability and prosperity of a country reaches a certain level, both workers and employers begin to think about their future, to secure their old age, to finance the risks that exist in everyone's life, property insurance and so on. The rapid aging of the world's population is depleting the financial resources of citizens, leading to low levels of health care and pensions. Insurance makes it possible to provide daily human protection – both today and in the future. This leads to two effects – the state has additional long-term funds that provide financing for investment projects, which contributes to the further development of the

country's economy; citizens receive insurance protection, savings for future periods, and therefore – protection of human interests.

Important and relevant for Ukraine is the issue of improving the organizational, economic and legal foundations of effective lending activities of domestic banks, which directly affects sustainable development. The ability of the latter to meet government credit needs contributes to the development of the country's economy. The stability of the banking system and the financial system as a global indicator largely depends on the level of efficiency of banks' lending activities.

The development of information technologies leads to the appearance of new types of cryptocurrencies. The main advantages of using cryptocurrency are decentralization and freedom of transactions. Cryptocurrency acts all over the world as an inexpensive technological means of payment, as well as a special form of investment that particularly affects the sustainable development of the country.

In the context of Ukraine's economic integration into the world market, there is a growing interest in creating a system of control over all stages of venture capital. The mechanism of effective management of the enterprises venture activity should become the tool of creation of this system. The system of information flows has great importance, and it provides information to the management decision-making process on a risky innovation project in a venture enterprise, which are elements of sustainable development.

In a market economy the formation of a sufficient amount of funds for effective financial and economic activities of enterprises is a major factor in increasing financial potential, ensuring competitive advantages and stable economic development. An effective process of forming the financial resources of enterprises allows to maximize their market value, ensure their financial stability and profitability, minimize the financial and economic risks.

The financial system of Ukraine as a country with a small open economy are experienced by global turbulence. Significant imbalance of global funds, their significant separation from the real economy led to permanent financial crises that cause internal instability of the financial sector, distrust of the banking system, low demand for consumer products, and, as a result, these problems lead to lower level of financial security. In this conditions, the financial security of enterprises is important not only for itself, but also for protection of the financial interests of their owners and

other stakeholders (managers, employees, counterparties, banks and other financial institutions) – the basis for sustainable development.

The monograph includes nine chapters, which are structured so that each of them contains the results of scientific and practical research on certain aspects of financial policy and security policy for sustainable development.

Authors of monograph:

Maksym Slatvinskyi, Candidate of Sciences (Economics), Associate Professor (leader of the author's team, scientific editor) – Preface, Conclusions and Chapter II; **Olesia Demianyshyna**, Candidate of Sciences (Economics), Associate Professor; **Nataliia Osadchuk**, Senior Lecturer – Chapter I; **Mykola Biloshkurskyi**, Candidate of Sciences (Economics), Associate Professor – Chapter II; **Tetiana Korniienko**, Candidate of Sciences (Economics), Associate Professor – Chapter II and Chapter IX; **Roman Shchur**, Doctor of Sciences (Economics), Professor – Chapter II; **Olha Yemets**, Candidate of Sciences (Economics), Associate Professor – Chapter II; **Marianna Kichurchak**, Doctor of Science (Economics), Professor – Chapter III; **Liudmyla Chvertko**, Candidate of Sciences (Economics), Associate Professor – Chapter IV; **Yuliia Melnychuk**, Candidate of Sciences (Economics), Associate Professor – Chapter IV; **Oksana Vinnytska**, Candidate of Sciences (Economics), Associate Professor – Chapter V; **Andrii Makurin**, Candidate of Sciences (Economics), Associate Professor – Chapter VI; **Tetyana Demchenko**, Candidate of Sciences (Economics), Associate Professor – Chapter VII; **Inna Berzhanir**, Candidate of Sciences (Economics), Associate Professor – Chapter VIII; **Nataliia Gvozdej**, Candidate of Sciences (Economics), Associate Professor – Chapter IX.

Chapter I

FINANCIAL MANAGEMENT SYSTEM OF UNITED TERRITORIAL COMMUNITIES: CONCEPTUAL FUNDAMENTALS OF THEORY AND PRACTICE

Olesia Demianyshyna

Candidate of Sciences (Economics), Associate Professor

Associate Professor at the Department of Finance,

Accounting and Economic Security

Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine

E-mail: demianyshyna.o@udpu.edu.ua

ORCID ID: 0000-0001-9820-8878

Nataliia Osadchuk

Senior Lecturer at the Department of Finance, Accounting and Economic Security

Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine

E-mail: n.osadchuk@udpu.edu.ua

ORCID ID: 0000-0001-5921-3869

Introduction. Local finances play an important role in society, as they are an objective form of economic relations at the level of administrative-territorial units and at the same time the main tool for implementing the policy of socio-economic development of regions.

Under the conditions of decentralization, the wording of local finances has been changed, namely, it has been determined that the specific sphere of financial relations is the finances of a united territorial community. Their emergence is associated with the general implementation of reforms of local autonomy and organization of local government, and their further role depends on an in-depth study of theories and methods in this area. With the unification of territories and communities and the emergence of financial relations at the level of UTC has become an objective phenomenon of UTC finance, which requires detailed research through the prism of determining its role and place in the financial system, current challenges, strategic development and modernization.

It should be noted that there is no such definition of the concept of “financial management”, which in the broad sense would mean the ability of a certain system to perform its function taking into account external and internal factors. Therefore, we can say that the concept of “financial

management of UTC” in the methodology of research of scientists and national legislation is incomplete and requires further clarification and improvement.

Literature review. The problems of functioning of finances at all levels of the economic system were investigated by O. Vasilik, V. Demyanishin, O. Desyatnyuk, M. Karlin, A. Krysovaty, M. Krupki, L. Lisyak, I. Lyuty, P. Nikiforov, V. Oparin, K. Pavlyuk, Y. Pasichnyk, O. Rozh, O. Tulay, V. Trofinoy, V. Fedosov, I. Chugunov, S. Yuriy and others. Significant contribution to the development of theoretical and methodological and applied aspects of the formation of financial resources of territorial communities has been made by foreign and domestic scientists such as I. Vakhovich, I. Volokhova, T. Gurgula, O. Molodtsov, I. Pelehatiy, I. Storonyanska, R. Musgrave, E. Ostrom.

The regulatory support in the sphere of financial management of public utilities in Ukraine was investigated by such domestic scientists as S. Klimova, V. Dyachenko, L. Drobozina, A. Gryaznova, A. Alexandrov, D. Molyakov, E. Shokhin and others, but scientific publications devoted to the formation of the financial management of public utilities in the context of the reform of decentralization of power in Ukraine are still scarce.

The issues of local budgets in the conditions of the policy of financial decentralization were investigated by such Russian scientists as Y. Arabchuk, T. Bondaruk, O. Vasilik, M. Dolishny, V. Kravtsov, M. Kulchitsky, I. Lunina, V. Oparin, S. Osipenko, K. Pavlyuk, I. Storonyanska, V. Fedorov, R. Schur.

Results. To understand the concept of financial management of public utilities, it is necessary to analyse the essence of the concept “finances”.

The formation of the basic concept of finances of the state is in the space of scientific confirmation of the structural elements and the definition of the position and role of the financial system of the state.

As stated by V. Oparin, “...defining finances, like any other phenomenon, it is necessary to answer the simple, but at the same time extremely difficult question – what is it and what does it include?” [1].

1.1. Financial management of territorial communities

Looking at the assumptions and tools of systemic methodology, knowledge about the finances of UTCs, it is possible to identify their position in the financial system and structure. Our interpretations are based

on the arguments that finances are a single element of the multiplicity that forms a subsystem of local finances in the financial system. It should be remembered that subsystems are subordinate to higher order systems, and the latter are higher order systems with their own structure. We believe that “...each system has its own rules of adaptation and transformation, structural characteristics, especially the existing hierarchy between elements and subsystems, which influences the behaviour of each element. This is also characteristic of finances as a system that includes elements of a subsystem” [2]. A large number of interpretations of the financial system are centered on the interrelated multiplicities and parts of financial relations, the formation and use of financial resources in the process of centralization and decentralization is quite consistent with the period of administrative and command economy [1]–[4].

According to another methodology, which was formed in the transition period of the market economy, the conceptual definition of the financial system in most of the scientific works includes new principles, expands the meaning and treats it as a specific form and methods of financial relations, which carry out the process of exchange, distribution and redistribution. It is believed that this is also an integral part of the financial system by a group of financial institutions and agencies that manage cash flows to determine the size and organizational structure. It should be noted that the organization and configuration of the organization depend only on the national peculiarities of the country in which it is located [1], [5].

Thus, the internal structure is considered to be based on the established conceptual position, and its perception is a totality of independent, but interrelated fields of financial relations (broad components) and connections (components of isolation), which have certain characteristics. Mobilize and use financial resources, as well as appropriate management personnel and supervision support [5].

In our opinion, the internal structure of the financial system reflects the configuration of the participants of financial relations, related to the cash flow, grouped in the appropriate areas and links. In view of the reverse methodology of the system of scientific knowledge, we agree with the point of view of A. Galchinsky, who stated that the financial system “is a structure of the internal organization – a system of systems as a way to achieve specific goals, (systemic) goal, has a specific mechanism of self-preservation and energy of self-development, and is governed by its own logics, historicism and internal laws” [5].

The description of the internal structure of the financial system reflects the configuration of the participants in the financial relations. These relations are related to cash flow and are grouped according to the area and the reference to the disclosure of their content (Figure 1.1).

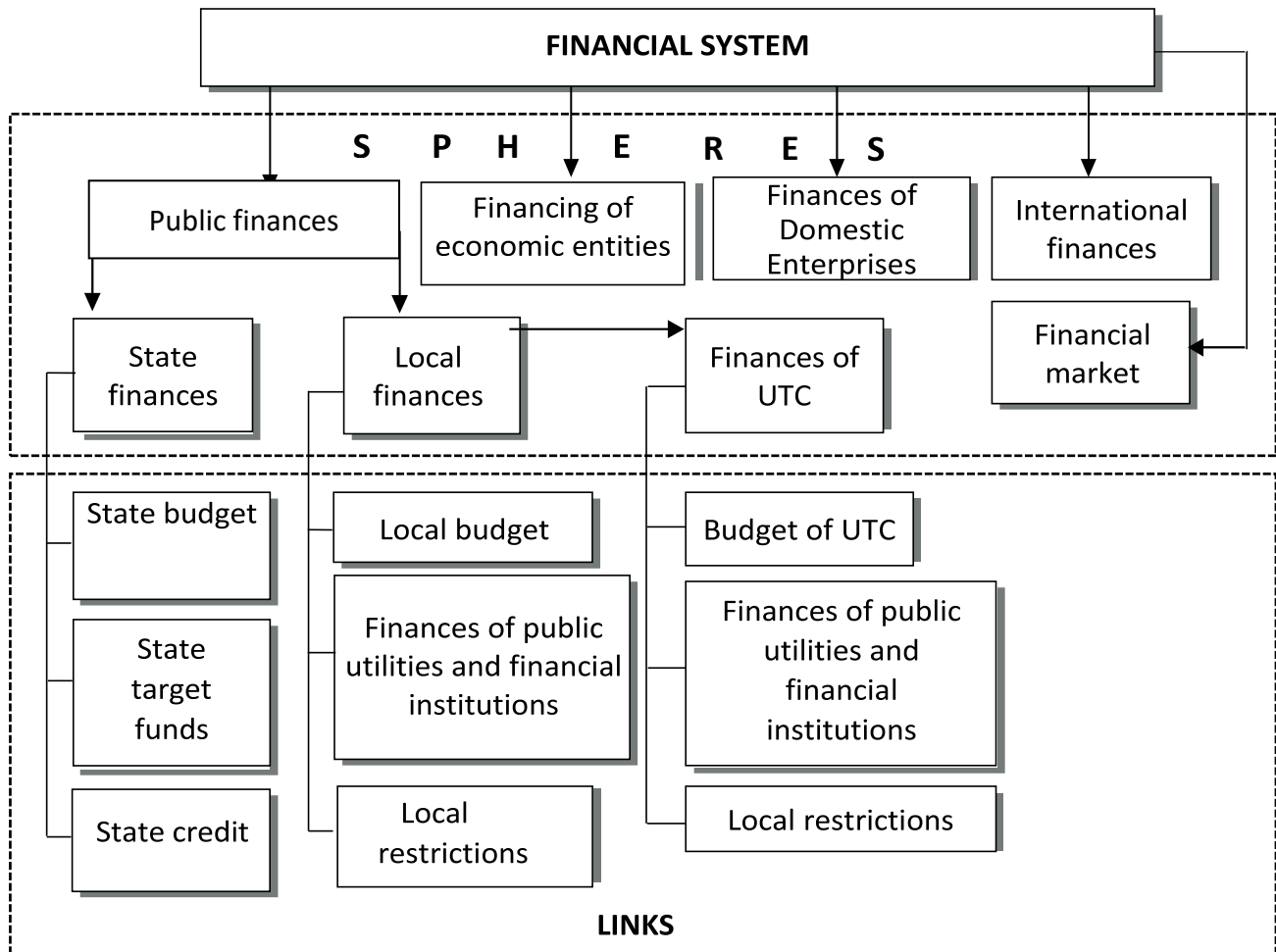


Figure 1.1. The place of GTA finances in the financial system of Ukraine by internal structure [4]

It seems reasonable and scientifically justified to consider the finances of UTC as an important sphere of the financial system of Ukraine, as part of local finances, i.e. it is a structural element of municipal finances together with state finances, since they have different characteristics, between the UTC in the financial relationship with other subjects of the financial system, especially the flow of cash flows and the existence of a functional organization and legal structure. The UTC finances influence the social and economic development of the territorial unit and provide for the well-being of community members.

Mirror the system of financial relations between different levels of

administrative subordination between the state, local self-government bodies, legal entities and individuals, households, International structures and the financial market for the formation of the financial resources of UTC, which also affect the formation of cash flow, management of local deposits and the management of communal property.

The mirror of the system of financial relations of different levels of administrative division between the state, local self-government bodies, legal entities and individuals, households, international structures and the financial market for the formation of the financial resources of public utilities, which also affect the formation of cash flow, management of local deposits and the management of communal property. So, it is possible to assert that irrespective of the level, the essence of financial activity remains the same – the maximum and immediate receipt of income and ensuring their efficient use [7].

Using the postulates of the systemic research methodology for understanding the finances of UTCs by descriptive approach, the place of the latter in the structure of the financial system of Ukraine was identified.

Due to the constructive approach to the knowledge about the financial resources of the UTC, it is possible to determine their structure, i.e. based on the reverse methodology we select the lanes for building the financial system, using the tools of systemic research. So, “according to the conventional theory and methodological principles, the assessment of the components of the financial system and determination of the object of analysis determines the methods of its research” [8].

Based on the systematic approach to the financial system, we can choose a unique configuration of the elements of the multiplicity with their characteristic economic properties and main features by presenting them as an aggregate of interrelated components (Figure 1.2).

The focus on the elements of the financial structure of local governments is based on the use of theoretical assumptions about local finances and finances of local self-government. As stated by V. Kravchenko, “Local government finances as a system includes several key interrelated structural elements: payments, revenues, ways of income formation, local financial institutions, subjects, objects, interrelations between the system subjects, the system and other lanes of the financial system of the state in general” [9].

Since the sphere of activity of the financial system (subsystem) is determined by the finances of the public utilities, the lanes that constitute an

independent structural component and are isolated by certain characteristics are the public utility budget, finances of public utilities and financial institutions, local deposits. From the point of view of a systematic approach, it is recommended to identify two elements in the UTC budget and other structural components – the non-financial part – income and expenditures, since “. financial activity of any subject is manifested in the formation of income and expenses”.

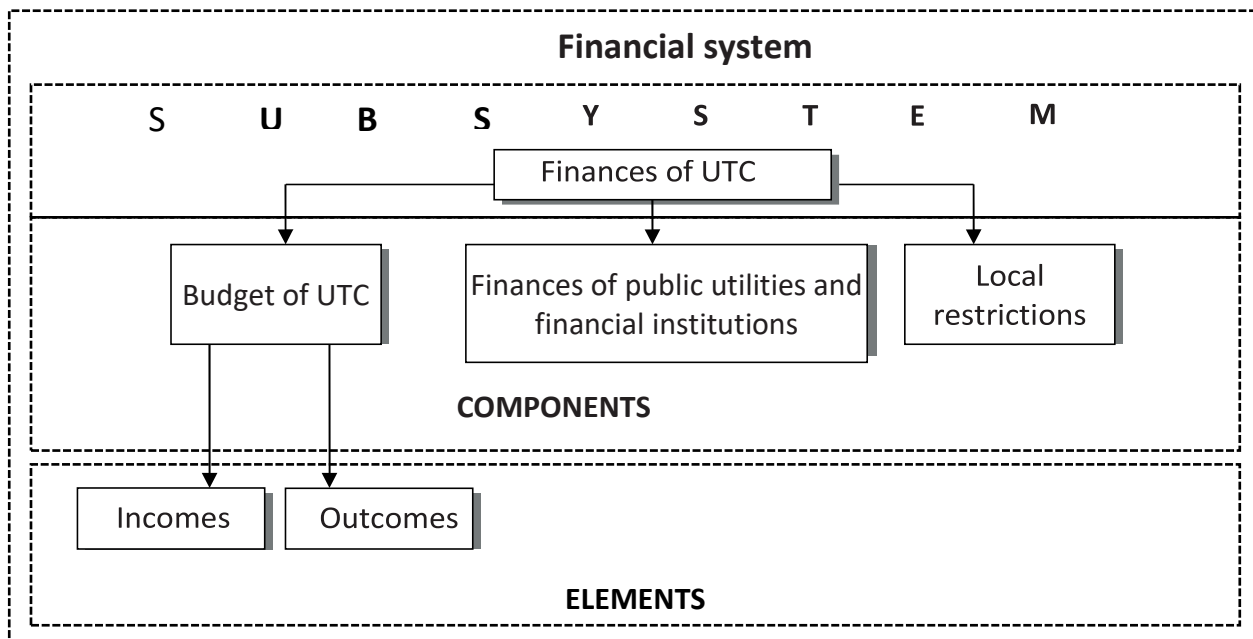


Figure 1.2. Structuration of the TSG finances according to the constructive approach [8].

Therefore, from the point of view of the internal structure, the financial system is an integral set of interdependent spheres and links, and its financial activity is subject to legal restrictions in view of the use of systemic research methods to identify their nature as a combination of descriptive and constructive methods, Motivating the strengthening of UTC’s finances in the structure of the financial system as important subjects of financial activity.

Financial management of UTC is a complex process of unification of management (subjects) and management (object) systems. The management process is ambiguous, it includes not only the management of objects but also improvement of the activity and organization of the management subject itself [6].

It should be noted that today neither scientific doctrine nor current legislation have the concept of regulation, since all the studies contain only

a general definition of finances and their management. After analysing the scientific method of understanding the essence of the concept of “finances”, we can formulate our own definition of “finances of UTC” as a totality of economic (cash) relations for the formation and use of various funds of cash assets of UTC, which are established in the process of establishing a management, to perform the task in accordance with the goal and purpose.

Among the factors that have a decisive influence on the management of finances of the territorial unit is the creation of this or that program of territorial development, they are divided into the following groups: social, historical, economic (including financial), educational, emotional, political and individual. These factors are “visible” on the application of a particular program or on the application of a particular program in a particular territorial community [10].

In the words of S. V. Kovalchuk: “Financial management of a UTC is a complex process that is a unification of the system of the object management and the management of the sub-activity. The financial control system is a group of financial institutions (institutions) – management system – financial system – a group of financial and credit relations. The process of financial management is not clear, it includes not only the management of objects, but also the improvement of activity, organization of the management subjects” [13].

Financial management is one of the most important tools for maintaining the stability and efficiency of the system. In essence, a set of measures designed to improve the financial performance and efficiency of the system of management [14].

Therefore, the following definition of the term is considered appropriate: “financial management” means the targeted influence of certain management bodies on national and regional finances, finances of state management entities, financial activity aimed at achieving and maintaining equilibrium, economic and financial stability, income, profits and financial security of economic and social problems [13].

Financial management is the activity of ensuring the development of the financial system of the country or a particular economic entity in accordance with the established quantitative and qualitative parameters. The goal of fiscal management is to achieve financial stability and independence, which is manifested in the combination of macroeconomic balance, budget profitability, reduction of government debt, strengthening of the national currency, economic interests of the country and all members of society.

In our opinion, the characteristic features of the territorial community as an institutional subject of financial relations are as follows: financial independence; financial personification; financial justice, which includes financial rights and trustworthiness.

In this connection for the solution of this problem for solution of theoretically set tasks it is recommended to consider it as systematic, sequential and purposeful activity of the subject for organization and management of financial relations, Capital and cash flows of a certain territory, located in one or more settlements with a single administrative centre.

Let us analyse the status and prospects of development of territorial communities in Ukraine and management of finances in them.

In Ukraine the process of decentralization began in 2014 with the adoption of the Concept of Local Government Reform in Ukraine, The Ukrainian laws “On the Cooperation of Territorial Communities” and “On Voluntary Community of Territorial Communities” and amendments to the Budget and Tax Codes – on financial decentralization.

This process allowed for the establishment of a significant functioning and feasible institution of local self-government at the basic level in accordance with the provisions of the European Charter of Local Self-Government – territorial communities.

Decentralization of power and self-governance reform are of key importance for the further development of all reforms. Conceptually, this reform is carried out not through the administrative structure and orderly directives of the central authorities, but through increasing the capacity of territorial communities through their voluntary association.

Administrative and financial decentralization is often viewed from two perspectives:

- first, as a process of transferring (reforming) the powers and financial resources of the state sector from the nationwide to the subnational and local levels;

- Another, as a result of such reforms, which is assessed by the volume of responsibilities and financial resources delegated to the lower administrative levels in relation to their total volume in the public sector [15].

The first step to the transformation of the system of local self-government in terms of decentralization of power was the approval in 2014. The Concept of Local Government Reform in Ukraine [16], taking into

account the requirements of the European Charter of Local Government.

The aim of the Concept is to outline the directions, mechanisms and terms of forming efficient local self-government for creation and maintenance of full living environment for the citizens, provision of high quality and accessible public services, establishment of institutions of direct ownership, satisfaction of interests of citizens in all spheres of life on the territory, coordination of interests of the state and territorial communities.

The Cabinet of Ministers of Ukraine adopted on September 1, 2014 the Concept of Local Government Reform in Ukraine is caused by political processes that are taking place in the state and the society on the way of European integration. It requires decentralization, creation of appropriate material (property, in particular land owned by territorial communities), financial (taxes and fees, the process of decentralization in Ukraine is based on the principles of the rule of law, the rule of law, the rule of law and the rule of law.

In Ukraine the process of decentralization began in 2014 with the adoption of the Concept of Local Government Reform in Ukraine, The Ukrainian laws “On the Cooperation of Territorial Communities” [17] and “On Voluntary Community of Territorial Communities” [18] as well as the amendments to the Budget and Tax Codes [19], [20] – on financial decentralization. This process allowed the formation of a significant functioning and feasible institution of local self-government at the basic level in accordance with the provisions of the European Charter of Local Self-Government – territorial communities.

The decentralization reform began in February 2015 with the adoption of two legislative acts that are crucial for this reform: Decree of the Cabinet of Ministers of Ukraine “On Approval of the State Strategy of Regional Development for the period up to 2020” [21] and the Law of Ukraine “On Voluntary Community of Territorial Communities” [18]. The next step towards financial decentralization was the introduction of amendments to the Budget Code of Ukraine [19] and the Tax Code of Ukraine [20].

The Zhytomyr region was one of the leaders among the regions in the formation of united territorial communities. Currently, there are 66 territorial communities in the region. The Semyonivka Territorial Community of the Zhytomyr Region was established in 2017. The size of the community is 195.8 km² with a population of 5,197 people as of the date of establishment. The minimum distance of settlements to the administrative centre is 3.3 km, the maximum (1 settlement) – 18.5 km [22].

1.2. United territorial communities: Analysis and prospects of development

The development of territorial communities requires the consolidation of community forces and their territories, as well as the necessary financial support of the state. It is for this purpose that the Law of Ukraine “On Cooperation of Territorial Communities” was enacted, which defines the organizational and legal principles of cooperation of territorial communities, Principles, forms, and mechanisms of such cooperation, its stimulation, funding, and control, as well as the grounds and specifics for the termination of cooperation, since the current Ukrainian legislation stipulated only a general framework for the implementation of inter-municipal cooperation, allowed the association of resources of local self-government bodies for solving joint problems, but did not have any legal norms that would allow such cooperation [17].

The assessment of financial resources management was carried out in 16 integrated territorial communities from 11 regions (Vinnytsia, Volyn, Dnipropetrovsk, Donetsk, Zhytomyr, Ivano-Frankivsk, Kirovohrad, Luhansk, Mykolaiv, Odesa, Rivne) in the period from June 2019 till February 2019. The data for 2018 and the first half of 2019 was used for the assessment. All of the UTCs, in which the assessment was conducted, were created in 2015–2017, are different both for the number of population (from 3.5 to 20.6 thousand people), and for the area (from 63.5 to 669 km²), Have different administrative status (rural, town council) and different distances from the nearest city of regional importance (from 10 to 95 km) (Table 1.1).

All of the analysed communities have communal facilities, institutions and enterprises on their balance sheet. The structure of financing in these public utilities depends on the full extent of responsibilities assumed by the community in question.

In general, practice shows that not all communities take upon themselves, immediately after consolidation, all of the responsibilities stipulated by the Budget Code. While some communities immediately assume management of all budget institutions located in their territory, others take over only partially and selectively, and some give preference to not taking over the management of budget institutions, as before they give transfers to the district budget for their maintenance. This practice is not positive, because in this case the population does not feel the effects of voluntary association. In fact, the leadership of such communities is

deprived of not only financial, but also managerial and even political independence.

Table 1.1. Territorial communities analysed for financial management

Region	UTC	Type	Area, sq.km.	Number of inhabitants, thousand people	Distance from the administrative centre of UTC to the city of region value, km
Dnipropetrovsk	Raivska	rural	669.4	11.1	44
Vinnitsia	Nemyrivska	urban	271.4	15.4	46
Mykolaiv	Voskresenska	settlement	192.4	11.2	16
Luhansk	Novopskovskaya	settlement	271.3	12.2	95
Donetsk	Soledarska	urban	558.3	20.9	61
Dnipropetrovsk	Sviatovasylivska	rural	231.9	4.3	70
Volyn	Dubivska	rural	125.0	3.6	75
Donetsk	Illinivska	rural	526.5	9.6	37
Kirovohrad	Sokolivska	rural	228.4	6.1	10
Ivano-Frankivsk	Voinylivska	settlement	77.1	6.5	40
Kirovohrad	Velykoseverynivska	rural	139.0	3.5	13
Rivne	Malolyubashanska	rural	414.4	5.8	37
Luhansk	Chmyrivska	rural	206.2	6.7	63
Odesa	Yaskivska	rural	225.3	8.5	58
Rivne	Klevanska	settlement	63.6	11.7	23
Zhytomyr	Semenivska	rural	195.8	5.2	8.3

The surveyed communities have from one to six chief administrators of budgetary funds. For example, 5 communities have only one head manager of budgetary funds, 5 other local government units have two UTCs, and the Soledary local government unit has 6 head managers (Figure 1.3).

It should be noted that the designation of the legislative committee as the chief administrator of budgetary funds is a violation of Article 22 of the Budget Code of Ukraine, as it is a collegial management body without the status of a legal entity. Taking into account that this problem occurs in 3 out of 15 surveyed local self-governments, the problem may be considered systemic and requires additional attention from the community management bodies.

All budget expenditures are made through the budget programs of these main distributors of budgetary funds.

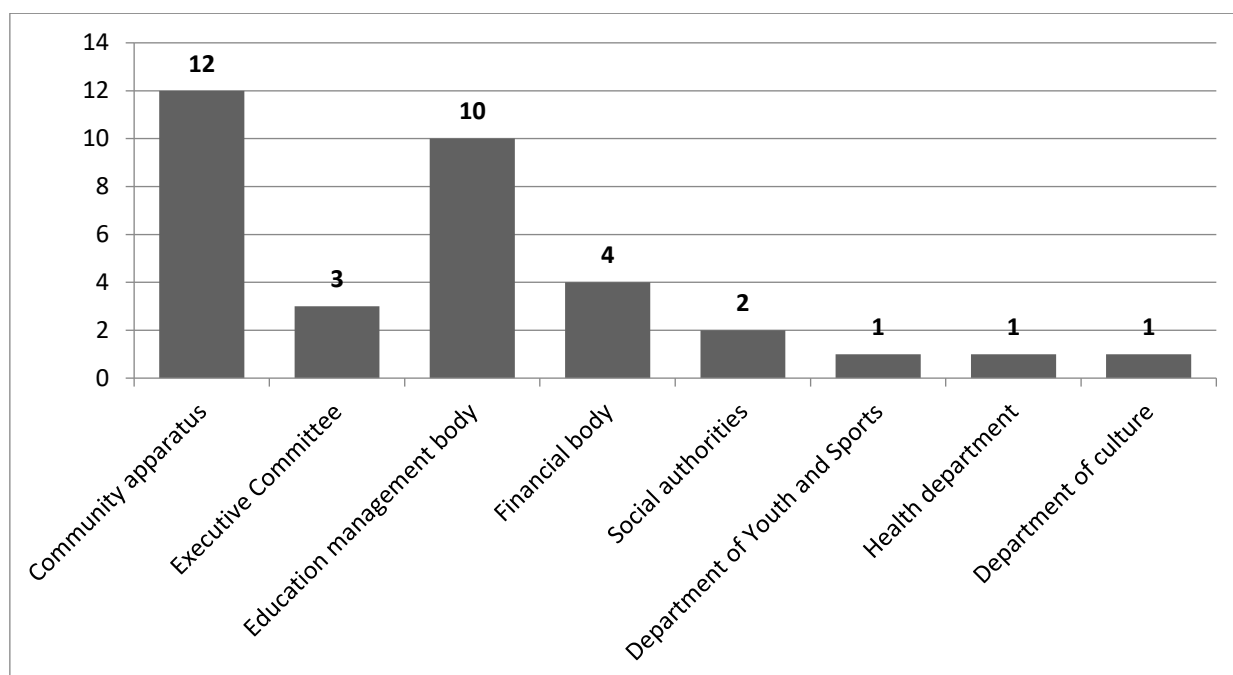


Figure 1.3. The main managers of budgetary funds that function in the analysed local self-governments

As a result of an analysis of the medium-term and strategic documents approved in the communities, the development priorities identified therein were found to be the most important priorities for the development of the local self-governance bodies:

- ensuring the proper functioning of educational, cultural and medical institutions;
- ensuring the quality of administrative services;
- ensuring the development of infrastructure and improvement of the community;
- creation of conditions for business development and attraction of investments;
- implementation of energy-saving technologies and rational use of energy resources;
- preservation of children’s rights and interests and creation of the best conditions for their life and development;
- budgetary funds are used rationally;
- development of civic activity and social responsibility of the community;
- formation of a safe environment.

Thus, the most painful for communities are the problems of social character, so they are identified as a priority for solution in the medium and long term. In turn, not enough attention is paid to the problems of creating

a favourable business environment, protection of the environmental situation in the community and energy conservation. Sometimes the priority of the community strategy is defined as “implementation of the community budget,” which is in essence a day-to-day activity rather than a strategic priority. This may indicate a lack of understanding of the essence of the strategy, development priorities, cause-and-effect relations, and the absence of a real strategic understanding of community development, while the focus is on solving the complex current issues that have accumulated over the previous years.

The level of publicity of documents and information on local councils’ official websites is low (Figure 1.4). Only 6 local councils published the community passport on the website, 7 local councils published information about the number of institutions, facilities, and organizations in the community, but none of the communities published information on the registers that are the basis for calculations of indicators of social and economic development.

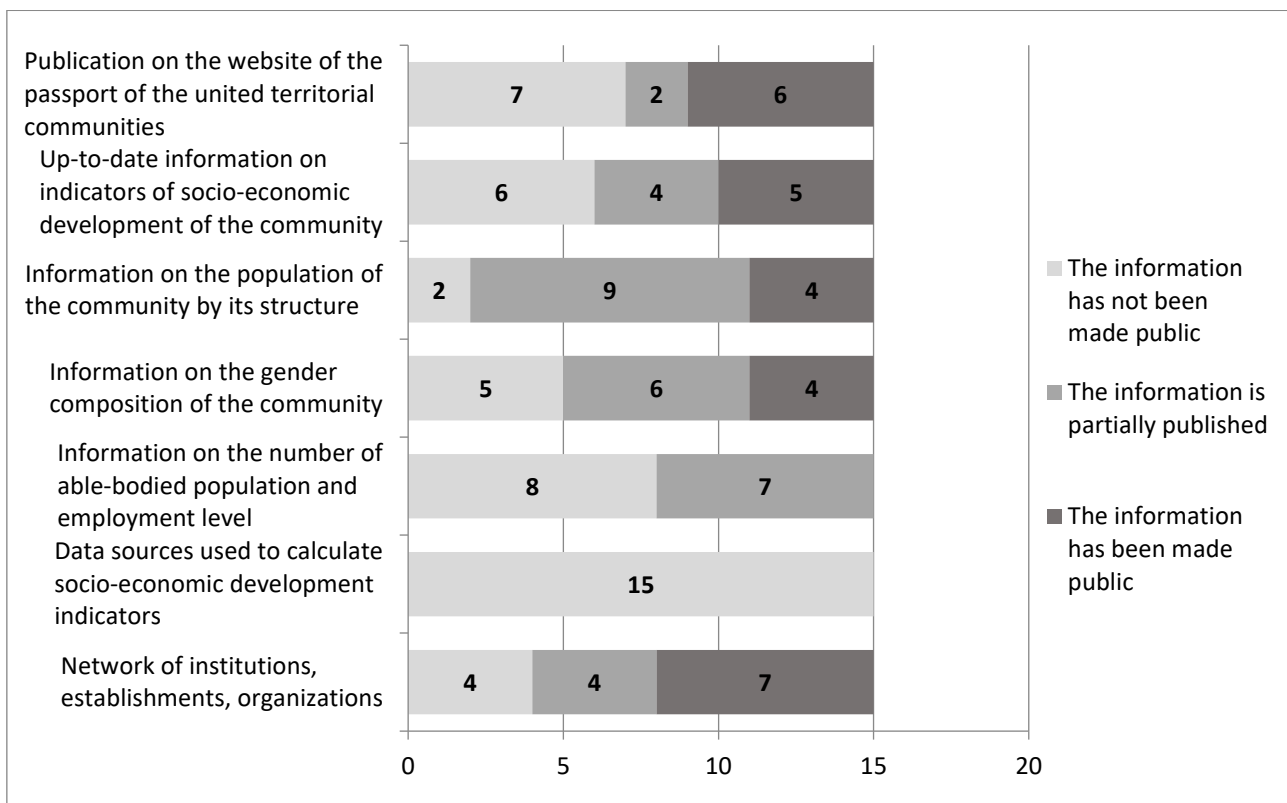


Figure 1.4. The number of CBOs that provide general information about CBOs on the community’s website

The methodology of this assessment makes it possible to structure the results of the assessment for the purpose of further comparison of

communities according to the scores in each of the assessment areas. Thus, the completeness of information about the communities and their accessibility as a result of the assessment is presented in the diagram which indicates significant differences between the communities when assessed by the same parameters.

Communities do not have registers that can be used to calculate indicators of social and economic development (e.g., demographic registers, community property registers, space registers, land registers, construction plans, etc.). The reason for this is quite often the banal absence of such local registers.

Also, it is necessary to review the form, structure and periodicity of the release of statistical data, which are formed by the state statistical service and characterize the demographic situation and influence the development of local communities. Thus, according to representatives of the local state administrations, today they do not have enough statistical information about the number of the population by age groups, the number of the active population, and so on. Therefore, it is advisable to develop a standardized form of data collection that would facilitate the unification of information collected from different communities, as well as establish a mechanism for exchanging information with communities in automatic mode.

As a result of the research, the administrative structure of the analysed UTCs was found to be typical, and the difference, for the most part, is caused only by the number of employees and the number of structural divisions.

As shown in Figure 1.4, only four of the UTSs have financial management as separate legal entities. At the same time, they are designated by resolutions of the sessions as administrators of budgetary funds. This dual role of the financial departments determines their broader responsibility for: organization and coordination of the budget process, control over compliance with the budget and financial discipline of all participants in the budget process, monitoring and analysis of budget execution, analytical work on the efficiency of spending of public funds and development of measures to increase budget revenues. As the main administrators, these departments implement a number of budget programs, making in their own name the appropriate cash payments and preparing accounting and financial statements for these programs. In other communities, the financial department is part of the committee's apparatus, which is typical for small rural communities.

The advantage of establishing separate financial departments in the

form of separate legal entities is that they have more powers, including the ability to perform control functions, develop and approve legal and regulatory assets within their competence, carry out audits of purposeful and effective use of budgetary funds, correctness of charging wages to employees and conducting thematic audits in the institutions that receive budgetary financing. They can also be recognized by the head distributors and carry out a number of budget programs. This is particularly relevant in the context of fiscal decentralization, given the high risk of inefficient use of budgetary funds and the inadequate system of internal financial control in communities. However, it is up to the leadership of local communities, especially small rural communities, to independently decide on the economic feasibility of creating a separate financial department (or subdivision) in their community and determine the volume of resources for its maintenance.

As a whole, the communities where the assessment was conducted quickly developed the necessary management structures and procedures after the process of consolidation. However, according to the representatives of the UTC (as noted in the “Letter of Opinion”), they still lack highly qualified personnel to establish effective financial management, Quick response to problems that arise in connection with changes in the conditions of functioning in the format of the united community or in conditions of partial changes in legislation; the routine work and the high volume of routine tasks prevail in the work of the administrative staff of the local administrations.

In our opinion, it is advisable to introduce the practice of calculating and evaluating the managerial workload and analysing its dynamics in communities. The assessment showed that in the 16 analysed local communities there is significant variation in the administrative workload per 1 staff member per 1000 inhabitants and in community contributions to the management apparatus, which indicates the presence of reserves for their optimization. However, for more informed conclusions, it is important to analyse the experience of neighbouring UTCs with an analogous number of population and compare them with each other, as well as take into account other factors that may influence them.

We propose to do the following:

- post on the official website of the local government the updated documents on the structure, staff list, activities of the bodies of executive power, approved regulations of local councils;

– to bring the names of the positions in compliance with the regulatory documents;

– to bring the composition of the legislative committees in compliance with the requirements of the Law of Ukraine “On Local Self-Government in Ukraine”;

– examine the possibility of creating separate legal entities – financial and educational management bodies where they do not have this status;

– to consider the possibility of optimizing the structure and staff numbers of the management apparatus after the monitoring of its utilization (if necessary);

– to consider the possibility of optimizing the costs of providing methodological services in the education sector, in particular through the introduction of inter-municipal cooperation in this area (if necessary).

At the legislative level, it is necessary to approve the typical structure of local self-government bodies based on:

1) the number of people in the territorial community whose interests are represented by the local self-government bodies;

2) the list of functions and responsibilities performed by local governments on the territory in question.

This requires specifying standards and certain norms (minimum and maximum) of managerial workload per position in local governments per contingent in the relevant sphere of sectoral management. Such methodological recommendations have a recommendatory character, since each community will have its own conditions and peculiarities of functioning.

As well as to institutionalize the coexistence of structural divisions of the governing bodies by a clear hierarchical approach. For example, as in Figure 1.5.

Such institutionalization will be useful for optimizing the disordered structures of the local government: now there are situations when heads of departments exercise leadership not by departments, but by individual staff members, which in fact means that it is not a department, but a division, namely the management is not structured by departments, departments by sectors, etc. (i.e., there is no hierarchy, and therefore there is a risk of duplication of responsibilities, unclear division of functions, absence of a responsible person).

The Community Development Strategy was developed and approved in 10 analysed communities. To familiarize the community with the

Strategy, it is published on the official websites of the communities in separate sections, which also show the plan of implementation and progress in the implementation of the Strategy. The community and representatives of businesses of various sizes operating in the respective territories were involved in the development of the Community Development Strategies. All communities have socio-economic development programs (SEDP). In addition, communities approve specific goal programs, their number varying from 13 to 28.

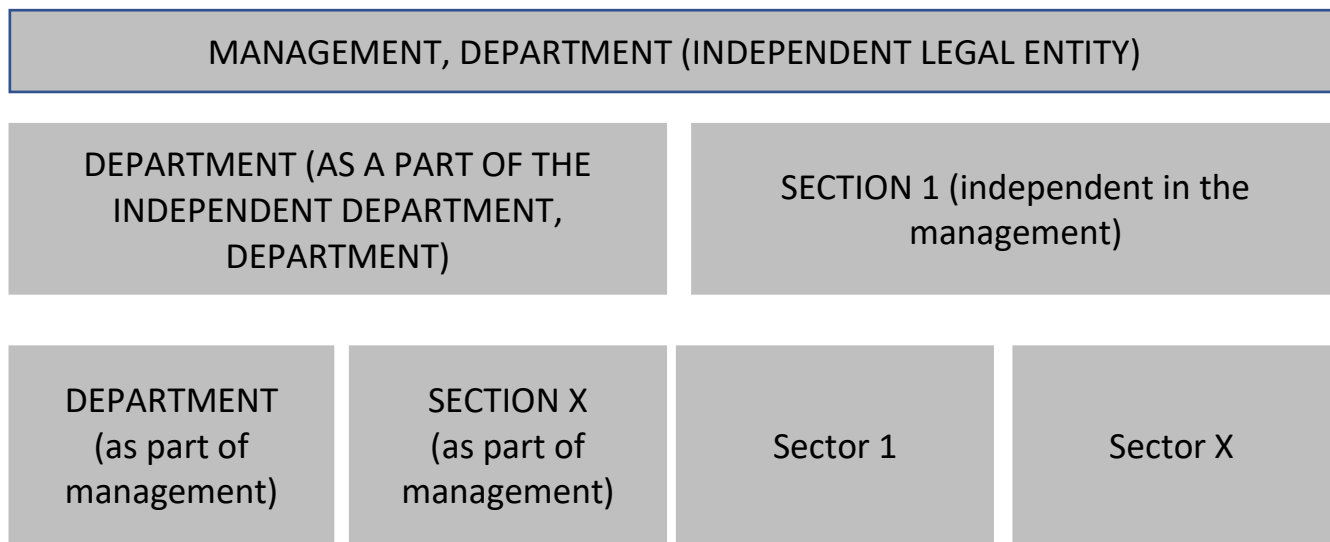


Figure 1.5. Ordering of structural divisions of the bodies of state power

The analysed communities take measures to prepare for the implementation of the 2021 mid-term budgetary planning as a matter of course. In particular, the head managers of budgetary funds during preparation of budget requests for 2019 formed indicators for the planning period (draft budget for 2019) and the two following years (budget forecast for 2020–2021), Communities have seized budget forecasts, head organizers submit forecast indicators for budget preparation, head organizers are informed about the amount of expenditures, and the instructions on budget requests are approved. It should be noted that this work is carried out in 12 regional administrations, but communities need further methodological and advisory support on this issue.

Budget revenues in the analysed communities are mainly concentrated in the general fund (Figure 1.6). The share of the special fund in the structure of revenues of the majority of communities does not exceed 4 %. The biggest share of the special fund is in the communities of Donetsk and Luhansk regions, This is due to significant amounts of receipts to the special

fund under the article of financing for directing funds to the communities of these regions (the largest amounts of receipts from financing were made by Novopskivska UTC of the Lugansk region and Illinivska UTC of the Donetsk region).

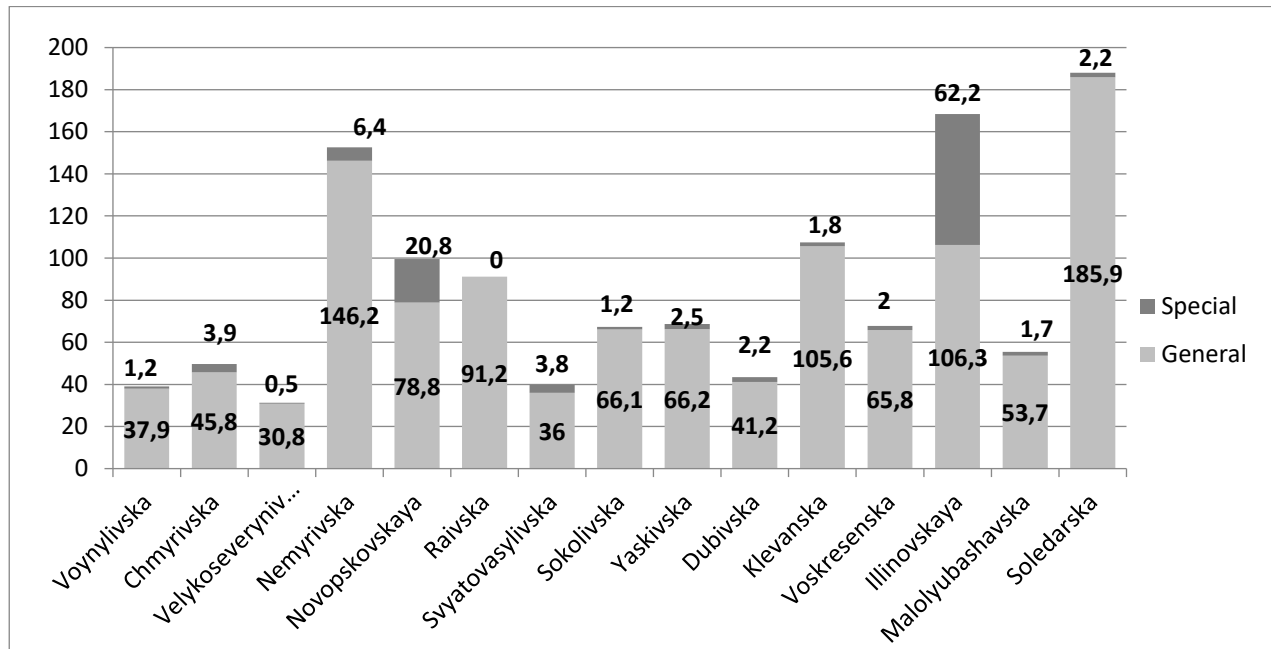


Figure 1.6. Income of local self-governments in the budget funds for 2018 (including inter-budgetary transfers), UAH mln

All of the assessed communities saw a further increase in budget revenues in 2019 compared to 2017 and 2018.

Having analysed the budget revenues of the Semenivska Territorial Community separately, it can be said that they have been growing since 2017, after the community was united. This became possible only after the consolidation of rural councils into a united territorial community and charging the individual income tax to the community budget.

It should be noted that community revenues increased by more than four times after reunification. Thus, during the period of decentralization, the per capita income of the community increased by 7,126 UAH in 2020 compared to 2016. Own income per capita amounted to 8,960.07 UAH.

In the structure of the revenue part of the budget of the rural territorial community the largest part is taken by own revenues of the general fund 64.8 % and inter-budgetary transfers – 34 % (Figure 1.7).

On the territory of the community operate retail establishments (22 stores), gas stations (4 gas stations, 1 LPG filling station), 5 public catering establishments, a communications office. All of them are taxpayers

and provide income to the Semenivska rural territorial community.

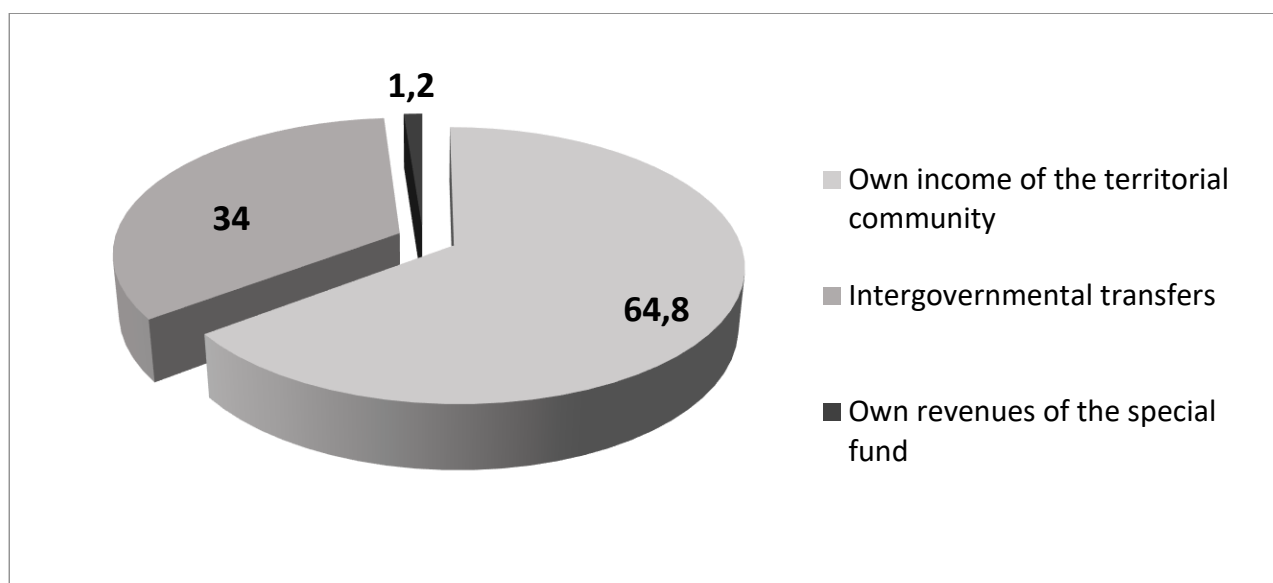


Figure 1.7. The structure of the revenue part of the Semenivska rural territorial community in 2020, %

The main taxpayers and, accordingly, budget-operating enterprises of the Semenivsk Territorial Community are: “Operator of gas transport of Ukraine” (32.5 % of all revenues to the community); Department of education, youth and sports of the Semenivska village council (5.9 %); “Klimchuk” (5.4 %); “Interskalit UA” (3.4 %); Semenivska Village Council (2.8 %); “Berdychivka” (2.6 %); “Fact” (2.5 %); “Svitanok” (2.3 %). Revenues from these taxpayers make up more than half of the community budget – 57.4 %.

Analysing the structure of own revenues to the budgets of territorial communities, it can be seen that the biggest part of all revenues is formed by the individual income tax. Each year the share of the tax and fee on personal income in the budget of the Semenivska rural territorial community grows: from 57.5 % in 2017 to 64.8 % in 2020, as can be seen in Figure 1.8 and Table 1.2.

Local taxes include revenues from the property tax and unified tax. The share of property tax decreases from 17.1 % in 2017 to 16.2 % in 2020 (Table 1.2).

A significant source of income of local budgets is the land fee, which is included in the tax on property and is a component of local taxes. In 2020, the community budget received 3,988.5 thousand UAH of land payments, which is 25 % (795.6 thousand UAH) more than the income for 2019.

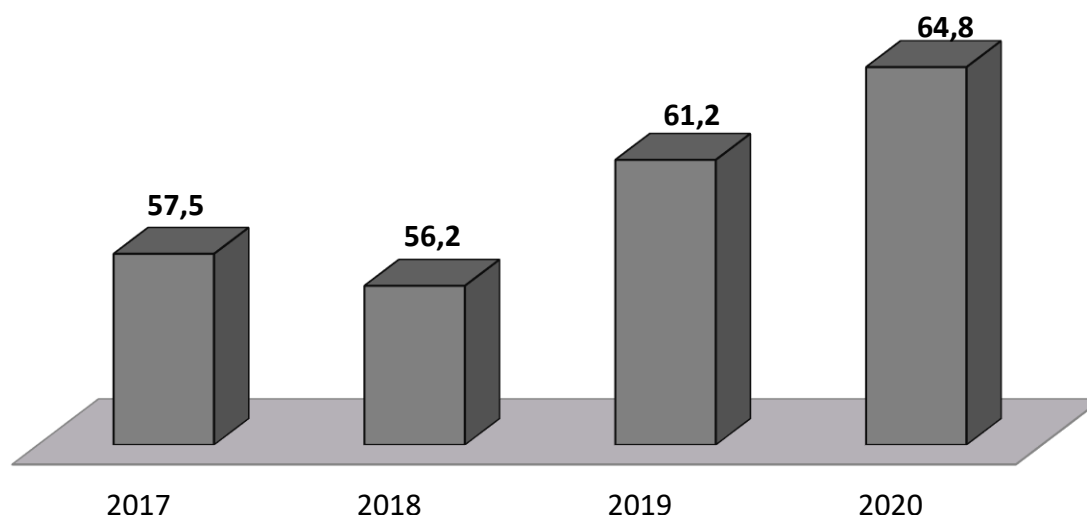


Figure 1.8. The share of GDP in the budget of Semenivska TC in 2017–2020, %.

Table 1.2. Structure of the revenue part of the budget of the Semenivska UTC by sources of income in 2017–2020, % (without taking into account transfers)

The name of the tax	2017	2018	2019	2020
Income tax	57.5	56.2	61.2	64.8
Rent	0.8	0.4	0.4	0.1
Excise tax on excisable goods (fuel) produced and imported into the customs territory	8.8	12.1	8.3	6.5
Excise tax on the sale of excisable goods by retail trade entities	1.0	0.4	0.4	0.3
Property tax	17.1	14.8	15.4	16.2
Single tax	14.6	15.9	14.2	11.7
Other receipts	0.1	0.1	0.1	0.3
Total (excluding transfers)	100.0	100.0	100.0	100.0

In the structure of revenues, land fees take from 12.4 % to 14.8 %. (Table 1.3).

The share of the single tax from 2017 to 2020 is 11.7 % to 15.9 %. The decrease in income in 2020 is explained by the introduction of incentives for enterprises to pay this tax to the budget.

Excise tax from the manufactured and imported into the territory of the Ministry of Foreign Affairs of the Republic of Belarus in 2020 went to the budget in the amount of 19,325 thousand UAH, compared to the same

period last year there is a decrease in the tax in the amount of 172.9 thousand UAH. Its share in revenues decreased from 8.8 % in 2017 to 6.5 % in 2020 (Table 1.3).

Table 1.3. Revenues from land fee and unified tax to the budget of the Semenivka rural territorial community in 2017–2020.

Indexes	2017	2018	2019	2020
Own revenues to the budget, total, thousand UAH	18,835.6	20,964.6	25,365.3	29,829.4
Land fee	2,787.4	2,604.1	3,192.9	3,988.5
Share in the structure of budget revenues, %	14.8	12.4	12.6	13.4
Single tax	2,755.6	3,328.3	3,596.2	3,498.7
Share in the structure of budget revenues, %	14.6	15.9	14.2	11.7

In the structure of the revenue part of the budget of the Semenivska territorial community a significant part is taken by inter-budgetary transfers (34 %) and own revenues of the general fund (65 %).

In the communities analysed, inter-budget transfers account for 31 % to 80 % of total community budget revenues (Figure 1.9).

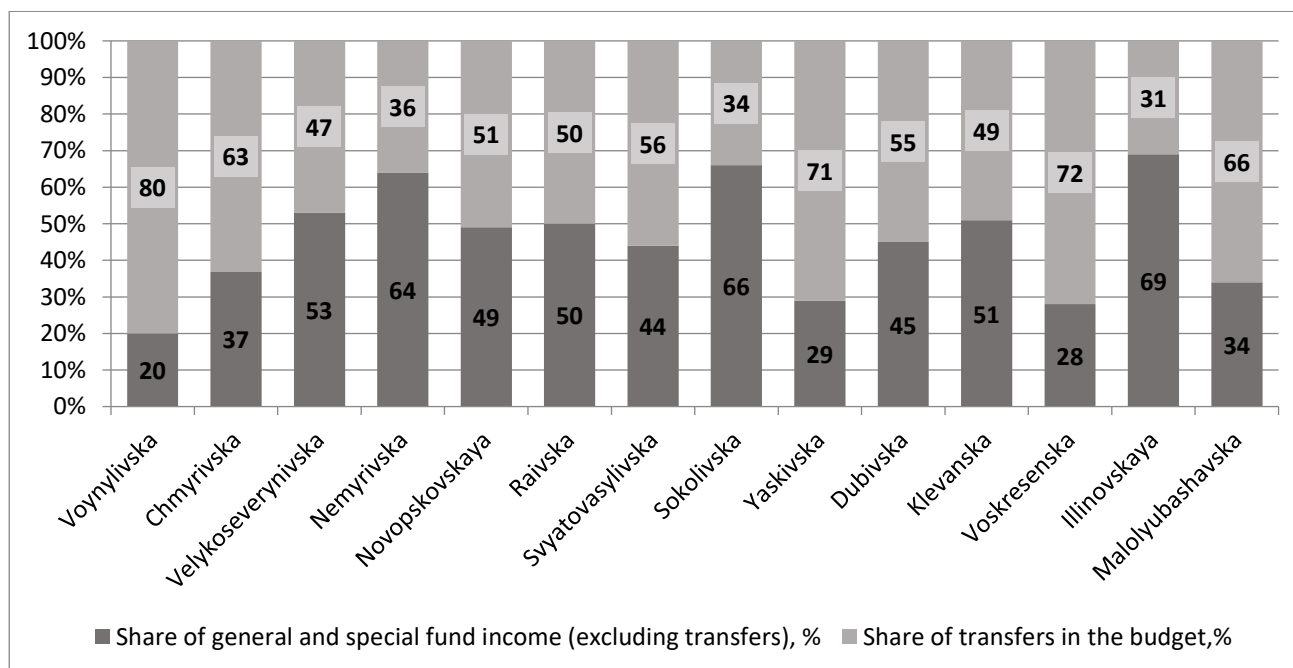


Figure 1.9. Ratio of total revenues of community budgets and official transfers in 2018, %.

In particular, official transfers account for over 50 % of total budget revenues in the budgets of 8 surveyed communities, including 5 UTCs where this indicator exceeds 60 %. The most dependent on inter-budget transfers from the state budget are the Voynilivska (80 %), Voskresenska (72 %) and Yaskivska (71 %) communities that are subsidized (receive one of the largest amounts of the basic subsidies among the communities analyzed), The main sources of income are the local tax and excise taxes, the revenues of the general budget fund per citizen vary from 1.1 to 2 thousand hryvnias per person. On the whole, these figures determined the actual dependence of these communities on inter-budgetary transfers.

The bulk of official transfers in the analysed local government units consisted of educational (from 42 % to 77 % of the amount of transfers in the analysed local government units) and medical subventions (from 13 % to 34 % of the amount of transfers). This is purposeful financing allocated by the state for communities' performance of the main delegated duties – provision of quality educational and medical services. Thus, on average, 77 % of transfers in the analysed communities are goal-oriented (and in some communities this indicator reaches 91 % of received transfers), which demonstrates the self-sufficiency of local self-government in the distribution of received resources.

From the state budget to the budget of territorial communities is hidden educational subvention, which is specified in Article 103-2 of the Budget Code of Ukraine, for the payment of wages to the teaching staff of educational institutions [19].

As of June 1, 2018, the distribution of educational subsidies between local budgets is based on a new formula that takes into account such indicators as the number of students and specific features of the territory (the number of rural population and the number of students per square kilometre). On the basis of these for each community, the estimated number of classes, i.e. a forecast of the minimum number of students to be taught in classes, is determined. In the opinion of the state, the relative compliance of the actual (real) capacity of classes with the estimated capacity should ensure sufficient funding for the payment of wages and salaries for the teaching staff in general education institutions.

The designated financial resources allocated by the Ministry of Finance of Ukraine for 2020 are insufficient to ensure the full implementation of the responsibilities delegated by the state. At the expense of the forecast figure the Ministry of Finance is unable to provide full

payment of wages for the teaching staff of the schools.

The designated number of subsidies amounts to 85 % of the cost of wages paid to teachers. In the income structure of the Semenivka Territorial Community, the educational subsidy accounts for an average of 1/4 of the community income: from 28.4 % in 2017 to 25.1 % in 2020 (Table 1.4).

Table 1.4. Analysis of educational subventions from the state budget to the Semenivka rural territorial community in 2017–2020

Indexes	2017	2018	2019	2020
Budget revenues, total	37,035.1	39,245.4	43,390.0	45,463.5
Educational subvention from the state budget to local budgets	10,523.9	9,683.7	10,563.0	11,402.9
Share in the structure of budget revenues	28.4	24.7	24.3	25.1

In 2020, to ensure the functioning of educational institutions of the community was allocated funds for the payment of wages in the amount of 16,348.9 thousand UAH, including from the educational grant to pay the teachers in the amount of 13,455.2 thousand UAH. The state budget allocated funds amounting to 351.8 thousand hryvnias to pay the non-pedagogical staff, and 2,541.9 thousand hryvnias from the state budget out of own revenues.

Six general education institutions operate on the territory of the Semyonivka Territorial Community, with 416 students enrolled as of November 1, 2019.

All six schools have more or less the same number of students. The use of the formula for calculating the number of classes instead of the actual number of students encourages local self-government organizations to optimize the school network. However, residents of rural territorial communities do not appreciate the closure of schools or their conversion into branches. This has a negative impact on the community budget as well: it is necessary to spend money to cover insecurity of wages at the expense of the budget's own revenues.

The revenue structure in the analysed local governments is very typical. It was found that in 2018 the largest revenues to the budgets of communities, in addition to transfers, were from the tax on income of individuals, payment for the land, the unified tax.

The total amount of the rural territorial budget for 2020 was 43,167.4 thousand UAH. The legislative part of the general fund of the rural territorial budget for 2020 consists of 39,494.2 thousand UAH, or 92.8 % of the planned expenditures. The expenditures of the Special Fund were used in the amount of 3,673.2 thousand UAH. The largest share in the structure of the general fund of the rural budget – 56.1 % – 59.4 % is represented by payments for maintenance of educational institutions. The community also has 5 pre-school institutions with 126 children. The total number of employees is 33.75 (Table 1.5).

Table 1.5. Analysis of the structure of the expenditure part of the budget of the Semenivka rural territorial community for 2017–2020, %

Expenses	2017	2018	2019	2020
Governance	13.7	15.2	17.2	21.0
Education	59.0	56.1	59.4	58.3
Healthcare	2.6	5.8	1.6	2.5
Social protection and social security	3.3	2.2	4.1	4.3
Culture and art	4.3	3.0	4.7	4.1
Utilities	1.9	1.2	1.8	1.5
Transport, roads, communications and telecommunications	0.8	1.4	1.7	3.9
Agriculture and forestry, fisheries and hunting	0.0	0.7	0.0	0.7
Other programs and activities related to economic activities	–	0.0	0.0	0.0
Funds transferred to other budgets	14.3	14.3	9.5	3.5
TOTAL	100.0	100.0	100.0	100.0

In 2020, 3,347.0 thousand UAH were allocated to provide preschool institutions, of which: 2,812.9 thousand UAH to pay wages, 185.5 thousand UAH to pay for energy and utilities. The state budget amounted to 107.4 thousand UAH for purchasing materials, supplies and equipment, 93.8 thousand UAH for paying services, 14.1 thousand UAH for medical supplies, and 129.8 thousand UAH for food for children in kindergartens, or 79 % of the planned amount.

The cost of maintenance of local authorities in 2020 amounted to 7,667.8 thousand UAH. The level of execution of these payments is 95.9 %, the share in the structure of payments to the general fund is 19.4 %, of which 5,587.4 thousand UAH were spent on wages and 1,225.0 thousand UAH on fines. The actual number of employees as of January 1, 2021 was 34.25, including 21 employees, 13.25 other staff. The average wage rate per one

staff position was 12.6 thousand UAH. The money allocated for energy costs amounted to 89.7 thousand hryvnias, or 36.4 % of the adjusted plan.

Health expenditures include expenditures for the care of the KNP “Center for Primary Health Care” of the Semenivska rural territorial community, which was established in September 2017. As of June 1, 2018, the KNP “PMSD Center” switched to a contractual relationship with the National Health Service. According to the “Program of support and development of communal non-profit enterprises for 2019–2020 with amendments” financial support in the amount of 1,029.9 thousand UAH for KNP “Center of primary medical and sanitary aid” of the Semenivska rural territorial community.

Social protection and social security involve the use of funds for the maintenance of the centre for the provision of social services. Thus, in 2020 the centre was allocated 1,072.5 thousand UAH. The staff of the centre consists of 13 units, which serve 83 people.

The highest total amount of cumulative payments among the surveyed 16 territorial communities in 2018 was established in Soledarska, Illinska and Nemyriv UTC, also these communities had the highest amounts of payments from the special fund. In Illinivsk TC, the special fund contributions exceeded the total contributions to the general fund and accounted for more than 54 % of total contributions.

All communities prepare documents in accordance with the program budgeting methodology. When planning budget expenditures, the main distributors of budgetary funds are informed about the amount of expenditures, which they independently divide between the budget programs. Budgetary notes are used to formulate draft budget decisions. They are formed for all budget programs on the basis of standard forms and approved instructions for the preparation of budgetary notes.

The decisive force in the country is strong free communities. Their task is to care about the residents of the community: to provide quality and affordable services, to build roads and infrastructure, to worry about the safety of the residents of the community.

To improve the management of finances of territorial communities, it is necessary to strengthen the practice of enterprise budgeting and continue the work on the implementation of the participation budget (budget of community initiatives) [22] in the community. Such measures will contribute to greater understanding of local authorities and allow directing budget resources to finance measures for the support of certain gendering

groups, as well as for projects developed in close cooperation and for the community's initiatives.

As a result of the administrative and territorial reform it is expected that capable territorial communities will emerge. Therefore, decentralization is able to open up significant prospects for ensuring the conditions of social and economic development in the basic level territories and in the society as a whole. Territorial communities will be able to independently decide on the development of their own territory.

In addition, to increase the efficiency of using budgetary funds, it is advisable to continue working on improving the methodology of the program-value-based method of budgeting. In particular, it is necessary to systematically review the approaches that are used to assess the efficiency of local budget programs; adopt a unified methodology for assessing the efficiency of budget programs. In this case, it is important to provide a mechanism for taking into account the results of the evaluation of budget programs when planning budget programs for the next periods.

Conclusion. The analysis enables us to formulate the following conclusions that after identifying the sector and its links in the structure of the financial system, it is recommended to pay attention to the content and scientific knowledge of the selected links in the further research.

The main goal of the national reform is to expand the powers of local self-government bodies to take decisions and give them full budgetary independence in the execution of budgets and the implementation of productive powers. The proposed definition is more opportune and has the following characteristics: purposefulness, systematises, organizational consistency and efficiency, regardless of the lightness of the electors and the activity of the state.

We believe that under the conditions of financial decentralization in Ukraine the finances of united territorial communities should be dominated in the national financial system, as they are the main indicators of efficiency of reforms of local self-government and regional state organizations and communities.

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Chapter II

METHODOLOGY FOR RANKING OLD INDUSTRIAL REGIONS IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT SECURITY

Mykola Biloshkurskyi

Candidate of Sciences (Economics), Associate Professor
Associate Professor at the Department of Finance,
Accounting and Economic Security
Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine
E-mail: biloshkurskyi.m@udpu.edu.ua

ORCID ID: 0000-0002-2826-3983

Maksym Slatvinskyi

Candidate of Sciences (Economics), Associate Professor
Director of the Educational and Research Institute
for Economics and Business Education
Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine
E-mail: ms@udpu.edu.ua

ORCID ID: 0000-0003-4096-2901

Tetiana Korniienko

Candidate of Sciences (Economics), Associate Professor
Acting Head of the Department of Finance, Accounting and Economic Security
Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine
E-mail: korniienko.t@udpu.edu.ua

ORCID ID: 0000-0001-8020-0771

Roman Shchur

Doctor of Sciences (Economics), Professor
Professor at the Department of Finance
Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine
E-mail: romanwur@ukr.net

ORCID ID: 0000-0001-9945-3939

Olha Yemets

Candidate of Sciences (Economics), Associate Professor
Associate Professor at the Department of Theoretical and Applied Economics
Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine
E-mail: olaif2005@gmail.com

ORCID ID: 0000-0003-1338-2880

Introduction. The problem of monitoring the current state of security of sustainable development of old industrial regions of Ukraine lies in the need for structural modernisation of the industrial sector, i.e. the transition from extensive exploitation of the resource potential of industrially developed areas in the past to intensive production based on technological progress. The term “old industrial region” should be understood to mean a territory that was once industrially developed but is now in decline or in decline due to a lack of capacity or the unwillingness of industry owners to invest in the modernisation of production facilities, a significant lag in the applied production technology from the modern news, a lack of adaptability to the sustainable changes in industrial markets, etc.

Literature review. The study is based on the works, which developed the solution of the problems of old industrial regions development, in particular, the scientific works of such authors as: O. Novikova (ed.) et al. [1], N. Biloshkurska [2], K. Gebhardt [3], A. Yevdokymova, V. Yevtushenko, A. Baranov, & O. Kubrak [4], O. Snihova [5], O. Amosha, O. Lyakh, M. Soldak, & D. Cherevatskyi [6], L. Li, P. Zhang, K. Lo, W. Liu, & J. Li [7], O. Kudrina, V. Omelyanenko, & O. Omelyanenko [8], R. Hassink, & M. Kiese [9], I. Petrova [10], Yu. Kharazishvili, & V. Lyashenko [11] and others. The study is also based on the security problems that have been investigated in [12]–[18]. However, methodological support for ranking the sustainable development security of Ukrainian old industrial regions is an understudied topical problem that requires further development.

Results. There are three economic districts in Ukraine with the features of an old industrial region:

1. Slobozhanskyi (north-eastern) economic district consists of Poltava region, Sumy region and Kharkiv region.
2. Pridneprovskyi economic district consists of Dnipropetrovsk region and Zaporizhzhia region.
3. Donetsk economic district consists of Donetsk region and Luhansk region.

There are 7 regions in Ukraine that can be considered as old industrial, and their sustainable development security is the object of our study. Of particular relevance is the sustainable development security of Donetsk region, 33.5 % of whose territory is temporarily occupied, and Luhansk region, 30 % of whose territory is temporarily occupied. Moreover, since 2014, active military operations have been taking place in these regions.

2.1. Methodological support for old-industry regions ranking according to the security condition of sustainable development

The main threats to the sustainable development security of old industrial regions in Ukraine are:

- low efficiency of human, physical and social capital utilisation in the industry;
- high level of physical and moral deterioration of fixed assets in the industry;
- low innovation activity of industrial enterprises
- production of industrial products using outdated, energy-demanding technologies;
- low social security of employees, and a high rate of workplace injuries;
- lack of a competitive environment in shaping the labour supply;
- exceeding of the maximum permissible norms of anthropogenic impact on the environment;
- violation of environmental safety of the population;
- irrational use and reproduction of natural resources, etc.

There are three main components in the security system of sustainable development of the old industrial region. These are economic, social and environmental components [19, p. 108; 20, p. 16].

The economic component of the sustainable development security of an old industrial region is characterized by the volume of production of the gross regional product (GRP), the dynamics of industrial production, real investment, the efficiency of use of production resources, the demand for industrial products, the innovative activity of industrial enterprises, the development of the risk management system, etc.

The social component of sustainable development security of old industrial regions is characterised by the level of employment and social security of the population, the level and timeliness of wages, the well-being of residents, labour costs in industrial enterprises, the level of corporate culture, the social responsibility of industrial business, the state of healthcare, pension provision, etc.

The environmental component of the sustainable development security in old industrial regions is characterised by the investments made and current expenditure on environmental protection activities, the state of environmental pollution due to industrial emissions of hazardous

substances, the volume of waste disposal and recycling, climate change control, etc.

In the context of ranking the Ukrainian old industrial regions of according to the components of sustainable development security, a system of indicators has been developed for each component:

1. Indicators of the economic component of sustainable development security in old industrial regions:

1.1. GRP per Person per Year is the ratio of the annual GRP volume to the population in the region, UAH, stimulant;

1.2. Annual Industrial Production Index is the annual growth rate of the volume of industrial production per year (in % to the previous year), stimulant;

1.3. Annual Capital Investment per Enterprise is the ratio of annual capital investment volume to the number of enterprises in the region, UAH, stimulant;

1.4. Annual Sales Volume per 1 Enterprise is the ratio of annual sales volume to the number of enterprises in the region, UAH, stimulant;

1.5. Annual Productivity of 1 Employee is the ratio of annual sales volume to the number of hired employees in the region, UAH, stimulant.

2. Indicators of the social component of sustainable development security in old industrial regions:

2.1. Average monthly salary of a full-time employee in the region, UAH, stimulant;

2.2. Unemployment Rate in the Region for the Year according to the International Labour Organisation Methodology, %, destimulant;

2.3. Wage Arrears per Employee per Year is the ratio of annual wage arrears to the number of employees in the region, UAH, destimulant;

2.4. Annual Cash Income per Person is the ratio of the annual amount of available income to the number of populations in the region, UAH, stimulant;

2.5. Annual Labour Costs per Enterprise is the ratio of annual labour costs to the number of enterprises in the region, UAH, stimulant.

3. Indicators of the environmental component of sustainable development security in old industrial regions:

3.1. Capital Investment in Environmental Protection per Enterprise per Year is the ratio of annual volume of capital investments in environmental protection to the number of enterprises in the region, UAH, stimulant;

3.2. Current Environmental Protection Expenditure per Enterprise per Year is the ratio of the annual amount of current environmental protection expenditure to the number of enterprises in the region, UAH, stimulant;

3.3. Annual Air Pollutant Emissions from Stationary emission Sources per Person is the ratio of annual air pollutant emissions from stationary emission sources to the number of inhabitants in the region, kg, destimulant;

3.4. Annual Air Emissions of Carbon Dioxide from Stationary sources of Emissions per Person is the ratio of annual volume of carbon dioxide emissions into the atmospheric air from stationary emission sources to the population of the region, tonnes, destimulant;

3.5. Annual Volume of Waste Disposed of per Person per Year is the ratio of annual volume of waste disposed of to the population of the region, tonnes, stimulant [21].

The indicators shown are marked as stimulants or destimulants. This is done in order to determine the direction of action of the indicator. Thus, if an increase in an indicator indicates an improvement, this indicator is considered a stimulant (e.g. annual labour productivity per employee). If the growth of an indicator indicates its deterioration, such an indicator is considered as a disincentive (e.g. annual unemployment rate in the region according to IOP methodology).

The process of ranking the Ukrainian old-industry regions according to the indicators of sustainable development security is implemented by the sum of places method. This method is based on the ranking of 7 Ukrainian regions, defined as old-industrial, according to the values of each of the 5 indicators of the three components of sustainable development security with the assignment of an ordinal place so that the best indicator value is assigned first place, and the worst one is assigned seventh place.

The ranking of old industrial regions according to the sum of the places method is done using the formula:

$$R_j = \sum_{i=1}^n M_i \rightarrow \min, \quad (2.1)$$

where R_j is the rank of the old industrial region, $j = \overline{1;7}$;

M_i is the rank of the old industrial region to the i -th indicator, $i = \overline{1;n}$, $n = 15$.

The study of the sustainable development security of old industrial regions is conducted in the dynamics at the beginning of the year for 2011–2020 according to the official statistical data of the State Statistics Service of Ukraine [22].

Consequently, to implement the ranking of old-industrial regions of Ukraine by indicators of sustainable development security using the method of sum of places, 7 regions of Ukraine, 3 components of sustainable development security by 5 indicators in each and the study period of 10 years from early 2011 to early 2020 are determined.

2.2. Ranking of old-industry regions according to indicators of the economic component of sustainable development security

The economic component of sustainable development security of Ukrainian old industrial regions is interpreted by 5 indicators-stimulants, they are: GRP per person per year, UAH; Annual industrial production index, %; Annual capital investment per enterprise, UAH; Annual sales volume per 1 enterprise, UAH; Annual productivity of 1 employee, UAH.

Table 2.1 summarises the consolidated data of the indicators of the economic component of the sustainable development security of Ukraine's old industrial regions. The data in Table 2.1 show that by the beginning of 2020, compared to 2011, GRP per person per year grew in all regions except Luhansk region. Thus, in 10 years the annual GRP volume per person in the Luhansk region has decreased by 5 %, which is the worst dynamic, in the Donetsk region it has increased by 70 %, and the highest growth is recorded in the Kharkiv region by 3.9 times, in the Sumy region by 4.5 times and in the Poltava region by 4.53 times. Comparing the volumes of GRP per person in each region as of the beginning of 2020, it should be noted that the Luhansk region with 18.8 thousand UAH is in the 7th place. Next comes the Donetsk region with 36.4 thousand UAH in 6th place, the Sumy region with 70.6 thousand UAH in 5th place, Zaporizhzhia region with 91.5 thousand UAH in 4th place, Kharkiv region with 92.8 thousand UAH in 3rd place, Dnipropetrovsk region with 122.3 thousand UAH in 2nd place, and Poltava region with 134.4 thousand UAH in 1st place.

Table 2.1 also summarises the annual industrial production indexes of the 7 Ukrainian old industrial regions for 2011–2020 (at the beginning of the year). The annual industrial production index is a chain index and is calculated as the ratio of current output (in UAH) to the output of the

previous period (in UAH). It is an important indicator in the economic component of sustainable development security of an old industrial region, as it reflects the dynamics of industrial production.

Table 2.1. Consolidated data on indicators of the economic component of sustainable development security in Ukrainian old industrial regions

Region name*	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
GRP per person per year, thousand UAH										
Dnipropetrovsk	34.7	42.1	44.7	46.3	53.7	65.9	75.4	97.0	114.8	122.3
Donetsk	29.0	36.4	38.9	37.8	27.8	26.9	32.3	39.3	45.9	49.4
Kharkiv	23.6	28.0	30.0	31.1	35.3	45.8	57.2	69.4	86.9	92.8
Luhansk	19.8	25.1	26.0	24.5	14.1	10.8	14.3	13.9	16.3	18.8
Poltava	29.7	35.2	38.4	40.0	48.0	66.4	81.1	106.0	123.7	134.4
Sumy	15.7	19.8	21.7	23.5	26.9	37.2	41.7	51.4	62.9	70.6
Zaporizhzhia	23.7	27.6	30.7	30.5	37.3	50.6	59.7	75.2	85.8	91.5
Annual industrial production index, %										
Dnipropetrovsk	116.1	105.4	102.2	98.5	92.5	92.1	99.3	100.1	103.0	101.0
Donetsk	114.7	113.6	94.6	93.6	68.5	65.4	106.4	89.1	102.6	100.6
Kharkiv	105.8	105.5	97.6	94.5	94.8	88.2	105.8	106.1	102.9	96.7
Luhansk	107.1	115.8	92.5	91.1	58.0	34.0	139.0	69.0	83.0	96.0
Poltava	112.6	99.6	100.0	94.7	92.9	96.2	100.1	98.9	101.5	98.8
Sumy	93.5	107.7	95.6	107.0	88.1	98.4	91.2	101.7	110.3	98.3
Zaporizhzhia	107.8	106.3	96.8	97.1	96.8	95.3	96.9	106.2	103.6	95.5
Annual capital investment per enterprise, thousand UAH										
Dnipropetrovsk	585	823	823	755	776	951	1,297	1,538	2,070	2,147
Donetsk	548	928	1,133	972	1,157	706	1,135	1,653	2,773	2,971
Kharkiv	313	506	591	356	324	451	810	857	990	913
Luhansk	517	631	766	999	1615	614	1,169	977	933	900
Poltava	658	816	1,046	942	883	822	1,698	1,556	1,701	2,011
Sumy	407	557	529	468	481	627	1,090	1,218	1,303	1,243
Zaporizhzhia	546	447	504	463	486	540	819	1089	1049	951
Annual sales volume per 1 enterprise, mln UAH										
Dnipropetrovsk	13.96	17.15	16.36	15.77	18.17	21.43	26.27	32.10	36.07	34.91
Donetsk	18.23	23.74	23.73	20.04	33.09	27.67	32.58	38.03	47.00	41.86
Kharkiv	5.71	6.53	7.18	6.23	7.07	9.64	13.37	14.61	15.85	15.70
Luhansk	9.59	11.52	10.93	9.16	14.17	10.31	13.71	11.43	11.57	11.25
Poltava	10.63	11.38	12.18	10.98	13.19	17.99	23.42	25.45	26.85	25.92
Sumy	4.69	6.09	6.77	5.94	6.90	10.33	13.28	15.19	17.59	17.25
Zaporizhzhia	7.33	8.32	8.69	7.68	9.53	12.74	16.15	19.29	21.51	19.56
Annual productivity of 1 employee, thousand UAH										
Dnipropetrovsk	511	624	591	607	700	919	1,146	1,488	1,715	1,688
Donetsk	545	762	743	678	814	798	1,096	1,514	1,780	1,580
Kharkiv	318	372	397	374	429	616	804	948	1,032	999
Luhansk	281	345	331	313	354	312	468	404	625	645
Poltava	434	466	500	483	591	873	971	1,196	1,299	1,378
Sumy	182	244	281	279	346	548	642	784	956	878
Zaporizhzhia	332	391	404	395	506	713	856	1,103	1,283	1,168

* the names of the Ukrainian old industrial regions in alphabetical order.

Source: Generated and calculated from data of the State Statistics Service of Ukraine [22].

Average annual dynamics of industrial production during 2011–2020 (at the beginning of the year) was growing only in Dnipropetrovsk region and Zaporizhzhia region, and in other regions it was downward. At the beginning of 2015–2016, a decrease in industrial production was also observed in all Ukrainian old industrial regions, the largest one in Luhansk region, respectively –42 % at the beginning of 2005, and –66 % at the beginning of 2006.

As of the beginning of 2020 in comparison with the beginning of 2011 there was an increase of annual capital investment per enterprise in all regions. Thus, during 10 years annual volume of capital investments per enterprise in Luhansk region and Zaporizhzhia region increased by 74 %, which was the worst dynamics, and the highest growth was recorded in Dnipropetrovsk region (3.7 times growth) and Donetsk region (5.4 times growth). Comparing the amount of capital investment per enterprise in each region as of the beginning of the year 2020, it is worth noting that the Luhansk region with 900 thousand UAH is in the 7th place. Next is Kharkiv region with 913 thousand UAH in 6th place, Zaporizhzhia region with 952 thousand UAH in 5th place, Sumy region with 1,243 thousand UAH in 4th place, Poltava region with 2011 thousand UAH in 3rd place, Dnipropetrovsk region with 2,147 thousand UAH in 2nd place and Donetsk region with 2,971 thousand UAH in 1st place.

At the beginning of 2020, in comparison with the beginning of 2011, there was an increase in the volume of sales per enterprise in all old industrial regions. So, for 10 years the annual volume of sold products per enterprise in Luhansk region increased by 17 %, which was the worst dynamics, in Donetsk region increased by 130 %, and the highest growth of 2.7 times was recorded in Zaporizhzhia region, in Kharkiv region growth of 2.75 times and in Sumy region growth of 3.7 times.

The data in Table 2.1 also shows that by the beginning of 2020 there was an increase in the level of productivity per employee in all regions compared to the beginning of 2011. Thus, over 10 years the productivity of 1 employee in the Luhansk region increased by 2.3 times, which was the worst dynamics, and the highest growth was recorded in the Zaporizhzhia region (3.5 times growth) and Sumy region (4.8 times growth). Comparing the levels of labour productivity per employee in each region as of the beginning of the year 2020, one has to conclude that the Luhansk region with UAH 645 thousand UAH is in the 7th place. The Sumy region with 956 thousand UAH comes 6th, Kharkiv region with 999 thousand UAH

comes 5th, Zaporizhia region with 1,283 thousand UAH comes 4th, Poltava region with 1,299 thousand UAH comes 3rd, Donetsk region with 1,580 thousand UAH comes 2nd and Dnipropetrovsk region with 1,688 thousand UAH comes 1st.

Table 2.2 summarises the ranking of Ukraine's old industrial regions according to the values of the indicators of the economic component of sustainable development security.

Table 2.2 shows that by the beginning of 2011 the outsider in terms of GRP per person was Sumy region, which improved its result by 2 positions by the beginning of 2020. The leader was Dnipropetrovsk region, which lost its leading position at the beginning of 2016 and by the beginning of 2020 was in the 2nd place, while Poltava region from 2015 became the sole leader. If we determine the sum of GRP volume places per person of old industry regions during the study period, Dnipropetrovsk region was the leader with indicator 15 points, and Luhansk region with indicator 66 points was the outsider.

At the beginning of 2011 Dnipropetrovsk region was the leader in industrial production growth rates, and Sumy region was the outsider. At the beginning of 2020 Dnipropetrovsk region was again on the first place, Sumy region improved its ranking to 4th place, and the outsider was Zaporizhzhia region, which at the beginning of 2011 was on the 4th place. The total sum of places for 10 years shows the highest dynamics of industrial production in Dnipropetrovsk region (31 points), and the lowest – in Luhansk region (55 points).

The outsider in terms of capital investment per enterprise at the beginning of 2011 was Kharkiv region, which improved its result by 1 position at the beginning of 2020, and the leader was Poltava region, which lost its leading position at the beginning of 2012 and at the beginning of 2020 was in the 3rd place, while Donetsk region from the beginning of 2018 became the sole leader. If we determine the sum of places of annual capital investment per enterprise in old industrial regions over the period of the survey, with the indicator 19 points, the leader is Donetsk region, and the outsider is Kharkiv region with indicator 65 points.

Comparing the volume of sales per 1 enterprise in each region at the beginning of 2020, it should be noted that the worst situation is Luhansk region with 11.3 thousand UAH in 7th place, then Kharkiv region with 15.7 thousand UAH in 6th place, Sumy region with 17.3 thousand UAH in 5th place, Zaporizhzhia region from UAH 19.6 thousand in 4th place, Poltava

region from UAH 25.9 thousand in 3rd place, Dnipropetrovsk region from UAH 34.9 thousand in 2nd place and Donetsk region from UAH 41.9 thousand in 1st place.

Table 2.2. Ranking of Ukrainian old industry regions by sum of places based on indicators of the economic component of sustainable development security

Region name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Σ
GRP per person per year											
Dnipropetrovsk	1	1	1	1	1	2	2	2	2	2	15
Donetsk	3	2	2	3	5	6	6	6	6	6	45
Kharkiv	5	4	5	4	4	4	4	4	3	3	40
Luhansk	6	6	6	6	7	7	7	7	7	7	66
Poltava	2	3	3	2	2	1	1	1	1	1	17
Sumy	7	7	7	7	6	5	5	5	5	5	59
Zaporizhzhia	4	5	4	5	3	3	3	3	4	4	38
Annual industrial production index											
Dnipropetrovsk	1	6	1	2	4	4	5	4	3	1	31
Donetsk	2	2	6	6	6	6	2	6	5	2	43
Kharkiv	6	5	3	5	2	5	3	2	4	5	40
Luhansk	5	1	7	7	7	7	1	7	7	6	55
Poltava	3	7	2	4	3	2	4	5	6	3	39
Sumy	7	3	5	1	5	1	7	3	1	4	37
Zaporizhzhia	4	4	4	3	1	3	6	1	2	7	35
Annual capital investment per enterprise											
Dnipropetrovsk	2	2	3	4	4	1	2	3	2	2	25
Donetsk	3	1	1	2	2	3	4	1	1	1	20
Kharkiv	7	6	5	7	7	7	7	7	6	6	65
Luhansk	5	4	4	1	1	5	3	6	7	7	43
Poltava	1	3	2	3	3	2	1	2	3	3	22
Sumy	6	5	6	5	6	4	5	4	4	4	49
Zaporizhzhia	4	7	7	6	5	6	6	5	5	5	56
Annual sales volume per 1 enterprise											
Dnipropetrovsk	2	2	2	2	2	2	2	2	2	2	20
Donetsk	1	1	1	1	1	1	1	1	1	1	10
Kharkiv	6	6	6	6	6	7	6	6	6	6	61
Luhansk	4	3	4	4	3	6	5	7	7	7	50
Poltava	3	4	3	3	4	3	3	3	3	3	32
Sumy	7	7	7	7	7	5	7	5	5	5	62
Zaporizhzhia	5	5	5	5	5	4	4	4	4	4	45
Annual productivity of 1 employee											
Dnipropetrovsk	2	2	2	2	2	1	1	2	2	1	17
Donetsk	1	1	1	1	1	3	2	1	1	2	14
Kharkiv	5	5	5	5	5	5	5	5	5	5	50
Luhansk	6	6	6	6	6	7	7	7	7	7	65
Poltava	3	3	3	3	3	2	3	3	3	3	29
Sumy	7	7	7	7	7	6	6	6	6	6	65
Zaporizhzhia	4	4	4	4	4	4	4	4	4	4	40

Source: Generated and calculated from data in Table 2.1.

At the beginning of 2011 Sumy region was the outsider in the sales volume per 1 enterprise, improving its result by 2 positions at the beginning of 2020, Dnipropetrovsk region was in the second place all the 10 years, and Donetsk region was in the first place. If we determine the amounts of sales volume per enterprise in the old industrial regions during the study period, the leader was Donetsk region with an indicator of 10 points, Dnipropetrovsk region was on the second place with an indicator of 20 points, and the outsider was Sumy region with an indicator of 62.

By the beginning of 2010, the outsider in terms of labour productivity per employee was Sumy region, improving its result by 1 position by the beginning of 2020, and the leader was Donetsk region, which lost its leading position by the beginning of 2016 and by the beginning of 2020 was in the 2nd place. If we determine the sum of places of labour productivity of one employee in old-industry regions during the study period, with an indicator of 14 points the leader is Donetsk region, and outsiders are Luhansk region and Sumy region with an indicator of 65 points.

The final stage of ranking Ukraine’s old industrial regions according to the economic security component of their sustainable development is a composite ranking over the 10 years of the study period (Figure 2.1).

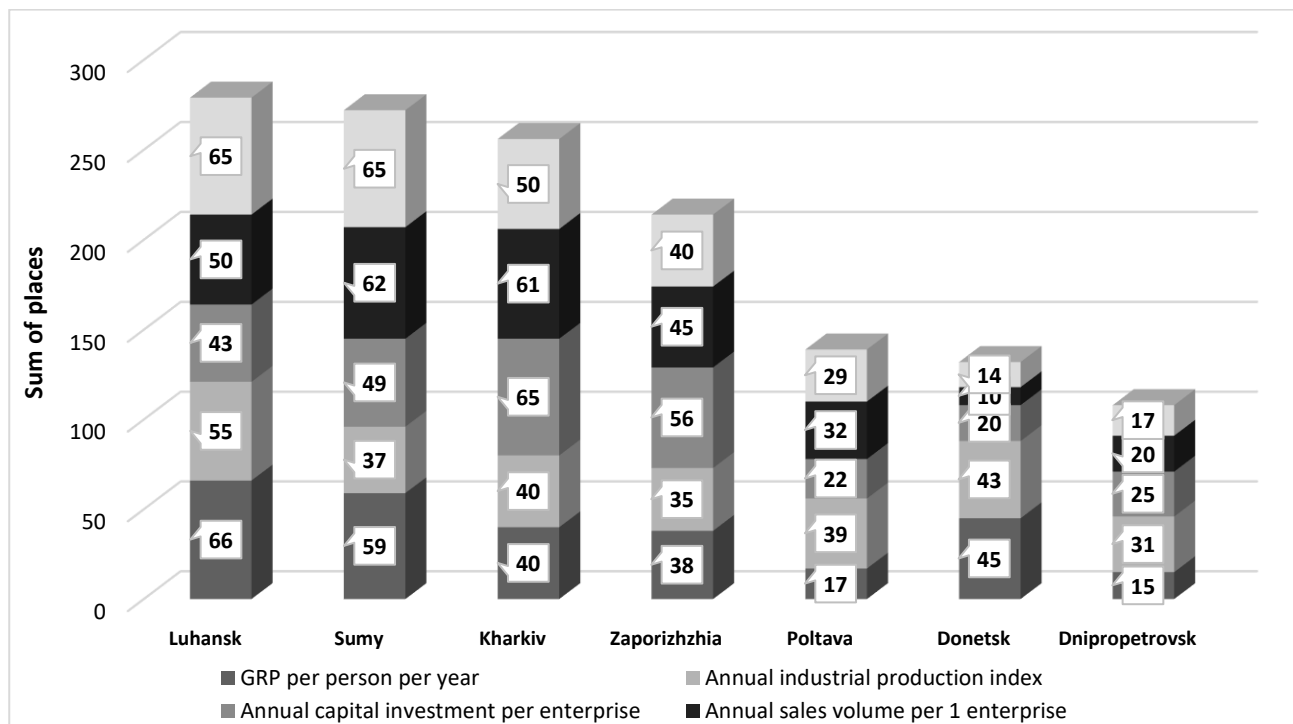


Figure 2.1. Consolidated ranking of Ukraine’s old industrial regions according to the indicators of the economic component of sustainable development security

Source: Generated and calculated from data in Table 2.2.

Figure 2.1 summarises the 10-year placements of old industrial regions for each indicator and the economic dimension of sustainable development security as a whole, and ranks them.

So, for 10 years of the research period the worst state of economic component of sustainable development security was demonstrated by Luhansk region with the total score 279 points, Sumy region with the total score 272 points was the sixth, Kharkiv region with the total score 256 points was the fifth, Zaporizhzhia region with the total score 214 points was the fourth, Poltava region with the total score 140 points was the third, Donetsk region with the total score 132 points was the second, and the leader was Dnipropetrovsk region with the total score 108 points.

2.3. Ranking of old industrial regions according to indicators of the social component of sustainable development security

The social component of the sustainable development security of Ukrainian old industry regions is interpreted by 3 indicators-stimulators: the average monthly salary of a full-time employee in the region, UAH; annual cash income per person, UAH; annual labour costs per enterprise, UAH; and 2 indicators-stimulators: unemployment rate in the region for the year according to the ILO, %; wage arrears per employee per year, UAH.

Table 2.3 summarises the annual values of the indicators of the social component of the sustainable development security of Ukrainian old industrial regions.

Based on the data presented in Table 2.3, one can see that by the beginning of 2020 compared to the beginning of 2011, there was an increase in the level of average monthly salary of a full-time employee in all oblasts. Thus, for 10 years the average monthly salary of a full-time employee in the Luhansk region increased by 3.8 times, which was the worst dynamics, and the highest growth was recorded in the Zaporizhzhia region. Comparing the levels of average monthly salary of a full-time employee in each region as of the beginning of 2020, it is worth noting that the Sumy region with UAH 8,579 is in the worst position (7th place), followed by the Luhansk Region with 8,731 UAH (6th place), Kharkiv region with UAH 9,081 (5th place), Poltava region with 9,846 UAH (4th place), Zaporizhzhia region with UAH 10,480 (3rd place), Dnipropetrovsk region with UAH 10,751 (2nd place) and Donetsk region with UAH 11,716 (1st place).

Table 2.3. Consolidated data on indicators of the social component of sustainable development security in Ukrainian old industrial regions

Region name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
The average monthly salary of a full-time employee in the region, UAH										
Dnipropetrovsk	2,369	2,790	3,138	3,336	3,641	4,366	5,075	6,939	8,862	10,751
Donetsk	2,549	3,063	3,496	3,755	3,858	4,980	5,989	7,764	9,686	11,716
Kharkiv	2,060	2,407	2,753	2,975	3,143	3,697	4,448	6,244	7,657	9,081
Luhansk	2,271	2,742	3,090	3,337	3,377	3,427	4,637	5,862	7,365	8,731
Poltava	2,102	2,481	2,850	2,988	3,179	3,783	4,621	6,551	8,375	9,846
Sumy	1,866	2,177	2,503	2,702	2,877	3,449	4,131	5,946	7,324	8,579
Zaporizhzhia	2,187	2,607	2,927	3,142	3,432	4,200	5,080	6,863	8,726	10,480
Unemployment rate in the region for the year according to the ILO, %										
Dnipropetrovsk	7.1	6.8	6.6	6.5	8.0	7.2	7.9	8.5	8.0	7.7
Donetsk	8.4	8.2	8.0	7.8	11.0	13.8	14.1	14.6	14.0	13.6
Kharkiv	7.2	7.0	6.8	6.4	7.8	7.1	6.4	6.1	5.3	5.0
Luhansk	7.2	6.6	6.4	6.2	11.4	15.6	16.0	16.6	15.1	13.7
Poltava	9.7	9.2	8.6	8.2	11.5	12.1	12.6	12.0	11.2	10.6
Sumy	10.6	9.1	8.6	7.7	9.5	10.1	9.3	9.1	8.7	7.7
Zaporizhzhia	7.5	7.2	7.0	6.6	8.4	9.7	10.0	10.7	10.0	9.5
Wage arrears per employee per year, UAH										
Dnipropetrovsk	116	31	20	14	10	164	205	237	203	208
Donetsk	291	259	224	204	250	891	1,157	1,003	1,764	1,712
Kharkiv	258	283	200	204	182	295	478	663	614	689
Luhansk	355	299	262	208	342	565	4,905	4,273	8,722	7,766
Poltava	149	112	84	67	67	122	145	125	167	221
Sumy	362	332	391	477	323	653	776	928	1,081	2,252
Zaporizhzhia	181	164	158	180	150	231	229	268	503	726
Annual cash income per person, thousand UAH										
Dnipropetrovsk	20.7	24.3	28.8	30.3	32.0	39.1	44.4	57.3	74.8	89.0
Donetsk	21.3	24.9	29.3	31.0	26.2	21.3	20.9	25.3	33.8	39.8
Kharkiv	18.5	21.8	24.9	26.1	26.3	32.2	38.2	48.4	56.4	66.5
Luhansk	17.9	20.9	24.0	25.6	19.8	15.6	13.8	16.4	21.3	25.0
Poltava	18.0	20.9	24.0	25.4	26.2	32.0	37.9	48.7	61.6	72.8
Sumy	16.9	19.6	22.6	23.6	23.9	30.6	36.1	45.9	55.8	65.9
Zaporizhzhia	20.2	23.7	27.1	28.4	30.2	36.3	43.5	54.3	65.1	76.1
Annual labour costs per enterprise, thousand UAH										
Dnipropetrovsk	736	877	1,042	1006	1140	1237	1381	1,720	2,158	2,564
Donetsk	1,013	1,164	1,414	1,381	2,479	2,103	2,419	2,565	3,196	3,800
Kharkiv	384	451	554	550	583	662	794	994	1226	1,469
Luhansk	896	1,126	1,302	1,200	1,919	1,501	1,608	1,560	1,423	1,651
Poltava	543	652	779	776	814	919	1338	1,646	2,065	2,051
Sumy	491	589	697	669	672	809	1093	1,355	1,612	1,884
Zaporizhzhia	507	602	731	683	746	888	1127	1,352	1,662	1,939

Source: Generated and calculated from data of the State Statistics Service of Ukraine [22].

The annual unemployment rate by ILO methodology at the beginning of 2011–2020 was downward only in Kharkiv region (–2.2 %) and Sumy

region (−2.9 %), and was growing in the rest of the regions, including the highest growth was observed in Donetsk region (+5.2 %) and Luhansk region (+6.5 %).

Also, at the beginning of 2011–2014 there was a decrease of unemployment rate according to ILO methodology in all old industrial regions of Ukraine: most of all in Sumy region (−2.9 %), and least of all in Dnipropetrovsk region and Donetsk region (−0.6 %). At the beginning of 2015, in comparison with the beginning of 2014, there was an increase in the unemployment rate according to ILO methodology in all surveyed regions: most of all in Luhansk region (+3.2 %) and Sumy region (+3.3 %), and least of all in Zaporizhzhia region (+1.5 %) and Dnipropetrovsk region (+1.4 %). At the beginning of 2018–2020, the unemployment rate according to ILO methodology decreased in all regions. The smallest decrease was recorded in Dnipropetrovsk region (−0.8 %), and the largest decrease was in Luhansk region (−2.9 %). At the beginning of 2011 the leader by the ILO methodology unemployment rate was Dnipropetrovsk region (7.1 %), and the outsider was Sumy region (10.6 %).

At the beginning of 2020 there was an increase in the amount of wage arrears per employee per year in all areas compared to 2011. Thus, in 10 years the annual amount of wage arrears per employee in the Luhansk region increased by 22 times, which was the worst dynamic, while the Dnipropetrovsk region (1.8 times) and Sumy region (1.5 times) showed the lowest growth and the best dynamics. Comparing the arrears of wages per employee in each region as of the beginning of 2020, it should be noted that the worst place is occupied by the Luhansk region with 7,766 UAH (7th place), followed by the Sumy region with 2,252 UAH (6th place), Donetsk region with 1,712 UAH (5th place), Zaporizhzhia region with 726 UAH (4th place), Kharkiv region with 689 UAH (3rd place), Poltava region with 221 UAH (2nd place) and Dnipropetrovsk region with 208 UAH (1st place).

At the beginning of 2020, there was an increase in available income per person in all old industrial regions compared to 2011. Thus, in 10 years the annual cash income per person in the Luhansk region increased by 40 %, which was the worst dynamic, in the Donetsk region increased by 87 %, and the highest increase of 3.9 times was recorded in the Sumy region, 4 times in the Poltava region and 2.3 times in the Dnipropetrovsk region.

Based on the data in Table 2.3, it is also clear that in early 2020, there was an increase in labour costs per enterprise in all areas compared to the beginning of 2011. Thus, for 10 years the volume of labour costs per

enterprise in the Luhansk region increased by 84 %, which was the worst dynamics, and the highest growth was recorded: in the Zaporizhzhia region in 3.82 times, in Kharkiv region in 3.83 times and in Sumy region in 3.84 times. Comparing the amount of spending on labour costs per enterprise at the beginning of 2020, it should be noted that the worst situation is in Kharkiv region with 1,469 thousand UAH (7th place). Next comes the Luhansk region with 1,651 thousand UAH (6th place), Sumy region with 1,884 thousand UAH (5th place), Zaporizhzhia region with 1,937 thousand UAH (4th place), Poltava region with 2,051 thousand UAH (3rd place), Dnipropetrovsk region with 2,158 thousand UAH (2nd place) and Donetsk region with 3,740 thousand UAH (1st place).

Compare the amount of labour costs per company at the beginning of 2020. The worst position is occupied by Kharkiv region with 1,469 thousand UAH (7th place). Next comes the Luhansk region with 1,651 thousand UAH (6th place), Sumy region with 1,884 thousand UAH (5th place), Zaporizhzhia region with 1,937 thousand UAH (4th place), Poltava region with 2,051 thousand UAH (3rd place), Dnipropetrovsk region with 2,158 thousand UAH (2nd place) and Donetsk region with 3,740 thousand UAH (1st place).

Table 2.3 shows the rating places of Ukrainian old industrial regions according to the values of each of the indicators of the social component of the sustainable development security. Table 2.3 shows that by the beginning of 2011, as well as by the beginning of 2020, the outsider by the level of average monthly salary of a full-time employee was Sumy region, the second place during the whole period of research was occupied by Dnipropetrovsk region, and the leader, as well as all 10 years, was Donetsk region. If we determine the sums of places of the average monthly salary of a full-time employee in the old industrial regions during the study period, then with the indicator 10 points the leader was Donetsk region, and with the indicator 68 points the outsider was Sumy region.

At the beginning of 2020 according to the ILO methodology, Kharkiv region took the first place (5.0 %), Sumy region improved its ranking to the second place, and Lugansk region (13.7 %), which in 2010 was in the first place, became the outsider. The total sum of places for 10 years shows the lowest level of unemployment by ILO methodology in Kharkiv region (15 points) and the highest in Poltava region (55 points).

At the beginning of 2011 the outsider in wage arrears per employee per year was Sumy region, which has improved its result by 1 position in early

2020, and the leader was Dnipropetrovsk region, which lost its leading position in early 2016 and at the beginning of 2020 regained it. If we determine the sums of places in arrears of wages per employee of old industrial regions during the period of the study, then with the indicator 14 points the leader was Dnipropetrovsk region, and the outsider was Luhansk region with the indicator 64 points.

Table 2.4 summarises the ranking of Ukraine's old industrial regions according to the values of the indicators of the social component of sustainable development security.

Comparing the amount of cash income per person in each region at the beginning of 2020, it should be noted that the worst situation is Luhansk region with 25 thousand UAH (7th place), then Donetsk region with 40 thousand UAH (6th place), Sumy region with 66 thousand UAH (5th place), Kharkiv region with 66.5 thousand UAH (4th place), Poltava region with 72.8 thousand UAH (3rd place), Zaporizhzhia region with 76.1 thousand UAH (2nd place) and Dnipropetrovsk region with 89 thousand UAH (1st place). It should be noted that at the beginning of 2011 the outsider in terms of cash income per person was Sumy region, which improved its result by 2 positions at the beginning of 2020, Dnipropetrovsk region ranked second for the first 4 years and first for the last 6 years, and Donetsk region dropped from first place in early 2011 to 6th place in early 2020. If we determine the amount of cash income per person in the old industrial regions during the study period, the Dnipropetrovsk region was the leader with 14 points, Zaporizhzhia region was in second place with 24 points, and Luhansk region was the outsider with 65 points.

From the data shown in Table 2.4, we can also see that during the study period, the annual outsider in the volume of labour costs per enterprise was Kharkiv region, and the leader was Donetsk region. If we determine the number of places of labour costs per enterprise of old industrial regions during the study period, the absolute leader with a score of 10 points was Donetsk region, and the absolute outsider with a score of 70 points was Kharkiv region.

The final stage of ranking the old industrial regions of Ukraine on the social component of the security of their sustainable development is a composite ranking (Figure 2.2).

Figure 2.2 summarizes the ten-year sums of places in the old industrial regions for each indicator and the social component of sustainable development security in general, as well as their ranking.

Table 2.4. Ranking of Ukrainian old industry regions by sum of places based on indicators of the social component of sustainable development security

Region name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
The average monthly salary of a full-time employee in the region										
Dnipropetrovsk	2	2	2	3	2	2	3	2	2	2
Donetsk	1	1	1	1	1	1	1	1	1	1
Kharkiv	6	6	6	6	6	5	6	5	5	5
Luhansk	3	3	3	2	4	7	4	7	6	6
Poltava	5	5	5	5	5	4	5	4	4	4
Sumy	7	7	7	7	7	6	7	6	7	7
Zaporizhzhia	4	4	4	4	3	3	2	3	3	3
Unemployment rate in the region for the year according to the ILO										
Dnipropetrovsk	1	2	3	3	2	2	2	2	2	2
Donetsk	4	5	5	6	5	6	6	6	6	5
Kharkiv	2	3	2	2	1	1	1	1	1	1
Luhansk	2	1	1	1	6	7	7	7	7	6
Poltava	5	7	6	7	7	5	5	5	4	4
Sumy	6	6	6	5	4	4	4	3	3	2
Zaporizhzhia	3	4	4	4	3	3	3	4	5	3
Wage arrears per employee per year										
Dnipropetrovsk	1	1	1	1	1	2	2	2	2	1
Donetsk	5	4	5	4	5	7	6	6	6	5
Kharkiv	4	5	4	5	4	4	4	4	4	3
Luhansk	6	6	6	6	7	5	7	7	7	7
Poltava	2	2	2	2	2	1	1	1	1	2
Sumy	7	7	7	7	6	6	5	5	5	6
Zaporizhzhia	3	3	3	3	3	3	3	3	3	4
Annual cash income per person										
Dnipropetrovsk	2	2	2	2	1	1	1	1	1	1
Donetsk	1	1	1	1	4	6	6	6	6	6
Kharkiv	4	4	4	4	3	3	3	3	4	4
Luhansk	6	6	6	5	7	7	7	7	7	7
Poltava	5	5	5	6	5	4	4	2	3	3
Sumy	7	7	7	7	6	5	5	4	5	5
Zaporizhzhia	3	3	3	3	2	2	2	2	2	2
Annual labour costs per enterprise										
Dnipropetrovsk	3	3	3	3	3	3	3	2	2	2
Donetsk	1	1	1	1	1	1	1	1	1	1
Kharkiv	7	7	7	7	7	7	7	7	7	7
Luhansk	2	2	2	2	2	2	2	4	6	6
Poltava	4	4	4	4	4	4	4	3	3	3
Sumy	6	6	6	6	6	6	6	5	5	5
Zaporizhzhia	5	5	5	5	5	5	5	6	4	4

Source: Generated and calculated according to Table 2.3.

So, the worst state of the social component of security of sustainable development is demonstrated by Sumy region with a total score of 287, in 6th place with the sum of places 249 Luhansk region, in 5th place with the

sum of places 218 Kharkiv region, in 4th place with the sum of places 196 Poltava region, in third place with the sum of places 173 Zaporizhzhia region, in second place with the sum of places 165 Donetsk region and the leader was Dnipropetrovsk region with the sum of places 98.

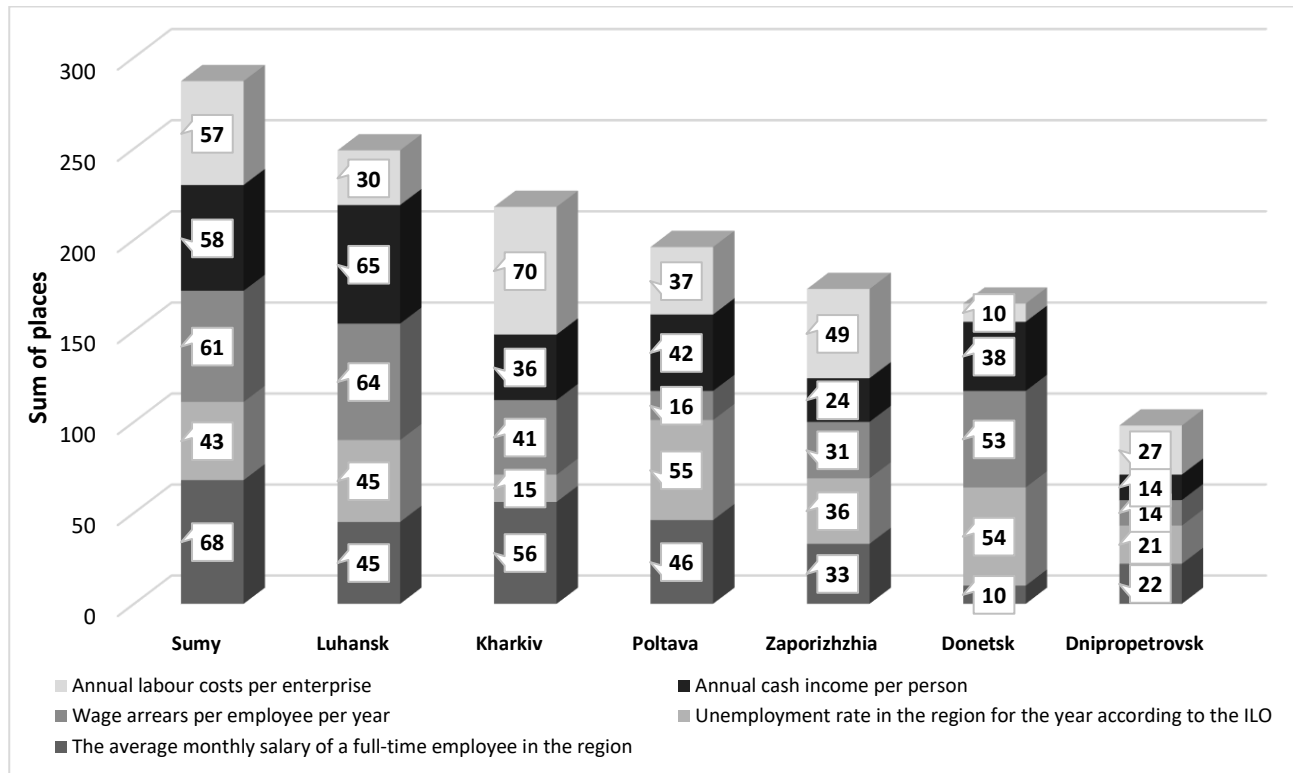


Figure 2.2. Consolidated ranking of Ukrainian old industrial regions by indicators of the social component of sustainable development security
Source: Generated and calculated from data in Table 2.4.

2.4. Ranking of old industrial regions according to indicators of the environmental component of sustainable development security

The ecological component of the Ukrainian old industrial regions sustainable development security is interpreted by 3 indicators as stimulants: capital investments in environmental protection per enterprise per year, UAH; current environmental protection expenditure per enterprise per year, UAH; annual volume of waste disposed of per person per year, tons; and 2 indicators de-stimulators: annual air pollutant emissions from stationary emission sources per person, kg; annual air emissions of carbon dioxide from stationary sources of emissions per person, tons

Table 2.5 summarizes the annual values of indicators of the environmental component of sustainable development security of Ukrainian old industrial regions.

Table 2.5. Consolidated data on indicators of the environmental component of sustainable development security in Ukrainian old industrial regions

Region name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Capital investment in environmental protection per enterprise per year, thousand UAH										
Dnipropetrovsk	34.73	56.20	36.06	35.50	57.39	52.03	64.97	94.25	84.30	82.21
Donetsk	21.00	35.15	32.52	51.11	32.97	19.74	62.09	74.13	155.61	251.39
Kharkiv	3.82	20.53	24.36	6.77	2.80	2.52	4.66	15.08	11.48	18.87
Luhansk	9.40	14.96	48.40	28.28	67.18	15.46	11.12	3.95	8.51	4.70
Poltava	8.06	7.23	12.56	13.29	12.77	6.60	11.46	19.60	24.10	25.81
Sumy	2.86	4.36	2.75	2.54	2.55	8.99	9.19	8.26	3.82	3.76
Zaporizhzhia	10.92	27.83	31.70	21.85	60.85	41.01	78.87	56.06	71.06	69.23
Current environmental protection expenditure per enterprise per year, thousand UAH										
Dnipropetrovsk	88.8	118.7	150.5	141.5	193.3	201.6	214.3	198.4	241.2	266.6
Donetsk	59.3	70.5	82.2	80.7	101.1	121.7	196.0	177.3	220.5	228.5
Kharkiv	20.4	18.0	20.9	28.7	25.6	31.6	40.2	39.8	44.3	49.3
Luhansk	119.7	102.5	107.2	92.6	164.9	155.6	172.7	145.7	117.9	121.2
Poltava	49.7	54.4	64.4	64.1	64.1	84.3	101.7	104.6	131.8	129.9
Sumy	27.7	40.1	35.3	30.7	30.4	43.1	58.3	79.9	123.9	104.8
Zaporizhzhia	52.5	64.2	82.1	82.1	88.0	110.0	137.3	137.4	166.5	184.0
Annual air pollutant emissions from stationary emission sources per person, kg										
Dnipropetrovsk	279.7	286.2	290.8	285.7	261.2	222.4	257.9	203.4	191.6	181.6
Donetsk	310.9	346.5	346.2	333.4	242.7	215.1	231.2	186.8	189.7	187.2
Kharkiv	55.1	63.5	72.0	76.8	55.1	19.6	37.1	16.7	16.7	40.1
Luhansk	223.3	207.7	198.4	197.4	89.1	52.2	70.8	34.6	21.7	17.5
Poltava	48.9	48.9	46.3	45.7	43.4	38.6	39.4	39.5	37.2	36.8
Sumy	27.3	31.2	26.4	26.9	24.0	15.7	17.9	18.6	19.2	20.3
Zaporizhzhia	120.7	128.0	116.3	138.5	117.1	110.5	96.0	105.0	102.4	102.8
Annual air emissions of carbon dioxide from stationary sources of emissions per person, tons										
Dnipropetrovsk	5.64	10.24	10.45	9.90	10.05	7.88	9.59	8.07	7.37	7.40
Donetsk	13.31	14.45	13.87	13.82	9.86	8.44	9.00	5.45	6.04	5.69
Kharkiv	3.79	4.57	4.28	4.33	3.53	1.97	2.67	2.14	2.72	2.86
Luhansk	4.72	9.29	9.02	9.56	7.12	2.97	4.46	1.96	1.48	1.13
Poltava	1.53	1.79	1.67	2.07	2.32	2.30	2.41	2.51	2.39	1.42
Sumy	1.42	1.56	1.37	1.45	1.34	1.12	1.45	1.53	1.68	1.49
Zaporizhzhia	7.53	7.85	7.04	7.46	7.35	7.93	7.61	8.15	8.57	8.10
Annual volume of waste disposed of per person per year, tons										
Dnipropetrovsk	28.26	28.19	28.65	31.04	25.62	21.97	20.66	25.94	26.53	28.48
Donetsk	3.86	4.51	3.01	2.53	0.06	0.64	0.89	1.28	1.60	1.31
Kharkiv	0.19	0.11	0.12	0.10	0.07	0.10	0.16	0.05	0.11	0.07
Luhansk	1.65	2.78	2.22	2.37	0.45	0.12	0.26	0.04	0.02	0.02
Poltava	1.46	2.01	3.05	2.99	2.38	2.13	2.53	1.97	1.98	2.21
Sumy	0.29	0.40	0.35	0.22	0.22	0.17	0.18	0.21	0.18	0.15
Zaporizhzhia	0.93	0.95	0.94	0.75	0.92	1.50	1.66	1.57	1.95	2.25

Source: Generated and calculated from data of the State Statistics Service of Ukraine [22].

The data in Table 2.5 shows that by early 2019 there has been an increase in capital investment in environmental protection per company in all regions except Luhansk region compared to early 2011. Thus, in 10 years, the average monthly amount of capital investment in environmental protection per company in the Luhansk region has halved, which was the worst trend, and the highest increase of 12 times was recorded in the Donetsk region.

Let's compare the volume of capital investments for environmental protection per 1 enterprise in each region for early 2020. It should be noted that the worst situation is shown by the Sumy region with 3.8 thousand UAH (7th place), then the Luhansk region with 8.5 thousand UAH (6th place), Kharkiv region with 18.9 thousand UAH (5th place), Poltava region from 25.8 thousand UAH (4th place), Zaporizhzhia region with 69.2 thousand UAH (3rd place), Dnipropetrovsk region with 82.2 thousand UAH (2nd place) and Donetsk region from 251.4 thousand UAH (1st place).

The annual volume of current environmental protection expenditure per enterprise per year at the beginning of 2011–2020 was growing in all regions, in particular, the highest growth rate was recorded in Sumy region (+279 %) and Donetsk region (+285 %), and the lowest in Kharkiv region (+141 %) and Luhansk region (+1 %). Comparing the current environmental protection expenditure per enterprise per year in each region at the beginning of 2020, it should be noted that the worst situation is Kharkiv region with 49.3 thousand UAH (7th place), then Sumy region with 104.8 thousand UAH (6th place), Luhansk region with 121.2 thousand UAH (5th place), Poltava region with 129.9 thousand UAH (4th place), Zaporizhzhia region with 184 thousand UAH (3rd place), Donetsk region with 228.5 thousand UAH (2nd place) and Dnipropetrovsk region from 266.6 thousand UAH (1st place).

The data in Table 2.5 also show that by early 2020, there has been a positive reduction in annual air pollutant emissions from stationary sources of emissions per person in all areas compared to early 2011. Thus, for 10 years the annual volume of pollutant emissions in the atmospheric air from stationary sources of emissions per 1 person in Zaporizhzhia region decreased by 15 %, which was the worst dynamics, and the greatest reduction and the best dynamics – 92 % were recorded in Luhansk region.

At the beginning of 2020, compared with the beginning of 2011, carbon dioxide emissions per person from stationary sources increased in Sumy region (+5 %), Zaporizhzhia region (+8 %) and Dnipropetrovsk region

(+31 %). The Poltava region (−7 %), Kharkiv region (−25 %), Donetsk region (−57 %) and Luhansk region (−76 %, best result) showed a decrease. Comparing the annual emissions of carbon dioxide into the air from stationary sources of emissions per 1 person in each region at the beginning of 2020, it should be noted that the worst situation is demonstrated by the Zaporizhzhia region with 8,097 kg / person (7th place), followed by the Dnipropetrovsk region (6th place), Donetsk region from 5,694 kg / person (5th place), Kharkiv region with 2,857 kg / person (4th place), Sumy region with 1,486 kg / person (3rd place), Poltava region with 1,421 kg / person (2nd place) and Luhansk region with 1,125 kg / person (1st place).

The annual volume of recycled waste per capita at the beginning of 2020, compared to the beginning of 2011, increased in Dnipropetrovsk (+1 %), Poltava (+51 %), Zaporizhzhia (+142 %, the best result) regions, but decreased in Sumy (−50 %), Kharkiv (−62 %), Donetsk (−66 %) and Luhansk (−99 %, the worst result). Comparing the amounts of utilised waste per person at the beginning of 2020, it should be noted that the Luhansk region with 20 kg (7th place), Kharkiv region with 70 kg (6th place), Sumy region with 150 kg (5th place), Donetsk region with 1.3 tons (4th place), Poltava region with 2.2 tons (3rd place), Zaporizhzhia region with 2.3 tons (2nd place) and Dnipropetrovsk region with 28.5 tons (1st place).

Table 2.6 summarises the ranking of Ukraine's old industrial regions according to the values of the indicators of the environmental component of sustainable development security. The data of Table 2.6 show that by the beginning of 2011, as well as by the beginning of 2020 the outsider by the volume of capital investments into environment protection per company is Sumy region, the first and the second places are occupied respectively by Dnipropetrovsk region and Donetsk region, and by the beginning of 2020 on the contrary, Dnipropetrovsk region ranks second, and Donetsk region is the leader. If we determine the amounts of annual capital investment in environmental protection per 1 enterprise of the old industrial regions during the survey period, Dnipropetrovsk region was the leader with 17 points, and Sumy region was the outsider with 66 points.

At the beginning of 2011, as well as at the beginning of 2020, the outsider by annual volume of current expenses per company was Kharkiv region, Dnipropetrovsk region and Luhansk region took the second and the first places respectively, and at the beginning of 2020 the leader was Dnipropetrovsk region, and Luhansk region fell down to the fifth place. If we determine the amount of annual current environmental protection

expenditures per company in the old industrial regions during the survey period, Dnipropetrovsk region was the leader with 11 points, and Kharkiv region was an absolute outsider with 70 points.

Table 2.6. Ranking of Ukrainian old industry regions by sum of places based on indicators of the environmental component of sustainable development security

Region name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Capital investment in environmental protection per enterprise per year										
Dnipropetrovsk	1	1	2	2	3	1	2	1	2	2
Donetsk	2	2	3	1	4	3	3	2	1	1
Kharkiv	6	4	5	6	6	7	7	5	5	5
Luhansk	4	5	1	3	1	4	5	7	6	6
Poltava	5	6	6	5	5	6	4	4	4	4
Sumy	7	7	7	7	7	5	6	6	7	7
Zaporizhzhia	3	3	4	4	2	2	1	3	3	3
Current environmental protection expenditure per enterprise per year										
Dnipropetrovsk	2	1	1	1	1	1	1	1	1	1
Donetsk	3	3	3	4	3	3	2	2	2	2
Kharkiv	7	7	7	7	7	7	7	7	7	7
Luhansk	1	2	2	2	2	2	3	3	6	5
Poltava	5	5	5	5	5	5	5	5	4	4
Sumy	6	6	6	6	6	6	6	6	5	6
Zaporizhzhia	4	4	4	3	4	4	4	4	3	3
Annual air pollutant emissions from stationary emission sources per person										
Dnipropetrovsk	6	6	6	6	7	7	7	7	7	6
Donetsk	7	7	7	7	6	6	6	6	6	7
Kharkiv	3	3	3	3	3	2	2	1	1	4
Luhansk	5	5	5	5	4	4	4	3	3	1
Poltava	2	2	2	2	2	3	3	4	4	3
Sumy	1	1	1	1	1	1	1	2	2	2
Zaporizhzhia	4	4	4	4	5	5	5	5	5	5
Annual air emissions of carbon dioxide from stationary sources of emissions per person										
Dnipropetrovsk	5	6	6	6	7	5	7	6	6	6
Donetsk	7	7	7	7	6	7	6	5	5	5
Kharkiv	3	3	3	3	3	2	3	3	4	4
Luhansk	4	5	5	5	4	4	4	2	1	1
Poltava	2	2	2	2	2	3	2	4	3	2
Sumy	1	1	1	1	1	1	1	1	2	3
Zaporizhzhia	6	4	4	4	5	6	5	7	7	7
Annual volume of waste disposed of per person per year										
Dnipropetrovsk	1	1	1	1	1	1	1	1	1	1
Donetsk	2	2	3	3	6	4	4	5	4	4
Kharkiv	7	7	7	7	7	7	7	7	6	6
Luhansk	3	3	4	4	4	6	5	8	7	7
Poltava	4	4	2	2	2	2	2	2	2	3
Sumy	6	6	6	6	5	5	6	6	5	5
Zaporizhzhia	5	5	5	5	3	3	3	4	3	2

Source: Generated and calculated according to Table 2.5.

Comparing the volume of pollutant emissions to the atmospheric air from stationary emission sources per person in each region at the beginning of 2020, it should be noted that the Donetsk region Luhansk region shows the worst situation with 187 kg/person (7th place), Further Dnipropetrovsk region with 182 kg/person (6th place), Zaporizhzhia region with 203 kg/person (5th place), Kharkiv region with 40 kg/person (4th place), Poltava region with 37 kg/person (3rd place), Sumy region with 20 kg/person (2nd place) and Luhansk region with 18 kg/person (1st place).

It should be noted that by the beginning of 2011, as well as by the beginning of 2020, the outsider by annual volume of emissions of pollutants into the atmospheric air from stationary sources of emissions per person was Donetsk region, and the leader was Sumy region, which lost its leading position in early 2018 and until the beginning of 2020 was in second place. If we determine the sum of places by annual volume of pollutant emissions from stationary sources of emissions per 1 person of old industrial regions during the study period, the leader was Sumy region with 13 points, and the outsider was Donetsk region with a score of 65 points.

It should be noted that by early 2011, the outsider in annual carbon dioxide emissions from stationary emission sources per person was Donetsk region, which improved its result by 2 positions by early 2020, Poltava region was second as at early 2020, and Luhansk region improved its result from fourth place by early 2011 to first place by early 2020. If we calculate the amount of annual carbon dioxide emissions from stationary emission sources per 1 person in the old industrial regions over the study period, with 13 points the leader was Sumy region, the second with 24 points was Poltava region, and outsider was Donetsk region with a score of 62 points.

By the annual volume of utilised waste per person the outsider at the beginning of 2010 was Kharkiv region, which improved its result by 1 position at the beginning of 2020, Donetsk region was second, and at the beginning of 2020 became the fourth. Dnipropetrovsk region was the undisputed leader during the period under study. If we calculate the sum of places by the annual volume of utilised waste per person of the old industrial regions during the study period, Dnipropetrovsk region was the leader with 10 points, Poltava region was second with 25 points, and Kharkiv region was the outsider with the score of 67 points.

The final stage of ranking the old industrial regions of Ukraine according to the environmental component of sustainable development security is the composite ranking (Figure 2.3).

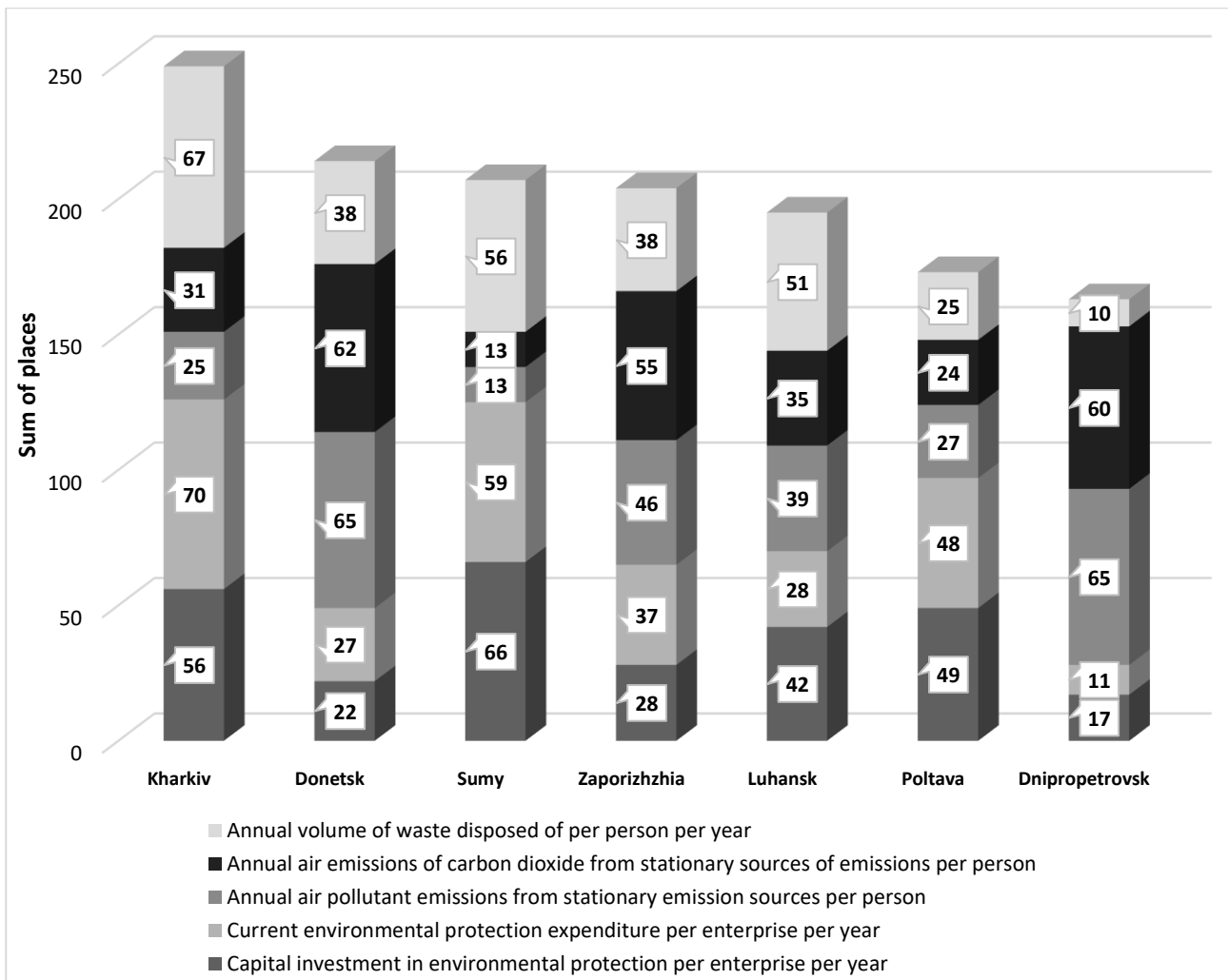


Figure 2.3. Consolidated ranking of Ukrainian old industrial regions by indicators of the environmental component of sustainable development security

Source: Generated and calculated from data in Table 2.6.

Figure 2.3 summarizes the ten-year sums of places in the old industrial regions for each indicator and the environmental component of sustainable development security in general, as well as their ranking.

Thus, the Kharkiv region with the total score 249 points shows the worst ecological component of sustainable development, Donetsk region with the total score 214 points on 6th place, Sumy region with the total score 207 points on 5th place, Zaporizhzhia region with the total score 204 points on 4th place, Luhansk region with the total score 195 points on 3rd place, Poltava region with the total score 173 points on 2nd place, and the leader is Dnipropetrovsk region with the total score 163 points.

2.5. Consolidated ranking of Ukrainian old industrial regions according to the ranks of the components of sustainable development security

The consolidated sustainable development security ranking of old industrial regions in Ukraine includes partial ratings (ranks) of economic, social and environmental components of sustainable development security.

Figure 2.4 shows the results of the Ukrainian old industrial regions ranking according to the ranks of sustainable development security components at the beginning of 2011–2020.

Consequently, according to the data shown in Figure 2.4, the Dnipropetrovsk region was the unqualified leader in the state of all components of sustainable development security during the study period. The second place was occupied by the state of security of sustainable development in the Poltava region, as the state of the environmental component was in second place, economic in third place and social in fourth place.

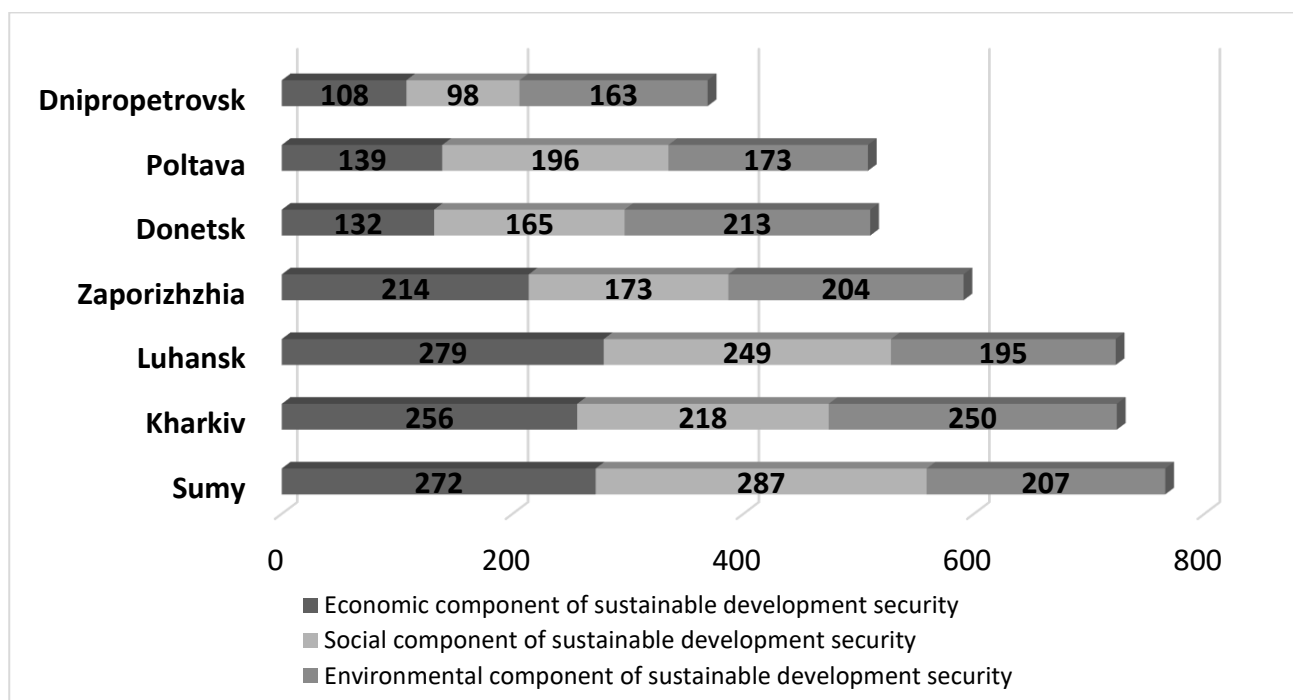


Figure 2.4. Consolidated ranking of Ukrainian old industrial regions by the components of sustainable development security

Source: Generated and calculated from data in Tables 2.2, 2.4 and 2.6.

Security condition of sustainable development in Donetsk region is rated third because according to economic and social constituent parts the

region took the second place, but according to ecological constituent parts it took the sixth place. Zaporizhzhia region is ranked fourth in the composite rating of Ukrainian old industrial regions according to the component of sustainable development security, because according to economic and ecological component the region was in the fourth place, but according to social component it was in the third place. The fifth place is given to the security of sustainable development of Kharkiv region, whose economic and social components have been estimated at the fifth place, and the environmental component at the last seventh place. Luhansk region in the consolidated rating of Ukrainian old industrial regions according to the component of sustainable development security took the penultimate sixth place because of the worst result on the economic component, the penultimate result on the social component and the third result on the environmental component. The outsider among old industrial regions in the condition of sustainable development security is Sumy region, which was in fifth place in the environmental component, in the economic component in sixth place, and in the social component in the last seventh place.

Thus, the improved and tested methodological approach of the sum of places in ranking the security of sustainable development of Ukrainian old industrial regions has shown its ease of use, accuracy in calculations and universality of application in any regional comparisons. It allows ranking the regions on the basis of official statistical data with high reliability.

Conclusion. Thus, in the course of developing a methodological framework for rating the sustainable development security in old industrial regions, its methodological support has been improved by introducing the sum of the places method for annual indicator values over 10 years. The expediency of distinguishing the economic, social and environmental components of sustainable development security of old industrial regions and proposed evaluation indicators for each of the components has been substantiated. The ranking of Ukrainian old industrial regions for each of the three components of sustainable development security has been carried out. In doing so, the ranking of the economic component is realised by GRP per person per year, the annual industrial production index, the annual capital investment per enterprise, the annual sales volume per 1 enterprise, and the annual productivity of 1 employee. The ranking of the social component is realised by the average monthly salary of a full-time employee, the annual unemployment rate in the region for the year according to ILO methodology, wage arrears per employee per year, the

annual cash income per person, the annual labour costs per enterprise. The ranking of the environmental component has been realised by the capital investment in environmental protection per enterprise per year, current environmental protection expenditure per enterprise per year, the annual air pollutant emissions from stationary emission sources per person, the annual air emissions of carbon dioxide from stationary sources of emissions per person, the annual volume of waste disposed of per person per year.

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Chapter III

EVALUATION OF THE CULTURAL SPHERE BUDGETARY FINANCING AT THE SUBNATIONAL LEVEL IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT IN UKRAINE

Marianna Kichurchak

Doctor of Science (Economics), Professor

Professor at the Department of Economy of Ukraine

Ivan Franko National University of Lviv, Lviv, Ukraine

e-mail: Marianna.Kichurchak@lnu.edu.ua

ORCID ID: 0000-0002-1927-5704

Introduction. One of the components of the sustainable economic development strategy of Ukraine is the reform of the state policy in the cultural sphere (CS). The implementation of a set of measures in this direction involves modification of the current model of budgetary financing of cultural activities at the national and subnational levels. In view of this, there is a need to evaluate the budgeting situation of the CS in a regional context and identify its peculiarities in the context of modern requirements that arose in connection with the realization of the sustainable development strategy of the Ukrainian economy. This involves the formation of scientific and methodological approaches to assessing the budgetary financing of the CS at the subnational level from the point of view of changing the imperative of Ukraine's development.

Literature review. The special theory-methodological and practical problems concerning to the character of the CS governmental budgeting have investigated by the cohort of Ukrainian and foreign scientists-economists. Peculiarities of financing regional cultural programs from the point of view of investing were identified by O. Golovchenko and M. Golovchenko [1, p. 110–115]; the main regularities of the development of financial relations in the CS were determined by I. Molchanov [2, p. 122–130]; the budgetary financing situation in the context of the development of social infrastructure of Ukraine was analysed by V. Novikov [3, p. 57–65]; institutional principles of financial providing for the CS taking into account intergovernmental were worked out by Yu. Petrushenko [4, p. 4–6]; conditions of reforming the existing model of the CS financial providing were characterized by V. Tropina [5, p. 219–221]; key factors which affect the CS funding from local budgets were identified by M. Kichurchak [6,

p. 235–236]; the typology of financing the CS in foreign countries was carried out by M. Chizhikov [7, p. 90–91].

Due to the improvement of the state regulation for the CS development in the region O. Yevseyeva has formed theoretical and methodological approaches to the development of socio-cultural partnership [8, p. 24–27]; in terms of strengthening the influence of the socio-humanitarian sphere on ensuring the implementation of the sustainable development strategy V. Kutsenko has substantiated the scientific principles of its modernization [9, p. 90–91]; V. Muzychuk has structured the modernization potential of this sphere in order to increase the effectiveness of the mechanisms of the CS state financing [10, p. 195–247]; B. Sorochkin and A. Rubinstein have determined factors of enhancing the cultural activities [11, p. 19–20, 35–38]; K. Nabuko has specified the main directions of the decentralization as a significant component of cultural policy [12, p. 120–134].

In EU countries, from the standpoint of sustainable development, they form effective financial instruments to stimulate cultural activities, which involve direct and indirect state support of this sphere, decentralization of cultural policy measures [13, p. 3; 9, 14–27]. Innovative is the fact that the peculiarities of the CS financing on systemic principles began to be represented in European statistics [14]. From the theoretical and methodological point of view D. Trosby raised the question of the role and place of cultural capital in ensuring sustainable development [15]. Available researches of the CS financing on macro- and regional levels, the instituting of national models of cultural policy undoubtedly have the scientific value. However, it is appropriate to step up scientific investigations aimed at developing a comprehensive approach to the disclosure of specific budgetary support of the CS of Ukraine in the regional context in view of the sustainable development strategy.

The purpose is to determine the peculiarities of governmental budgeting of the CS at the subnational level and to ground practical recommendations for improving its financing in the context of implementing the sustainable development strategy of the Ukrainian economy. To do this, we use the following scientific methodological approach: we evaluate the dynamics of changes in the expenditures of local budgets (LB) on culture and arts (C&A), structure the factors that influence on the subnational budgeting of this sphere, by factor analysis and factor ranking, the determination of correlation-regressive dependencies.

Results. In 2003–2019, the budgetary financing of the C&A of Ukraine at the subnational level showed mixed ambiguity (Table 3.1). In 2003–2013, in the allocation of the consolidated budget (CB) on the cultural and physical development there was the trend to greater fiscal decentralization, which caused the transfer from the national to subnational level of assignment for this sphere, in 2014–2015 – a weak reverse trend, in 2016–2019 – resumption of the fiscal decentralization process in the CS. The fact that in 2003–2019 there is a wavelike increase in the share of the LB expenditures on the C&A in the structure of the CB and LB expenditures. In the period under review, the LB expenditures on the C&A are increased per capita.

Table 3.1. Tendency of the local budgets’ expenditures on the culture and art in Ukraine*

Indicator	2003	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
CB expenditures allocation on cultural and physical development, % CB**	SB	30	31.2	37	36.9	32.1	35	36.9	38.6	44.8	35.6	40.2	37.4	35.2	32.5	34.9	31.6
	LB	70	68.8	63	63.1	67.9	65	63.1	61.4	55.2	64.4	59.8	62.6	64.8	67.5	65.1	68.4
LBE for C&A, % CB expenditures	1.37	1.43	1.3	1.31	1.4	1.45	1.5	1.70	1.67	1.65	1.69	1.74	1.78	2.30	2.32	2.29	
LBE for C&A, % LBE	3.21	3.46	3.23	3.12	3.34	3.76	3.94	3.81	3.75	4.01	4.13	3.35	3.26	3.31	3.31	3.81	
LBE for C&A, % GDP	0.44	0.42	0.45	0.45	0.49	0.56	0.58	0.53	0.57	0.58	0.59	0.48	0.48	0.55	0.53	0.54	
Elasticity of LBE for C&A to GDP	2.94	14.6	4.42	4.25	18.37	-0.68	5.65	1.79	105.6	AE***	-0.88	-0.14	8.69	14.88	4.35	3.89	
Growth rate of LBE for C&A, % to p.y.	131.4	139.4	132.3	133.6	142.3	110	123.2	109.3	121.1	105.7	105.8	101.4	120.9	137.7	114.8	114.3	
Surplus of the growth rate of LBE for C&A above CPI, % to p.y.	26.2	25.9	20.7	17.0	20.0	-2.3	14.0	4.7	21.3	5.2	-19.1	-41.9	8.5	24.0	5.0	10.2	
LBE for C&A, UAH per capita	22.9	39.6	52.7	70.8	101.2	111.8	138.3	151.6	183.9	194.9	218.2	222.1	269.6	387.9	448.0	515.1	
Structure changes Index of LBE for C&A	1.08	1.05	0.93	0.97	1.07	1.12	1.05	0.97	0.99	1.07	1.03	0.81	0.97	1.02	1.00	1.15	

* – cumulatively on the local budgets. ** consolidated budget – CB; SB – state budget; LBE – local budget expenditures; C&A – culture and art; p.y. – previous year. ***AE – absolute elasticity. “Budgets of Ukraine 2002–2019” (2003–2020), The State Statistics Service of Ukraine (2021).

Moreover, an increase in the corresponding volumes of the LB expenditures is faster than the growth of the CPI (except for 2009, 2014–2015). If by 2014 the share of the LB expenditures on the C&A in GDP was gradually increased, then in 2015–2016 it was reduced and fixed at 0.48 % of GDP, in 2017–2019 it was built up. This indicates that the CS is sensitive to the current socio-economic situation in Ukraine, as the elasticity of the LB expenditures on the C&A mainly exceeds 1.0. In the years of the deployment of crisis phenomena in the national economy, this causes tensions in allocating the budgetary expenditures at the subnational level to this sphere. The dynamics of the change index in the structure of the LB expenditures on the C&A in 2003–2019 has a sinusoidal character, which makes it possible to consider such a trend as evidence of the unreliability of approaches to the formation of cultural policy measures in the context of regions.

From the point of view of the sustainable development strategy, this points to the blurriness of priorities, principles and directions of the national policy implementation in the CS at the subnational level. However, in the medium term, it is appropriate to expect positive changes in the CS budgetary financing by the regions, due to the adoption of the national agenda (“Long-term strategy for Ukrainian culture – reform strategy” [16]) and the participation in the “Creative Europe” programme [17]. It should be noted that in the EU countries from 2002 to 2019, the LB expenditures on cultural and physical development remain practically unchanged, on average they make up 0.6–0.7 % of GDP, while in Poland, accordingly, 0.8–1.1 % GDP [18]. Compared to Ukraine (see Table 3.1), they are higher, which testifies to the importance of the government support of this sphere at the regional level in the EU countries, the basis for which is the need to preserve the national cultural identity, cultural and historical values. If we take into account the possibility of adapting the experience of the EU budgetary financing of the CS at the subnational level, it is important for Ukraine to ensure sustainability of approaches to allocation of the budgetary expenditures for cultural and physical development in terms of the state and regions, decentralized governing of the CS and clearly delineate local strategic objectives development of culture. Taking into account the practice of the EU countries and the sustainable development strategy for Ukraine, it is important to continue the reorientation of the CS budgetary financing to the subnational level in order to ensure positive changes in the socio-economic development of our country’s regions.

To determine the impact of the socio-economic factors on the volume of the LB expenditures on the C&A by factor analysis means, we use the official statistics of Ukraine for 2019, for example: Y – the LB expenditures on the C&A by region, mln UAH; X_1 – resident population by region, persons; X_2 – gross regional product, mln UAH; X_3 – the employed population of worked age by regions, thsd people; X_4 – disposable population income by region, mln UAH; X_5 – number of enterprises by regions, units; X_6 – volume of products (goods, services) sold by the enterprises by region, mln UAH; X_7 – volume of construction works accomplished by region, mln UAH; X_8 – capital investments by region, mln UAH; X_9 – tax revenues to the LB by region, mln UAH; X_{10} – deficit/surplus of the LB by regions, mln UAH; X_{11} – the LB revenues with intergovernmental transfers (IGT) by regions, mln UAH; X_{12} – the IGT by region, mln UAH; X_{13} – the LB revenues without IGT by regions, mln UAH; X_{14} – capital investments on environmental protection by regions, thsd UAH; X_{15} – current expenditures on environmental protection by region, thsd UAH; X_{16} – environmental protection expenditures, by region, thsd UAH. As a grouping variable we take y , variables of analysis – X_1 – X_{16} . Further, we carry out the factor analysis using the principal component method to distinguish the types of factors that are important for them when allocating the LB expenditures on the C&A. Taking as a base the recommendations on formation of a “simple structure” of the factor solution and taking into account the main components not less than 90 % of the explained variation, we use the first four factors for analysis (97.7 % of total variation). The eigen values of the correlation matrix for the first factor are 11.20; the second – 2.54; the third – 1,07; fourth – 0.50; cumulatively – 15.31. Every one of the variables X_1 – X_{16} is counted to one of the factors based on the definition of the maximum value taken by the modulus in the corresponding column of the factor coordinates matrix (Table 3.2).

The first factor is the variables X_1 – X_9 , X_{11} – X_{13} , X_{15} – X_{16} , which define the general conditions of the region socio-economic development, forming of the LB revenues and expenditures on environmental protection; the second factor – the variable X_{10} , which describes the deficit/surplus of the LB by regions; the third factor – the variable X_{14} , which identifies capital investments on environmental protection by regions.

This can be summarized as follows: the first factor relates to the existing socio-economic environment in terms of regions, the situation of the LB revenue part and expenditures on environmental protection; the second

factor – situation with the volume of deficit/surplus of the LB by regions; the third factor – current state of capital investments on environmental protection by regions; the fourth factor – situational, accidental and unpredictable events.

Table 3.2. The factor coordinates matrix of variables based on correlations*

Indicator	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8
Factor 1	-0.705	-0.967	-0.887	-0.876	-0.932	-0.908	-0.962	-0.923
Factor 2	-0.491	0.231	-0.310	0.390	0.329	0.385	0.136	0.336
Factor 3	-0.172	0.004	-0.275	0.034	-0.039	0.050	-0.143	0.121
Factor 4	0.122	0.028	0.016	-0.023	0.082	0.022	0.091	0.057
Indicator	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}
Factor 1	-0.996	-0.268	-0.980	-0.724	-0.996	-0.426	-0.726	-0.702
Factor 2	0.007	0.865	-0.119	-0.485	0.013	-0.470	-0.376	-0.501
Factor 3	-0.049	0.272	-0.133	-0.335	-0.055	0.675	0.172	0.482
Factor 4	-0.015	-0.099	0.013	0.046	0.000	0.363	-0.546	-0.152

* data for 2019.

Source: Calculated based on “Budgets of Ukraine 2002–2019” (2003–2020), The State Statistics Service of Ukraine (2021).

Moreover, the coordinate values for the variables belonging to the first factor are negative. This indicates the existence of an inverse relationship between the budgetary financing of the CS and the current socio-economic situation in the regions of the country, the existing redistributive intergovernmental relations and peculiarities of financing measures for environmental protection, which to a certain extent confirms the tendencies to perceive this sphere as a secondary measure for regional policy. Taking into account the implementation of the sustainable development strategy, the improvement of the conditions of the CS budgeting in the context of the regions of Ukraine implies consideration of the influence of such factors as: demographic situation, employment and income level of the population, economic activity of business entities, fiscal capacity of the LB and the practice of financial resources redistribution through the IGT, allocation of funds due to the improvement of the environmental situation.

Our research interest is the definition of the first priority of impact factors on the LB expenditures on the C&A in the regions of Ukraine (Table 3.3). This process is iterative and involves ranking the regions by the influence power of each of the factors on the LB expenditures on the C&A (taken by modulus). According to this, we highlight 8 regions in which the first factor for the CS budgetary financing is of great importance; 7 regions

for which the impact of the second factor is important; 5 regions, in which the third factor mainly manifests itself; 5 regions in which the fourth factor is dominant.

Table 3.3. The factors values matrix based on correlations and their ranks for Ukrainian regions*

Region	Factor 1		Factor 2		Factor 3		Factor 4	
	V	R	V	R	V	R	V	R
Vinnitsia region	0.144	4	0.456	1	0.160	3	-0.182	2
Volyn region	0.582	4	-2.150	2	0.685	3	-3.174	1
Dnipropetrovsk region	-2.048	1	-1.951	2	0.316	4	0.912	3
Donetsk region	-0.369	2	0.579	1	0.016	4	-0.161	3
Zhytomyr region	0.441	1	0.176	3	-0.178	2	-0.052	4
Zakarpattia region	0.544	3	-1.062	1	0.138	4	-0.870	2
Zaporizhzhia region	-0.122	2	-0.070	3	-0.253	1	-0.047	4
Ivano-Frankivsk region	0.376	4	-1.177	3	3.272	1	2.738	2
Kyiv region	-0.677	2	0.704	1	0.428	3	-0.243	4
Kirovohrad region	0.616	1	-0.061	3	0.259	2	-0.020	4
Luhansk region	0.832	3	-0.704	4	-1.888	1	1.025	2
Lviv region	-0.503	2	0.451	3	0.333	4	-0.534	1
Mykolaiv region	0.412	4	-0.661	3	-2.081	1	1.242	2
Odesa region	-0.502	2	0.315	3	0.235	4	-0.658	1
Poltava region	0.034	4	0.216	2	-0.054	3	-0.269	1
Rivne region	0.516	2	0.485	3	0.320	4	-0.538	1
Sumy region	0.532	1	0.422	2	0.104	3	-0.005	4
Ternopil region	0.669	4	-0.994	2	-1.847	1	0.798	3
Kharkiv region	-0.710	1	0.613	2	0.238	3	-0.134	4
Kherson region	0.613	1	0.143	3	-0.210	2	0.040	4
Khmelnitskyi region	0.455	2	0.466	1	0.046	4	-0.183	3
Cherkasy region	0.435	1	0.377	2	0.236	3	-0.126	4
Chernivtsi region	0.777	1	0.476	2	0.261	4	-0.278	3
Chernihiv region	0.591	2	2.883	1	0.166	4	0.356	3
Kyiv city	-3.638	2	4.595	1	0.172	4	0.252	3

* data for 2019; V – value; R – rank. “Budgets of Ukraine 2002–2019” (2003–2020), The State Statistics Service of Ukraine (2021).

Since the second, third and fourth factors determine special conditions and situational, accidental and unpredictable events, 17 regions of Ukraine fall into the cumulative impact of this group of factors. This points to the relative weakness of the CS position in the regional policy system and the conjuncture of actions in determining the LB expenditures on the C&A, adversely affecting the implementation of the sustainable development

strategy in Ukraine. Because it does not allow to ensure the integrity of the cultural environment and change the system of human values.

Therefore, in view of the state policy reform in the CS, it is appropriate to create proper conditions for reducing the dependence of this sphere on the conjunctive measures action of the local authority. We believe that a change in approaches to shaping the priorities of the state policy in this sphere is just starting.

On the basis of the specific dependent variable Y and independent variables X_1 – X_{16} we specify the types of factors that impact on the LB expenditures on the C&A using multiple regression analysis. To construct the multiple regression model, we apply a stepwise regressive method. Initially, we calculated the correlation coefficients of the factor characteristics X_1 – X_{16} with the resulting variable Y and their ranking was made. Then, at each stage, the sample regression function was constructed, a change in the coefficient of determination R^2 was analysed, the partial F -criterion were calculated and compared with the determined critical value, depending on the inspection results, the explanatory variable is either left or removed from the model. As a result, we obtained such multiple regression model (Table 3.4).

Table 3.4. The sample regression function and reporting regression results

Variables	Intercept and slope parameters	Standard error*	t -statistic	Confidence interval, 95 %		
				Low-level	Low-level	
Y -meet	–88.5290	31.7889	–2.7849	–151.4709	–25.5870	
variable X_1	0.000093	0.000016	5.8116	0.000061	0.000124	
variable X_4	–0.0055	0.0007	–7.5571	–0.0070	–0.0041	
variable X_5	0.0271	0.0025	10.6382	0.0221	0.0322	
variable X_{12}	0.0532	0.0043	12.2970	0.0446	0.0618	
Regression statistics		Analysis of variance				
R	0.9112		df	SS	MS	F
R^2	0.9148	Regression	4	4468889	1117222	187.9453
Normalized R^2	0.9869	Residue	70	416108	5944	
Standard error**	77.0999	Total	74	4884997		

* the slope parameters and intercept; ** the regression. “Budgets of Ukraine 2002–2019” (2003–2020), The State Statistics Service of Ukraine (2021).

The model is adequate according to Fisher's test ($F_{cr}(4; 70; 0.95)=2.45$) and statistically significant for the Student's t -test ($t_{cr}(0.05; 70)=1.980$). In the specific function and there is no autocorrelation in the residuals ($DW=1.656$; 1 % critical value ($k=4$, $n-k-1=70$) $d_l=1.343$; $d_u=1.578$; $d_u \leq DW < 4-d_u$).

With a probability of 91.48 % (Table 3.4), the change in LB expenditures on the C&A by region of Ukraine (Y , mln UAH) can be explained by changes in the number of resident population by region (X_1), the amount of disposable population income by region disposable income by region (X_4), the number of enterprises by region (X_5); the volume of the IGT by region (X_{12}). It is possible to economically interpret the multiple regression model as follows: when the resident population by region grow for 1,000 people, the average LB expenditures on the C&A by region will increase by 0.093 mln UAH; as the disposable population income grows up for 1 mln UAH, the average amount of the LB expenditures on the C&A will reduced to 0.0055 mln UAH; an increase in the number of enterprises by 1 unit will lead to an average increase in the LB expenditures on the C&A by 0.0271 mln UAH; if the volume of the IGT by region build up for 1 mln UAH, the average amount of the LB expenditures on the C&A will increase by 0.0532 mln UAH.

Conclusions. So, from the standpoint of the sustainable development, the situation of the CS budgetary financing of Ukraine at the subnational level indicates the uncertainty of the priorities in the national policy reform in this sphere. It is appropriate to use the following scientific approach to evaluate trends in budgetary funding for the CS at the subnational level: to specify the major factors that affect the amount of LB expenditures on the C&A by region; to carry out factor analysis by the method of principal components for structuring factors and their ranking by region; to identify a sample regression function in order to determine the peculiarities of the impact of defined factors on LB expenditures on the C&A in the regions of Ukraine. According to the results of the factor analysis by the principal components method and correlation-regressive analysis the LB expenditures on the C&A mainly were influenced by situational, random and unpredictable events, economic relations in the allocation of the IGT, existing social and economic situation in the regions and regional peculiarities in financing of environmental protection measures. In our point of view, the improvement of budgetary funding for the CS in Ukraine at the subnational level should be based on a clear definition of approaches to the

allocation of budgetary resources to this sphere, be related to strengthening the fiscal capacity of local budgets, measures concerning stimulation of business activity and improvement of the social and demographic situation. Prospects for further research are related to the social and economic factors evaluation of the integration of the national CS into the EU.

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Chapter IV
**FINANCIAL POTENTIAL OF THE INSURANCE MARKET:
THEORETICAL AND PRACTICAL ASPECTS OF
DEVELOPMENT**

Liudmyla Chvertko

Candidate of Sciences (Economics), Associate Professor
Associate Professor at the Department of Finance,
Accounting and Economic Security
Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine
E-mail: chvertko.l@udpu.edu.ua

ORCID ID: 0000-0003-2788-6991

Yuliia Melnychuk

Candidate of Sciences (Economics), Associate Professor
Associate Professor at the Department of Finance,
Accounting and Economic Security
Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine
E-mail: melnychuk.y@udpu.edu.ua

ORCID ID: 0000-0003-4149-0205

Introduction. The insurance market in each country is an indicator of the economy and sustainable business development. When the stability and well-being of a country reaches a certain level, both workers and employers begin to think about their future, to ensure their old age, to finance the risks that exist in everyone's life, property insurance, and so on. The rapid aging of the world's population is depleting the financial capacity of citizens, leading to low levels of health care and pensions. Insurance makes it possible to provide daily human protection – both today and in the future. This leads to two effects – the state has additional long-term funds that provide financing for investment projects, which contributes to the further development of the country's economy; citizens receive insurance protection, savings for future periods, and thus – protection of human interests.

The insurance market in Ukraine is at the stage of constant formation. The main obstacles and problems of its development are the unstable socio-economic situation at the present stage and the peculiarity of the cultural and historical traditions of Ukrainian society, the problems of the COVID–19

pandemic and unstable economic development. Therefore, even with significant changes in the legal framework, the insurance market is quite weak in the economy and requires changes in government regulation, namely: strengthening legal and economic mechanisms to protect the interests of the insured and encourage the public and employers to conclude contracts; improvement of investment and credit legislation, directions and spheres of activity of the insurer.

Literature review. A significant scientific contribution to the development of insurance was made by domestic scientists who studied the problems of insurance in Ukraine A. Alexandrova, M. Alexandrova, E. Andrievsky, V. Bazylevych, K. Bazylevych, V. Baranova, N. Vnukova, K. Vobly, I. Gabidulin, O. Gamankova, V. Hetman, L. Gorbach, N. Dolgosheya, O. Zaletov, O. Zaruba, M. Klapkiv, O. Kneisler, M. Malovany, Yu. Melnychuk, D. Martsenishin, S. Osadets, A. Tarkutsyak, I. Tkachuk, L. Chvertko, T. Fedorov, J. Shumelda, V. Furman and many others. Foreign scientists V. Garkusha, V. Gorin, J. Monkievich, T. Nazloyan, M. Piccard, M. Popov, V. Reicher, T. Sangovskiejo, B. Serbinovsky, V. Tulinov, V. Shakhov deal with insurance issues. R. Yuldashev and others.

Results. However, the problems of insurance of the population of Ukraine, insurance of their property and financial interests remain insufficiently studied. Insurance needs to be improved, which necessitated their further study. Insufficient level of theoretical developments and the need to solve problems of improving the legal framework of insurance, intensification of investment activities of the insurer, balancing the interests of the insurer and the insured determine the relevance of the research topic.

4.1. Theoretical foundations of insurance business

In all countries with developed market economies, insurance is the most important element of the economic and social system of the state and allows to solve economic and social problems of society, to meet the needs of legal entities and individuals in providing sustainable guarantees of property interests related to various economic activities. maintaining a certain level of human well-being and health.

The formation of a market economy in Ukraine, the emergence of new areas of management for all subjects of market relations necessitates the theoretical clarification of the essence of insurance, the search for new

methods of insurance protection and compensation for losses of all market participants.

In many countries, insurance is seen as a powerful factor in stabilizing the economy, investment opportunities as the most prestigious field of activity, in which, for example, in the EU, the number of employees exceeds one million and this figure increases by two percent annually [1].

The concept of “insurance” in the language of most European countries means confidence, reliability, well-being. In English, “insurance” means “confident”; the one who made sure; faithful, infallible; safe, reliable; unconditional. In Spanish, “Seguro” means confidence. In Italian, “assicurare” means to provide, guarantee, assure, promise [2].

The explanatory dictionary of the Ukrainian language defines the word “insurance” as “to protect someone from something undesirable, unpleasant” [3, p. 962].

The Russian Explanatory Dictionary explains “insurance” as the prevention of material loss by paying contributions to an institution that undertakes to reimburse possible damage incurred in special cases [4].

The Law of Ukraine “On Insurance” defines insurance as a type of civil law relations to protect the property interests of citizens and legal entities in the event of certain events (insured events), defined by the insurance contract or applicable law, at the expense of funds formed by citizens and legal entities of insurance payments (insurance premiums, insurance premiums) and income from the placement of funds of these funds [5].

In the legislation of countries with developed insurance, legislators generally do not interpret general concepts, considering them a field of science rather than practical legislation. For example, the Law of the Republic of Poland “On Insurance Activity” does not define insurance.

Modern insurance literature, economic dictionaries and encyclopedias offer more than 100 different definitions of insurance. We have systematized some definitions in the following approaches:

- in terms of the interests of the insurer and the type of activity;
- from the point of view of the insured (insured);
- in terms of economic relations between the subjects of insurance (as an economic category).

From the point of view of the insurer’s interests and type of activity, insurance is considered by domestic and foreign scholars in the context of

general methods of fund creation, indemnification, risk operations, type of economic activity, etc.

According to Professor V. D. Bazylevych, the essential characteristic of insurance protection provided by the method of insurance is its social and public orientation, as the funds accumulated by the insurer are used to form the insurance fund and are used to protect only those participants who suffered [6, p. 50].

Considering the essence of insurance from the standpoint of risk management, O. V. Kneisler notes: “insurance as a method of risk neutralization in all spheres of life and economic activity provides mobilization of a significant amount of capital, which is a significant source of compensation for possible financial losses in case of risk events” [7, p. 125].

As you know, the main subject of insurance coverage in the modern world are insurers. However, the scientific works of researchers in the theory and practice of insurance emphasize the importance of the state in the implementation of insurance protection. In particular, O. M. Ostapenko emphasizes that the state acts as a guarantor of insurance protection and one of the main subjects of insurance relations [8, p. 83].

Thus, the economist T. A. Fedorova gives a modern definition that “insurance is the creation of trust funds of funds intended to compensate for losses incurred as a result of unexpected, accidental events” [9, p. 29]. This definition, in our opinion, does not cover the completeness of the concept of insurance, but only reflects the material part of the process.

Shakhov V. V. interprets insurance as “a way to compensate for losses incurred by an individual or legal entity by distributing them among many persons” [10, p. 14]. Based on this interpretation, insurance is an expression of the method or action of protection from adverse circumstances; means of protection against losses and damages.

Scientist Monkievich T. I. and other Polish economists, among whom insurance practices predominate, define it as the most common method, a combination of known methods of risk transactions, which consists in the transfer of risk, its layout and control over it [11, p. 50]. This interpretation reduces insurance to a single concept of “risk”, which reflects more the concept of “risky transactions” than “insurance”.

T. Sangovskievsky and others give a broad definition of insurance, considering it from different points of view. From the point of view of management, insurance is considered as a method of risk management, from

the economic point of view – as an economic tool that provides compensation for future property needs caused by individual events by random events, by allocating costs to many entities at risk; from the organizational and financial point of view – as a form of organization of the centralized insurance fund from decentralized sources; from a legal point of view – as a legal relationship that binds the insurer and the insured, assigning them specific responsibilities [12, p. 57–58]. This definition is only a financial reflection of the concept of “insurance”, and does not clarify the essence of the insurer and the insured, their relationship.

From the point of view of the insured, insurance is considered as a direction of satisfaction of interests of the insured person at occurrence of certain circumstances.

So, the economist V. D. Bazylevych believes that “insurance in a market economy is based on the previous creation of insurance funds for insurance premiums and compensation for victims, i.e. insurance, in his opinion, is a way to protect the property interests of citizens in a market economy. Everyone should know how, on the other hand, insurance business is a profitable type of entrepreneurship, which is just beginning to develop in Ukraine. The regularity here is as follows: the more subjects covered by insurance, the less it costs an individual” [13, p. 8]. The scientist puts a person in the basis of insurance, because meeting the needs of the insured and is one of the main areas of insurance.

K. G. Vobly, a Russian scientist, considers insurance as “a type of economic activity based on solidarity and predictability, the purpose of which is to cover future shortages or needs caused by the occurrence of an accidental insured event” [14, p. 30–32]. In our opinion, these views are built on the interests of the insured, but insurance is also a type of activity.

Dolgosheya N. O. defines “insurance” as “a system of measures organized by special insurance state and non-state bodies to protect the property interests of citizens and organizations and institutions (individuals and legal entities) in the event of certain events, unforeseen negative circumstances (insurance cases) due to specially created funds” [15, p. 14]. This interpretation does not confirm the economic relations that arise during insurance. From the point of view of economic relations between the subjects of insurance, the concept of “insurance” covers the positions of the insurer and the insured and other participants in the insurance market.

A number of scientists, such as N. Vnukova, V. Reicher, V. Shakhov believe that insurance is associated with economic relations in the process

of creating and using insurance funds [16]–[18], This interpretation is not taken into account economic interests of the insurer, although insurance ensures the implementation of all subjects of insurance relations.

Osadets S. S. gives the following definition: “insurance – a bilateral economic relationship, which consists in the fact that the insured, paying a cash contribution, provides himself (or a third party), in the event of an event due to contract or law, the amount of payment by the insurer the scope of liability and to ensure it replenishes and effectively allocates reserves, takes preventive measures to reduce risk, and if necessary, reinsures part of its liability” [19, p. 24]. This interpretation clarifies the process of insurance transactions and reflects the movement of funds from their payment to receipt, but does not reflect the purpose of insurance by the insurer and the insured.

According to Horbach L. M.: “the economic nature of the relationship that arises and reflects the content of insurance is associated with the transfer of interested persons, for a fee to another (legal entity), usually an insurance company (commercial organization or mutual insurance company) risk possible damage and further compensation of actual losses in the event of an insured event, such a person, the participants of the insurance” [20, p. 7]. That is, this interpretation does not reflect the full essence of the relationship, but only a brief reflection of them.

As an economic category of “insurance” is considered by scholars in a broad sense, including all possible aspects of this category. Insurance is aimed at creating conditions and sources of compensation, primarily for extraordinary losses incurred as a result of insured events. As the development of technological and economic progress increases the risk nature of production, due to the growing man-made load on the environment, the contradictions between human activities and environmental potential, which increasingly loses the ability to naturally recover. The possibility of technological catastrophes is a reality, and hence the need to compensate for such losses becomes a mandatory factor in production. Therefore, taking into account the insurance risk and protective measures against it form the content of the economic category of insurance.

The material basis of insurance as an economic category, says Zaruba O. D., is “permanent provision of part of the gross national product to prevent and compensate for material losses from the insured event, i.e. the formation of the insurance fund. Based on this, in the economic system of society material embodiment in insurance stocks, which include the

accumulation of means of labor, objects of labor, products of personal consumption and monetary insurance funds” [21, p. 5]. This interpretation reduces the concept of “insurance” to a source of increasing means and objects of labor, products, etc., and does not reflect its essence in the direction of meeting human needs.

It is worth agreeing with Kneisler O. V. that “insurance as an economic category – a set of redistributive relations that arise between two entities – the insurer and the insured – on the formation of funds by paying the latter insurance premiums to protect property interests in case occurrence of insurance cases and replenishment of these funds in the process of effective placement of temporarily free funds on the stock market” [22].

The economic essence of insurance, according to Alexandrova A. A., is determined by two main mechanisms inherent in insurance:

- the effect of rare events, when the insured event during a certain period of time does not occur in all participants in the formation of the insurance fund;

- the effect of accumulation, when the insurance premium is always less than the insurance payment, because insurance payments are not issued simultaneously, which is taken into account through the discount factor on the investment income of the insurance company [23, p. 24].

Insurance always involves the accumulation of funds of many persons (insurance participants) in special trust funds, which are managed by a legal entity entitled to do so by law or in the manner prescribed by law, and are used solely to compensate victims of accidents. Therefore, the insurance relationship is about the conditions of formation and use of the target insurance fund [24]. Thus, the economic essence of insurance activity, in any field of insurance, is the formation of specialized organizations – insurers of the insurance fund in monetary terms, which is formed on the basis of contributions of policyholders to compensate for losses caused to individual policyholders as a result of insurance insurance or current legislation [25].

Based on the above, we can conclude that insurance as an economic category expresses the system of relations through:

- 1) monetary redistributive relations due to the probability of insured events;

- 2) the distribution of damage between insurance participants – policyholders, which is always closed (this is due to the fact that the accidental nature of the loss entails material or other costs, which usually do

not cover all farms, not the entire territory of a country or region, but only their part, which creates conditions for compensation of losses by distribution of losses of one farm among all insured, and, consequently, – the more participants of insurance, the smaller share in distribution of losses falls on each insured);

3) closed distribution of losses (provides for the return of funds mobilized in the insurance fund (insurance premiums of each insured, contributed to the insurance fund, have only one purpose – compensation for the probable amount of losses in a certain territorial scale and during a certain period, and therefore the entire amount of insurance payments returned in the form of compensation for losses for a certain period in the same territorial scale);

4) redistribution of losses both between territorial units and in time (for effective territorial redistribution of funds of the insurance fund within one year requires a fairly large area and a large number of objects subject to insurance. The distribution of losses over time is random This creates the need to reserve part of the received insurance premiums to create a reserve fund as a source of compensation for losses).

We believe that based on the statements of economists, you can form your own vision of the insurance category.

Thus, insurance, in our opinion, is a system of financial relations between the insurer and the insured to create insurance (money) funds, at the expense of persons interested in protecting their interests, property, health and life in the event of insured events and full or partial compensation these persons from unforeseen events and providing them (or their families) with assistance in the event of insured events by the insurer, which is regulated by the insurance contract.

Because insurance is a system of economic relations, and as any relationship requires the presence of at least two entities. In the insurance business, the insurer and the insured are the main subjects.

The basis of insurance relations is the insured, who is obliged to pay the insurer insurance premium (insurance premium, payment) and the insurer, which undertakes to compensate the insured for the loss or the established amount in the event of a certain event [26].

4.2. Insurance classification

The subjects of insurance are: the insured, the insurer, the insured, insurance agents, insurance brokers. Insurers – financial institutions established in the form of joint-stock, general, limited partnerships, or companies with additional liability, taking into account the features provided by the Law of Ukraine “On Insurance”, which have received a license to conduct insurance activities.

The emergence and specificity of insurance relations, in our opinion, is due to four main features:

- accidental nature of the insured event;
- the extraordinary nature of the damage (damage) in kind, in monetary terms;
- the objective need to prevent and overcome the consequences of the event;
- compensation for material and other losses.

Since the accident in the insurance is accompanied by an inherent risk and has its own characteristics for each case, you should consider the classification of insurance.

In the economic literature there are different classifications of types of insurance. Most often, insurance is classified according to the form of implementation (Figure 4.1).

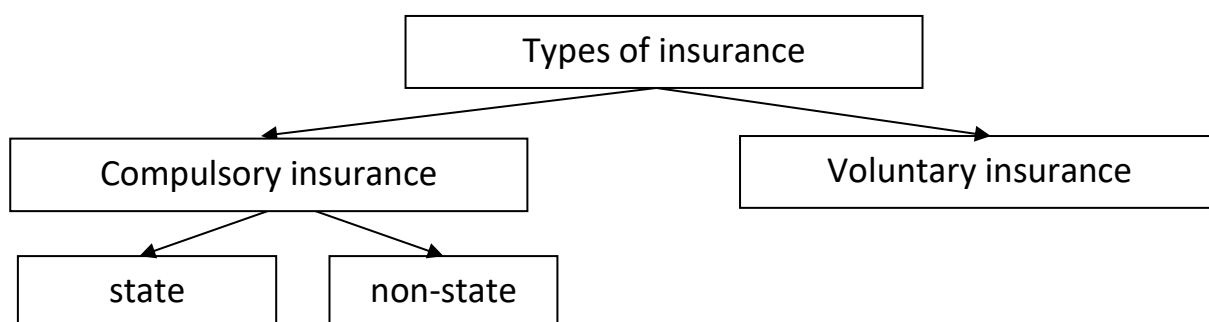


Figure 4.1. Classification of insurance by form of implementation

The Law of Ukraine “On Insurance” as of December 22, 2010 provides for 43 compulsory and 22 voluntary types of insurance. The Cabinet of Ministers of Ukraine establishes the procedure and rules for their implementation, forms of standard contracts, special conditions for obtaining a license, the amount of insurance amounts and maximum

insurance rates, the method of their actuarial calculations for the implementation of compulsory insurance.

Compulsory insurance means that an entity that owns certain types of property or performs certain types of work must insure that property or liability for damages caused by its actions or omissions to a third party.

Voluntary insurance, according to the law, is insurance that is carried out on the basis of a contract between the insured and the insurer [27]. The procedure and general conditions of voluntary insurance are determined by the rules of insurance, which are established by the insurer independently in accordance with the requirements of the Law of Ukraine “On Insurance”. On the basis of this law the specific conditions of insurance which are defined at the conclusion of the insurance contract are established also. One type of voluntary insurance is life insurance.

Voluntary types of insurance are regulated by current legislation and are carried out on the basis of an insurance contract. To conclude contracts and fulfill obligations under it, insurers develop insurance rules in accordance with current legislation and coordinate them with the supervisory authorities for insurance activities. Insurance contracts define specific conditions of insurance, taking into account the characteristics of the objects of insurance.

As the insurance contract defines specific conditions of insurance taking into account features of objects of insurance, the Law of Ukraine “On insurance” defines objects of insurance as property interests which do not contradict the legislation of Ukraine and are connected:

- with the life, health, ability to work and additional pension of the insured or the insured person;
- with the possession, use and disposal of property;
- with compensation by the insured for the damage caused to the person or his property, as well as for the damage caused to the legal entity.

The subject of insurance is life, property, money, material values, liability of various kinds, contractual obligations, including leasing, transport, cargo, other interests of citizens and legal entities [28].

In Ukraine, the following areas of insurance are defined by objects, in contrast to the generally accepted practice: risk insurance; life insurance.

According to the Law of Ukraine “On Insurance”, these areas of insurance are divided into three main areas of insurance (Figure 4.2):

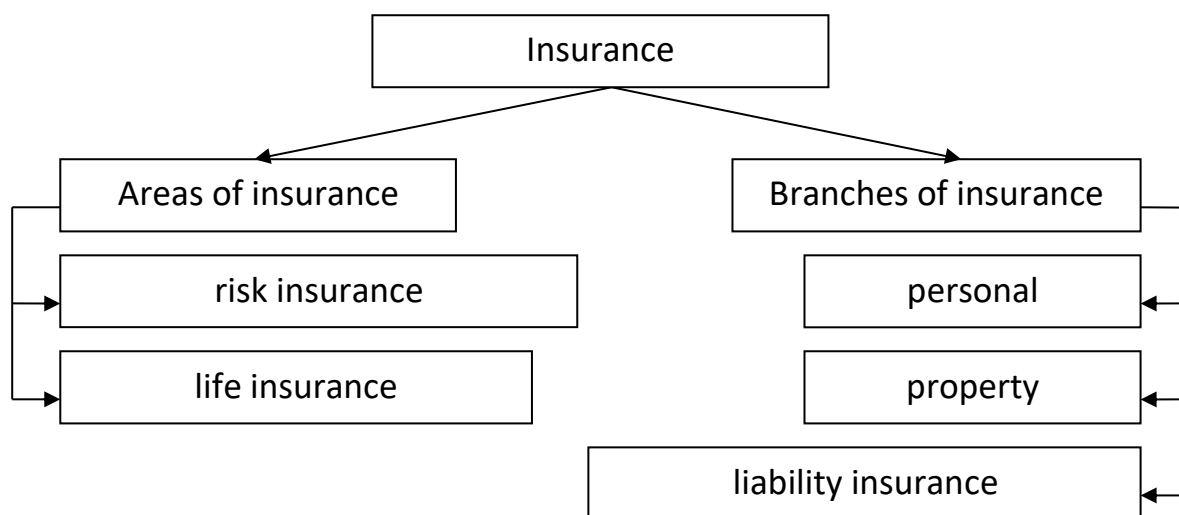


Figure 4.2. Areas and branches of insurance in Ukraine [2]

The objects of insurance may be property interests that do not contradict the current legislation of the state. Therefore, depending on the objects – insurance is divided into personal, property, liability insurance.

Personal – insurance of property interests related to life, health, ability to work and pension of the insured or the insured person. Personal insurance includes: life insurance, accident insurance, health insurance.

Property – insurance of property interests related to the possession, use and disposal of property [29, p. 75]. In property insurance, the objects of insurance are property interests related to the possession, use and disposal of property. Property insurance includes: insurance of land, air, water transport; cargo, other types of property; financial risks.

Liability insurance – related to the indemnification of the insured caused damage to the life of a third party or its property, as well as damage caused to legal entities by their activities or omissions. Liability insurance is a branch of insurance where the object is property interests related to compensation by the insured for damage to a person or his property, as well as damage caused to a legal entity [30, p. 63].

One of the most relevant types of insurance is life insurance, which belongs to the category of personal insurance, so consider in more detail this group of insurance.

4.3. Features of life insurance and insurance of the interests of the population

Personal insurance stipulates that the object of insurance is property interests related to life, health, ability to work and supplementary pension. In personal accident insurance there are: insurance of children and schoolchildren; compulsory passenger insurance; insurance of employees of risky professions (servicemen, customs officers, tax specialists, etc.); individual insurance, etc.

Personal insurance is divided by law into: life insurance; accident insurance; Medical Insurance. In personal life insurance there are: children's insurance; death insurance; rent insurance; pension insurance; medical Insurance; mixed life insurance, etc.

In the late twentieth century, economist Picard M. interprets life insurance as “a contract in which in exchange for payment the insurer undertakes to pay the insured or third parties a certain amount of money (capital or rent) in the event of death of the insured, or in the event of his survival age stipulated in the insurance contract. Given that historical period of formation of life insurance, such a definition is relevant to him, but does not fully reflect modern life insurance”.

The Russian scientist M. Popov believes that “life insurance is a special type of economic activity that creates the provision of one-time or permanent payments” [31]. This interpretation tells us about the end result of insurance, but does not include the economic and social significance of life insurance.

By definition, P. T. Yuldasheva: “life insurance – a type of personal insurance that provides economic protection against damage associated with the death of the insured during the insurance period under a contract under which a certain amount of money is paid in favor of the beneficiary, which is either a family member or company In the case of life insurance, the amount is paid in connection with the death of the person whose life was insured or after the expiration of the prescribed period – depending on what happens earlier” [25]. This definition reflects the risks of life insurance and the conditions of their implementation, but does not formulate economic relations and sources of financial compensation.

Russian scientists V. V. Tulinov and V. S. Gorin believes that “life insurance is insurance that covers the risks associated with the life of the

insured (insured)” [30]. This interpretation is very concise and one-sided reflects life insurance and does not cover the essence of this category.

According to Zaletova O. M.: “life insurance – the most affordable way to manage risks or their consequences in the event of certain events in a person’s life or death. It provides incentives to increase savings, compensation for income losses due to deterioration health or death of a family member, organization of medical care in case of illness or accident” [29]. In addition to the above, savings from life insurance, worldwide, are also used to purchase housing, pay for children’s education, etc., because life insurance is focused on the specific needs of the population, which contributes to the implementation of its life plans.

It is worth agreeing with E. P. Andrievsky that “life insurance is a modified factor of national savings in the narrow sense of the word, but in no case can fit the definition of “property insurance”. Personal insurance should be dominated by an ethical element, and its legal side should be strictly regulated by law” [31].

Life insurance, according to the Law of Ukraine “On Insurance” – a type of personal insurance, which provides for the insurer’s obligation to make an insurance payment under the insurance contract in case of death of the insured person, as well as, if provided by the insurance contract, in case of life expiration of the insurance contract and (or) achievement by the insured person of the age specified in the contract [36]. One of the terms of the life insurance contract may provide for the obligation of the insurer to make an insurance payment in the event of an accident that happened to the insured person and the insured person’s illness, in which case the contract includes basic and additional risks. If, in the event of an insured event, the insurance contract provides for regular consecutive life insurance payments (life pension insurance), it is mandatory to insure the risk of death of the insured person during the period between the insurance contract and the first life insurance payment. The terms of a life insurance contract may provide for the insurer’s obligation to make an insurance payment in the event of an accident to the insured person and the insured person’s illness.

Summarizing the considered interpretations of the concept of “life insurance”, in our opinion, life insurance – a type of material protection of the person (insured, insured) by the insurer in case of accident or illness, as well as the death of the insured person or life, due to insurance contract between the insurer and the insured on the terms of regular insurance

premiums by the insured and payment of the sum insured in the event of insured events – by the insurer.

Life insurance is carried out exclusively on a voluntary basis on the basis of an insurance contract. According to the legislation of Ukraine, life insurance is carried out for a period of at least 3 years [25].

Life insurance is classified by types of capital insurance and annuity insurance. Capital insurance includes insurance during the accumulation process, and rent insurance – the accumulated amounts.

Death insurance provides insurance for one type of risk – “death of the insured person”. The sum insured, in this case, is not received by the insured, but by a person appointed in advance.

In the case of life insurance, the insured event is the risk of “survival of the insured person until the expiration of the insurance contract or until the age specified in the insurance contract”. The sum insured is received by the insured.

Summarizing the considered interpretations of the concept of “life insurance”, in our opinion, life insurance – a type of material protection of the person (insured, insured) by the insurer in case of accident or illness, as well as the death of the insured person or life, due to insurance contract between insurer and insured, on the terms of regular insurance premiums by the insured and payment of the sum insured in the event of insured events – by the insurer.

Mixed types of insurance include various combinations of types of insurance or risks. At the present stage, mixed types of life insurance with accident insurance are more common.

Annuity insurance differs from capital insurance only in the way of payment of the sum insured, which is carried out in the first case in installments, repeatedly, and in the case of capital insurance – once in full.

Among the types of insurance built on the mechanism of annuity insurance (annuities), the most widespread are products intended for education, purchase of real estate and payment of additional pensions.

Lifelong pension insurance or pension insurance is a new type of insurance in Ukraine, which provides for the creation of private savings with payments from it in the form of capital or rent in case of retirement, full or partial disability, death.

This type of insurance cannot yet replace social pension insurance. Because social insurance is characterized by centralized formation of funds and payments from the budget only to certain categories of citizens. And for

pension insurance there is a possibility of private accumulation and use of such fund irrespective of a category of citizens. Characteristic features of pension and social insurance are that the basis for the payment of pensions and benefits are funds paid in the form of insurance premiums.

One of the best ways to solve the problem of pensions is when a person takes care of his own future, and will not rely on the state. That is why you should carefully consider life insurance, which contains elements of pension provision.

In our opinion, among all insurance products, the types of life insurance, which include the accumulation of funds, are the most effective tool for ensuring old age, maintaining it throughout life. Such products are reflected in mixed life insurance, when one insurance contract combines life and death insurance.

Insurance protection can be provided only if the company has the appropriate means to prevent and compensate for material losses. Hence the objective need to separate for this purpose part of the gross national product, i.e. the formation of an insurance fund, which is a reserve stock of material and money to ensure the continuity of the process of social reproduction and assistance to people in the event of insurance events [32].

Gradually in our country the norms of accumulation in combination with life insurance adapt. Accumulative insurance policy for citizens of most countries is the norm. The average Swiss invests 3.4 thousand dollars a year, a Hungarian – 50 dollars, a Slovak 80 dollars, a Russian – 10 dollars. In Ukraine, this figure is 10 cents [33].

The laws of many countries of the world oblige a person to take care of his future on his own, which provides a stable income for retirement or medical expenses for various cases, the opportunity to start your own business, or achieve a certain goal. However, each state takes into account the economic, political situation and features of socio-cultural development of the country for the formation of the legal framework for life insurance.

The positive experience of economically developed countries in using the insurance mechanism in the risk management system confirms its effectiveness and feasibility.

In the current conditions of Ukraine's economy, insurance is one of the most dynamic components of the country's financial system, which guarantees the protection of property interests of all members of society, ensures their security and promotes sustainable development. Insurance protection provided by insurance companies stimulates the development of

business activity and investment processes in the country. The financial condition of insurance companies is a basic element of market economy development. Insufficient attention to the problems of financial potential of insurers leads to negative consequences in the activities of the insurers themselves, as well as slows down the development of the entire insurance market [34].

The formation and active functioning of the insurance market is an important condition for ensuring sustainable socio-economic development of the state and guaranteeing its economic security, so ensuring its comprehensive development in Ukraine is one of the most pressing social challenges.

According to researchers, the modern insurance market combines two categories: on the one hand – it is a specific area of monetary relations, the object of which is the purchase and sale of insurance services, i.e. “secondary service”, the demand for which largely depends on the state. Primary market “of goods and services; on the other hand, the insurance market is a complex integrated system of insurance and reinsurance organizations, which together carry out insurance activities” [35]. The main functions of the insurance market are the accumulation and distribution of the insurance fund to protect the property interests of individuals and legal entities.

4.4. Overview of the insurance market of Ukraine

Unlike general insurance, long-term life insurance (more than 3 years) can be designed to enrich the insured, Article 9 of the Law of Ukraine “On Insurance” of 4.10.2001, provides for the possibility of obtaining part (85 %) of the insurer’s investment income from placement of insurance reserves.

Article 12 of the Law of Ukraine “On Financial Services and State Regulation of Financial Services Markets” No. 2664–III of 12.07.2001 [21] discloses access rights to information on the activities of the insurer, which is obliged to provide information on the following at the request of the client:

- information on financial indicators and economic condition, which are subject to mandatory disclosure;
- list of management and administration of the company;
- intersection of services provided;

- tariffs for services;
- the number of shares of the insurer, the owners of which are members of the executive body, the list of persons whose shares in the authorized capital exceed 5 % [36].

According to the Law of Ukraine “On Amendments to the Law of Ukraine “On Insurance” of 07.07.2005, insurance activities in Ukraine are carried out exclusively by resident insurers, and established requirements for the formation of the authorized capital of the insurer, its funds and reserves.

The law sets the minimum size of the statutory fund for life insurance companies in the amount equivalent to 1.5 million euros, at the exchange rate of Ukraine, which is paid exclusively in cash. Thus, the legislation establishes restrictions:

- it is allowed to form the statutory fund of the insurer with securities issued by the state at their nominal value in the manner prescribed by the Financial Services Commission, but not more than 25 % of the total authorized capital;

- it is prohibited to use promissory notes, insurance reserves, budget funds, funds received on credit, loan and collateral for the formation of the statutory fund, and to contribute intangible assets.

The total amount of the life insurance company’s contributions to the statutory funds of other insurers of Ukraine may not exceed 30 % of its own statutory fund, including the amount of the contribution to the statutory fund of an individual insurer may not exceed 10 %.

The insurer has the right to start insurance business if:

- accounting and registration system meet the requirements established by regulations;

- the internal rules of the insurer meet the requirements of the laws of Ukraine and regulations of state bodies that regulate and supervise the financial services markets;

- professional qualities and business reputation of the staff meet the requirements established by regulations.

In order to protect policyholders from non-performance by the insurer of its obligations, state control over investment activities is established. The directives of the European Union set the amount of investment in insurance reserves, namely:

- real estate investments – no more than 10 % of the total reserves for each object;

- investments in quoted shares and guaranteed loans – not more than 10 % of the amount of reserves for each of the types of these deposits;
- investments in unsecured loans – not more than 5 % for each type;
- in unquoted shares – not more than 10 % of the total investment;
- in cash – not more than 3 % of the total amount of reserves.

The funds of the insurance company involved in the circulation of funds can be divided into own and borrowed. These funds are the financial resources of the insurer. The financial resources of the insurance company are cash income and receipts available to the latter for direct insurance and reinsurance operations from the moment of concluding the relevant contract to the fulfillment of obligations in the form of payments of insurance sums and indemnities, as well as for other expenses provide the process of insurance, economic incentives for employees, costs aimed at improving, improving the quality of insurance services.

According to Article 41 of the Law of Ukraine “On Insurance” [36], if the insurer is not liable for the obligations of the state, and the state – for the obligations of the insurer. Any centralized regulation (unification, restrictions, mandatory, etc.) of the amount of insurance payments (tariffs) and insurance amounts (insurance indemnity), conditions of concluding insurance contracts, the relationship between the insurer and the insured, unless they contradict the legislation of Ukraine, is not allowed. Compulsory types of insurance, life insurance, property of individuals, reinsurance, insurance of export-import deliveries under the guarantee of the state and activity of insurance intermediaries. The state guarantees observance and protection of property and other rights and legitimate interests of insurers, conditions of free competition in carrying out insurance activities. The main components of the state insurance system are the regional departments of state insurance and inspection.

Currently, the insurance market of Ukraine is characterized by the dynamism and expansion of the list of insurance services for voluntary types of insurance, as well as increasing requirements for the establishment of the insurance company.

According to the current legislation, insurers are financial institutions that are established in the form of joint-stock, general, limited partnerships or companies with additional liability in accordance with the Law of Ukraine “On Business Associations”, taking into account the features provided by this Law, carrying out insurance activities [36]. The legislation of Ukraine stipulates that companies that have received a license to conduct

life insurance are not entitled to conduct general types of insurance, and vice versa. This approach is typical of many Western European countries.

Assessment of the dynamics of the number of insurers in the market of insurance services in Ukraine shows that during the study period 2015–2019 there was a decrease in such companies (Table 4.1). In particular, in 2015, 361 insurance companies were registered in Ukraine, while in 2019 their number decreased by 35.5 % and amounted to 233. According to official statistics in the field of financial services markets as of the end of 2020 in Ukraine 210 insurance companies are registered. Regarding the structure of insurance companies, the market of insurance services in Ukraine is dominated by companies that do not belong to life insurance (“non-Life”).

Table 4.1. Number of insurance companies in Ukraine in 2015–2020

Indexes	2015	2016	2017	2018	2019	2020
Number of insurance companies, pcs.	361	310	294	281	234	210
including non-life insurance companies	312	271	261	251	211	191
including life insurance companies	49	39	33	30	23	19

The trend of reducing the number of insurers has been going on for several years, which is due to the application of the standard of solvency and capital adequacy of insurance companies. Today, a significant number of insurers leave the market on their own initiative. This is due to today’s requirements of the National Bank of Ukraine. Characteristic features of excluded insurers are non-transparent ownership structure, absence of individuals in the insurance portfolio, as well as violation of the insolvency and capital adequacy ratio of insurers and some other regulations. According to official statistics, only in the first half of 2020, 20 insurers were excluded, 2 were included; In the second half of the year, the NBU received 8 applications from insurers for license revocation, 7 of which were satisfied [37].

In 2021, 29 insurance companies lost the status of a financial institution compared to 2020. The number of insurance companies (IC) at the end of the first half of 2021, according to the state regulator, was 181, of which 19 are life insurance companies (IC “Life”), and 162 – insurance

companies operating in the segment insurance, except life insurance (non-Life Insurance Company).

In 2019, despite the significant number of companies, in fact, the main share of gross insurance premiums in the market (98.1 %), according to official statistics of the insurance market regulator, will accumulate 100 non-Life insurance companies (47.6 % of all non-Life insurance companies) and 96.7 % – 10 Life insurance companies (43.5 % of all Life insurance companies), 60 non-Life insurers with the lowest insurance premiums account for less than 1 % of total insurance premiums on the market (Table 4.2).

Table 4.2. Concentration of the insurance market for 2019

The first (TOP)	Life insurance		Non-Life Insurance		
	Receipt of awards (million UAH)	Fraction on market, %	Receipts of premiums (UAH million)	Fraction on market, %	The number of ICs that received more than 50 % of insurance premiums from reinsurers
TOP 3	2,662.4	57.6	6,739.4	13.9	1
TOP 10	4,471.2	96.7	18,358.0	37.9	3
TOP 20	4,624.0	100.0	29,035.2	60.0	6
TOP 50	x	x	42,843.6	88.6	13
TOP 100	x	x	47,469.0	98.1	13
TOP 150	x	x	48,279.3	99.8	17
Total market	4,624.0	100.0	48,377.2	100.0	21

Examining the main indicators of the insurance market (Table 4.3), we note that during 2015–2017 there was a decrease in the number of insurance contracts, while during 2017–2018 their number was characterized by a tendency to increase. However, 2019 again showed a decrease in the activity of policyholders in purchasing insurance services and concluding insurance contracts. In general, in the insurance market of Ukraine during 2015–2019, this indicator decreased by more than 18.5 million contracts, or almost 9 %.

It should be noted that in 2019–2020 one of the main factors influencing the development of the insurance market and all economic processes in the country and the world was the spread of the COVID–19 pandemic.

During 2019, the number of concluded insurance contracts decreased by 4.15 million units (or 2.1 %), while the number of voluntary insurance contracts increased by 0.3 million units (or 0.5 %), including the number of concluded medical insurance contracts increased by 2.02 million units (or

45.4 %), the number of concluded third party liability insurance contracts increased by 0.9 million units (or 58.6 %), the number of concluded insurance contracts from accidents decreased by 3.5 million units (or 9.3 %). The number of concluded compulsory insurance contracts decreased by 6.4 million units (or 4.8 %) due to a decrease in the number of insurance contracts against transport accidents by 6.9 million units (5.6 %).

Table 4.3. The main indicators of the insurance market of Ukraine in 2015–2019

Indexes	2015	2016	2017	2018	2019
Number of contracts, except for contracts on compulsory insurance against accidents on transport, thousand units	109,106.8	61,272.8	70,658.2	7,7495.0	80,271.1
Number of contracts for compulsory personal insurance against accidents on transport, thousand units	106,321.2	118,198.4	114,824.7	123,582.5	116,652.6
Gross insurance premiums, UAH million	29,736.1	35,170.3	434,31.8	49,367.5	53,001.2
Gross insurance payments, UAH million	8,100.5	8,839.5	105,36.8	12,863.4	14,338.3

During 2015–2019, there was an increase in such qualitative indicators of market development as gross insurance premiums and insurance payments. In particular, as of 2015, gross insurance premiums amounted to UAH 29,736.1 million, and in 2019 they increased by 78.2 % and amounted to more than UAH 53.0 billion. Insurance payments in 2019, compared to 2015, increased by more than 77 % and amounted to almost UAH 14.34 million. This trend was caused by an increase in insurance premiums from individual and legal entities. As for insurance premiums from reinsurers, their value increased only in 2017. That is, insurers have used reinsurance more intensively as a way to increase their reliability for customers. But in general, the trend of this indicator was negative (Table 4.4).

In 2019, UAH 21.6 billion of gross insurance premiums were received from individual insurers, which is 17.4 % more than in 2018. The majority of these revenues are insurance premiums received by types of insurance other than life insurance (79.1 %). At the same time, in recent years, life insurance has become increasingly popular among the population. In

particular, in 2019, this type of insurance received UAH 4.5 billion or 18.4 % more than in 2018.

Table 4.4. The structure of gross insurance premiums for 2017–2019

Indexes	2017	2018	2019	Growth rates	
				2018/ 2017	2019/ 2018
	million UAH			%	%
Gross insurance premiums, of which:	43,431.8	49,367.5	53,001.2	+13.7	+7.4
from insured individuals	15,555.6	18,431.0	21,632.0	+18.5	+17.4
from legal entities	12,937.7	17,348.1	19,034.8	+34.1	+9.7
from reinsurers	14,938.5	13,588.4	12,334.4	-9.0	-9.2

Under conditions of quarantine measures and a decline in economic activity in 2020, insurers reporting to the National Bank of Ukraine demonstrated an increase in gross insurance premiums (+ 4.4 %) in the first half of the year. Under such conditions, such a positive trend for life insurance was more noticeable. However, during the year the total gross insurance premiums decreased by 12 %, which was primarily due to the exit of a number of insurers and the reduction of risk insurance in the crisis quarter of the second quarter.

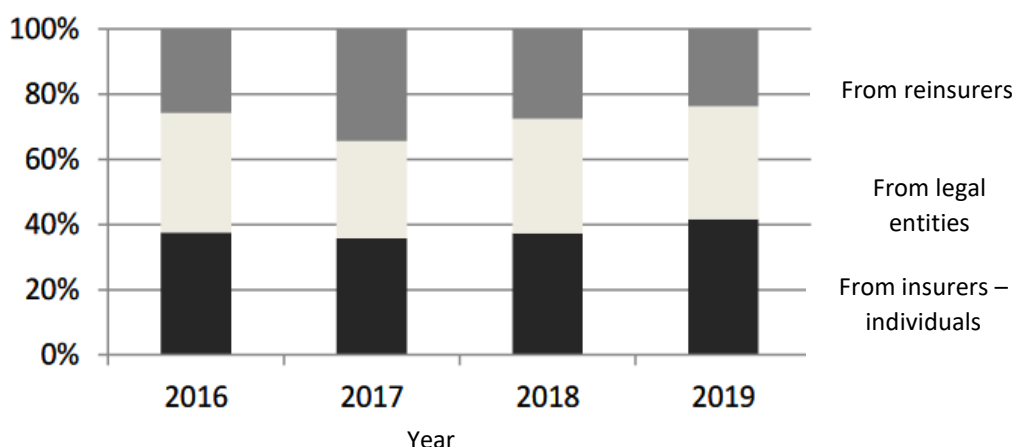


Figure 4.3. Dynamics of the structure of insurance premiums in Ukraine, including from insured persons-individuals, legal entities and reinsurers for 2016–2019

Analysis of the structure of gross insurance premiums (Figure 4.3) shows that in 2016–2019, the largest share in the total amount of insurance premiums are premiums from individuals. The level of activity of legal

entities is slightly lower. At the same time, risk insurance provides economic entities with stability of production, a guarantee of profit in the event of unfavourable situations. The share of insurance premiums from reinsurers shows that insurance companies in Ukraine are quite active in using reinsurance in their activities as a way to reduce their risk.

Gross insurance payments increase during the analyzed period (Figure 4.4). This phenomenon is the reason for the increase in gross insurance premiums, an increase in the number of insured events that are the reason for concluding an insurance contract. This proves once again the importance of insurance as a way to reduce risk.

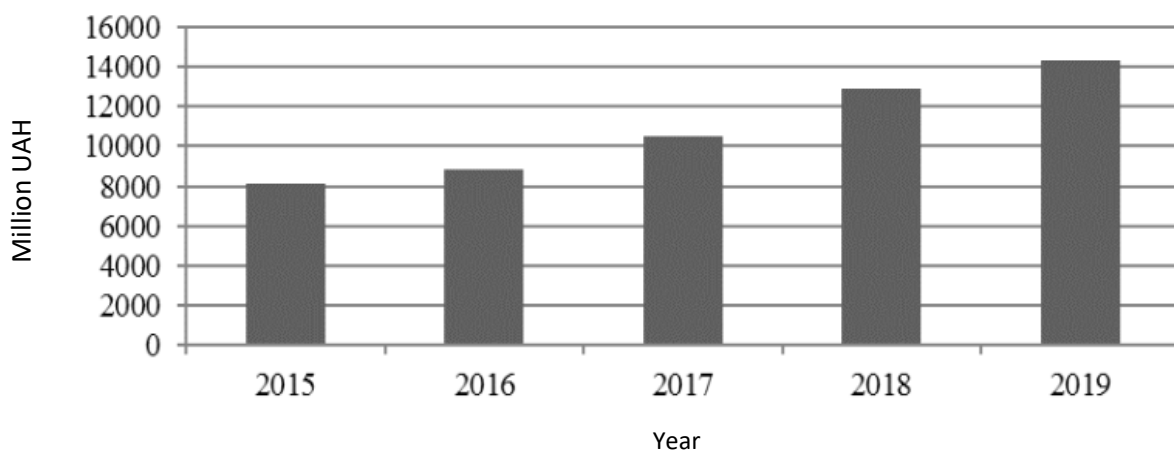


Figure 4.4. Dynamics of insurance payments in Ukraine for 2015–2019

Analysing the ratio of gross insurance payments to gross insurance premiums, it should be noted that their share is quite small and averages 26 % in 2015–2019. In 2019, the level of gross insurance payments in Ukraine was 27.1 % (Figure 4.5), while, for example, in the Polish insurance market, this figure reached 60.2 % [38, p. 54].

That is, it can be argued that more than 70 % of insurance premiums remain at the disposal of insurers, which not only covers the cost of insurance activities, but also allows you to invest significant amounts of money to increase your income. That is why the insurance market is considered the most capitalized compared to others in the financial market. This is also evidenced by the value of total assets of insurers.

In the total amount of insurance premiums, the majority is income from risk insurance contracts. In particular, in 2019, gross insurance premiums for all types of insurance amounted to only 8.7 % of life insurance premiums. Whereas in world practice, on the contrary, about 60 % of the volume of insurance premiums provides accumulative life insurance, and

about 40 % – risky types of insurance. That is, the structure of the volume of insurance premiums in economically developed countries is dominated by insurance premiums received by insurance companies under life insurance contracts.

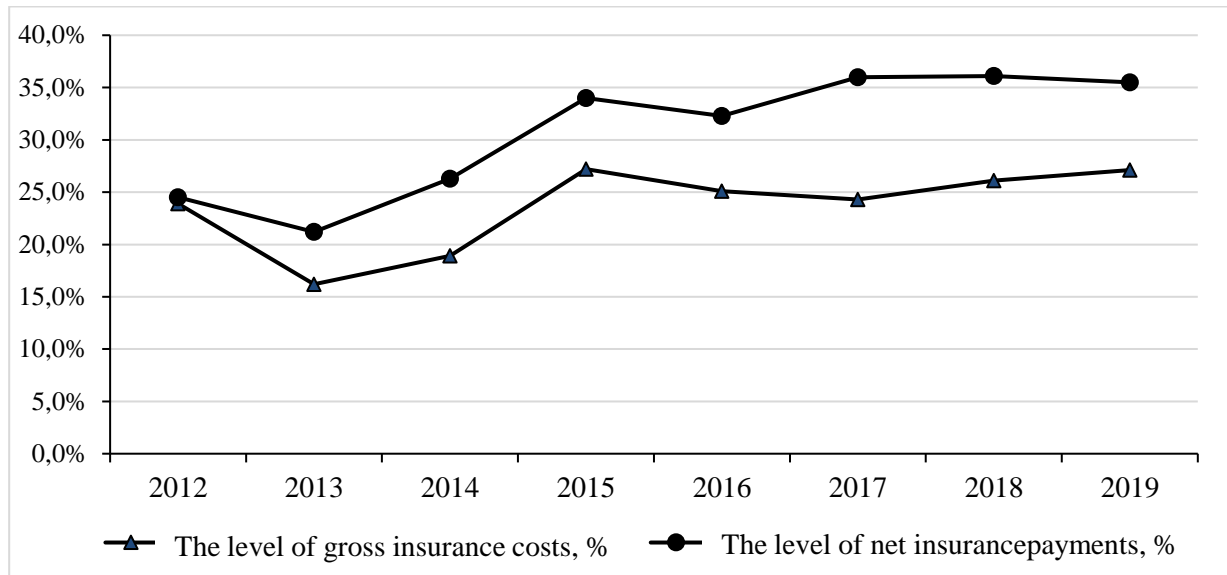


Figure 4.5. Dynamics of the level of insurance payments in the insurance market of Ukraine during 2012–2019, %

The dynamics of insurance premiums by type of insurance for 2018–2019 (volumes, structure and growth rates) are shown in Table 4.5.

In 2019, compared to 2018, as can be seen from the data presented in the table, the highest growth rates were shown by such types of insurance as medical expenses insurance (increase in gross insurance payments by UAH 539.6 million (40.1 %)); medical insurance (increase in gross insurance payments by UAH 983.6 million (28.2 %)) and car insurance (CASCO, compulsory insurance of civil liability of vehicle owners (CSCLVO), “Green Card”) (increase in gross insurance payments by UAH 2,135.1 million (16.5 %)). At the same time, in 2019, gross aviation insurance premiums decreased (decrease in gross insurance payments by UAH 338.0 million (32.4 %)); financial risk insurance (reduction of gross insurance payments by UAH 737.9 million (14.4 %)); third party liability insurance (reduction of gross insurance payments by UAH 328.5 million (12.8 %)); cargo and luggage insurance (reduction of gross insurance payments by UAH 64.0 million (2.2 %)).

The changes in the structure of revenues were largely due to the influence of COVID–19 pandemic insurers. This primarily explains the

increase in the number of health insurance contracts. Today, the demand for health insurance in case of coronavirus infection is growing.

Table 4.5. Insurance premiums by type of insurance for 2018–2019
(volumes, structure and growth rates)

Types of insurance	Insurance premiums, UAH million				Structure of insurance premiums, %				Growth rates of insurance premiums, %	
	Gross net premiums		Clean		Structure of gross insurance premiums		Structure of net insurance premiums		gross premiums	net premiums
	2018	2019	2018	2019	2018	2019	2018	2019	2019/2018	
Life insurance	3,906.1	4,624.0	3,906.1	4,624.0	7.9	8.7	11.3	11.7	+18.4	+18.4
Types of insurance other than life insurance, including:	45,461.4	48,377.2	30,518.2	34,962.0	92.1	91.3	88.7	88.3	+6.4	+14.6
Voluntary personal insurance	7,078.7	8,912.1	6,144.7	8,044.5	14.3	16.8	17.8	20.3	+25.9	+30.9
Voluntary property insurance	27,692.2	28,472.1	15,342.4	17,374.4	56.1	53.7	44.6	43.9	+2.8	+13.2
– including insurance of financial risks	5,135.5	4,397.6	1,663.8	2,151.2	10.4	8.3	4.8	5.4	–14.4	+29.3
Voluntary liability insurance	3,116.7	2,790.8	2,085.5	1,910.3	6.3	5.3	6.1	4.8	–10.5	–8.4
Non-state compulsory insurance	7,573.8	8,202.2	6,945.6	7,632.8	15.3	15.5	20.2	19.3	+8.3	+9.9
– including civil liability insurance of vehicle owners	6,002.7	6,976.3	5,671.6	6,583.2	12.2	13.2	16.5	16.6	+16.2	+16.1
State compulsory insurance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	–
TOTAL (all types of insurance)	49,367.5	53,001.2	34,424.3	39,586.0	100.0	100.0	100.0	100.0	+7.4	+15.0

In 2020, the most common types of insurance, as in the previous year, are car insurance (CASCO, CSCLVO and Green Card) and personal insurance (health and life). During the year, the volume of premiums for these types increased. Compared to 2019, only property and fire risk insurance premiums have decreased significantly, mainly due to the exit of market leaders in this area.

Negative political (military actions, aggravation of the domestic political situation, changes in the political course, changes in the geopolitical situation) and socio-economic changes taking place in the

country affect both the security status of insurance companies and their formation of financial resources for insurance compensation. This situation leads to a decrease in insurance premiums from both individuals and legal entities.

Indicators of the development of the insurance market, as research shows, are largely determined by the level of material security of the population, the availability of quality insurance products, the degree of confidence in financial institutions and so on. It should be noted that in the country only about 3 % of the population independently and prudently insure their lives, while in Europe and the United States – 85 % and 80 %, respectively [39]. However, in economically developed countries, policyholders usually have several insurance programs in different insurance companies for different periods. In these countries, compared to Ukraine, the range of services for accumulative insurance is much larger, as well as the number of reliable insurers that offer them.

As of the end of 2020, 19 life insurance companies operated in the domestic insurance market, which is 4 companies less than at the beginning of the year. According to experts, of all the companies operating in this field in Ukraine, less than a dozen meet international standards.

The results of insurers providing life insurance services indicate the complete dependence of the situation in this area on macroeconomic stability and the level of business activity in the country. The analysis of life insurance premiums shows that before the financial crisis of 2008–2009 their volumes gradually increased. During the financial crisis, there was a significant decrease in revenues from life insurance premiums, as well as total insurance revenues in general in the insurance market. Since 2009, there has been a positive trend in the receipt of insurance premiums under life insurance contracts and a gradual increase in their growth rates. In particular, in 2010 the growth of this indicator was insignificant – compared to the previous year, the growth rate was 9.6 %. More accelerated growth of insurance revenues was observed in 2011–2013: the growth rate in 2011 was 48.5 %, in 2012 – 34.4 %, in 2013 – 36.9 %. However, in 2014 the volume of insurance income from life insurance compared to 2013 again significantly decreases (by 12.8 %), and the increase in insurance premiums in 2015 was only 1.2 % [40, p. 172]. The negative dynamics of the rate of insurance revenues is directly related to significant fluctuations in macroeconomic indicators and lower living standards.

During 2016–2019, the life insurance market was characterized by a revival of activity: there is an increase in insurance premiums received under life insurance contracts: the increase in net insurance premiums in 2017 compared to the previous year is 5.7 %, in 2018 – 34.1 %, for 2019 – 18.4 %. At the end of 2019, more than UAH 4.6 billion in insurance premiums were collected, which is 2.1 times more than in 2015 and 4.2 times higher than in 2008 (Figure 4.6).

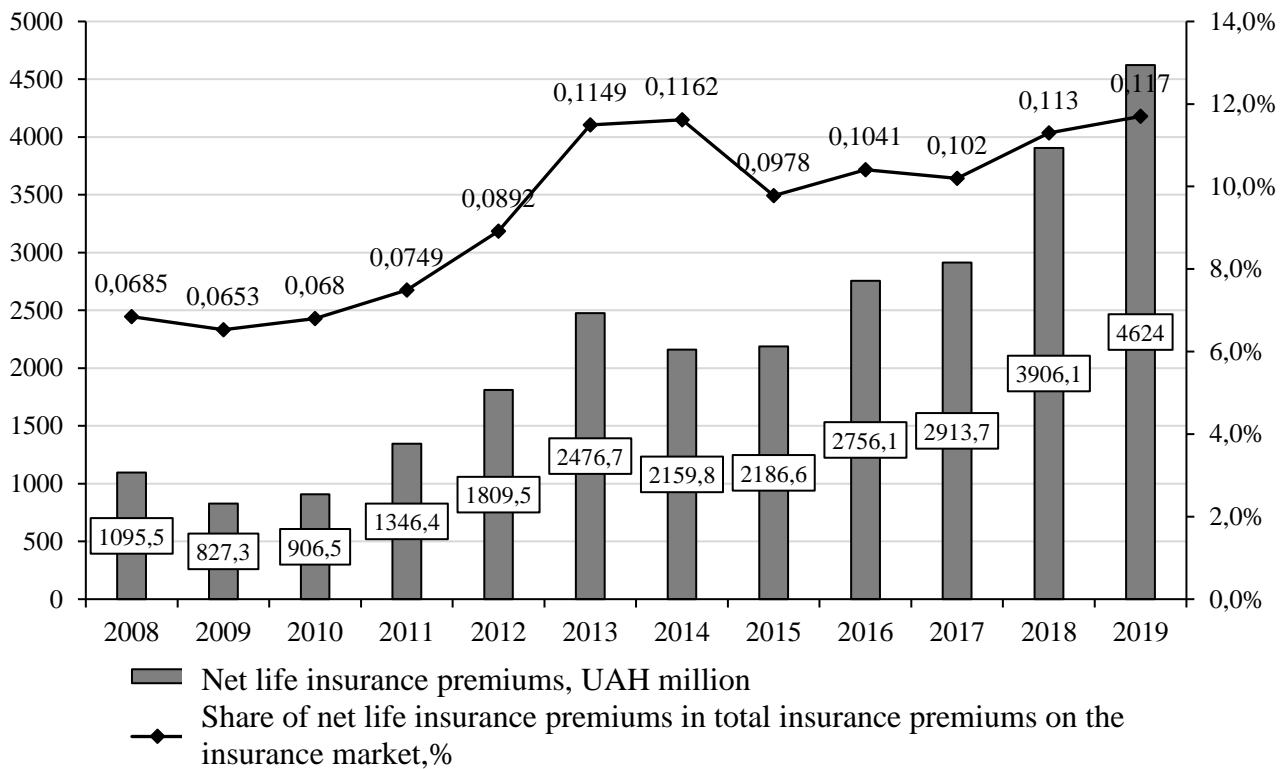


Figure 4.6. Dynamics of net life insurance premiums in 2008–2019

At the same time, there was an increase in the share of life insurance premiums in the total net insurance premiums in the market: from 6.85 % in 2009 to 11.7 % in 2019. 2015–2016 are characterized by a decrease in the share of net premiums under insurance contracts life in total insurance income: at the end of the study period, this indicator became important due to significantly higher growth rates of insurance premiums for non-life insurance, types of insurance (in 2015 and 2016, these figures were 42.3 % and 27.6 %). It should be noted that according to the Methodology for calculating the level of economic security of Ukraine [41], the optimal value of the share of net life insurance premiums in the total amount of insurance premiums on the market is at least 30 %. In EU countries, life insurance

accounts for more than 60 % of insurance premiums, and in some countries this figure exceeds 80 % [42, p. 57].

The number of concluded contracts and insured persons is growing. However, it should be noted that services in the Ukrainian life insurance market in recent years are mostly bought by individuals. In general, life insurance contracts are concluded by the working population, which in this way provides confidence in old age and / or uses life insurance as a way to accumulate funds for an event. According to I. I. Kozma, the decrease in the number of policyholders is an extremely negative phenomenon and “a clear sign of deteriorating conditions for the functioning of the life insurance market in Ukraine” [43]. This change is due to the refusal of employers to include the option of life insurance in the social package of the employee due to the deteriorating economic situation. After all, this allows you to reduce the costs of the enterprise, while maintaining existing wage levels. In addition, according to researchers, the trend of excluding life insurance from the social package of employees is due to a change in the procedure for calculating a single contribution to compulsory state social insurance on the amounts paid by employers under long-term life insurance contracts.

Among the factors hindering the development of life insurance in Ukraine are: reduced propensity of the population to save; unformed insurance culture; distrust of potential insurers to financial institutions; unstable tax legislation; adverse economic processes, including inflation; lack of reliable state guarantees of receiving insurance payment in case of bankruptcy of the insurer, etc. Support for this sector at the state level is needed to intensify the development of the life insurance market. It is expedient to introduce a system of guaranteeing insurance payments, in particular, the creation in Ukraine of the Fund for guaranteeing insurance payments under life insurance contracts.

It should be noted that now the Financial Stability Board, which unites the National Bank of Ukraine, the Ministry of Finance of Ukraine, the Deposit Guarantee Fund and the National Commission on Securities and Stock Market, has already taken the first step towards resolving this issue: agreed concept creation of a guarantee system on the basis of the current Deposit Guarantee Fund for Individuals (DGF). According to experts, on the basis of the DGF it is possible to launch a reliable system of guaranteeing deposits of credit unions and payments under life insurance contracts as soon as possible. First, the fund is an established institution with specialists, many years of experience in guaranteeing deposits and withdrawal of

insolvent banks from the market. With this in mind, the institution will have a greater credibility and level of trust compared to the alternatives that would have to be created for this mission. Second, the DGF has worked closely with the National Bank of Ukraine, other public authorities, and regulators in recent years. Third, the creation of a single guarantee fund for banks and other credit institutions is one of the best world practices and meets the requirements of the European Directive 2014/49 / EU.

Analysing the Ukrainian insurance market, we note that the insurance portfolio of almost every Ukrainian insurance company is formed at the expense of motor insurance: land transport insurance and compulsory insurance of civil liability of vehicle owners. In particular, in 2015–2019 the share of gross insurance revenues by type of auto insurance (CASCO, CSCLVO under domestic contracts and international car insurance contracts “Green Card”) in such revenues in the insurance market of Ukraine as a whole (Table 4.6) averaged more than 26.6 %. The share of car insurance in net insurance premiums is more than 35 % of the total net insurance premiums in the insurance market.

Table 4.6. Indicators of gross and net insurance premiums under motor insurance contracts in the insurance market of Ukraine in 2015–2019

Types of insurance	Insurance premiums, UAH billion										Growth rates insurance premiums, %	
	gross	net	gross	net	gross	net	gross	net	gross	net	gross awards	net awards
	2015		2016		2017		2018		2019		2019/2015	
Car insurance (CASCO, CSCLVO, under domestic contracts and “Green Card”)	7.9	7.3	9.3	8.7	10.6	9.9	13.0	11.7	15.1	13.8	+91.1	+89.0
Total (all types of insurance)	26.8	18.6	35.2	26.5	43.4	28.5	49.4	34.4	53.0	39.6	+97.8	+112.9
Share of car insurance in total insurance premiums, %	29.5	39.2	26.4	32.8	24.4	34.7	26.3	34.0	28.5	34.8	–	–

Annually, the increase in insurance premiums in the insurance market of the country was formed due to a significant increase in revenues from car insurance payments: the growth rate of net insurance premiums in 2016 was 18.2 %, in 2017 – 13.9 %, in 2018 – 17.1 %, in 2019 – 17.8 %. At the end of 2019 compared to 2015 the growth rate of net insurance premiums is 89.0 %.

The role and high social significance of car insurance are evidenced by indicators of gross and net insurance payments. During 2015–2019,

almost half of the total amount of insurance payments in the insurance market of Ukraine are payments under motor insurance contracts, among which the compulsory insurance of civil liability of vehicle owners plays an important role.

The high level of gross insurance payments (higher than the market average) in recent years is characterized by such types of insurance as: compulsory insurance of civil liability of vehicle owners (in 2019 – 45 %, in 2018 – 44.7 %, 2017 – 47.1 %), voluntary personal insurance (in 2019 – 36.1 %, in 2018 – 37.2 %, in 2017 – 38.7 %) (Table 4.7).

Table 4.7. The level of insurance payments by type of insurance in 2010–2019, %

Types of insurance	2011	2012	2013	2014	2015	2016	2017	2018	2019
Life insurance	5.2	4.5	6.0	11.1	22.5	15.2	19.1	18.0	12.5
Risk types of insurance, including:	22.5	25.7	17.2	19.6	27.6	26.0	24.6	26.7	38.5
voluntary personal insurance	39.8	39.9	34.6	42.0	46.2	40.8	38.7	37.2	36.1
voluntary property insurance	19.1	23.3	12.2	13.8	24.5	23.4	21.1	24.2	24.6
voluntary liability insurance	2.4	3.7	2.2	3.6	22.5	3.8	2.9	2.5	12.4
non-state compulsory insurance, including CSCLVO	32.8 38.9	29.8 37.8	31.3 36.2	31.5 37.6	28.8 34.2	33.4 38.9	37.9 47.1	36.2 44.7	39.0 45.0
Total for all types of insurance	21.4	23.9	16.2	18.9	27.2	25.1	24.3	26.1	27.1

The indicators of the level of insurance payments for health insurance contracts are quite significant: in 2019 their value was 58.2 %, in 2018 – 60.1 %, in 2017 – 58.0 %.

Estimation of the values of the level of insurance payments under life insurance contracts allows to assert about their instability and significant growth of indicators in certain periods, for example in 2015 this indicator had the highest value – 22.5 %, in 2017 and 2018 – 19.1 % and 18.0 % respectively. This is evidence that these periods include payments under long-term insurance contracts, which have expired, and confirms the fulfillment of obligations by insurance companies that provide life services to policyholders.

At the same time, according to analysts, the activities of companies that provide life insurance services today are aimed at attracting customers under short-term insurance contracts. Lack of products to attract long-term resources does not allow businesses to grow and become more sustainable.

Despite the steady increase in indicators, the functional and institutional characteristics of the insurance market do not meet the real

needs of the economy, which in turn slows down its development in today's globalization [44, p. 58].

At the same time, insurers in Ukraine, from the point of view of researchers, do not perform their proper role of active institutional investor, and the performance of insurance companies in Ukraine indicate a lack of investment opportunities for these financial institutions [45, p. 110]. According to research, the financial potential of the insurance market has its own specifics, priorities and development trends. Currently, the share of the classic insurance market in the structure of Ukraine's GDP is unjustifiably small.

The financial potential of the insurance company is the financial resources that are in economic circulation and are used during insurance operations and investment activities [46, p. 63].

The financial potential of the insurer, as a business entity, is formed by two components, namely equity and borrowed funds. The own capital includes: authorized capital; additional capital formed as a result of revaluation of non-current assets and as a result of the difference between the sale price and the nominal value of shares obtained in the process of forming the authorized capital (for a joint-stock company); reserve capital, which is intended to cover losses, as well as to repay bonds and repurchase shares in the absence of other funds; retained earnings and profits and reserves. The amount of equity of insurers is regulated by regulations. In particular, the Law of Ukraine "On Insurance" stipulates that the minimum size of the statutory fund (guarantee deposit) of an insurer engaged in types of insurance other than life insurance is set at the equivalent of 1 million euros, and an insurer engaged in life insurance, 10 million euros at the exchange rate of the currency of Ukraine [47].

Borrowed capital may consist of borrowed capital and insurance reserves – the insurer's obligations under insurance, co-insurance and reinsurance contracts. Thus, in the structure of the insurer's own capital the largest share is the authorized capital, and in the structure of the borrowed capital the means of insurance reserves prevail [48, p. 286].

Carrying out insurance operations involves the formation of insurance reserves by the insurer at the expense of accumulated contributions of policyholders, as well as the payment of insurance indemnities on the obligations under this fund in the event of insured events. These funds, which are formed at the expense of insurance premiums and are intended exclusively for future payments of insurance sums and indemnities, are

considered relatively or temporarily free. The specifics of the insurance contract allow the insurer to dispose of them for a certain period of time.

According to the Law of Ukraine “On Insurance”, insurance reserves are divided into technical reserves and reserves for life insurance (mathematical reserves). Funds of such specific financial reserves are a source of investment resources in the insurance market, and their availability determines the specifics of the insurance business. Accordingly, the investment activity of insurers also becomes a factor in shaping the financial potential of insurance companies. After all, investing temporarily free funds allows insurers to obtain significant investment income.

The dynamics of the volume of insurers’ assets in 2012–2020, despite the termination of a number of market participants, shows a slight increase in the volume (after the decline in 2015–2016) of total assets. In particular, at the end of 2020, the total assets of insurers amounted to UAH 64.9 billion, which is 1.6 % more than the corresponding figure of the previous year (Figure 4.7).

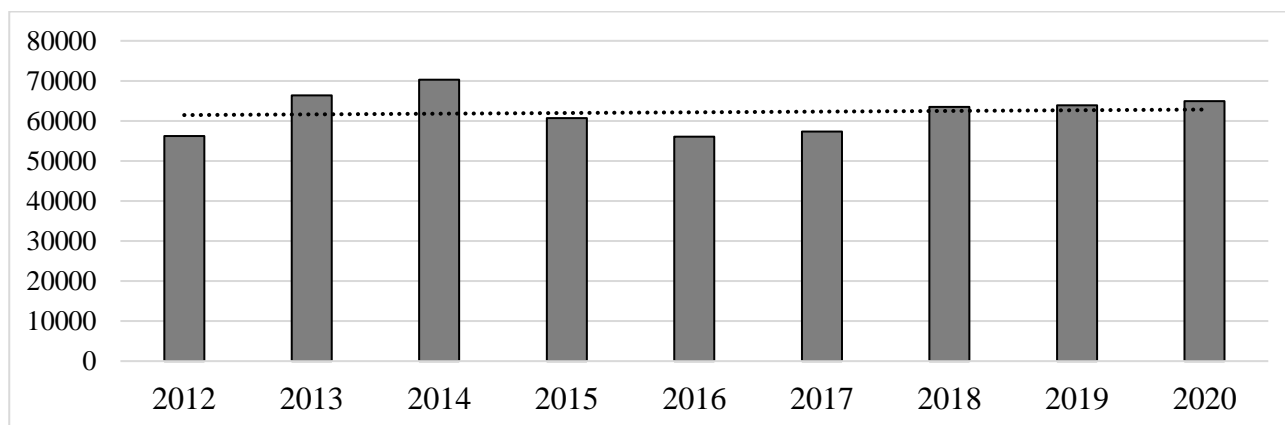


Figure 4.7. Dynamics of assets of insurance companies in Ukraine in 2012–2020, UAH million

During the analysed period, the value of insurance reserves increases. That is, insurers increase their solvency and reliability to avoid situations that could lead to bankruptcy.

Studies show that for a long-time domestic insurer have been actively increasing the amount of statutory funds paid. However, given the fact that in recent years in Ukraine the number of insurance companies is declining (in 2019 compared to 2012 by 181 companies), there is also a decrease in this indicator: from UAH 14.6 billion in 2012 to 11, UAH 1 billion in 2019, or almost a quarter [49]. The average amount of paid-in authorized capital

per company in hryvnia equivalent during 2012–2019, despite the slowdown, tends to increase (Table 4.8). However, the conversion of this indicator to the official average annual exchange rate of hryvnia to the euro currency indicates a decrease in the solvency of insurance companies: in 2019 compared to 2012, such a decrease was more than 50 %.

Table 4.8. Volumes of paid-in authorized capital of insurance companies in Ukraine in 2012–2019, UAH million

Indexes	2012	2013	2014	2015	2016	2017	2018	2019
The amount of paid-in authorized capital	14,579.0	15,232.5	15,120.9	14,474.8	12,661.6	12,831.3	12,636.6	11,066.1
The average amount of paid-in share capital per company	35.2	37.4	39.6	40.1	40.8	43.6	45.0	47.5
Growth rates of the average size of paid-in authorized capital per one insurance company, %	–	6.25	5.88	1.26	1.75	6.86	3.21	5.56

It should be noted that from an economic point of view, the insurance market of Ukraine is small in scale. Despite some positive developments in the insurance market of Ukraine, the level of insurance penetration in the country still remains too low. In particular, the ratio of gross insurance premiums to GDP over the past ten years did not exceed 2 %, moreover, there is a downward trend (to the end of 2019 – up to 1.3 %), while in developed countries this figure is more than 7 %. The volume of net insurance payments (excluding insurance payments transferred to reinsurance to residents) in the structure of GDP is also characterized by a clear negative trend and in recent years (from 2017 to 2019) is maintained at 1.0 % (Figure 4.8). However, the development of high-risk insurance, in particular in the energy and construction sectors, agriculture, risks of mass insurance, in particular, health insurance, life insurance and the formation of strong long-term financial resources through attracting savings of households and corporations in the investment process is impossible without insurance reform. sector of the economy [49, p. 17].

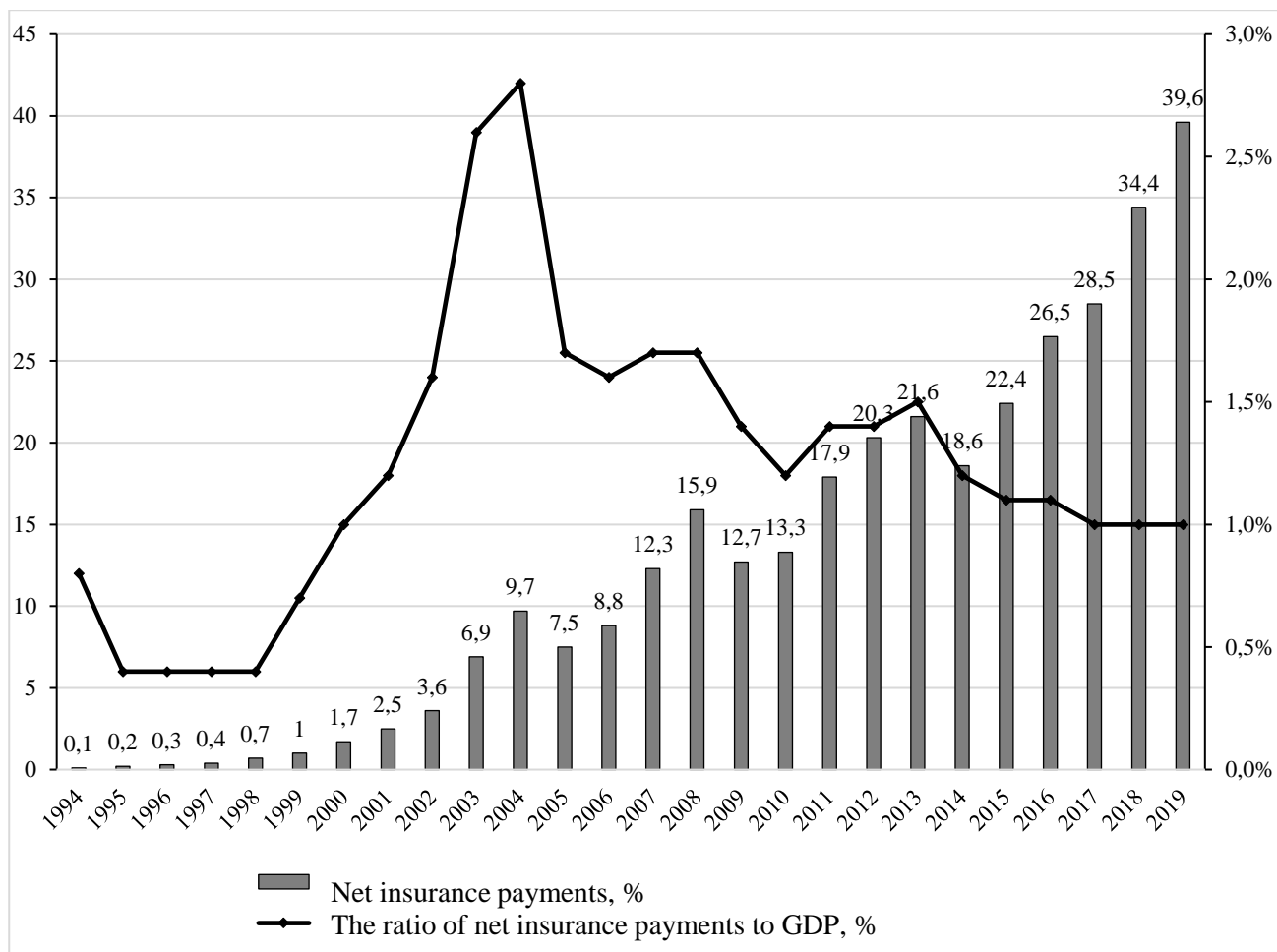


Figure 4.8. Dynamics of the volume of net insurance premiums and their share in the GDP of Ukraine for 1994–2019.

The investment portfolio of insurance companies in Ukraine is imperfect, typical of underdeveloped insurance markets of transition economies, where risky types of insurance predominate. As of the end of 2019, in the structure of assets of insurance companies, determined in accordance with Article 31 of the Law of Ukraine “On Insurance”, the largest share are assets allowed for bank deposits – 35.6 % – in 2014 – 22.3 %). About a third of the total (32.2 %) are assets allowed for the presentation of securities (in 2014 – 56.0 %), including: 21.6 % – securities issued by the state (in 2014 – 8.4 %); shares – 8.4 % (in 2014 – 44.4 %); bonds – 2.1 % (in 2014 – 2.0 %); mortgage certificates – 0.1 % (in 2014 – 1.2 %). Claims to reinsurers account for 11.9 % (in 2014 – 9.5 %) of the total, 7.1 % – represented by cash on current accounts (in 2014 – 6.9 %) (Table 4.9).

Thus, in recent years, the assets of insurance companies have increased due to the positive dynamics of bank deposits, real estate, government-

issued securities and investment in housing construction. At the same time, insurers are showing less and less interest in purchasing corporate securities – in 2019, compared to 2014, the volume of the latter decreased almost 5 times. Insurers did not invest at all, or did not invest at all, in some types of assets.

Table 4.9. Structure of insurers' assets in Ukraine in 2014–2019, %

Indexes	2014	2015	2016	2017	2018	2019
Assets defined in Art. 31 of the Law of Ukraine “On Insurance”, including:	100.0	100.0	100.0	100.0	100.0	100.0
1) cash on current accounts	6.9	7.0	8.3	7.6	7.3	7.1
2) bank deposits	22.3	34.6	32.9	33.9	34.7	35.6
3) bank metals	0.1	0.1	0.1	0.1	0.1	0.1
4) real estate	5.0	6.1	7.4	7.4	7.4	9.2
5) shares	44.4	32.7	22.7	18.4	12.5	8.4
6) bonds	2.0	2.0	2.4	2.5	2.2	2.1
7) mortgage certificates	1.2	0.1	0.3	0.2	0.2	0.1
8) securities issued by the state	8.4	7.2	15.8	18.2	19.4	21.6
9) claims against reinsurers	9.5	10.3	9.9	11.2	13.3	11.9
10) investments in the economy of Ukraine in the areas defined by the Cabinet of Ministers including	0.2	0.002	0.1	0.3	2.8	3.8
10.1) development and implementation of high-tech equipment, other innovative products, resource- and energy-saving technologies	0.1	0.001	0.006	0.01	0.3	0.345
10.2) development of tourism infrastructure	0.0	0.001	0.1	0.1	0.1	0.3
10.3) extraction of minerals;	0.0	0.0	0.0	0.0	0.0	0.0
10.4) processing of waste from mining and metallurgical production;	0.0	0.0	0.0	0.0	0.0	0.0
10.5) housing construction	0.0	0.0	0.0	0.02	2.2	2.78
10.6) development of transport infrastructure, including construction and reconstruction of roads	0.0	0.0	0.0	0.1	0.1	0.1
10.7) development of the communications and telecommunications sector	0.0	0.0	0.0	0.02	0.1	0.3
10.7) development of the mortgage lending market through the purchase of securities issued by the State Mortgage Institution.	0.0	0.0	0.0	0.0	0.0	0.0
11) loans to insured citizens issued in the manner prescribed by the Authorized Body and agreed with the NBU	0.01	0.001	0.03	0.04	0.04	0.05
12) long-term loans for housing construction, including individual developers	0.0002	0.0003	0.0003	0.0003	0.0005	0.0004
13) cash at the box office	0.04	0.02	0.05	0.04	0.03	0.02

This, in particular, applies to investments in the economy of Ukraine in certain areas defined by the Cabinet of Ministers of Ukraine, banking metals, mortgage certificates, long-term loans for housing construction, including individual developers used in the manner prescribed by the

government, loans to insurers, issued in the manner prescribed by the regulator of the insurance market, etc.

It should be noted that the choice of areas for investment by domestic insurers is radically different from the approaches to investing in their foreign counterparts. In particular, in world practice, the assets of institutional investors are formed only by 4–7 % due to banking instruments, while the bulk of funds are invested in stocks (about 60 %) and debt securities (about 25 %). This situation is due to the low yield of bank deposits in developed market countries and high yield of stock market instruments. At the same time, in Ukraine, bank deposits remain a traditionally popular area of investment: compared to other financial market instruments, they provided a fairly high guaranteed income. In addition, working with banks to place funds on deposit accounts is characterized by low costs.

Comparison of the structure of assets, which represent the insurance reserves of insurers in Ukraine and the EU gives grounds for concluding on the feasibility of cooperation of insurers with such entities of the financial market infrastructure of Ukraine as asset management companies and rating agencies [50, p. 39–40]. After all, as world practice shows, the use of insurers of the capabilities and experience of asset management companies can increase the profits of insurance companies from investing insurance reserves and minimize their investment risks.

From July 1, 2020, the National Bank of Ukraine became the regulator of the non-banking financial services market, the key tasks of which are defined in the update of the legal framework governing the provision of financial services by financial institutions; restoring confidence in the market of non-banking financial institutions; strengthening the protection of the rights and interests of consumers of financial services; development and improvement of financial services taking into account the requirements of today. The new regulatory model provides for the improvement of licensing requirements, assessment of solvency and liquidity, corporate governance and risk management system, application of risk-oriented prudential supervision. In general, the introduction of a new model of regulation and supervision of the insurance market will help increase the financial potential of the country's insurance market and the effective use of its financial capabilities.

Ensuring the financial stability of insurance companies, according to V. Bratyuk, strengthening their position in the insurance market involves

work on deep and comprehensive management of insurance operations [51, p. 71]. An objective assessment of the profitability and prospects of insurance operations, the identification of reserves for further expansion of the insurance field will contribute to the effective use of the existing potential of the insurance company.

The difficult economic situation in Ukraine, burdened by the demographic crisis, impoverishment of the population, as well as the decline in business activity in the country and the world due to the coronary crisis create additional challenges for Ukrainian insurers. The atmosphere of growing uncertainty encourages insurers to develop such insurance products that will provide policyholders and insured with adequate protection against the latest risks [52, p. 65]. Given that the country covers only 10–15 % of the insurance field in the country, Ukrainian insurance companies have a task to respond quickly and adequately to the needs of the target audience, thereby gradually expanding it.

The quarantine situation has greatly affected the behaviour of insurance clients. In this unstable situation, people felt the need for resistance, not wanting to risk the already unpredictable reality – the COVID–19 pandemic. Thus, the demand for health insurance and life insurance has increased in the insurance market. This trend is evidenced by the increase in the share of insurance premiums for these two types of insurance in 2020, compared to 2019, by 2 % and 3 %, respectively.

In the near future, special attention will be paid to the effects of insurance coverage in case of infection with the COVID–19 virus, as well as the feasibility of its expansion. According to experts, most likely, the virus will not be an exception to the standard accident insurance policies and life insurance policies [53, p. 4]. Under the conditions of development and commercialization by domestic insurers of new insurance products and strengthening of requirements of the legislation concerning qualitative filling of insurance products for tourist's insurance will become the key tool of development of sphere of tourism on a safe basis [54, p. 72]. Because nowadays, when the problem of ensuring the safety of tourism has become especially relevant, the success of the tourism industry is largely determined by the effectiveness of the use of insurance mechanisms for consumers of tourism services and tourism entities.

According to experts, the corona crisis has a major impact on the development of the insurance sector due to increased demand for a new segment of potential consumers. In particular, the current situation has a

positive effect on the decision to purchase insurance policies for low-income people. This is primarily due to the growing awareness of the risk of non-insurance against the risks associated with the COVID–19 pandemic, which has led to a significant increase in the demand for health insurance. Accordingly, it opens up new opportunities for insurers, which are estimated to be the largest in recent decades.

The insurance market in each country is an indicator of the economy and sustainable business development. An efficient insurance sector provides significant benefits to households, businesses, businesses, the government and the financial sector. Given the achievement of economic stability and a certain level of welfare, insurance, satisfying the desire for security and providing a guaranteed level of income, can improve the quality of life – then reveals a person’s desire to recover, travel, rest, and so on. Insurance allows people to choose which risks are acceptable to them and from which they would like to protect themselves.

The growth of the values of indicators of environmental protection expenditures in Ukraine testifies to the extreme urgency of introducing an effective mechanism of environmental insurance. After all, significant funds are allocated annually to ensure environmental safety and maintain ecological balance in the country. According to the State Statistics Service of Ukraine, total expenditures on environmental protection are constantly growing, in particular, if in 2017 their volume amounted to UAH 31.5 billion, in 2019 this figure was already equal to UAH 43.7 billion, or in 1, 4 times more. This indicates a strengthening of state control over the environmental situation. At the same time, for the period from 2017 to 2019, the volume of capital investments in environmental protection increased significantly: in 2019, their volume amounted to UAH 16.3 billion, which is 1.5 times more than the corresponding indicator in 2017. Another indicator that indicates on the problem of deteriorating environmental situation in Ukraine, there is the amount of current expenditures on environmental protection. During the study period, the value of this indicator increased by UAH 7 billion. At the same time, the largest part of the total amount of current expenditures in 2019 (UAH 27.5 billion) is directed to such areas as return water treatment and waste management. Among the environmental problems in our country, the greatest threat is industrial and household waste, as well as emissions into the atmosphere.

Damage caused by the activities of enterprises, which creates an increased environmental risk, provided they enter into environmental

insurance contracts is compensated by insurance funds formed by insurance companies. After all, insurance as a type of economic relations, which are associated with the formation and use of trust funds intended for insurance protection, is a kind of mechanism for transferring risk from one entity to another for a fee [55, p. 8].

However, environmental insurance policies, given the complexity of determining the amount of damage and significant amounts of insurance amounts aimed at compensating third parties, may be unprofitable for insurers. As you know, when calculating the amount of insurance payments using a complex system of mathematical and statistical calculations. Specialists who have the technique of these calculations are called actuaries. It is the actuaries' responsibility to ensure that insurance reserves are sufficient at the time the insurer has to meet its obligations under insurance contracts.

When calculating environmental risks, actuaries must assess the probability of an environmental accident at a specific facility subject to environmental insurance and the amount of damage that may be caused by the occurrence of the insured event.

When determining the level of danger of industrial production is taken into account [56]:

- list of hazardous and harmful chemicals that are present in this facility in critical quantities;
- limit norms and possible multiplicity of exceeding the limit norms of environmental impact of dangerous and harmful chemicals;
- the amount of hypothetical damage that can be caused to the environment in the event of an undesirable situation.

It should be noted that currently environmental insurance in the country is carried out mostly on a voluntary basis, providing insurance protection of civil and property liability of policyholders for damage caused by environmental pollution. The domestic market of environmental insurance is fragmented. Due to regulatory reasons, insurance companies are usually not ready to fully engage in this type of insurance. Although there are a large number of laws and regulations in the country that regulate environmental activities, they are not integrated into a single system, and are often contradictory and belong to different concepts of nature management.

The optimal combination of government regulation of state environmental policy and the use of levers of influence on insurance

companies and enterprises is the basis of its effectiveness. To achieve this, first, it is necessary to improve the legal framework that will ensure the functioning of the structure of the national environmental insurance system with fundamental state support. Secondly, it is expedient to create a National Fund, which will provide compensation for environmental damage in case of failure to identify the perpetrators of environmental incidents. This will provide a state mechanism for providing financial guarantees to compensate for damage to the environment [57, p. 102]. A positive consequence of the implementation of these measures will be the growing popularity of environmental insurance among both insurers and policyholders, as well as reducing the burden on the state budget in case of compensation for losses caused by man-made accidents.

In the economic realities of Ukraine, the issue of involvement of the insurance sector in the development of foreign trade becomes relevant [58]. Given the current features of international trade, only recently began to highlight the international nature of certain insurance services, including transit and transport insurance, export credit insurance [59]. At the same time, some studies point to the key role of insurance in the development of foreign trade and investment [60], as only risk insurance is sufficient to cover foreign trade risks.

Insurance services have long been closely linked to foreign trade operations and are an important prerequisite for their conduct, indirectly affecting the trade balance and thus contributing to economic growth. At present, such insurance services as cargo and transport insurance, civil liability insurance, etc. have become widespread in this area.

The introduction of quarantine has given impetus to the rapid development of e-commerce in insurance, which is beginning to compete with the classic territorial sales networks and become an integral part of them. Insurers' business processes were actively restructured into telecommuting. Some insurers have decided to keep these changes after the quarantine.

The introduction of quarantine gave impetus to the rapid development of e-commerce in insurance, which is beginning to compete with the classic territorial sales networks. In particular, the scale of sales of electronic policies OTSPV is constantly growing. The number of electronic contracts of OTSPV in Ukraine in 2020 amounted to 3.1 million units. Thus, the growth was 152.8 % (Table 4.10).

Table 4.10. The main indicators of the implementation of compulsory insurance of civil liability of owners of land vehicles under domestic contracts in 2019 and 2020 [58]

Indexes	2019	2020	Growth, %
Number of agreements that have entered into force, pcs.	8,003,279	8,333,824	+4.1
including electronic insurance contracts, pcs.	1,224,419	3,095,479	+152.8
Amount of accrued insurance payments, UAH	5,089,744,903	6,136,584,507	+20.6
including under electronic insurance contracts, UAH	922,605,574	2,584,011,801	+180.1
Number of claims settled by payment of insurance indemnity, pcs.	139,551	147,117	+5.4
including settled with the use of the “European protocol”, pcs.	47,529	50,272	+5.8
Accrued amount of insurance indemnity, according to settled requirements, UAH	2,526,624,427	2,851,856,419	+12.9
including those regulated with the use of the “European protocol”, UAH	447,830,114	503,162,786	+12.4

At the same time, the amount of insurance premiums under e-policies are UAH 2.6 billion, which is 180.1 % more than in the previous year. More than a third of the total number of car insurance contracts are concluded in electronic form: the share of electric policies in 2020 exceeded 37 %, while in 2019 it was 15 %, and in 2018 – about 2 %. Significant dynamics was demonstrated by the indicators of the use of the electronic European protocol, having increased 2.8 times: in 2019, 1,620 electric European protocols were issued, in 2020 – already 4,628 units.

Last year, the participants of the accident were able to draw up an electronic European protocol not only through the MTIBU website, but also through the mobile application “My Policy”, which increased the availability of the service [61].

On some sites, online offices have been created for the insurance company’s clients, where the client can mainly get acquainted with the list of valid insurance contracts, see the paid insurance premium and when to pay the next insurance premium. The share of such insurers is quite low and is only 9 % [61].

It is worth noting that today the official statistics provide very limited data on the level of innovative development of the domestic insurance

market. According to the results of statistical studies [62], for 2016–2018 in the areas of financial and insurance activities 580 organizations were surveyed, of which 222, or 38.3 %, declared themselves innovatively active, including only 67 institutions, or 30.2 %, implemented product and / or process innovations, and 155 (69.8 %) – marketing and / or organizational. In the total sales of services of innovative organizations in the field of financial and insurance activities, products and services that were new to the market in 2018 were absent, and new to the organization amounted to 4.2 %. 53.7 % of innovative financial and insurance institutions independently implemented innovations.

It is clear that the above information, firstly, does not reflect the state of affairs directly in the field of insurance, and secondly, does not contain information about the types of innovative services and processes that have been implemented, which makes their qualitative and quantitative characteristics impossible.

In modern conditions, when the range of dangers and threats to businesses is not reduced, but tends to increase, there is an objective need to expand the scope of insurance activities, more persistent and effective use of innovative approaches, improving the manageability of these processes.

In their activities, insurance companies, responding to the demands of time, widely use modern organizational and innovative management and marketing technologies. The priority of improving approaches to conducting insurance business, developing innovative sales channels and providing services and service technologies is to meet the needs and wishes of policyholders and insured persons [62, p. 49].

Transfer of emphasis from the “insurance market of the seller” to the “insurance market of the consumer” [63] is determined not only by the need to attract new customers and increase the number of policyholders, but also the need to “retain” them. When selling an insurance product, insurers are interested in building relationships with policyholders that will be long-term. To ensure such relationships between insurance market participants, insurance companies, carrying out their marketing activities, now widely use the concept of consumer-oriented marketing.

It should be noted that the main task of consumer-oriented marketing is to study the consumer, his wishes, motivations, priorities, as well as the conditions and factors of their formation and development.

The use of this concept in the field of insurance is the most acceptable. Numerous studies show that one of the reasons for the low demand for

insurance services is the low level of trust in insurance companies caused by the negative experience of insurance in Soviet times and the first years of Ukraine's independence, as well as the lack of real state guarantees of insurance payments. his fraudulent actions. For example, according to the results of annual national monitoring surveys conducted by the Institute of Sociology of the National Academy of Sciences of Ukraine, in 2002–2015 more than 60 % of respondents distrusted insurance companies [64, p. 162]. Most Ukrainians do not see the need to ensure their own lives and health, or the lives and health of their loved ones, property or liability insurance, and do so only when absolutely necessary, when the situation requires it. In addition, the mentality of the domestic consumer generates distrust in advertising, sales promotion and more.

All this indicates the need to pay special attention to potential consumers of insurance services by both insurance companies and other participants in the insurance market, on whose behavior depends the decision of the insured to purchase insurance services. It is known that the process of providing insurance services by the insurer to potential policyholders often takes place with the participation of such entities of the insurance market infrastructure as: insurance intermediaries in the implementation of insurance services; indirect insurance intermediaries (underwriters, surveyors, adjusters, emergency commissioners, dispatchers, etc.) in risk and loss assessment; other entities (assistance companies, insurance guarantee funds, etc.), the operation of which creates conditions for the effective operation of insurance companies.

In recent years, insurers have been trying to regain lost confidence. The development of competition in the country's insurance market encourages them to modernize, as well as to develop, form and distribute new insurance services. In order to interest potential consumers and provide information about such services, as well as to successfully implement them, the company's fears use various marketing tools and methods in the market, primarily aimed at communicating with potential consumers and developing effective sales channels.

The formation of demand for insurance services is through the influence and persuasion of potential customers through targeted advertising, a wide range of organizational measures for concluding insurance contracts, the introduction of differentiation of tariffs for insurance services, combining insurance services with various forms of trade and legal services [65, p. 175].

Currently, the issue of insurance management should be considered from the standpoint of managing the process of providing insurance services. The activities of the insurer should primarily be determined by changes in the market environment. Flexible response to the requests of policyholders and trends in the sale of insurance products will be possible only through an effective policy of marketing management of the insurer [66, p. 281].

The incentive for the active introduction of innovative sales channels is the development of technology, increasing the level of financial education and customer requirements. Internet marketing helps the insurer to diversify the sales channels of its services and significantly increase the coverage of potential consumers. The use of digital technologies by insurers in the implementation of insurance services has great prospects and is already an integral part of doing business. However, so far online sales only complement traditional sales channels and, today, can not completely replace them. According to research, despite the growing use of digital channels for the sale of goods and services, which is typical of the modern world, potential buyers of insurance services, making their choice, still want direct contact with other people. In the near future, “the provision of financial services will take place through meetings, telephone, video or web chat”, and the success of financial companies, as rightly noted by D. V. Kondratenko, will determine the optimal balance between automation and human interaction [67, p. 359].

In economically developed countries, mediation is an integral part of insurance relations. Insurance agents and brokers, providing professional intermediary services, create opportunities for the implementation of insurance services, accelerate and facilitate the conclusion and implementation of agreements, ensure the formation of insurance relations between insurance market participants. In our country, as research shows, insurance mediation is traditionally widely represented by the practice of insurance agents. To this day, these participants in insurance relations, who act on behalf of and on behalf of the insurer and perform part of its insurance activities, receiving a commission for their work, occupy a significant niche in the system of sales of insurance products. At the same time, the demand for the services of insurance brokers, despite the positive dynamics of some indicators of these insurance market participants, is too low.

As insurance intermediaries are the link between insurance companies seeking to sell their insurance services and insurers aiming to provide

insurance coverage, there is a need in Ukraine to strengthen the role of insurance intermediaries in promoting insurance services. Recently, scientists have been emphasizing the need to improve the legal framework for regulating the activities of these insurance market entities and increase the level of awareness of potential consumers of insurance services about the benefits of insurance mediation.

4.5. Investment potential in insurance activities

Due to the fact that the insurance system implements economic relations between various subjects of insurance activity. For the insurance market of Ukraine there is an urgent need to improve its subject structure, increase the efficiency of its individual entities and intensify the role of the state in this process. The implementation and coordination of economic interests of individual participants is the driving force of the insurance market and determines the direction of its dynamics.

It is necessary to ensure high-quality training of personnel in life insurance risk assessment and to develop a methodology for this activity. At this stage of development of the insurance market, the role of underwriters is performed by insurance intermediaries, and this has a negative impact on the size of insurance rates, risk assessment and finances of insurers in general. It is necessary to motivate insurers to use the services of qualified specialists in this field.

The level of insurance services directly depends on the level of qualification of employees. To do this, it is necessary to raise standards for company employees, create an appropriate educational infrastructure, provide (for students who have chosen insurance as their future profession) the opportunity for internships and internships in domestic insurance companies and similar financial institutions outside Ukraine. It is necessary to provide an opportunity for insurance workers to improve their skills.

Domestic insurance companies, in order not to lose competitive advantage, must constantly improve their operations and services, increase the level of capitalization of the insurance system and consolidation of domestic insurance business, introduce advanced management technologies to improve service quality and efficiency of insurance companies.

After analyzing the financial support of insurance companies, the formation of their financial resources, we found that the temporarily free financial resources of the insurer participate in investment projects in order

to obtain additional income. Such temporarily free funds are insurance reserves. Investment funds received from policyholders and included in insurance reserves are subject to state regulation.

Insurance reserves, according to Article 31 of the Law of Ukraine “On Insurance” may be represented by the following assets:

- cash on current account and bank deposits (deposits), credit rating of banking institutions must correspond to the investment level on a national scale;

- foreign currency deposits;

- Real Estate;

- shares, bonds, mortgage certificates of issuers whose credit rating corresponds to the investment level on a national scale;

- securities issued by the state;

- rights-requirements to reinsurers;

- bank metals;

- loan to policyholders within the redemption amount of the insurance contract;

- availability of cash at the box office within the limit.

Before liquidation National Commission for State Regulation of Financial Services Markets controlled the placement of assets of insurance companies and in accordance with the Order No. 3104 of 17.12.2004 restricts the areas of investment of insurance reserves (Figure 4.9).

Within such restrictions, the insurer must carry out its investment activities, with important attention paid to the choice of investment project.

The complexity of the problem is that in addition to a purely economic evaluation of the option when making a decision, it is necessary to take into account the goal that follows from the general investment policy of the company – consolidating market position, improving the general condition of the company, introducing new approaches ideas, maximum reliability of the company, simplification of management, gaining credibility in the team. However, for all the variety of different components of the goal, the main one – profit maximization, which is the basis for the formation of investment policy [68]. It is impossible to separate such issues of the company’s development as ensuring its smooth operation, consolidating the economically stable state and preserving its independence.

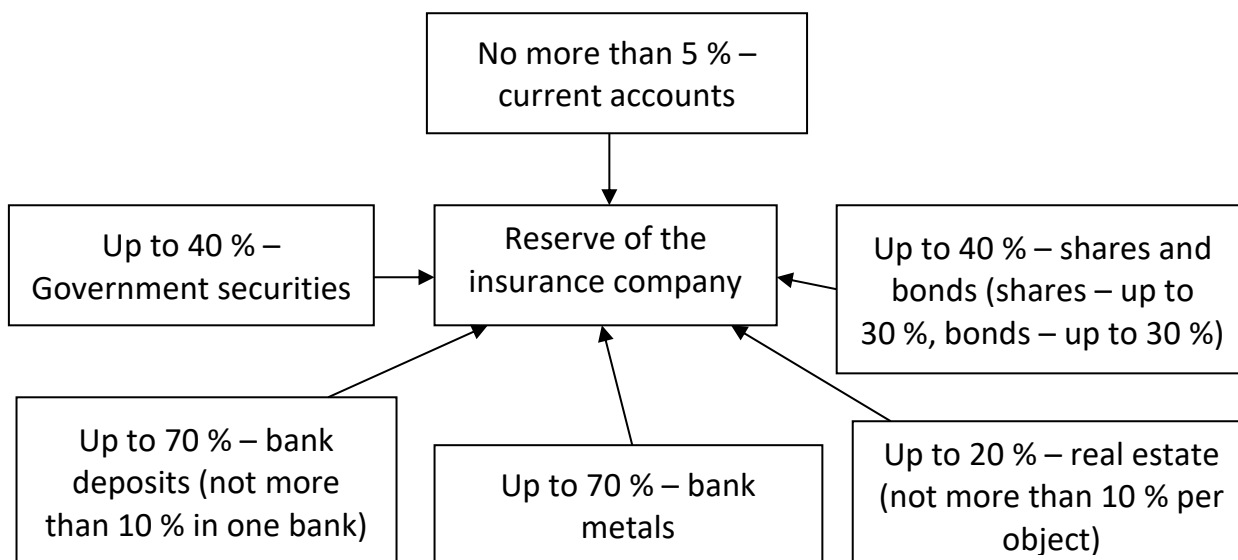


Figure 4.9. Directions and restrictions on investment of insurance reserves by life insurance companies [2]

The decision to invest is influenced by a number of factors – the type of investment, the cost of the investment project, the number of available projects, limited financial resources, the risk of decision-making and more.

The size of the expected investment is an important issue in making an investment decision. The level of responsibility associated with the acceptance of projects with an investment amount of 50 thousand UAH or UAH 50 million is different. But the depth of analytical elaboration of the economic block of the project, which precedes the decision, must be maximized in both cases [69].

Often the conditions for decision-making are a number of alternative or mutually exclusive projects, i.e. there is a need to choose one or more projects based on certain formalized criteria. There may be several such criteria, and the probability that this project will be better than others in all respects, usually much less than one. That is why it is necessary to give preference to any one criterion, to determine their hierarchy or to use additional informal evaluation methods.

Investment decision-making, like any other type of management activity, must be based on the use of various formalized and informal methods and criteria and depends on the manager's acquaintance with the existing apparatus used in a particular case.

In the field of accumulative insurance, the social effect and zero profit does not satisfy both the insurance company and its customers. Therefore, the purpose of the investment process for insurers is to obtain maximum

profit, with minimum risk and costs. Of course, to achieve this goal you need to achieve the following goals:

- search for new promising, most profitable areas of free capital investment;
- development of marketing and financial, engineering and technological forecasts;
- preparation of the capital investment budget;
- evaluation of alternative projects, determination of the sphere of influence of risks;
- assessment of the consequences of the implementation of previous projects.

From investment activities, i.e. from the placement of temporarily free funds, insurers receive:

- bank interest is accrued on the amounts of the balance on the current account;
- bank interest on the placement of funds on deposit accounts;
- interest on mortgage certificates and bonds;
- dividends on shares;
- income from the implementation of corporate rights, i.e. participation in the profits of legal entities, the founders of which are the insurance company.

For the insurance company's clients, the main and most interesting area of the company's profitability is its investment activity, as 85 % of the insurance company's investment profit is distributed among clients.

When investing funds should take into account their size. From the very beginning of the insurer's activity, a significant share of investments is the company's own funds, including the authorized capital. The main source of investment is insurance reserves.

The insurer chooses its own investment policy based on the types of insurance, term and amount of accumulated funds. Life insurance companies, in contrast to insurers that carry out risky types of insurance, have longer ownership of funds and can invest them in real estate, government securities and other long-term assets. For companies that carry risky types of insurance, the emphasis should be on more liquid investment funds [61].

None of the insurance companies today dare to invest in mortgage certificates or lend to borrowers. A similar picture has developed with investments in the economy – the volume of investments by insurers in this

area is close to zero. But such an asset as real estate insures insurers more confidence. However, some insurance companies, investing in real estate, pursue their own mercantile goals. They invest the money of policyholders in the purchase of their own offices, then declaring them in the structure of reserves. Thus, insurers save on rent. However, the profitability of such investments is very questionable. In addition, experts note that it is currently difficult to make reliable forecasts of the domestic real estate market in the long run. The practice of many Eastern European countries has shown that a dizzying rise in prices may be followed by a sharp decline, and real estate prices are comparable to the average European.

Another asset that is gradually being raised by life insurance companies is government securities. Although this type of investment is considered one of the most reliable worldwide, it is sceptical in Ukraine. The exception is, except that Eurobonds, but they, by today's standards, bring a fairly modest income [70].

To increase profitability, some insurance companies are willing to take risks, including violations of the law. By concluding long-term contracts in dollars or euros, they invest reserves in the national currency. Such actions of life insurance companies are quite clear: the profitability of hryvnia deposits today is much higher than in foreign currency contributions. At the same time, the insurance law requires that reserves be invested in the same currency in which the contract is placed.

Experts consider this practice very dangerous, because in the event of a financial crisis, such companies will find it very difficult to fulfil their obligations to customers. According to R. Denis, that one of the well-known Western insurance companies worked on this principle in Russia. But when the 1998 crisis erupted, the insurance company's liquidity plummeted. Of course, her maternal structure helped her by sending money from abroad. The company was able to repay the debt, but it was very expensive [71].

The total amount of the life insurance company's contributions to the statutory funds of other insurers of Ukraine may not exceed 30 % of its own statutory fund, including the amount of the contribution to the statutory fund of an individual insurer may not exceed 10 %.

According to Ukrainian insurance legislation, investment income is added to the contribution reserve in three ways:

1. Joining the paid net contributions of the part for which the tariffs were understated during the calculation (not more than 4 %);

2. Joining bonuses (bonuses) to the allocated part of investment income (participation of policyholders in the insurer's profits);

3. Joining the contribution reserve to the value of the inflation rate (indexation according to the inflation rate), due to which the accumulated amounts are protected from depreciation.

The insurer has the right to start insurance business if:

– accounting and registration system meet the requirements established by regulations;

– the internal rules of the insurer meet the requirements of the laws of Ukraine and regulations of state bodies that regulate and supervise the financial services markets;

– professional qualities and business reputation of the staff meet the requirements established by regulations [70].

The Law of Ukraine “On Amendments to the Law of Ukraine “On Insurance” No. 2774–IV of 07.07.2005 [20], which enters into force five years after Ukraine's accession to the WTO, stipulates that insurers who have the right to exercise insurance activity on the territory of Ukraine, there are permanent representative offices registered in accordance with the legislation of Ukraine in the form of branches of foreign insurance companies that have received a license to carry out insurance activities in the prescribed manner.

To ensure the solvency, financial stability and reliability of the insurer, a prerequisite for its activities are:

– availability of paid-in authorized capital (EUR 1 million and EUR 1.5 million);

– the presence of a guarantee fund, which consists of special funds, reserve funds, retained earnings;

– creation of insurance reserves sufficient for future insurance payments;

– the availability of free reserves, which are created from profits;

– excess of the actual solvency margin of the insurer over the estimated regulatory margin [34, p. 85].

The formation of the authorized capital is not possible at the expense of loans, collateral, insurance reserves, promissory notes.

The main goal of the insurance company is to preserve and increase capital in reverse accumulation programs, as well as support in case of disability or death of a breadwinner. Insurance programs can also be seen as “the possibility of creating a pension capital or another source of permanent

income” – says the American scientist W. Dilendorf It should be agreed that due to the increased capital, i.e. the profit, the company not only ensures the solvency of insurance claims, but also ensures the reliability and competitiveness of its company.

The legislation pays special attention to ensuring the solvency of the insurer and clearly regulates the conditions for the creation of funds and reserves to ensure the appropriate level of the actual solvency margin of the life insurance company.

The actual solvency margin (net assets) of the insurer is determined by deducting from the value of the property (total assets) of the insurer the amount of intangible assets and the total amount of liabilities, including insurance. Insurance liabilities are accepted equal to the amount of insurance reserves [36]. Insurance reserves are formed by the insurer to ensure future payments of insurance indemnity and insurance amounts depending on the types of life insurance.

To please customers, insurers are even sacrificing their own profits. In particular, some financial groups that already have banks and insurance companies are also creating investment funds, which in the future will manage the money of policyholders. Although the law prohibits an insurance company from transferring clients' money to investment funds, insurers have found a way out. “We can't buy investment certificates for clients' money”, says A. Gavrilchenko, “but no one forbids us to invest our own assets in this way. Therefore, the part of the profit we will earn by investing in an investment fund (which is much more than deposits can bring), we will distribute among clients, but at the same time we will risk not money of insurers, and own” [72].

The insurance process is reflected in the conclusion of a contract between the insurance company and the client, on the terms previously discussed and set out in the contract. And the choice of insurer depends on the decision of the person who seeks to insure his life, property or liability. That is why the financial condition of the insurance company plays an important role in making such decisions.

The main indicator of the state of the insurance company according to the law is to ensure its solvency, due to a set of indicators, the threshold values of which are set separately for companies that provide life insurance, as well as other types of insurance and reinsurance companies. Under the solvency of insurance operations means a constant balance or excess of income over the costs of the insurer as a whole in relation to the insurance

fund. In this case, the factors that ensure the solvency of the insurance company include: sufficient equity, insurance reserves (including technical reserves), positive results of investment policy, the use of the reinsurance system, if necessary, effective tariff policy.

A company with an appropriate level of solvency is financially stable, i.e. one that at its own expense covers the funds invested in assets (fixed assets, intangible assets, current assets), does not allow unjustified receivables and payables and pays its obligations to the specified term. Financial security, in this case, is to ensure the financial stability of the insurer.

The urgency of the investment issue knows no bounds, because behind it is the company's profit and well-being, the trust of its customers. The company's well-being is confirmed by a number of indicators in assessing the effectiveness of the insurer's life insurance business. Therefore, it is necessary to make such an assessment and analyze the effectiveness of the insurer.

Conclusion. Thus, the formation of a market economy in Ukraine, the emergence of new areas of management for all market participants necessitated a theoretical clarification of insurance, life insurance, social and property insurance, finding new methods of insurance protection and compensation to all market participants.

Studies of a number of definitions of "insurance" have shown that considering insurance as an economic category, from the point of view of the insurer and the insured can reveal its essence. Therefore, in a broad sense, insurance – is expressed by the system of financial and economic relations that arise between the insurer and the insured to create insurance funds, at the expense of persons interested in protecting their interests, property, health and life in insured events and full or partial compensation losses of these persons from unforeseen events and providing them (or their families) with assistance in case of insured events by the insurer, which is regulated by the contract.

Today, any country with a stable economy must have a reliable insurance system that effectively mitigates uncontrolled and unpredictable risks that can cause damage and threaten the existence of not only individuals but also unbalance the activities of economic entities.

Analytical assessment of the use of accumulative insurance funds is related to the analysis of the financial condition of life insurance insurers. The comparative characteristics of similar indicators of their activity make

it possible to identify the advantages and disadvantages of the financial condition of such companies and their position in the insurance market. According to the official data of the State Commission for Regulation of Financial Services Markets in Ukraine and the NBU, the total number of insurance companies in Ukraine as of June 30, 2021 is 181, while on the same date a year earlier – 215, including life companies – 19 (20). At the same time, 166 insurance companies submitted reports on the activities of the regulator. The Ukrainian insurance market is attractive to foreigners because, firstly, it is only developing and competition is insignificant, and secondly, favorable legal conditions interest foreigners to work in the Ukrainian market.

For the period 2015–2020, the insurance market of Ukraine is characterized by the dynamism and expansion of the list of insurance services for voluntary types of insurance, as well as increasing requirements for the establishment of the insurance company. At the same time, the current state of the insurance market is characterized by the presence of many negative trends and significant disparities in its development, which require increased attention from government agencies to supervise insurance activities and consideration in the development management of an individual insurance business.

Ukraine's insurance market still needs significant transformations in order to meet the needs of legal entities and individuals and the requirements of the global insurance market. The number of insurers has been declining in recent years due to the application of the solvency and capital adequacy ratio of insurance companies; there was a decrease in the number of insurance contracts due to the difficult economic situation and the corona crisis; the level of insurance penetration in the country is too low – the ratio of gross insurance premiums to GDP for the last decade did not exceed 2 %; The level of insurance payments is low – on average for 2015–2019 it is 26 %, although the volumes of received gross insurance premiums and made gross insurance payments are steadily growing.

The financial potential of the insurance market has its own specifics, priorities and development trends and is determined by the amount of equity and borrowed funds of insurers that can be used at a given time. Currently, the financial potential of the insurance market of Ukraine, despite the fact that it shows a slight increase in total assets (after the decline in 2015–2016), is assessed, compared with economically developed countries, as insufficient.

The investment portfolio of insurers in Ukraine is assessed as imperfect primarily due to the predominance of technical reserves in the structure of formed insurance reserves. In addition, in recent years the structure of insurers' assets has mainly increased due to bank deposits; the volume of assets represented by stock instruments, in particular, corporate securities, decreased; Insurers did not invest in some types of assets – investments in the economy of Ukraine in certain areas defined by the Cabinet of Ministers of Ukraine, mortgage certificates, etc.

At the same time, in the insurance market of Ukraine there is an insufficient use by insurance companies of modern opportunities to develop communications with customers, as well as the use of information technology to improve internal business processes.

Improving the insurance business, increasing its efficiency, ensuring the growth of economic development in modern conditions should be based on the use of various innovations, as well as identifying and eliminating the reasons that hinder the development and implementation of innovative approaches to creating effective insurance products and services.

Given today's trends for domestic promising are: expansion of the digital insurance system, which includes a range of technologies offered by insurers to their potential customers: insurance calculator, online payment for the insurance contract, ordering and purchasing an insurance contract online, online consultation, consultation in video mode and others; formation of a mobile insurance system through the creation of mobile applications; introduction of telematics in the field of insurance business; use of cloud technologies; introduction of automated systems for checking insurance contracts, etc.

The successful functioning of the domestic insurance market, ensuring the growth of its financial potential will contribute to the introduction of a new model of regulation and supervision of the insurance market, bringing Ukrainian legislation in line with European Union standards, transition to international financial reporting standards.

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Chapter V

LENDING ACTIVITIES OF UKRAINIAN BANKS: PROBLEMS AND PROSPECTS FOR SUSTAINABLE DEVELOPMENT

Oksana Vinnytska

Candidate of Sciences (Economics), Associate Professor

Associate Professor at the Department of Finance,

Accounting and Economic Security

Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine

E-mail: vinnytska.o@udpu.edu.ua

ORCID ID: 0000-0001-6402-6451

Introduction. An important and topical issue for Ukraine is the issue of improving the organizational, economic and legal foundations of effective lending activities of domestic banks. The ability of the latter to satisfy public needs for loans contributes to the development of the country's economy. The stability of the banking system largely depends on the level of efficiency of banks' lending activities.

The revitalization of the lending activity of Ukrainian banks in recent years has been accompanied by a simultaneous decrease in its profitability, which is primarily due to the instability of financial markets, imperfect regulatory framework and a high level of competition. Under such conditions, the requirements for the quality of the management process in banks are growing, in particular, there is a need to develop new and improve existing methods for assessing and increasing the efficiency of lending activities.

Such scientists as N. E. Avanesova & Yu. M. Voznikova [1], S. H. Arbuzov et al. [2], O. A. Karagodova & L. Rasputna [3], V. V. Kovalenko, O. M. Zvieriakov, & D. S. Haidukovych [4], V. Mishchenko, V. Krylova, & M. Nikonova [5], A. M. Moroz, M. I. Savluk, & M. F. Pukhovkin [6], N. V. Rohozhnikova [7] devoted their scientific works to the theoretical and practical aspects of considering the problem of assessing the credit activity of commercial banks and others, however, the issue under study remains controversial and requires analysis and further study in terms of assessing the effectiveness of certain areas of banks' activities.

Literature review. One of the most important tasks of credit management is the formation and analysis of the bank's loan portfolio. At

the same time, until now in the economic literature there is no unified approach to the interpretation of the essence of the bank's loan portfolio. Some authors refer to the loan portfolio all financial assets together with the bank's liabilities, others believe that this concept covers only the bank's lending operations, and some authors define the loan portfolio as a set of certain elements [8].

According to the definition of the National Bank of Ukraine, the loan portfolio is the aggregate of all bank loans, structured according to certain parameters in accordance with the objectives of the credit policy determined by the bank [4].

The essence of the loan portfolio is also considered through its functions, which include: distribution and redistribution; replacement of money by credit operations; consolidation of loans; minimization of credit risk; expansion and diversification of the bank's income base. However, some of them, according to scientists, are derived from the well-known functions of credit, and some are specific due to the specifics of the loan portfolio [9].

The loan portfolio is usually associated with the banking portfolio, so it becomes necessary to compare them. Comparative characteristics of the banking and loan portfolios are shown in Table 5.1.

Table 5.1. Comparative characteristics of the banking and loan portfolio

Characteristics	Bank portfolio	Loan portfolio
Profitability	Income earned per unit of assets over a specified period of time	Income received per unit of assets invested in loans for a certain period of time
Risk	The likelihood of undesirable events that may arise as a result of making a decision on the management of a bank portfolio in conditions of uncertainty	The likelihood of undesirable events that may arise as a result of making a decision on the management of a loan portfolio in conditions of uncertainty
Liquidity	Timely transformation of assets into cash or cash capabilities and ability of the bank to fulfill obligations to creditors	Timely return of loans to the bank

Source: Compiled by the author based on [10]–[11].

The loan portfolio is characterized by size and structure. “The size of the loan portfolio” is considered in relation to the total amount of active

passive operations of the bank, as well as in relation to the size of loan portfolios of other banks and is estimated at the book value of all bank loans, including overdue, prolonged, doubtful. In turn, the “structure of the loan portfolio” is the ratio of specific types of credit operations in the bank’s loan portfolio. The structure of the bank’s loan portfolio can be considered satisfactory if the proportion of unsecured loans, doubtful for repayment, overdue and prolonged loans is no more than 50 % [2].

The structure of the bank’s loan portfolio depends on [12]: subjects of lending (legal entities and individuals); debt service status (high, good, fair, weak, unsatisfactory); the class of the debtor (the class of the debtor – a legal entity (from 1 to 10) is determined depending on the obtained value of the integral indicator of the financial condition of the debtor, taking into account the size of the enterprise); credit quality categories (from I to V, taking into account the state of debt service and the class of the debtor – a legal entity); credit risk indicator, which depends on the actual values of the integral indicator of the financial condition of the debtor-legal entity, the debt coverage ratio, the quality of management of the debtor-legal entity, product markets, availability of business plans, ratings of the debtor-legal entity and other events and circumstances that can affect the timeliness and completeness of debt repayment; types of economic activities; lending currency; loan terms, etc.

With the development of the market economy, an approach has spread among economists in the study of a bank as a specific enterprise, a business entity providing services [1], or an intermediary type commercial enterprise with trade in various kinds of liquid assets, the basic element of which is currency, or money that is imitated by the lender of last resort. represented by the central bank of different countries. They represent an indefinite title of state ownership, secured by the authority of a given country. From this position, banks are accumulators and custodians of money, multipliers and trusted capital managers who carry out credit and other services under certain economic and legal conditions. The motive of maximizing profits as a source of capitalization of savings and accumulations for a credit institution, regardless of the will and wishes of the banker, must be regulated by law, although it is the direct subject of a specific agreement and contract. Otherwise, the economy of banker usury may prevail [1]. So, like any business entity, the bank, carrying out activities, must reproduce some products. It is important to find out what is the final product of the

implementation of the bank's lending activities, which borrowers use when entering into credit relations with the bank.

Consequently, the provision of credit services is accompanied by significant risks that are subject to strict control and optimization in order to prevent the occurrence of negative consequences of their implementation. It should be noted that the effectiveness of the bank's loan portfolio management depends on consistency, the adequacy of methods for assessing credit risk, methods of control over it and the timeliness of the response system on the part of banks and the regulator. Banks should strive to independently create a comprehensive risk management system that provides a reliable process for identifying, assessing, controlling and monitoring credit risk in order to minimize it at all stages of the credit process and ensure liquidity, profitability and reliability of the bank's loan portfolio.

In modern conditions, there are two approaches to determining the effectiveness of banks' lending activities:

- determination of efficiency by the ratio of such parameters as the level of reserves for non-standard debt, the volume of lending, the average interest rate on loans granted and the risk-free rate [13];

- focus either on the profit received (absolute indicator), or on the ratio of profit to a certain value (relative indicator). The importance of studying this indicator is confirmed by foreign theory and practice. For example, Western scholars use the so-called The DuPont System of Analysis, the purpose of which is to thoroughly examine the activities of companies. This system consists of five indicators: net return on equity, net return on sales, asset turnover, net return on assets, capitalization ratio. As you can see, three of the five coefficients of this system are indicators of profitability, that is, efficiency. Particular attention is paid to the profitability of equity capital, on the basis of which conclusions are drawn about the prospects for business development, the degree of stability of the enterprise in the market, the availability of financial reserves to increase the competitiveness of the company.

The effectiveness of the bank's lending activities is analyzed using the following indicators:

- profitability of credit operations;
- return on assets due to credit operations;
- the share of income from the provision of loans in the total amount of income;

- profitability of credit operations;
- profitability of credit operations;
- income per employee of the credit department [9].

The profitability of lending operations can be calculated using the following indicators:

– return on credit investments – is calculated by dividing income from credit operations by the average amount of credit investments for the study period:

$$K_{In} = \frac{\text{Income from credit operations}}{\text{Average amount of loan investments for the period}} \quad (5.1)$$

This coefficient is a universal indicator characterizing the efficiency of investments in credit operations and showing how much the bank receives income from each UAH invested in credit operations. With ideal financial discipline of borrowers, when all the terms of the agreements are fulfilled and all loans and interest on them are fully repaid, this ratio will be equal to the weighted average interest rate on loans.

Return on assets from credit operations – calculated by dividing income from credit operations by the average amount of assets:

$$K_{In.act} = \frac{\text{Income from credit operations}}{\text{Average assets}} \quad (5.2)$$

The use of this ratio is less common than the previous indicator. It characterizes the contribution of lending operations to the total return on assets. A variation of this indicator can be a coefficient, in the denominator of which, instead of total assets, only earning assets are taken. With a high share of loans in total assets, its value will approach the value of the first coefficient – the profitability of credit investments.

The specific weight (share) of income from the provision of loans in the total amount of income is calculated by dividing income from credit operations by the total amount of the bank's income:

$$Ch_{In.cr} = \frac{\text{Income from credit operations}}{\text{Income bank, total}} \quad (5.3)$$

This ratio characterizes the share of income received by the bank from the provision of loans in the total income of the bank from other active operations. Analyzing it, it is advisable to compare the value of this indicator with the value of the coefficient of credit activity. If the ratio of the share of

credit income is higher than the ratio of the share of loans in earning assets, this indicates that the efficiency of credit operations is higher than the efficiency of other banking operations.

The profitability of lending operations can be analyzed using a number of complementary indicators. The profitability of credit operations (P1) is calculated by dividing the profit from credit operations by the costs associated with attracting resources and the functioning of the credit department:

$$R_1 = \frac{\text{Interest income from loans} - \left(\text{Interest expenses} + \text{Expenses credit department} \right)}{\text{Interest expenses} + \text{Expenses of the credit department}} \quad (5.4)$$

A variation of the profitability indicator can be the ratio of interest income from loans to interest expenses associated with attracting resources.

$$R_2 = \frac{\text{Interest income from loans}}{\text{Interest expenses on attracting resources}} \quad (5.5)$$

This indicator characterizes the effectiveness of the chosen policy in regulating the ratio between the price of the resource base and the price of allocating resources. The growth of this ratio characterizes the high quality of the bank's management.

The inverse indicator – the ratio of interest costs for attracting resources to interest income from lending operations can also testify to the effectiveness of the interest rate policy:

$$B = \frac{\text{Interest expenses on attracting resources}}{\text{Income from credit operations}} \quad (5.6)$$

A decrease in this indicator is undoubtedly a positive phenomenon, but the analysis should be supplemented with an estimate of the absolute amount of profit, which, as a result of a strict interest rate policy, should not lead to a decrease in the volume of attracted resources and a decrease in demand for expensive loans.

The profitability of credit operations is calculated by dividing the profit from credit operations by the average credit investments:

$$P = \frac{\textit{Profit from credit operations}}{\textit{Average loan investments}} \quad (5.7)$$

This ratio shows how much profit from credit operations for each UAH invested in credit operations. The growth of the rate of profitability of lending operations at a higher rate in comparison with the growth of the rate of profitability of lending operations indicates an increase in the efficiency of credit investments.

For a comparative analysis of the performance of employees of the credit departments of different banks or bank branches, one can calculate the labor productivity indicator as the ratio of income from credit operations to the average number of employees of the credit department.

$$D_{1 \text{ empl}} = \frac{\textit{Income from credit operations}}{\textit{Average number of employees of the credit department}} \quad (5.8)$$

The main goal of the bank's loan portfolio management process is to ensure maximum profitability at a certain level of risk. The level of profitability of the loan portfolio depends on the structure and volume of the portfolio, as well as the level of interest rates on loans. The formation of the structure of the bank's loan portfolio is significantly influenced by the specifics of the market sector served by this bank. For specialized banks, the structure of the loan portfolio is concentrated in certain sectors of the economy. Long-term lending is typical for mortgage banks. The structure of the loan portfolio of savings banks is dominated by consumer loans and loans to individuals.

The volume and structure of the bank's loan portfolio is determined by such factors as: the official lending policy of the bank; banking regulation rules; the amount of the bank's capital; experience and qualifications of managers; the level of profitability of different directions of funds allocation.

It is possible to improve the level of bank liquidity by changing the quality of the loan portfolio by reducing the risk of the loan portfolio, increasing the share of short-term loans in the loan portfolio by reducing the cost of loans and improving the level of their collateral. The level of profitability of the bank's loan portfolio depends on a number of economic factors: the market interest rate, the volume and structure of the loan portfolio, the conditions of competition in the banking market, the bank's own capabilities in choosing directions and lending [14].

Thus, the formation of a loan portfolio is important in the activities of banks, and its balance, profitability, liquidity and riskiness affects the efficiency of the bank as a whole. Therefore, the loan portfolio should be viewed not as a simple set of loans provided, which is the result of chaotic active operations, but as a structured portfolio of assets that can be assessed, segmented, classified and managed, the nature of which is documented in advance by the bank's credit policy for raising funds and directing them to lending to customers on the basis of appropriate principles. The quality of the entire loan portfolio as a whole determines the efficiency of lending activities, therefore, for its successful implementation – ensuring the return of loans provided and increasing the profitability of lending operations, banks must implement an effective and flexible loan portfolio management system.

Results. In modern conditions, the state of the banking system of Ukraine is difficult and difficult to predict, which is due to both transformational processes in the country's economy and difficult political and social conditions. However, one of the important components of the development of the state economy is the stability and sustainability of the banking system. The ability to predict the state of the banking system makes it possible to increase its attractiveness for foreign investors and domestic economic entities, as well as to determine the main directions of further development [15].

The efficiency of banks' lending activities today is a necessary, if not decisive, factor in the life of banks, since the loan portfolio accounts for more than half of all bank assets. In the structure of the bank's balance sheet, the loan portfolio is considered as a single whole and a component of assets, which has its own level of profitability and risk. Therefore, for successful lending, banks must form and implement an effective loan portfolio management system.

Modern conditions confirm that the limited possibilities of attracting credit funds also have an impact on the development of the state economy. The intensification of lending contributes to the further growth of the economy, the emergence of new business entities, an increase in jobs, the development of the country's infrastructure, etc., which creates the basis for economic stability. At the same time, lending is one of the main lines of activity of banks, ensuring their profitability. But the process of lending for banks is accompanied by certain risks, one of which is the risk of default on borrowed funds [13].

To develop the lending process, one should first analyse the current state of the bank's lending operations, starting with determining the place occupied by lending operations in the total volume of the bank's assets.

To calculate this ratio, we use the indicators of credit investments of Ukrainian banks for the period 2017–2019, the number of banks and their assets. Input data are shown in Table 5.2.

Table 5.2. Input data for calculating the ratio of the share of loans in the total assets of the bank

Years	Number of banks, thing	Assets in nat. currency, thousand UAH	Loans and debt of clients, thousand UAH
2017	158	1,316,717,870	873,610,836
2018	113	1,252,570,443	713,974,266
2019	95	1,258,643,603	554,637,262

Source: Compiled by the author based on statistical data [16]

Based on the data in Table 5.2, the value of the ratio of the share of loans in the total assets of an individual bank was calculated, which is 59,88 %. This value indicates that the share of lending operations in the total assets of the bank is 59,88 % and characterizes the lending activity of banks. A sufficiently large value of this indicator may indicate that banks are too overloaded with loans.

There is an opinion that the value of this indicator over 65 % is too high. However, liquid banks have a lower level of this ratio, but they have most of their resources in short-term money market funds and in investment securities, which, in turn, can be easily converted into cash and then issued in the form of loans [10].

According to article 41 of the Law of Ukraine “On the system of guaranteeing deposits of individuals” and in accordance with the Resolution of the Cabinet of Ministers of Ukraine dated December 18, 2016 No. 961 “Some issues of ensuring the stability of the financial system”, adopted taking into account the decision of the National Security and Defense Council of Ukraine dated 18 December 2016 “On urgent measures to ensure the national security of Ukraine in the economic sphere and protect the interests of depositors”, enacted by the Decree of the President of Ukraine dated December 18, 2016 No. 560, and on the basis of the proposal of the National Bank of Ukraine and the decision of the Financial Stability Council from On December 18, 2016, on December 21, 2016, the state acquired

100 % of shares of KB PrivatBank JSC represented by the Ministry of Finance of Ukraine.

One of the main catalysts for the growth of net assets of the banking system in 2019 was the growth of highly liquid assets (+48 billion UAH). The loan portfolio of the banking system grew by +33 billion UAH: +11 billion UAH increase in the loan portfolio of legal entities; +22 billion UAH increase in the loan portfolio of individuals [15].

Before evaluating the effectiveness of credit management in JSC CB PrivatBank, let's start by defining the type of the bank's credit policy. To do this, we will determine the part of loans to customers in the total volume of the bank's assets. The calculations are shown in Table 5.3.

Table 5.3. Analysis of the credit activity of JSC CB “PrivatBank” in 2015–2019

Indicators	2015	2016	2017	2018	2019
Loans for clients, UAH mln.	1,591,763	189,314	36,616	38,335	50,140
Bank assets, mln. UAH	212,813	258,611	179,761	253,675	278,046
Share of loans in bank assets	74.8 %	73.2 %	18.1 %	15.1 %	18.0 %

Source: [15]

From the data Table 5.3 lending activity of PrivatBank has undergone significant changes in connection with a change in the form of ownership. So, before the nationalization of the bank, lending occupied the lion's share in the structure of the bank's active operations – 74.8 % in 2015 and 73,2 % in 2016. The largest volume of loans provided by PJSC CB “PrivatBank” fell in 2015 and amounted to UAH 189,314 million, in the future we observe the curtailment of lending activities, which led to a UAH 156,698 million.

In October-November 2017, the Bank restructured part of its loan portfolio with a total value of UAH 137,082 million, before deducting allowance for impairment losses as of December 31, 7. In 2018 and 2019, an increase in PrivatBank's loan portfolio is observed. Thus, the increase in the bank's lending operations in 2018 amounted to 26.4 % (UAH 5,719 million), in 2019 – 21.6 % (UAH 11,805 million).

As for borrowers, JSC CB PrivatBank in 2018–2019 gave priority to legal entities working mainly in the field of trade in petroleum products (Table 5.4).

Table 5.4. Analysis of the credit activity of JSC CB “PrivatBank”
in 2014–2018

Indicators	2014	2015	2016	2017	2018
The total amount of loans for clients, UAH mln.	180,174	217,689	227,924	237,181	291,936
Loans for legal entities, UAH million	82.7 %	84.6 %	1.2 %	1.4 %	1.9 %
Share of loans to legal entities in the total amount of bank loans	149,365	184,193	2,639	3,330	5,648
Loans for individuals, UAH mln.	29,274	31,244	31,652	44,066	65,242
Share of loans to individuals in the total amount of bank loans	16.2 %	14.4 %	13.9 %	18.6 %	22.3 %
Loans to small and medium enterprises, UAH mln.	2,075	2,252	2,494	4,210	8,251
Share of loans to small and medium-sized businesses in the total amount of bank loans	1.1 %	1.0 %	1.1 %	1.8 %	2.8 %
Loans managed as a separate portfolio	–	–	191,139	185,575	212,795
Share of loans managed as a separate portfolio in the total amount of bank loans	–	–	83.9 %	78.2 %	72.9 %

Source: Based on [15].

Loans and advances to customers in the amount of UAH 40,645 million, or 19 % of the total amount of loans and advances to customers (in 2015 – UAH 40,603 million or 22 %), issued to companies engaged in wholesale and retail trade are disclosed as part of trade in refined products. petroleum products. These companies form a single supply chain, so the credit risk on these loans is, as estimated by management, lower due to such a system.

As of 2019, loans to these companies were secured by stocks of crude oil, petroleum products and gas processing products, as well as corporate rights to shares (shares) of borrowers and their guarantors with a collateral value of UAH 52,245 million (in 2015 – UAH 39,671 million and in 2019, after the end of the reporting year, additional collateral was obtained on these loans in the form of oil and gas reserves worth UAH 852 million).

As part of industrial production and the chemical industry, loans and advances to customers in the amount of UAH 23,423 million (in 2015 –

UAH 17,246 million) were disclosed to companies in Ukraine that are merged into one structure, but produce and sell a variety of products in the markets of Western and Central and Eastern Europe. The consumers of these products are companies operating in the food industry in these markets. Thus, in 2019 loans to these customers were secured by corporate rights to shares with a collateral value of UAH 30,385 million (in 2015 – UAH 18,673 million).

The total amount of loans to the largest 10 clients of PrivatBank in 2016 amounted to UAH 50,187 million (in 2015 – UAH 32,548 million) or 23 % of the total value of the loan portfolio (in 2015 – 18 %). The allowance for impairment losses on loans to these borrowers is UAH 4,849 million (2015 – UAH 4,455 million). In 2016, PrivatBank had 8 borrowers (in 2015 – 6 borrowers) with the total amount of loans issued to them exceeding 10 % of the Bank's net assets or UAH 2,751 million (in 2015 – UAH 2,450 million). The total amount of these loans amounted to UAH 45,928 million (in 2015 – UAH 25,414 million), and the amount of the formed allowance for impairment of loans issued to these borrowers amounted to UAH 2,572 million (in 2015 – UAH 3,125 million).

As a result of the restructuring, PrivatBank changed the currency of loans to UAH, lowered interest rates, increased the maturity of loans until 2024 and 2025, converted part of the loans into financial leasing and changed the collateral for loans. In 2017, the Bank recognized impairment of these loans in the amount of UAH 135,018 million.

As seen from Figure 5.1. in the structure of the loan portfolio of JSC CB "PrivatBank" there was such a component as "Loans managed as a separate portfolio". In 2017, 2018 and 2019 the category "Loans managed as a separate portfolio" includes non-performing loans issued before December 19, 2016. In the opinion of the Bank's management, this portfolio has a similar exposure to credit risk, regardless of its classification by industry and line of business at the date of origination of such loans.

In 2019, PrivatBank recognized a loss of UAH 209,453 million of the allowance for expected credit losses on these loans (2018: allowance for impairment of utility – UAH 181,887 million; in 2017: allowance for impairment of utility – 180,114 million).

In 2016, as a result of the threat of loss of solvency, JSC CB "PrivatBank" was forced to restrict the offer of credit products, but did not completely block channels of access to loan funds, since the bank is primarily loyal to customers with a positive credit history.

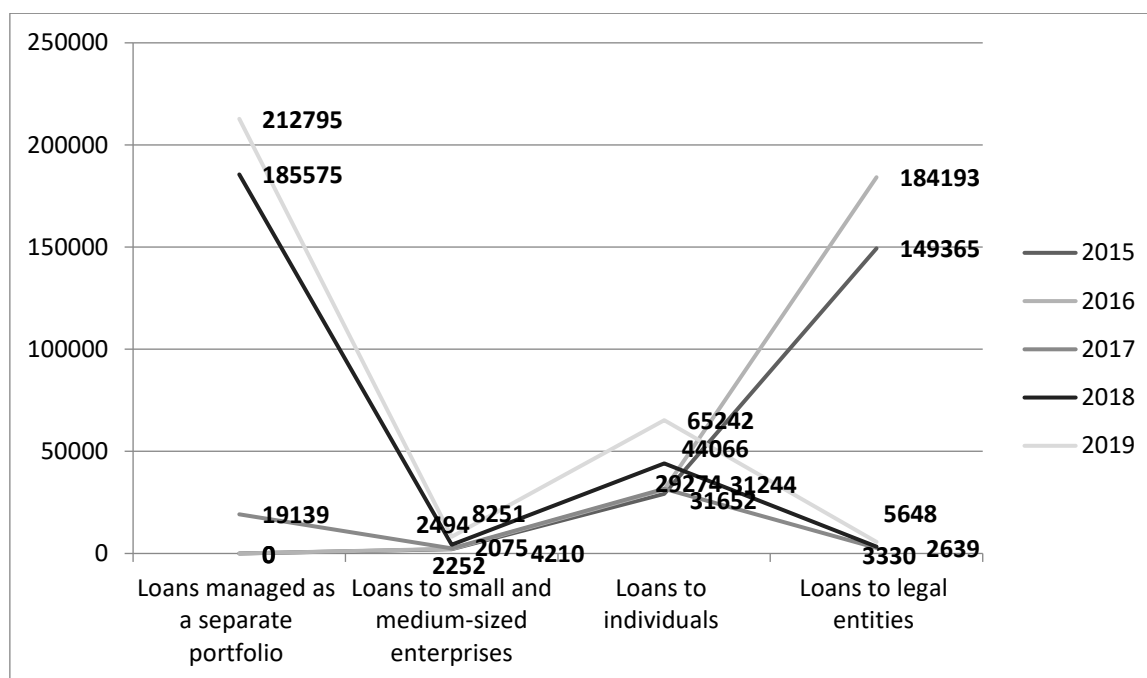


Figure 5.1. Analysis of the structure of the loan portfolio of JSC CB “PrivatBank” by types of borrowers in 2015–2019

Source: [15]

In the credit strategy and policy of PrivatBank, there are restrictions on financing large businesses (from UAH 50 million in annual revenue) and lending to the public sector. This is due to the fact that large companies have the opportunity to blackmail the bank: if the borrower owes a small amount, he is dependent on the actions of the lender, but if the borrower owes a million or more, then this becomes a problem for the bank.

Corporate business is credited only on the condition that the client serves salary projects in PrivatBank.

Six months after nationalization, the Bank resumed lending, that is, from mid-2017. Then the limit was set at UAH 7,5 billion. In 2019, the Bank reached a balance of UAH 5,223 billion, a total of 2,448 loans were issued.

It should be noted that 81 % of PrivatBank’s loan portfolio are loans of less than UAH 10 million. The largest is UAH 370 million. Loans over UAH 400 million. The bank does not consider it at all. Due to a balanced credit policy, the share of problem loans, the so-called NPL, on new loans is less than 1 %.

PrivatBank is very careful about lending in foreign currency: now 3 million euros is the largest foreign currency loan.

Regarding the cost of a corporate loan, it can be noted that the working rate is 19 %, without additional fees.

As for the maturity, longer leasing loans – up to five years with an advance payment of 30 %; the majority are loans up to a year, there are many overdrafts, the average rate is 17 %.

In order to accelerate customer service, as well as reduce the cost of service, 82 % of decisions on issuing loans were made in automatic mode.

Of the credit products, the most popular among corporate business is KUB (country of successful business), which accounts for 42 %; then – a loan to a limit account; other loans – 18 %. The share of leasing is still insignificant, but the Bank plans to increase it.

PrivatBank does not consider loans below UAH 5 million, because the labor costs for checking the client are too large.

The share of mortgage loans is also steadily high – in 2019, every fifth UAH was engaged in the acquisition of real estate. In absolute terms, this amounted to UAH 5,228 million. in 2015, UAH 8,099 million. In 2016 and UAH 9,045 million in 2017. In 2018, the volume of mortgage loans changed slightly and amounted to UAH 9,130 million, and in 2019 it tripled to UAH 12,923 million. There is a stable growth in consumer loans – from 0.6 % in 2015 to 6,4 % in 2019. In 2016, the lowest value of this indicator was observed – UAH 88 million. With the change in the client orientation of PrivatBank in 2017, the share of consumer loans amounted to 3.6 %, that is, UAH 1,069 million. In 2018, their volume almost tripled and reached UAH 3,144 million, and in 2019 – UAH 4,193 million.

It should be noted a positive trend in the increased lending to individuals through financial leasing. Since PrivatBank defines this as a priority, one can hope for a further increase in this indicator.

Summing up the above, we note that over the past five years, the credit strategy of JSC CB “PrivatBank” has undergone significant changes, which is associated with the nationalization of the Bank. So, if in 2015 credit transactions accounted for almost 75 % of total assets, then in 2019 their volume decreased to 18 %. The bank’s client orientation has also changed. If earlier PrivatBank focused on lending to corporate business, mainly specialized in the sale of petroleum products, now the priority of the Bank is the retail business. For individuals, the most popular credit product is card loans, while legal entities prefer the “KUB” loan (the country of successful business). When providing credit service to clients, PrivatBank is based on the principle of economic expediency, therefore, it tries to automate the process of credit service to clients as much as possible in order to make it cheaper. To reduce the riskiness of lending operations, PrivatBank does not

provide large loans and prefers UAH lending. To assess the effectiveness of lending operations, it is important to determine the quality of lending operations by calculating the volume of non-performing loans, the so-called NPL.

As evidenced by the data Table 5.5, the smallest share of problem loans was observed in 2015, but this was mainly due to an unreliable assessment of the level of risk of loans. In the last two years, the bank's lending operations have shown the maximum toxicity level – 71.8 % and 77.2 %, respectively, with the recommended value of up to 5 %.

Table 5.5. Analysis of the quality of credit operations of JSC CB “PrivatBank” in 2015–2019

Indicators	2015	2016	2017	2018	2019
Non-performing loans (NPL), UAH mln.	9,953	26,706	19,281	170,266	225,432
The total amount of loans for clients, UAH mln.	180,714	217,689	227,924	237,181	291,936
Share of non-performing loans (NPL) in the total amount of loans to customers	5.5 %	12.3 %	8.5 %	71.8 %	77.2 %

Source: [15].

According to PrivatBank, the toxic portfolio of the bank, inherited, amounted to UAH 213 billion: this is UAH 206 billion of loans and almost UAH 7 billion of non-core banking assets. These are 1147 objects: residential mortgage, parking lots, gas stations, oil depots, hotels, 2/3 of the Bukovel ski resort along with ski lifts and ski slopes.

A special unit has been created to sell non-core assets at three sites. A significant part of problem loans is secured by less than 2 % – loans for UAH 206 billion are secured by collateral only in the amount of UAH 4.4 billion. But the likelihood that they will be selected and sold is minimal [5].

The problem of loan defaults is not new to the banking system in recent years. But it is paradoxical that the largest bank in the country has the largest share of these problem loans, which makes it the most unprofitable. On average, for 2019, 85.11 % of all Privatbank loans are non-performing, which confirms the hypothesis that the presence of systemically important banks is detrimental to the economy due to the excessive concentration of

risks in these banks. At the same time, the large volume of Privatbank's problem loans on loans negatively affects the bank's capital and makes it impossible to finance new projects of enterprises.

One of the main directions of increasing the efficiency of the bank's loan portfolio is its effective management, which provides for balancing and minimizing the risk of the entire portfolio and controlling the structure of credit risk inherent in certain markets, customers, loan instruments, loans and operating conditions [17]. Loan portfolio management as a process consists of five sequential stages [18]: selection of credit policy; credit market analysis; formation of a loan portfolio; revision of the loan portfolio; assessing the effectiveness of the loan portfolio.

The effectiveness of the credit portfolio management of a commercial bank can be achieved to a significant extent thanks to a thorough analysis of each stage of the loan portfolio management process. Each bank independently chooses a credit policy, analyzes loan markets, forms a loan portfolio and evaluates its effectiveness, but it does so in accordance with the current legislation regulating banking activities.

Formation and management of a loan portfolio is the basis for effective management of the credit process. Portfolio management allows you to balance and hold the risk of the entire portfolio, anticipating and controlling the risk inherent in different markets, clients, lending instruments, loans and operating conditions.

Analysing the problems of bank lending in Ukraine, we can say that the banking system of Ukraine needs significant reform and improvement of credit policy, which should ensure the recovery of the financial sector and the restoration of economic growth in Ukraine. This is the main task in the context of the need to quickly overcome the consequences of the financial crisis in the domestic economy and the guarantee of its further development [5].

Credit policy is an important tool for achieving goals and objectives set by the bank. Last but not least, the result of a banking institution's activities depends on the successful implementation and implementation of credit policy. Credit policy determines the company for the lending activity of the banking structure, becomes the basis for the entire lending process, describes its characteristics and features. A properly developed lending process, the introduction of a system for managing credit operations and possible risks, determining the main priorities, goals, objectives, as well as methods and ways of implementing credit policy will help to maximize the

profitability of both credit operations and the overall result of the bank's activities [7].

The credit strategy as a component of the bank's credit policy forms the boundaries within which all future management decisions must be implemented. To develop an effective credit strategy, it is necessary to use a variety of scientific and practically grounded approaches that take into account the main and secondary, internal and external factors. The result of the implementation of this strategy is the formation of a long-term plan, which should reflect the system of new programs for the activities of the bank's credit departments and ensure the achievement of the set goals. A correctly developed strategy will allow the bank not only to withstand difficult conditions, but also to develop successfully [1].

The bank loan portfolio is exposed to all the main types of risk that accompany financial activities: liquidity risk, interest rate risk, credit risk. Therefore, it is necessary that the management of the loan portfolio is carried out on the basis of the use of methods and ways to minimize credit risk [20]. And according to the study, today lending to banks has a high level of risk.

Since the beginning of 2017, new requirements for the calculation of credit risk by banks are fully operational. Since, since the beginning of July 2016, banks have applied the requirements of the NBU Regulation "On Determining the Amount of Credit Risk" [19] in a test mode. At the same time, in order to take into account, the peculiarities of working with borrowers after the crisis, the NBU, together with banks, worked out a number of measures and made the necessary adjustments to the situation. The most significant changes in the Regulation [20]:

- the wording was clarified and the introduction of certain indicators of high credit risk;
- the LGD (Loss Given Default) value when calculating the credit risk for state-owned enterprises has been reduced – from 45 % to 30 %;
- the assessment of credit risk for swap transactions has been adjusted. A list of conditions has been established under which credit risk for such transactions does not arise;
- the list of instruments for guaranteeing the fulfilment of the debtor's obligations by other members of the group to which the borrower belongs has been expanded, in particular, the possibility of using financial orders and irrevocable stand-by letters of credit has been provided;

- it is determined that banks can use the financial statements of borrowers from open sources, for example, the websites of companies and the National Securities and Stock Market Commission;
- clarified certain requirements for collateral;
- deferred compulsory insurance of all pledged items. Therefore, today each bank must reasonably approach the development of its own credit policy, relying on the priority of minimizing the level of risk over the possible profitability of a credit operation. The bank's loan portfolio is documented in advance by the credit policy – the strategy and tactics of the bank to raise funds and direct them to lending to the bank's customers on the basis of lending principles.

Now, at the level of the banking system, it is possible to determine certain patterns and trends. Yes, a high proportion of loans in banks' assets leads to an increase in the level of sensitivity of the banking system to external shocks, which results in a high level of unprofitable banking activities. Thus, in the current conditions of the development of the domestic banking sector, the regulatory and supervisory approaches of the NBU should be focused on ensuring the macroeconomic stability of the banking system by reducing the risks of banking activities, based on the clear performance by banks of their functions of lending to the economy and compliance with basic economic standards, among which are the following [21]:

1. Capital ratios: the minimum amount of regulatory capital – N1 (UAH 500 million); sufficiency (adequacy) of regulatory capital – N2 (at least 10 %).

2. Liquidity ratios: instant liquidity – N4 (not less than 20 %); current liquidity – N5 (not less than 40 %); short-term liquidity – N6 (at least 60 %).

3. Ratios of credit risk: the maximum amount of credit risk per counterparty – N7 (no more than 25 %); large credit risks – N8 (within 8 times the amount of regulatory capital); the maximum amount of credit risk on transactions with persons related to the bank (no more than 25 %).

4. Investment standards: investment in securities separately for each institution – N11-1 (no more than 15 %); of the total investment amount – N12 (no more than 60 %).

Lending activities of banks play a key role in the process of ensuring the investment activity of economic entities, the provision of households with the necessary funds and, in general, the growth and development of the

economy. The credit policy, in turn, allows to realize the short-, medium- and long-term goals of the bank in terms of the formation and implementation of tactical and strategic objectives for raising funds and their direction for lending to borrowers (clients) with close interdependence with other types of policies [22].

At the present stage in Ukraine, most banks have formed a methodology and methodology for managing credit policy, but it requires significant improvement. This is not only about strengthening measures to improve the overall level of business activity, but also about comprehensive credit risk management. A key role in the latter can be played by a client-oriented approach, the use of new banking marketing tools, open contract work, as well as renewed customer confidence by strengthening information and physical security [11].

At the same time, it should be noted that the credit policy of commercial banks is an integral part of the strategy and policy of the NBU and the government, requiring appropriate rational and scientifically based measures in the country's financial market, in particular, in terms of supervision of banking institutions, strengthening monitoring and reporting requirements. reassessment of the principles and methodological foundations of the restructuring of troubled banks, the compliance of activities with international standards, the effectiveness of the communication component of activities, as well as the transparency of the activities of the banking sector regulators themselves [1].

The main directions for the further development of lending in Ukraine should be the use of best practices in assessing the creditworthiness of borrowers, legislative regulation of relations between the subjects of the credit process, in particular, between collectors and debtors, stimulating borrowers to improve their credit rating, increasing the level of financial literacy of the population and trust in banking system [23].

Regulatory and supervisory approaches of the NBU in the field of consumer lending should focus on ensuring the stability of the banking system by reducing the risks of banking activities; the formation of regulatory documents, rules and conditions for the organization and management of the lending process; ensuring effective supervision and control of the quality of lending [10].

The further development of lending is of great importance today. Indeed, in recent years, the quality of banks' loan portfolio has significantly decreased. According to the results of the study, it was determined that

lending activity is risky, while the quality of the loan portfolio is doubtful, the dynamics of quality indicators reflect a negative trend due to the growth of inflation and an increase in the share of bad debts. Given the high level of credit risk, it is advisable to improve the efficiency of statistical monitoring and control of borrowers [24].

The external conditions in which the bank operates are dynamically changing today: new technologies are being introduced, competition for clients is intensifying, and the means of regulating banking activities are being adjusted. Therefore, there is a need to manage the loan portfolio through supervision and control over the activities of a banking institution [25].

It is also important that in the current conditions of the development of the domestic banking sector, the regulatory and supervisory approaches of the NBU should be focused on ensuring the macroeconomic stability of the banking system by reducing the risks of banking activities, based on the clear performance by banks of their functions of lending to the economy and compliance with basic economic standards.

Thus, banking in Ukraine needs significant reform and improvement of credit policy, which should ensure the recovery of the financial sector and recovery of economic growth in Ukraine.

Conclusion. Generalization and systematization of approaches to understanding the essence of the concept of “bank loan portfolio” made it possible to consider the bank’s loan portfolio as a structured portfolio of assets subject to assessment, segmentation, classification and management, the nature of which is documented in advance by the credit policy – the bank’s strategy and tactics for raising funds and referring them to lending to his clients on the basis of lending principles.

Starting from 2015, the deterioration of the economic situation in the country and, as our analysis showed, the ineffective management of the loan portfolio of JSC CB PrivatBank significantly affected the quality of its lending operations. So, over the past 5 years of the bank’s activity, the share of overdue loans has significantly increased, the level of credit risk, accordingly, also tended to grow. In order to reduce the riskiness of lending activities, JSC CB “PrivatBank” uses various options for repayment of debts, lending to corporate clients is limited, foreign currency lending, lending to large loans, requirements for loan security have been increased and a number of other measures have been taken. By the end of 2019, the

bank managed to improve the security of its loan portfolio and make a profit, the largest in the banking system of Ukraine.

JSC CB “PrivatBank” is a leader in the domestic market of banking services. The innovativeness of its activities and effective management made it possible to receive UAH 12,79 billion in 2019 net profit, which secured the 1st place in this indicator among the banks of Ukraine. This is a record figure for the banking system of Ukraine since the beginning of the economic crisis.

Evaluation of the effectiveness of the banks’ loan portfolio made it possible to establish that the loan portfolio that has high profitability and low riskiness is effective. Based on the calculations, a strong direct relationship was found between the profitability of banks’ lending activities and their riskiness.

Also, in the calculations, an inverse relationship was found between the relative values of profitability and risk, which indicates the presence of a relationship between profitability and already acquired riskiness, and not potential.

Based on the results obtained, it is proposed to determine the effectiveness of the loan portfolio on the basis of the ratio of the relative value of profitability to the relative value of the risk of credit operations. The higher the value of this indicator, the more effective the bank’s loan portfolio.

As a result of the analysis, it was found that more loans were provided to both individuals and legal entities of the last class of debtors with a high credit risk significance. As an explanation, it was assumed that this situation is due to the fact that in previous years, borrowers who received loans in foreign currency, due to significant fluctuations in the exchange rate, automatically became debtors with a critical financial condition. In addition, this may indicate that a significant share of loans is issued by banks to insiders, and according to the law, such borrowers are classified as debtors with a high level of risk.

The main systemic risks of the financial sector today are the high share of the state in the banking sector and the level of non-performing loans – 55,8 %, which is a ballast for banks’ balance sheets. Most of these loans, in our opinion, will not be renewed, therefore it is advisable to fully reserve and write off. For this, it is necessary to amend the legislation in order to eliminate the negative tax consequences for banks. Therefore, banking in Ukraine requires significant reform and improvement of credit policy.

The effectiveness of the bank's loan portfolio can be achieved through effective management of it. For this, banks need to develop a credit policy aimed at minimizing the level of risk over the possible profitability of a credit operation. This will be facilitated by the improvement of information support in the process of assessing the creditworthiness of borrowers, thereby reducing the level of lending risks and the loan portfolio of banks as a whole.

The main directions for the further development of lending in Ukraine should be the use of best practices in assessing the creditworthiness of borrowers, legislative regulation of relations between the subjects of the credit process, in particular between collectors and debtors, stimulating borrowers to improve their credit rating, increasing the level of financial literacy of the population and trust in banking systems.

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Chapter VI
ACCOUNTING ASPECTS OF CRYPTOCURRENCY
OPERATIONS MANAGEMENT

Andrii Makurin

Candidate of Sciences (Economics), Associate Professor
Doctoral student at the Department of Finance, Analysis and Insurance
Kharkiv State University of Food Technology and Trade, Kharkiv, Ukraine;
Associate Professor at the Department of Accounting and Audit
Dnipro University of Technology, Dnipro, Ukraine

E-mail: makurin.a.a@nmu.one

ORCID ID: 0000-0001-8093-736X

Introduction. The information technology development results in the origin of new types of cryptocurrency. Main advantages of the cryptocurrency use are decentralization and freedom of transactions. Cryptocurrency acts worldwide as the inexpensive technological means of payment as well as special form of investment.

Nowadays, there is no shared idea as for the interpretation of the “cryptocurrency” concept. On the one hand, it is considered as the “virtual currency” and called both a special payment network and a new type of monetary means. On the other hand, it is called a “digital asset”, which can be exchanged for other assets. Cryptocurrency is characterized by a free market rate formed on the demand-supply basis.

Accounting of the traditional monetary means is performed in terms of the identification of a payment instrument and participants of the agreement. Such a process may be represented as follows: “seller-buyer” (agreement) on the “money-goods” principle. That is the approach which helps conduct short-term transactions in terms of similar location of the counterparties. While using cryptocurrency, which may be represented as a series of bytes of certain information, it is necessary to have electronic payment system acting as an intermediary. Main task of such system is the accounting control providing non-admittance of repeated set of bytes. Nowadays, there are a number of similar systems, which increase the risk of data and information fraud. Bitcoin (cryptocurrency) does not mean the involvement of the third parties to conduct monetary operations; thus, a blockchain system can be considered rather safe.

During the recording of cryptocurrency and operations with it, the accounting has certain legal limitations as the legal status of such assets is different worldwide. It is within the range from virtual currency, monetary surrogate, virtual goods, and digital asset to the intangible asset. Basing on that, there are no legal grounds to recognize cryptocurrency as a payment instrument in Ukraine. Along with that, it is not prohibited to convert cryptocurrency into the national currency and vice versa as such operations are not prohibited at the legislative level; thus, there is no violation of the national legislation. Bitcoin-ATMs already function in the developed countries worldwide but the no availability of the regulatory system does not allow the operation of electronic payment system PayPal (cryptocurrency) in Ukraine [1].

Legalization of the cryptocurrency operations requires a complex process of the determination of cryptocurrency status, a mechanism of its accounting, and the development of a system for taxation and control of such operations. There is the necessity to legalize cryptocurrency and cryptocurrency operations in order to legalize and impose taxes on the cryptocurrency operations and mining process. Basing on the fiscal law, legal entities that buy the equipment for virtual currency mining should enter it in the books and put it into operation.

If a physical party (a sole proprietor) buy such equipment, he/she does not enter it in the books, only in case if the latter is in the 3rd group of a simplified taxation system, it should be kept in mind that the income is limited by USD 178,000 (as of 01.10.2020) and costs for its purchase should be confirmed within the limits of the obtained income [2].

Literature review. R. Brukhansky, & I. Spilnyk [3] try to identify and substantiate the perspectives of solving the problem of digital assets integration in the accounting system and financial data reporting. The authors focus on the necessity of identification and giving certain legal status for cryptocurrencies in terms of certain legal environment. The research states that the acceptance of crypto assets by accounting is rather a methodologically complicated but innovative and perspective problem requiring complex solution. In his research, T. Yatsyk [4] represents a comparative characteristic of such main users of the cryptocurrency market as miners, cryptocurrency emitters, online-exchangers, cryptocurrency exchange markets etc. Moreover, the paper analyzes stages of the activities of economic agents in the cryptocurrency market to single out the cryptocurrency-related operations. It should be also noted that in the near

future such standard assets as bonds will become digital, which will make it possible to develop new decentralized business-models based on a blockchain model. A. Stovpova [5] studies key features of tokens as crypto assets, which differ from cryptocurrencies. She also considers the problems of recognition of bitcoin and other cryptocurrencies in accounting. The author substantiates impossibility of using a universal approach to the accounting of cryptocurrency due to its variety and functional difference. In their analysis, T. Tarasova et al. [6] uses to chastic models to forecast a cryptocurrency exchange rate. The authors emphasize the necessity of representation of certain operations in cryptocurrency-related accounting; they propose to recognize digital currency as digital assets. M. Pashkevych et al. [7] substantiate the necessity of the implementation of a blockchain technology in accounting. They also specify certain risks of the cryptocurrency use and consider the possibility for accounting to record digital assets in financial accounting and financial data reporting. X. Han, Y. Yuan, & F. Wang [8] study if cryptocurrency can draw ahead of fiat money with the help of analytical hierarchy process (AHP) for elaborating a scale of pair comparisons. The results have shown that fiat money still prefer cryptocurrency due to numerous reasons. In his research, A. Qassim [9] analyzes monetary characteristics for five cryptocurrencies to estimate whether they could act as money. He makes a conclusion that only bitcoin has the potential to act as the value storage owing to the facts that it is stick to low supply growth; in addition, it is supported reliably by the distributed network protocol and significant demonstration of no availability of any authority. R. Brukhansky, & I. Spilnyk [3] consider the essence of cryptocurrency for the accounting purposes: money, their equivalent, currency, goods, shares, financial investments or intangible assets. They conclude that it is required to apply a universal approach to the recording of cryptoassets in accounting.

E. Sundqvist, & P. Hyttiä [10] discuss different aspects of cryptocurrency recognition in Ukraine. They identify the necessity to clarify and harmonize the available national accounting standards for the determination and reporting during the cryptocurrency operations. Along with the development of information technology, there are certain changes not only in the technology dealing with the payment transactions; attitude of people to those operations changes as well [11].

Different generations replace each other; we observe transformation of modern society. V. Fostolovych [12] proposes the scenarios, in terms of

which cryptocurrency should be considered as the (foreign) currency though the financial system regulators do not consider cryptocurrencies as money (fiat currency). O. Nazarenko, & V. Lykova [13] stress that cryptocurrency is growing in its importance in the reformation of a financial system due to its increasing popularity and loyalty. However, I. Derun, & I. Skliaruk [14] proves that cryptocurrency is a destructing instrument of payment. Nevertheless, A. Stovpova [15] are sure that soon cryptocurrencies will have considerable effect on the banking, financial, and monetary systems.

Despite the considerable interest of scientists in digital assets, a problem of cryptocurrency determination as the accounting object is rather debating as it is not clear what it should be recognized as and where should it belong to. Consequently, there arises the necessity of studying the parameters of cryptocurrency as the accounting object.

Results. From the accounting viewpoint, a problem of considering cryptocurrency as a payment instrument has not been analyzed to the full extent. Currently, there are no grounds for qualifying different-type cryptocurrencies in the accounting as standard currencies or assets due to the following:

- they are not regulated by any jurisdictions;
- it is impossible to identify an emitter or a specific organization responsible for their emission;
- cryptocurrency exists only in the virtual internet-medium.

Basic features peculiar for cryptocurrencies and electronic monetary means are given in Table 6.1.

There is a problematic aspect at the initial stage; that is misunderstanding of the algorithm of accounting representation of such operations as well as a mechanism of its taxation. From the technical viewpoint, Ukrainian companies may conduct the operations of cryptocurrency buy and sell, exchange, and payment using free exchange rate on the Internet-sites or electronic resources of currency conversion (a peculiar kind of exchange market).

Thus, anonymity and diversification are the main cryptocurrency distinctions comparing to electronic money. The emission method means mining, owing to which new information blocks are created and main rewards for mathematical calculations of certain cryptocurrencies are generated. Bitcoin has the greatest market capitalization and, correspondingly, the greatest market share. Bitcoin is a peer-to-peer electronic payment system used in terms of the same-name exchange unit.

Maximum number of bitcoins, which can be mined, is limited by 12 million units.

Table 6.1. Comparison of monetary means, electronic money, and cryptocurrencies

Parameter	Monetary means	Electronic money	Cryptocurrency
Format	Paper	Digital	Digital
Payment unit	National currency	Fiat money (USD, UAN, EUR, BYN, ARS)	About 1000 cryptocurrencies
Identification of clients	Passport data	To identify clients, the standards developed by the Financial Action Task Force on Money-laundering (FATF) are used though the standards admit the simplified measures for low-risk financial instruments	Anonymity
Methods of emission	State institution	Emission in the electronic form in exchange for fiat money emitted by the central regulatory body	Mining – equipment and mathematical methods
Emitter	National banks	Based on the legal grounds, electronic money emitter (which may be represented by a financial institution)	Private individual, miners
Book-keeping operations in terms of the accounts (Ukraine)	301, 311	335	127, 301, 335, 35,

Source: Formed by the author on the basis of [8; 9].

According to the preliminary calculations, the last Bitcoin may be mined in 2040. Since the Bitcoin cryptocurrency emission is limited, becoming more and more resource-intensive with the course of time, it is quite common to consider Bitcoin as “digital gold”, i.e. as a certain standard for other cryptocurrencies. Leading role of Bitcoin is confirmed by statistic data concerning the cryptocurrency market functioning [10].

Classification of such assets and their further estimation has significant aftereffects not only for the reporting economic entity but also for the state economy in general [11]. Consequently, it is possible to control such a

specific object of accounting as cryptocurrency with the help of the following algorithm represented in Figure 6.1.

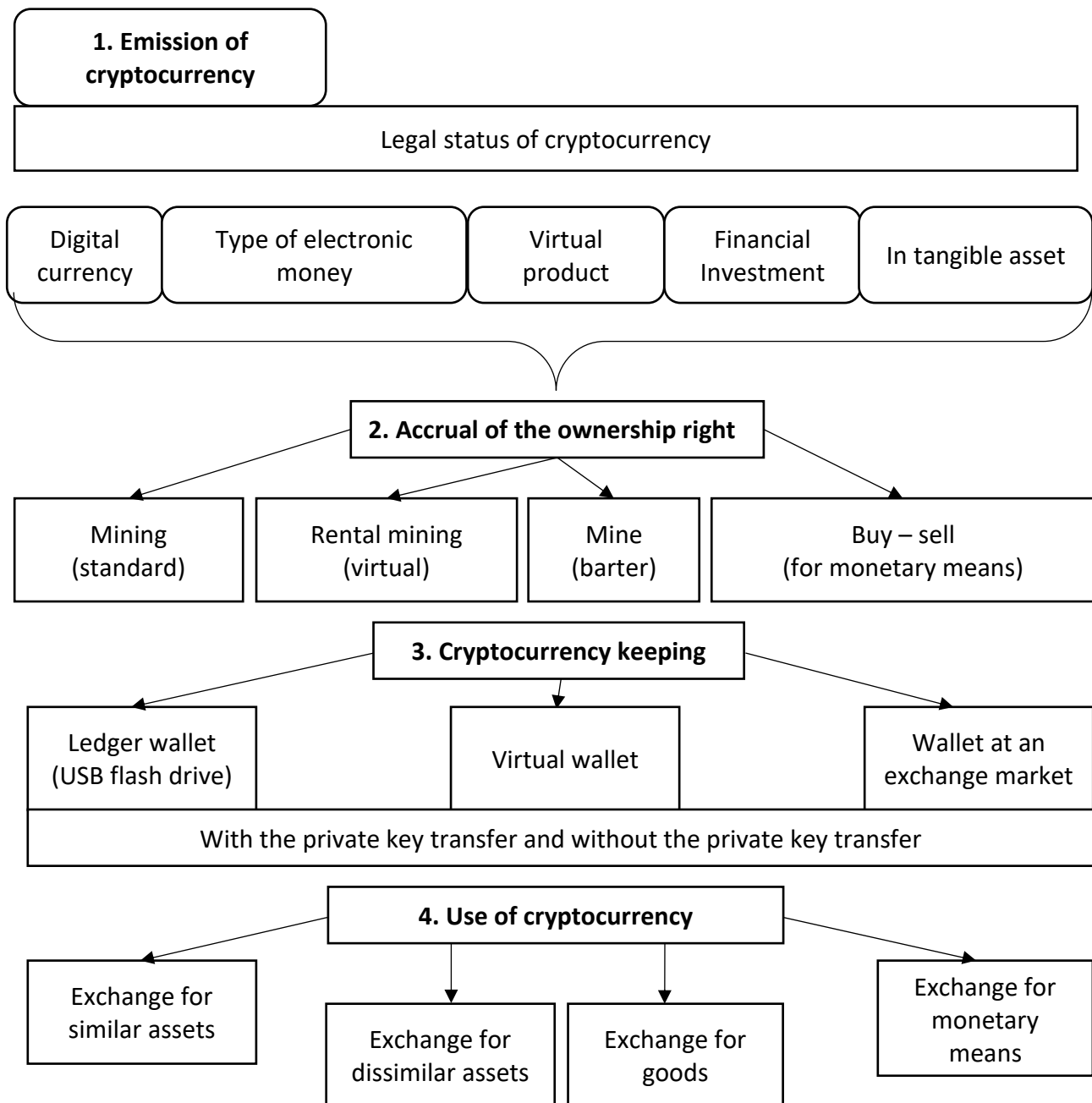


Figure 6.1. Stages to represent the activity of an economic entity
Source: Developed by the author.

At the beginning of 2018, market capitalization of cryptocurrencies reached its peak. Cryptocurrencies cannot be neglected in terms of their involvement in a share of wealth of both a state and certain parties. Differences in the approaches to cryptocurrency interpretations are the main practical problem; later, those differences affect the accounting methods, which influence considerably the financial markets. Asymmetry of the

information between the authorities and the interested parties experience certain intensification with further effect on the income control in terms of the lack of proper accounting regulation.

To understand better the creation of such an accounting object as cryptocurrency, it is expedient to analyze a mining process with the singling out of certain calculation stages of costs and consideration of main stages, which form the activity of economic entities in the cryptocurrency market.

Thus, stage one of the cryptocurrency creation, i.e. its emission, is the accrual of the ownership rights. There are several ways to get cryptocurrency. The first way requires use of specific equipment for cryptocurrency mining, Internet speed, powerful facilities, and electric power. Certain method (ASIC or mining farm) should select one correct hash Code among the millions of combinations, which will form the block heading in the blockchain. As soon as the required number is generated, a block with all the transactions is closed, and miners move on to search for the next one. Miners are rewarded for the correct hash Code; the reward is 12.5 bitcoins [12].

The second way is much simpler. That is cryptocurrency purchase in the exchange market for real monetary means. The third way is connected with the Thash equipment rent – virtual ASICs on the Internet for certain sum of compensation for the costs described in the first way. The fourth way is a mine, i.e. a barter operation – exchange for some similar asset.

All that should be singled out for further accounting of the costs, formation of the cryptocurrency prime cost, and cryptocurrency representation in both financial and fiscal reports. The rental of premises, heat elimination, and temperature control in the premises are the additional conditions of the successful equipment performance.

Stage two involves cryptocurrency keeping in terms of certain media or virtual wallet. Two variants are possible here – with and without the private key transfer; the key is formed of 30 words in a virtual wallet or of 20 symbols on an information-carrying medium. In this case, form of control and a period, during which an enterprise or sole proprietor can control such asset, is of great importance.

Stage three means the cryptocurrency use in everyday life of enterprises and organizations [6]. Two objectives are possible here: the first one is to use cryptocurrency for buying goods and services; the second one is the investment [7]. There are also other variants of cryptocurrency use, e.g. exchange for monetary means, but the mentioned ones are basic.

Moreover, while investing, all the possible risks should be considered. One cannot identify all the risks and protect oneself against them.

For instance, prohibition of cryptocurrency use in any country of the world may influence negatively its exchange, resulting in its further fluctuation; besides, electricity may become more expensive, making the mining inexpedient. Miners start switching off the equipment; load of mining complexity will decrease due to the lower number of network participants; and cryptocurrency will either increase or reduce its cost.

The accounting objects represented by cryptocurrency are accompanied by the subjects of the cryptocurrency market. Traditionally, they include salespeople, buyers, and those who deal with mining of new coins.

The wallet owners specify cold and warm cryptocurrency keeping. Warm keeping includes such wallets as exchange market wallets, mobile applications, and software applications. Cold wallets involves paper ones where a private key is represented by the following: a printable QR code; hardware keeping as a variety of USB flash disc; a computer, but in case of system crash one can lose the wallet access for ever; a coin – developers create real coins, which code a private key for digital money. To calculate the prime cost of the cryptocurrency obtained by independent mining, it is necessary to consider main costs that need to be identified and represented in accounting. Apart from bitcoins, one can mine altcoins and litecoins or transfer cryptocurrency into stablecoins, which are impossible to mine – they can be only bought. Thus, to calculate the cryptocurrency profitability, following aspects should be taken into consideration [9]:

- Cost of electric power for a physical party and legal entity in the country;
- Cost of the required equipment, its amortization, maintenance, and functional depreciation;
- Residual value in term so which one can sell the out dated mining equipment;
- Hash – a speed of the solution of mathematical problems by certain equipment;
- Network loading and mining complexity;
- Monetary value or exchange rate of a specific cryptocurrency or digital assets.

In terms of the initial investment and analysis of the mining prime cost, it is enough to understand the equipment cost, its hash, and electric power

expenditures. Mining can be performed by such equipment as ASIC (application-specific integrated circuit), a video card by AMD or Nvidia. For instance, Asic Bitmain Antminer Z11 costs from USD 1,200 to 1,500 (Hashrate 135 Thash) and consumes 1,670 W. Daily cost of electric power is USD 2.04. The profit is USD 7.6 a day. While using video card AMD Radeon VII, which costs USD 1,000, the consumed electric power is USD 2.06 a day. The profit is USD 7.5 a day.

Most miners try not to pay for the consumed power that reduces considerably the payback period. For example, if you use outdated equipment Bitmain Antminer T9+ with the capacity of 13 Thash and consumption of 1,500 W, which costs USD 300, mining will be totally unprofitable since the daily profit will be USD 0.8 but cost of the consumed power will be USD 2.04.

Video card AntMiner S7 consumes 0.25 kW/hour. Within a month, that will be $(0.25 \times 24 \text{ hour} \times 30 \text{ days}) = 180 \text{ kW/hour}$. In Ukraine, cost of more than 100 kW/hour of electric power is USD 0.06 for 1 kW per month.

The amount of consumed electric power * cost of a kilowatt

$180 \text{ kW/hour} \times \text{UAH } 0.06 = \text{USD } 10.8 \text{ a month, USD } 130 \text{ a year.}$

In Ukraine, video card AntMiner S7 costs USD 465. The yearly consumed power along with the video card price will be USD 595.

Calculate similar indices for the European Union countries in terms of Portugal. There, cost of video card AntMiner S7 is USD 435 as of 2019. 1 kW of electric power is USD 0.22.

Cost of electric power, taking into account its consumption by the video card, will be as follows: $180 \text{ kW/month} * \text{USD } 0.22 = \text{USD } 40 \text{ per month and USD } 480 \text{ per year.}$

The total yearly costs will be $\text{USD } 435 + 480 = 915$.

Thus, Bitcoin mining is profitable and cost-effective in terms of both Ukraine and Portugal since the expenditures are lower than the cost of the earned cryptocurrency. However, Ukrainian mining is more profitable due to lower expenditures for the consumed electric power.

So-called cloud mining is one more mining type. Here, an investor rents computer equipment and pay for the time of its operation. In this case, comparing with the equipment purchase, constant component of the investment is lower but the variable component is higher. The profitable mining requires two primary conditions: up-to-date equipment and cheap electric power.



Hashrate days

Figure 6.2. Level of hash rate in terms of ASICS9x85 equipment

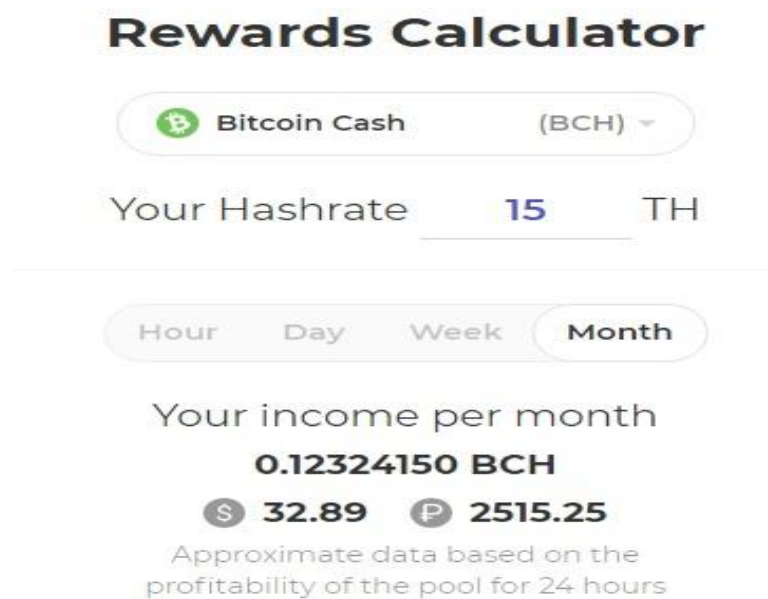


Figure 6.3. Profit level while using ASIC in terms of Thash 15 and unchangeable BitcoinCash exchange rate

If you mine by means of pooling, having invested USD 150 per tera hash capacity as the initial capital, then it is possible to get 0.00027068 BTC (USD 2.96 as the rate of 10948.9 as of 2019) per 24 hours of mining.

Taking into consideration that earning tendency, in a month we will get $USD\ 2.96 \times 30 = USD\ 88.88$. Yearly earning will be USD 1066.6.

Correct legal interpretation and recognition are the basic problems for the cryptocurrency recording in accounting. Due to that, in case of cryptocurrency recognition as a digital currency, it is proposed to use synthetic account 336 “Other means of digital currency” (virtual wallet); in case of cryptocurrency recognition as a variety of electronic money, it is proposed to use synthetic sub-ledger account 335.1 “Variety of electronic money”; if cryptocurrency is recognized as virtual goods, then one should

use synthetic sub-ledger account 287 “Virtual goods”; if cryptocurrency is recognized as a financial investment, then one should use synthetic sub-ledger account 352 “Other current financial investments”; if one recognizes cryptocurrency as an intangible asset, then it is recommended to use synthetic sub-ledger account 127 “Other intangible assets”. Figure 6.4 shows variants of cryptocurrency accounting depending on its recognition.

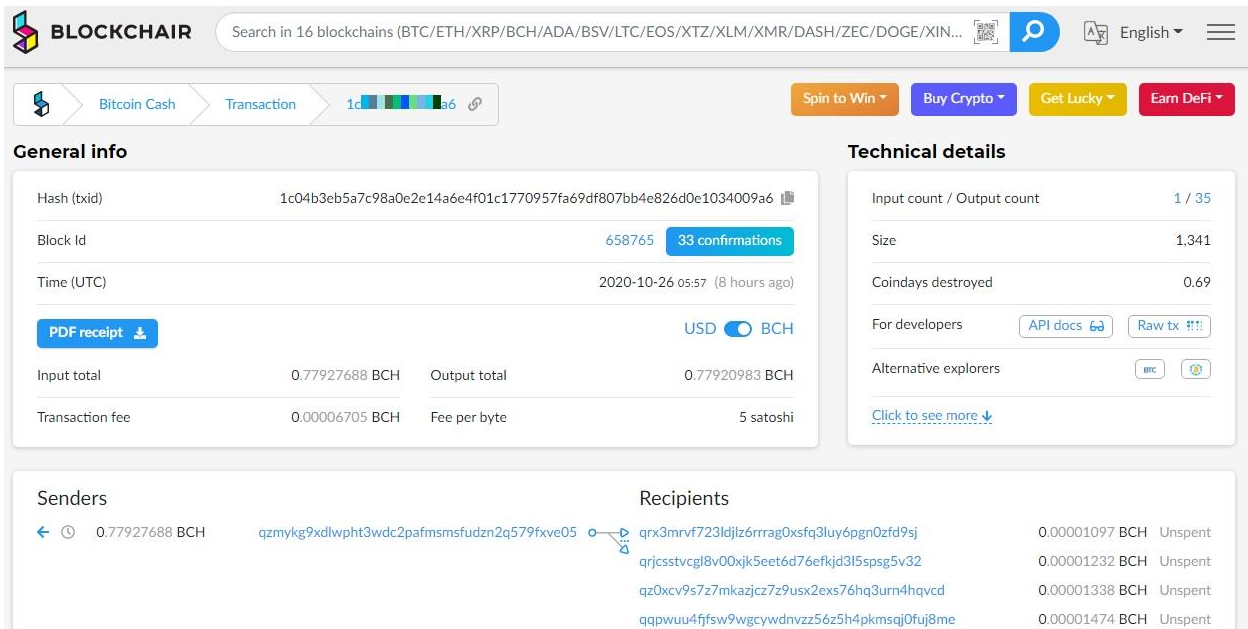


Figure 6.4. Information concerning the miner-reward transactions

It should be also noted that “pool” of digital currency is a base of mathematical problems; while solving those problems with the help of ASIC, miners get their profit. One can identify the “pool” profitability. A miner usually gets his/her profit from such a pool every 24 hours. Using certain site, it is possible to determine main features of any pool functioning. Figure 6.4 represents key information in terms of each certain transaction in the blockchain network as for the profit and reward of a miner.

Conclusion. Given the above, we can conclude that given the economic derivative of cryptocurrency, it can affect the economic and social components of any country. The European Union’s sustainable development strategy aims to develop the information component. Cryptocurrency is a hub that influences the development of telecommunications, digital economy, e-business and commerce. It can motivate countries around the world to develop all areas of activity for the control of such a specific asset.

At the economic level, cryptocurrency affects the way certain transactions are carried out. In the future, if it can be recognized internationally and locally, it will displace paper money and electronic money, as it is completely protected from counterfeiting. Under coronavirus, most bacteria exist on the surface of paper money, so people use an electronic payment format or cryptocurrency. You can pay with cryptocurrency using a QR code in your digital wallet. The amount of cryptocurrency affects the calculation of monetary aggregates in a country. Such a specific activity as mining allows the state to receive additional revenues from the taxation of such activities.

At the social level, humanity is constantly striving for self-development. Cryptocurrency is a future form of cash that can be easily and safely used in everyday life. It does not depend on the bank or a country, you cannot worry, however, that will not be a country – will not be such money that if the bank goes bankrupt, it will remain guilty of deposits to certain individuals. The main thing here is that countries develop a mechanism for recognizing and controlling such assets. For example, most of the US population trusts cryptocurrency, because after President Donald Trump's order to pay a certain amount of \$ 1,200 per person to support a pandemic, a large number of individuals were registered on the Coinbase cryptocurrency exchange people who started buying cryptocurrency in the amount equivalent to \$ 1,000. That is, people try to keep their assets in such a digital format.

Thus, a virtual currency is a huge amount of computing power and digital assets. At this stage of technological development of mankind, cryptocurrency is gaining a stable position in the international market. Rapid development is causing further capacity growth and interest but may eventually lead to collapse. However, if the price stability of the cryptocurrency is achieved, it can be used in international transactions, not just for speculative gain. However, this issue will be directly related to the legalization of the new currency and its recognition by central banks as a means of exchange or storage of money. There is a need for further research to understand the basic conditions for the use of digital currency in the payments market.

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Chapter VII

THE MANAGEMENT OF VENTURE CAPITAL AS A TYPE OF FINANCIAL RESOURCES: GOALS & OBJECTIVES

Tetyana Demchenko

Candidate of Sciences (Economics), Associate Professor
Professor at the Department of Finance, Accounting and Economic Security
Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine
E-mail: tetyana.demchenko@udpu.edu.ua

ORCID ID: 0000-0002-7471-540X

Introduction. In the context of Ukraine's integration into the world market, there is a growing interest in creating a control system for all stages of venture capital activities. The mechanism of effective management of venture activities of an enterprise should become a tool for establishing this system.

The system of information flows is of great importance, which provides information to the process of making management decisions on a risky innovative project at a venture capital enterprise.

The purpose of the venture business is to make a profit on the invested funds [1]. Unlike simple investment, venture capital is the most risky form of capital investment. However, if the project is successful, venture capital investment is the most profitable.

Venture investment is, on the one hand, a way of financing the innovative vector of the economy, on the other, an innovative form of entrepreneurship. The main goal of venture capital financing is that the monetary capital of some entrepreneurs and the intellectual capabilities of others (original ideas or technologies) are combined in the real sector of the economy in order to bring profit to both types of entrepreneurship in a new company.

Literature review. A significant contribution to the study of issues of venture activities of enterprises in Ukraine was made by: I. P. Bachevskaya, D. Zakharchuk, V. G. Semenova, A. V. Usatenko, A. V. Fomina, G. Yu. Khomenko, S. V. Cherkasova, G. Yu. Yakovets and others. It should be noted that, despite the existing research by economists, there is a need for further scientific research of the functioning of venture capital activities, as well as the disclosure of the necessary information for effective management of venture capital companies.

Results. The speed of commercialization of new promising scientific ideas and technological developments, and hence the competitiveness of various sectors of the national economy, largely depends on how successfully the venture mechanism functions. Understanding the role of venture capital investment in the innovation sector contributes to the broad support of the venture capital industry by the state, which makes it possible to effectively master this form of investment and stimulate the development of innovations in the country's economy. Therefore, the government authorities of many leading industrialized countries consider the venture mechanism as an important component of national systems of innovation and strive for its wider application in the economy. Determining national priorities for scientific and technological development is an equally political, economic and scientific task. One of the most important tasks is to create an effective system of venture financing. This will determine the successful operation of the innovation mechanism responsible for transforming the results of scientific research into a commercially profitable product, that is, a product demanded by the market [5].

The subjects of venture activities are venture funds, venture companies and companies for managing the assets of venture funds [1].

Venture capital enterprises are mainly not large enough enterprises engaged in applied research and development, the introduction of technical innovations in industries such as biochemistry, electronics, bioengineering, and others. They usually specialize in the areas of research, development, innovation, the organization of which is associated with increased risk.

Funding of venture capital entrepreneurship is carried out on the basis of equity participation, and the funds of venture capital firms function as equity capital [1].

The nature of venture capital as a special type of financial resource is determined by the current stage of scientific and technological progress. Venture capital is better suited for investment support for the production of innovations associated with a huge number of risks [9]. The category of venture capital reflects the system of relations between the subjects of venture entrepreneurship, which ensures the accumulation of free funds and their investment in innovative projects for the purpose of research, development and commercialization of innovations [5]. Venture capital is inherently social capital. It is formed and redistributed with active participation and support and is a product of overaccumulation. Venture funding has the following features:

- funds are invested in the venture business without guarantees from the venture capital firm;
- funds are provided on an interest-free basis, that is, risk capital is placed not as a loan, but as a share in the authorized capital of the company;
- capital investors are forced to wait on average from 3 to 5 years to make sure that investments are promising and up to 10 years to get a return on invested capital;
- risk capital investors seek to receive not entrepreneurial, but constituent income, which the trust firm will begin to bring;
- the return of the invested funds by the venture financier is carried out at the time of the release of the company's securities on the open market and depending on the share of participation in the provision of funds;
- monetary organizations become co-owners of the venture company, and the funds provided – a contribution to the authorized capital of the company – a share of the latter's own funds.

Innovation processes are closely related to investment, which can be considered as a source of funding for innovation programs [5].

Sources of venture investment can be:

- free financial resources of pension, charitable funds;
- government agencies;
- corporate venture capital;
- private investors;
- small business investment companies;
- foreign investors;
- banks;
- insurance companies;
- profit of venture funds, reinvested in innovative projects [8].

Sources of funding for venture capital activities can be divided into private and public ones by their form of ownership. State funds include budgetary funds, state property, state loans, extra-budgetary funds, etc. Accordingly, private sources form funds of private business entities, innovation banks, investment funds, insurance companies and pension funds, bank loans, venture financing, funds of individuals and public organizations [1].

Depending on the type of investment, real investments and monetary investments are distinguished. Real venture investments are investments in innovations, that is, new types of equipment and technologies and other investment objects associated with the implementation of the operating

activities of a venture capital enterprise. Financial venture capital investments are investments in securities of innovative venture enterprises, in most cases, in shares with the aim of generating income [1].

The innovative activity of domestic enterprises largely depends on the completeness of financing. Although there are a lot of potential sources of funds, the greatest number of difficulties in the implementation of innovative activities arises from the lack or insufficient funding [5].

The use of various sources of financing, taking into account their advantages and disadvantages, will contribute to the activation of innovative activities of domestic enterprises [6].

Venture investors (individuals and specialized investment funds), with the help of experts, preliminarily analyze in detail both the investment project and the activities of the proposed enterprise, its financial condition, credit history, management quality, and the specifics of intellectual property. Particular attention is paid to assessing the degree of an innovative project, on which the potential for increasing the value of an enterprise mainly depends. The venture investor finances the creation of an enterprise, then supports its development, at a certain stage, promotes the issue of shares for sale on the securities market in order to obtain a profit [9].

The planning and implementation of innovative projects takes place under conditions of uncertainty, which is generated by changes in the internal and external environment. Uncertainty is understood as the lack of complete and reliable information about the conditions for the implementation of the project [6].

So, venture activities are activities for the commercial implementation of innovations carried out by venture capital enterprises and funds.

The activity of venture funds is regulated by the Law of Ukraine “On joint investment institutions”. In accordance with this law, a venture fund is a closed-type non-diversified institution of joint investment, carrying out exclusively private placement of securities of the institution of joint investment among legal entities and individuals [1].

Asset management companies (AMC) are legal entities that carry out asset management activities on the basis of an appropriate license to carry out such activities [1].

An asset management company is an independent company (a legal entity that can be formed in the form of a joint stock company or a limited liability company), the activities of which are directly related to the management of assets of joint investment institutions on contractual terms.

AMC activities are carried out with the obligatory presence of a license from the National Securities and Stock Market Commission [1].

An asset management company, as an economic entity, must organize such a system of accounting for liabilities that would quickly and efficiently record data and create an information space on the presence and movement of liabilities. The rational organization of accounting for the liabilities of asset management companies will help not only to improve the financial condition, but also to develop a strategy for managing liabilities, which will contribute to the formation of a reputation as a reliable and responsible partner, which is very important for an asset manager [8].

Venture funds (non-diversified and closed institutions of joint investment) can be created in the form of a corporate or mutual fund, the participants of such funds are holders of securities [1].

Institutions of joint investment in Ukraine include corporate (CIF) and mutual investment funds, which have a wide variety depending on:

- 1) the procedure for carrying out activities (open, interval, closed);
- 2) the composition of assets (diversified and non-diversified);
- 3) by the terms of creation (urgent and unlimited). However, the functioning of the ISI is inextricably linked with the activities of AMC that manage their assets [9].

AMC ISI of a venture fund participates in the management of the issuer, whose corporate rights are in the assets of the fund, the assets of which are managed by the company [9].

Venture funds play an important role in the venture capital system. They are participants in the investment process and act as intermediaries between interested parties – investors, banks, the state, on the one hand, and recipients of funds – venture capital enterprises, on the other. A venture fund is an organizational structure created to carry out the activities of investors and itself acting as an investor. The main goal of a venture fund is to accumulate capital for further investment in promising and attractive innovative projects [6].

As accumulators of investment resources, venture capital funds have the opportunity to make large investments in promising production and innovative developments for a long period of time. At the same time, the main tasks of investment are to ensure the efficiency of management, to achieve higher rates of return than the industry average, and to increase the market value of the company's shares. Venture investors are interested in

constantly reinvesting the received profit in further business development [8].

The types of venture funds are shown in Figure 7.1.

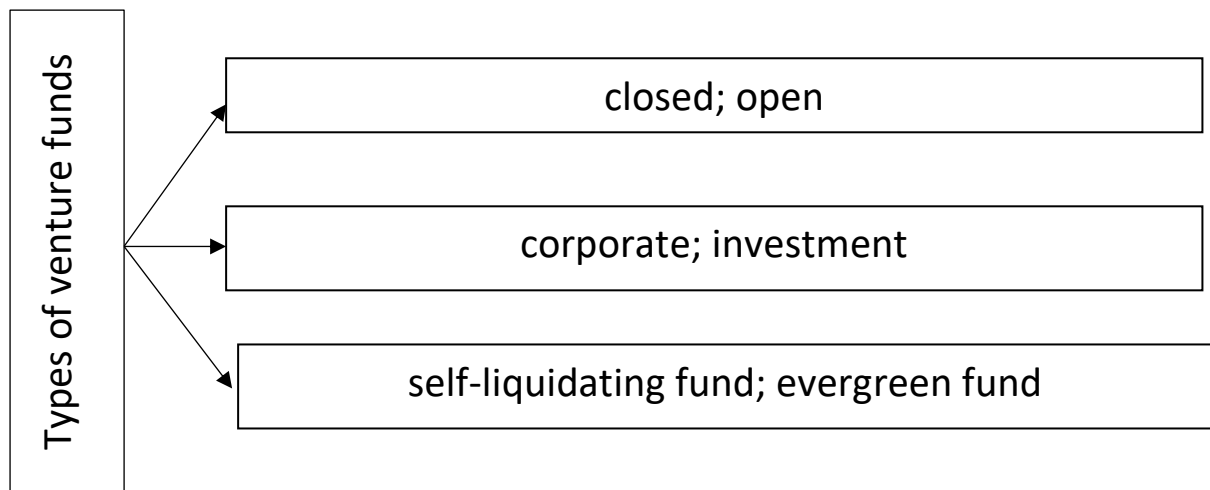


Figure 7.1. Types of venture funds

Source: Formed by the author based on [9].

Venture funds distinguish the following areas for capital investment:

- investing in the creation of technological innovations in the framework of investment projects carried out by various enterprises;
- financing of venture capital firms;
- investing in small businesses that are at the start-up stage and have the prospect of significant development due to their functioning in promising and rapidly progressing sectors of the economy [8].

Venture funds remain the most opaque players in joint investment institutions, since more than thirty percent of the structure of their investments is unknown. The lack of guidance in the legislation on the investment motives of venture capital funds created grounds for inadequate representations of such funds. This disregard for the innovative motives of venture capital funds has led to an ambiguous attitude towards the activities of such funds [9].

Venture capital funds should become the main link between investment and innovation as components of economic growth [8].

The process of managing venture activities involves the timely receipt of reliable information by the manager in order to make optimal decisions. The formation and presentation of such information is the main task of accounting in the management system of venture activities in meeting the needs of management [10].

Venture-backed businesses are growing faster than others. This is confirmed by the fact that all enterprises included in the first hundred of the largest companies in the world have developed thanks to venture financing at the initial stage of their development. Venture financing supports the innovative development of enterprises, when traditional capital is not capable of this due to the increased level of risk. To reduce the level of risk, especially at the stages of the life cycle of enterprises requiring significant capital investments, it is necessary to organize such a system for managing the resources of companies that will help managers to have detailed reliable information, which will lead to an increase in the efficiency of such an enterprise.

The life cycle of a venture capital enterprise can be divided into several stages in accordance with the funding needs, its sources and the level of risk:

- 1) planning stage,
- 2) launch stage,
- 3) the stage of implementation,
- 4) expansion stage,
- 5) stage of liquidity or stage of exit [8].

The stages of the life cycle of a venture capital enterprise define the main tasks required for reflection, as well as determine the model of the entire life cycle and the necessary information display system.

The initial stage of the life cycle of a venture capital enterprise – the planning stage (seed) – is characterized by the development of an innovative business idea.

Competition forces the venture company to shorten the period of this stage as much as possible, to intensively introduce innovations into production. This stage does not require a lot of venture funding. The main investors at this stage are developers, scientists, their relatives, friends and business angels. Representatives of the informal segment of the venture capital market are called “business angels”. As a rule, these are successful entrepreneurs, highly paid specialists (consultants, accountants, lawyers), top managers of large companies. With significant financial savings, they are the main source of venture capital funding around the world. Thus, in the United States and Western Europe, the volume of venture capital investments in the informal segment is several times higher than the volume of similar investments in the formal segment [8].

The next stage of the life cycle is the start-up stage. This stage in the enterprise is the most difficult. It requires significant investment in

preparing the product for production, the presence of professional managers and evidence of the uniqueness of the technology. The main investors of venture enterprises at this stage are venture funds and business angels [8].

In the Ukrainian market for investments in start-ups over the past 10 years, mainly foreign investors have been attracted, although venture capital funds with Ukrainian capital began to appear, since this was not a priority on the part of the Ukrainian government and it was not engaged in the development of this direction [9].

The greatest need for venture investments arises in the first phase (Seed-Finance and Start-up). At this stage, the development of a prototype of the product takes place, which will then be turned into a popular marketable product. For a venture investor, this stage of financing is associated with the greatest risk, but it is at this stage that the foundations are created for the greatest generation of income [7].

The third stage is the early – stage. The stage is characterized by the release of the product to the market and the determination of the scale of production. The main investors at this stage are venture capital funds and banks [8].

Although this stage of the life cycle of a venture capital enterprise requires significant investments, they are justified, since the level of risk is reduced. The key aspect of the stage for a venture capital enterprise is the fastest time to market in order to gain dominant positions.

The next stage is the expansion stage. The main investors are banks and corporations. At this stage, the venture is engaged in the expansion of production and sales of products, increasing working capital, debugging the sales system [8]. Despite the fact that the company at this stage requires significant capital investments, the financial risk remains low. The last stage of the life cycle of a venture capital enterprise – the liquidity stage or exit stage, is characteristic of reducing the risk to a minimum and stable cash flow. The main investors are banks and large corporations. At this stage, it is profitable for investors to realize their share in the authorized capital of a venture company or to promote the placement of the company's shares on stock exchanges and only then withdraw the invested funds and a share of the profit.

By defining the economic essence of venture financing and its differences from other forms of investment, it is possible to determine the basic principles of displaying information about venture financing:

1) the formation of information that provides for the grouping of data in accordance with the stages of the life cycle of the venture capital enterprise, the degree of risk and the need for capital investments;

2) preparation of financial statements not only with an annual or quarterly frequency, but also by the end of each stage of the life cycle, which will allow to analyze the efficiency of business activities in stages;

3) displaying information about the expenses of the venture company for each stage of the life cycle, as well as by sources of funding;

4) a detailed analytical accounting of all business processes of a venture enterprise, which will help in obtaining complete information about the actual and potential consequences of venture activities that affect the adoption of effective management decisions [7].

The following objects are distinguished for the analysis of venture activities of venture enterprises:

- household assets: cash; innovative products; current financial investments; intangible assets; long-term financial investments;

- sources of economic assets formation: venture capital;

- business processes, income, expenses, results of activity: income from innovation activity; costs of innovative activities (including scientific activities, research and development); monetary results from innovation.

Taking into account the peculiarities of venture activity, it is also necessary to single out risk as a separate object of research. Since, a business transaction under conditions of uncertainty, in relation to which there is a probability of obtaining a lower financial result than expected, is risky. Therefore, the risk, from the point of view of its reflection in the information flow system, will be the likelihood of not receiving the desired financial result.

The conditions for risk recognition are: high concentration of assets for certain items; a sharp increase or decrease in balances on the accounts of inventories, cash and receivables; slowdown in the turnover of current assets; damage and bad accounts receivable from the venture capital.

Determination of these conditions will make it possible to identify the presence of risk and assess the risk of venture activities, respectively, will contribute to the timely adoption of effective management decisions.

This classification of objects of venture activity provides:

- timely display of complete information on the arrival, disposal and valuation of assets of venture capital companies;

- reflection of expenses related to the activities of venture capital companies;
- determination of financial results from the activities of venture companies;
- information for drawing up reports on the activities of venture companies;
- information for the implementation of economic analysis of venture activities [10].

In Ukraine, as noted, there is no single law directly regulating venture capital activities. The Law of Ukraine “On Institutions of Joint Investment” regulates only the only part of the venture segment – the activities of venture funds. This regulatory legal document is aimed at ensuring the attraction and effective placement of financial resources of investors and determines the legal and organizational basis for the creation, operation, termination of joint investment entities, the specifics of managing the assets of these entities, establishes requirements for the composition, structure and storage of such assets, especially the issue, circulation, accounting and redemption of securities of joint investment institutions, as well as the procedure for disclosing information about their activities [1].

In the list of basic terms, there is no definition of concepts that directly relate to the field of venture business, such as venture capital, venture financing. Venture business really boils down to the activities of venture funds, which in fact are one of the participants in venture capital activities.

The question was raised of creating a new law regulating the activities of venture capital funds: “On the basic principles of the formation and regulation of the venture capital market in Ukraine” [1].

An important step in regulating the activities of venture funds was the development of the Draft Law of Ukraine “On Venture Activities in the Innovation Sphere”. The draft law provided definitions of the concepts of “venture innovation fund”, “venture financing” and “venture capital”. Also, in section IX of this bill, the main provisions of international cooperation in the field of venture activities were noted. But this bill was removed from consideration and now its fate is unknown.

Also, a draft Law of Ukraine “On Venture Funds for Innovative Development” was developed. In the draft law, for the first time in Ukraine, an attempt was made to determine the legal basis for the creation of a new financial instrument that would ensure the direction of investment flows to

innovative sectors of the economy. To date, the fate of the bill is also unknown [1].

There are about 200 documents in the database that need to be improved, since they have a low impact on the development of this activity in Ukraine of specialized regulatory documents regulating venture activities in terms of their innovative, investment, scientific and technical, intellectual components.

The general requirements for determining the categories of venture capital financing entities, accounting policies and evaluating their investments are determined by the following international financial reporting standards (hereinafter IFRS): IFRS 10 “Consolidated financial statements”, 27 “Consolidated and separated (individual) financial statements” (its rules in force so far was not implemented IFRS 10), 28 “Investments in associates”, 31 “Participation in joint ventures” [10].

Under IAS 27, venture capital firms and mutual funds (trusts) are required to consolidate all of their subsidiaries.

The development of the venture capital industry in the country, first of all, depends on the role of the state in this process, because it is necessary to develop a legal framework for regulating venture capital activities, which, in turn, guarantees the safety and reliability of investment for investors, will stimulate the activities of venture funds and thus, in general, it will create conditions for the implementation of scientific research and their funding.

When venture financing of innovative projects occurs, first of all, they are selected due to the market value of the prospects of such projects at an early stage of the implementation of an innovative project. This allows you to concentrate limited financial resources in specific areas that meet real economic demand [6].

The mechanism of venture financing consists in the fact that venture investors provide their capital in exchange for high super-profits as a result of exiting an innovative project through the sale of their share or shares in the stock market. As for the recipient enterprises that use venture capital investments, they primarily enjoy the trust and support of venture capital investors and share their risks with them in the process of implementing an innovative product. In addition, a distinctive feature of venture financing is that this mechanism is primarily a catalyst for direct financing of small and medium-sized innovative enterprises in the early stages of the life cycle of such an enterprise. At the same time, the ultimate goal of venture investment

is the sale of assets acquired by venture capital funds to a strategic investor. This is a very difficult problem for Ukrainian venture investors today.

For example, in developed countries, traditionally strategic investors are looking for a venture capitalist in order to purchase a stake in any enterprise from him, while in Ukraine venture investors are forced to look for a buyer on their own. This option of selling a business to venture capitalists, such as issuing an IPO (Initial Public Offering) – the initial public offering of shares in the stock exchange field in Ukraine is practically not implemented, since due to the underdevelopment of the stock market, it is impossible to issue an IPO at a market price. According to the vice-president of the investment company IFC John Sagitt, the issue price on the Ukrainian market will be two times lower than the price of the same block of shares on one of the Western stock exchanges [1]. The entry of Ukrainian enterprises abroad into the IPO market is still complicated due to the high cost of service.

The financial risk of a venture investor is justified only if the return on invested capital is high enough. The International Rate of Return (IRR) is a generally accepted measure of venture capital reward. In the European and British associations, it is considered the standard for assessing the profitability of investment projects [1]. In Ukraine, due to the underdevelopment of the stock market and the dysfunctional business environment, it is very difficult to assess the liquidity of enterprises by calculating IRR, that is, how venture capital enterprises are. In practice, derivative indicators are used – the rate of development of enterprises, an increase in sales, etc.

Today, it is becoming increasingly important to provide venture entrepreneurs with the necessary and useful information for the effective functioning of the system of their interaction with the environment.

Information today is a product of high quality and price. If we talk about a product as such, then a set of processes is assumed that precede its production. The product can be received from the supplier as a finished product, or it can be made independently, which involves the use of methods and procedures for budgeting, planning, controlling, financial diagnostics, risk management and internal control. The process of forming information is based on software systems and consists in designing databases with a filter to regulate information by decision-making levels. This is necessary for the high-quality organization of information exchange [7].

In countries with normal operating economies, the issuer is a party interested in providing the venture investor with maximum assistance in researching the level of investment attractiveness. The issuer cannot make these studies an investor, because the latter simply will not believe the results of such an analysis. However, the issuer can and should provide the investor with the necessary information in precisely those forms that will be convenient for different categories of investors, especially venture capitalists, to conduct their own research. It is necessary not only to disclose information, but to professionally and honestly show the existing risks, weaknesses and strengths of the investor.

Information support of the venture financing process is an array of data containing analytical, reference, technical, advertising and other information that can be presented in periodicals, electronic information systems and provided to users for making management decisions on venture activities of an enterprise [8].

Venture activity is a rather specific and risky business. Therefore, the peculiarities of venture capital activities have a significant impact on the process of analyzing and evaluating venture investments, which, in turn, manifests itself in the formation of information about venture investments in the form of grouping data by directions of venture investment activities, stages, forms of financing, stages.

The main stages of the analysis of venture activities are:

1) organizational and preparatory, where: the choice of the organizational form of the analysis of the investment project; identification of responsible persons or functional structures for the analysis; development of a plan and program for the analysis of venture activities;

2) analytical (calculated), where, on the basis of statistical and public information, the venture activity of the enterprise is preliminarily assessed, as well as the history of the development of the enterprise, the assessment of the level of quantitative parameters of the enterprise, the identification of dynamic changes in these indicators;

3) final (final), during which there is a generalization of the results of the analysis, the formulation of conclusions about the state of venture activities based on the results of the analysis, proposals for solving problematic issues of the development of venture activities [8].

Thus, carrying out analytical work on the features and effectiveness of the venture capital activities of the enterprise will contribute to the formation of complete and reliable information about venture investment projects for

making management decisions on the selection of the most effective venture project.

The main goal of effective management of venture activities is primarily in the development of activities aimed at the development of venture activities of the enterprise, as well as in providing management personnel with the necessary information to make decisions in the development of venture activities of the enterprise [8].

O. V. Usatenko (2015) proposes to evaluate the profitability of venture capital activities of venture funds by the main four indicators that are used to determine the effectiveness of investments: net present value, profitability index, payback period, internal rate of return. These indicators can only be considered in comparison with similar indicators of venture funds, but managed by another asset management company. Thus, it is possible to assess not only the profitability of the risk activities of venture capital funds, but also the efficiency of AMC management [6].

One of the indicators for evaluating the profitability of venture capital funds is the payback period. The payback period is one of the most common and understandable indicators that shows how long it takes for the amount of proceeds from the implementation of a risky innovative venture project to reimburse the amount of costs incurred for its implementation. It should be noted that the return on investment indicator has at least 5 drawbacks, in order to get rid of the shortcomings of the indicator, it is necessary to use the DPB (Discount payback period) indicator. At the same time, calculations of the payback period of venture capital investments of venture capital funds are made using accounting cash flows. The advantage of the DPB indicator is that it is a clearly expressed criterion for assessing a risky innovative venture project, due to the condition of equality of annual cash flows. However, such an indicator has limited use, although it demonstrates certain disadvantages of the payback period criterion, first of all, it shows the dependence of the maximum acceptable payback period on the life cycle of an investment risk venture project and the cost of money over time. Any investment project of a venture fund has a greater advantage if its current value of cash receipts exceeds the current value of the investment [6].

With an increase in the duration of the stages of the life cycle of a risky venture project, the maximum suitable payback period also increases (at a fixed discount rate).

Another indicator for assessing the profitability of venture capital activities of venture capital funds is, the most common in today's conditions,

the indicator for assessing the internal rate of return. Internal rate of return is a measure of the maximum cost level that a venture capital fund can associate with a given venture capital venture project.

Analysis of the main performance indicators of venture capital companies for asset management (AMC) gave the following results (Table 7.1, 7.2, 7.3).

Table 7.1. Main performance indicators of PJSC AMC “Kinto”, thousand UAH

Indicators	2015	2016	2017	2018	2019	2020	Deviation 2020 from 2015, (+, -)
Equity	69,371	68,913	68,106	68,409	69,810	69,945	+574
Revenue	6,735	10,661	6,654	9,254	8,580	9,204	+2,469
Net profit (loss)	(58)	(458)	(813)	615	1461	135	+77

Source: Author calculations based on [3]

PJSC “Asset Management Company “Kinto” in 2020 compared to 2015 has an increase in equity by 574 thousand UAH. For 2015–2020 it has an increase in its revenues. In general, the company has a stable financial position and is provided with all the necessary resources for profitable activities.

Table 7.2. Main performance indicators of LLC AMC “Investment Partners”, thousand UAH

Indicators	2015	2016	2017	2018	2019	2020	Deviation 2020 from 2015, (+, -)
Equity	14,533	28,716	34,318	55,155	110,808	119,433	+104,900
Revenue	36,289	91,535	133,407	170,094	416,144	459,283	+422,994
Net profit (loss)	6,541	12,544	6,897	21,006	20,174	9,380	+2,839

Source: Author calculations based on [2].

LLC “Asset Management Company” Investment Partners in 2020 compared to 2015 has a significant increase in equity by 104,900 thousand UAH.

In 2015–2019, it also has a significant increase in its revenues. It can be noted that the company has a stable financial position and is provided with all the necessary resources for its profitable activities, but there is a

significant significant decrease in net profit in 2020 compared to previous years.

Table 7.3. Main performance indicators of PJSC AMC APF “UPINVEST”, thousand UAH

Indicators	2015	2016	2017	2018	2019.	2020	Deviation 2020 from 2015, (+, -)
Equity	21,752	23,354	23,346	19,024	18,658	17,270	-4,482
Revenue	33,516	56,791	42,238	48,162	53,992	25,248	-8,268
Net profit (loss)	5,661	1,602	26	(4322)	(366)	(1,482)	-7,143

Source: Author calculations based on [4].

PJSC “Asset Management Company” APF “APINVEST” in 2020 compared to 2015 has, in contrast to other companies under study, a decrease in equity of the company by 4,482 thousand UAH. Revenues also decreased. The company as a whole is provided with all the necessary resources to carry out its activities, but the increase in losses in 2020 indicates the need for urgent and effective management decisions to improve its position and get out of the loss.

Schematically, the amount of available equity of the surveyed venture companies in 2020 is shown in Figure 7.2.

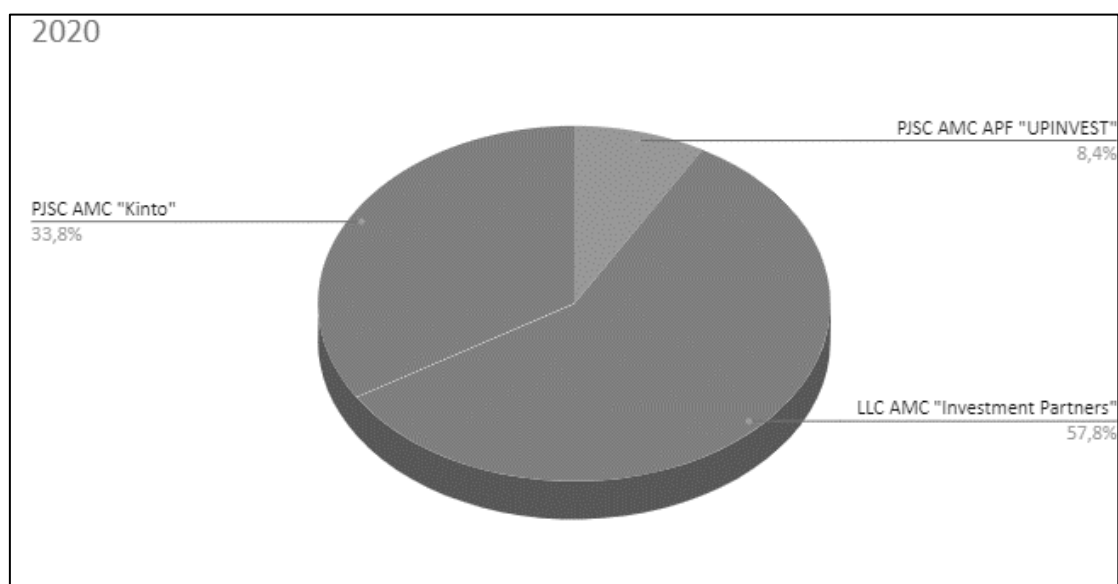


Figure 7.2. The amount of equity of the investment management companies for 2020, thousand UAH

Source: Author calculations based on [2]–[4].

Analysis of the amount of net profit (loss) in the context of asset management companies in 2015–2020 showed the following results (Table 7.4).

Table 7.4. The amount of net profit (loss) of the investment management companies for 2015–2020, thousand UAH

Companies	2015	2016	2017	2018	2019	2020	Deviation 2020 from 2015 (+, -)
PJSC AMC “Kinto”	(58)	(458)	(813)	615	1461	135	+77
PJSC AMC APF “Upinvest”	5,661	1,602	26	(4,322)	(366)	(1,482)	-7,143
LLC AMC “Investment Partners”	6,541	12,544	6,897	21,006	20,174	9,380	+2,839

Source: Author calculations based on [2]–[4].

The amount of net profit in 2020 compared to 2015 in PJSC AMC “Kinto” increased by 77 thousand UAH, in LLC AMC “Investment Partners” by 2,839 thousand UAH. The amount of loss in PJSC AMC APF “APINVEST” increased by UAH 7,143 thousand.

Any investment venture project assumes the presence of a primary investment, which will lead to cash flow in the future. The internal rate of return indicates the loan rate at which a risky investor will not suffer damage from an investment made by a venture capital fund. That is, the result of all cash inflows and outflows in total will be zero – neither profit nor loss, the investment in the project will be recouped by future cash flows from the project, but ultimately the investor will not receive profit [6].

Conclusion. The revitalization of the processes of venture financing in Ukraine can provide a positive impact on the development of innovative activities when reorienting venture funds for financing traditional processes to financing innovative ones. Domestic venture funds have access to financial resources that can be used to develop financial support for innovation processes. The process of developing and implementing a risky innovative project consists of a number of sequential stages, that is, it is a chain of sequential components. Unlike simple investment, venture capital is the most risky form of capital investment. However, if the project is successful, venture capital investment is the most profitable.

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Chapter VIII

ANALYSIS OF THE ENTERPRISES' FINANCIAL RESOURCES FORMATION

Inna Berzhanir

Candidate of Sciences (Economics), Associate Professor
Associate Professor at the Department of Finance,
Accounting and Economic Security
Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine
E-mail: berzhanir.i@udpu.edu.ua

ORCID ID: 0000-0001-7035-1170

Introduction. In a market economy the formation of a sufficient amount of financial resources for effective financial and economic activities of enterprises is a major factor in increasing financial potential, ensuring competitive advantages and stable economic development. The effective process of formation of financial resources of enterprises allows to maximize its market value, to provide financial stability and profitability, to minimize risks of financial and economic activity.

Literature review. Theoretical and practical aspects of the analysis of formation and use financial resources of enterprises are reflected in the works of such scientists as A. Kughii, & S. Sokoteniuk [1], O. Leos, & I. Koval [2], L. Brazhnik [3], O. Hrycyno, & V. Buslenko [4], etc.

In their research, scientists identify such tasks of financial resource management as: general assessment of volume financial resources; determining the optimal size, composition and structure of financial resources of the enterprise; efficiency analysis use and placement; substantiation of the financial strategy of the enterprise; study of the influence of factors about the processes of formation and use of financial resources of the enterprise; identification and mobilization of reserves to improve management efficiency etc. [1]–[3].

They emphasize that study of sources of formation of financial resources of the enterprise allows to reveal changes in structure capital, the causes and consequences of these changes, see the level of security of the enterprise's own financial resources and dependence on external sources of funding.

Results. Analysis of the dynamics of the volume of financial resources of domestic enterprises showed that in 2018–2021. There was an increase

in financial resources of enterprises by 3,997,525,600,000 UAH, or by 66.7 % (Figure 8.1).

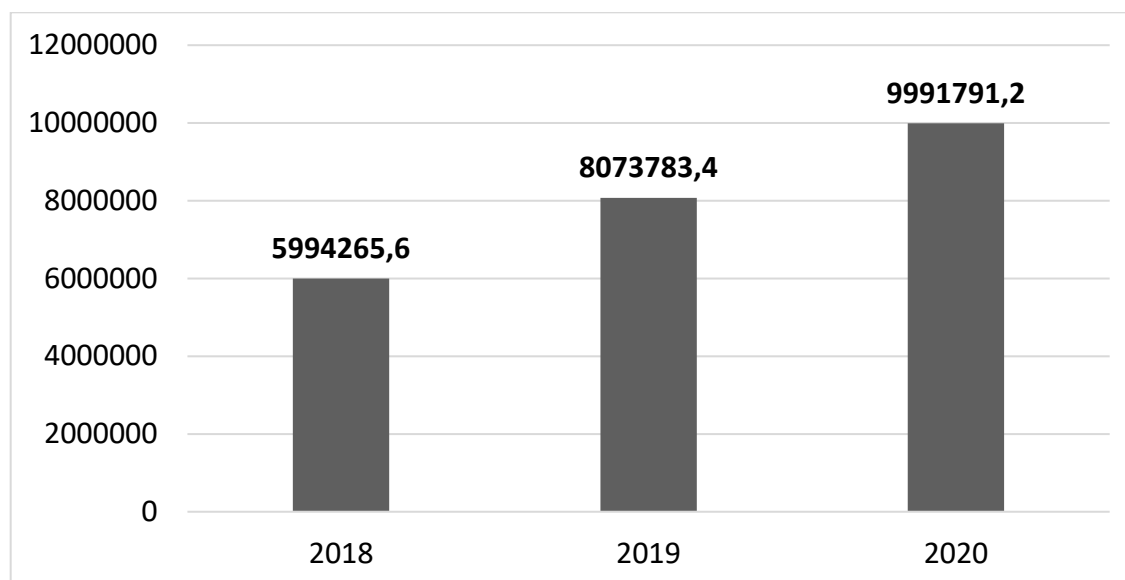


Figure 8.1. Dynamics of financial resources of Ukrainian enterprises in 2018–2020

The assessment of the capital structure of Ukrainian enterprises shows a slight change in the importance of borrowed sources of financial resources in comparison with their own. The cost of equity increased in 2017–2019.

By 65 %, however, in the total capital structure of enterprises, the share of equity, by contrast, decreased by 0.2 % (Table 8.1).

Table 8.1. Dynamics of the structure of financial capital of Ukrainian enterprises in 2017–2019

Index	2017	2018	2019	2017 compared to 2019, (+/-)	Growth rate from 2017 to 2019, %
Total cost of capital, UAH million	5,994,265.6	8,073,783.4	9,991,791.2	+3,997,525.6	+66.7
Equity, UAH million	1,480,658	2,288,741.4	2,445,803.7	+9,651,45.7	+65.2
% of the total amount	24.7	28.3	24.5	-0.2	-
Loan capital, UAH million	4,513,607.6	5,785,042.0	7,545,987.5	+3,032,379.9	+67.2
% of the total amount	75.3	71.7	75.5	+0.2	-

The reason for this was the financial results of activities that did not allow companies to replenish their own capital by reinvesting profits in the amounts required for restoration of financial stability, strengthening of current and perspective solvency [5].

The decrease in equity capital indicates the dependence of Ukrainian enterprises on the attracted capital. The choice of the ratio between equity and borrowed capital in the structure of financing an enterprise directly affects the achievement of the tasks set by managers and financial managers, such as maximizing the value of shares, profitability and financial stability of the enterprise and minimizing the weighted average cost of capital and the level of financial risks [5]–[6]. In turn, the structure of the attracted capital grows only due to current liabilities, which increased from 52.6 % in 2018 up to 58.6 % in 2020. In the sum of the sources of formation of funds of the enterprise.

Attracting external sources of financial resources allows domestic economic entities to form sufficient amounts of financial capital to ensure the possibility of expanding their activities, prospects for entering international markets etc. In addition, in case of deterioration in the economic situation directly within the country, foreign investment can support the entity that has been adversely affected by the crisis.

Based on the analysis of capital investment of enterprises (Table 8.2), it should be noted that the vast majority of funds attracted by the self-financing of enterprises, which share in 2019 was 65.43 %. It is 0.92 % less than in 2013 (66.35 %).

Table 8.2. Capital investments of enterprises under the sources of financing in 2013–2019, UAH million

Capital investments of enterprises under the sources of financing	2013	2014	2015	2016	2017	2018	2019
Total	249,873.4	219,419.9	273,116.4	359,216.1	448,461.5	578,726.4	623,978.9
Including:							
– at the expense of the state budget	6,174.9	2,738.7	6,919.5	9,264.1	15,295.2	22,814.1	30,834.5
– at the expense of local budgets	6,796.8	5,918.2	14,260.0	26,817.1	41,565.5	50,355.5	56,480.0
– own funds of enterprises and organizations	165,786.7	154,629.5	184,351.3	248,769.4	310,061.7	409,585.5	408,275.7
– bank credits and other loans	34,734.7	21,739.3	20,740.1	27,106.0	29,588.9	44,825.4	67,232.6
– funds of foreign investments	4,271.3	5,639.8	8,185.4	9,831.4	6,206.4	1,795.5	4,663.9
– funds of the population for housing construction	24,072.3	22,064.2	31,985.4	29,932.6	32,802.5	34,645.7	32,422.0
– other sources of financing	8,036.7	6,690.2	6,674.7	7,495.5	12,941.3	14,704.7	24,070.2

Source: Developed according to the official NBU data [7].

The share of capital investments from the state budget has increased in recent years and in 2019 amounted to 4.94 %, which is 2.46 % higher than the share in 2014 (2.48 %); the least funds in the financing of enterprises come from foreign investment, and this figure tends to decrease by 0.39 %.

According to analytical data provided by the National Bank of Ukraine (NBU) [7], during 2010–2020 the volume of FDI in which the ultimate controlling investor is a resident (roundtripping) is estimated at 9,5 billion US dollars, which is 23.5 % of inflow of FDI to Ukraine (40,4 billion USD) (Figure 8.2). The largest volumes of roundtripping investments were observed during 2010–2013 on average at the level of 32.7 % of the total. 89 % of such investments were directed to real sector enterprises.

In 2014–2015 there was an outflow of funds from Ukraine for such operations, which is associated with political changes in the country, as well as the outbreak of hostilities in the East.

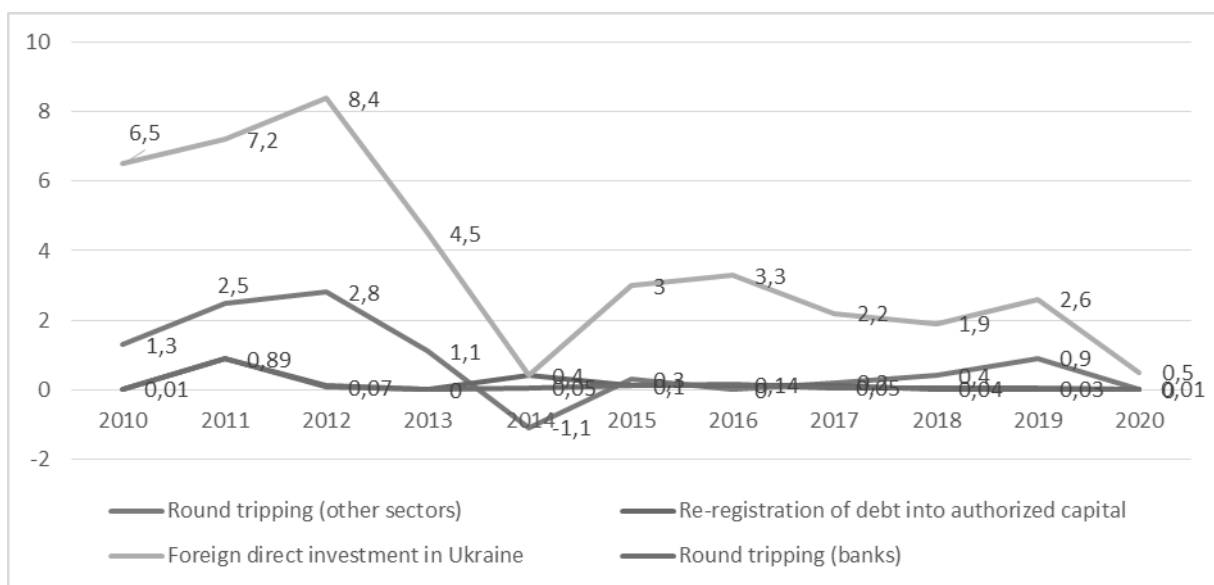


Figure 8.2. Foreign direct investment in Ukraine (FDI), USD billion
Source: Developed according to the official NBU data [7].

In 2016–2019 there was a gradual increase in the net inflow of funds from roundtripping operations, but in smaller amounts than on the eve of the crisis. In 2016, they provided 4.1 %, in 2017 – 12.3 %, in 2018 – 22.6 %, in 2019 – 36.6 % of FDI inflows to Ukraine. In 2020, roundtripping operations are estimated at 0.2 USD billion, which is 50.8 % of FDI inflows to Ukraine (95.2 % of their volume are investment in the real sector).

Foreign direct investment is a desirable form of investment for emerging economies because it allows large projects to be implemented; in

addition, the country receives new technologies, new corporate governance practices etc. [8]. According to the criterion “nature of participation in investment”, foreign investment can be divided into direct (PP) and portfolio ones. The Ukrainian practice of attracting foreign sources of financing is characterized by the situation that most of the portfolio investments come in the form of debt instruments, which, of course, affects the level of the total debt burden in Ukraine. Analysis of the structure of DI allows to identify a significant share of instruments of participation in capital, which in turn contributes to the formation of share capital (Table 8.3).

Table 8.3. Dynamics and structure of FDI in Ukraine in 2015–2020, USD million

Year	Direct investment, total	Equity participation instruments	Equity instruments other than income reinvestment	Reinvestment of income	Debt instruments
2015	–458.0	584.4	4,003.0	–3418.6	–1,042.4
2016	3,809.2	4,075.3	3,550.0	525.3	–265.6
2017	3,692.9	3,026.4	1,535.0	1,491.4	666.6
2018	4,455.0	4,069.0	1,472.0	2,597.0	386.0
2019	5,860.0	4,909.1	1,658.8	3,250.3	950.9
2020	–868.2	321.5	760.1	–1,321.0	–307.3

Source: Calculated according to the NBU data [7].

The indices of net foreign direct investment (FDI) in 2020 in Ukraine are the worst in the last 20 years. The COVID-19 pandemic has hurt the economies of countries around the world, and Ukraine is no exception. Foreign direct investment amounted to minus – 868,2 million USD, as the volume of foreign direct investment decreased significantly (the volume of FDI outflow significantly exceeds the volume of inflow) (Table 8.4).

Table 8.4. Foreign direct investment in Ukraine in 2020

2020	FDI to Ukraine		FDI from Ukraine		Balance	
I KB.	–1,549	–3,117	11	–637	–1,560	–269.6
II KB.	1,255	2,804	3	–8	+1,252	–180.3
III KB.	–49	–1,304	48	45	–97	–107.7
IV KB.	–525	–476	20	–28	–545	+461.9
Per year	–868		82		–950	

It is worth noting that equity capital does not lead to an increase in debt as opposed to debt instruments, as investors buy ownership in the business and acquire rights to part of the profits of such business, however, as well as the recipient, form the basis for taxes and losses, in case of inefficient activity.

I. Berzhanir mentioned that the real economic and political situation in Ukraine significantly complicates investment activities. The social and economic crisis, which began in 2014, has led to deterioration in attracting investment from abroad: an unfavorable investment climate, lack of security guarantees for investors and a high degree of risk have led to a sharp deterioration in investment performance in Ukraine and its regions [9].

Thus, the most attractive form of investment in Ukraine is foreign direct investment, but given the negative trends of recent years, it is advisable to improve the country's investment attractiveness through direct state participation in ensuring the protection and security of investors, forming an effective investment strategy, harmonizing domestic legislation with EU standards, which in turn will increase FDI inflows.

The main problems of low levels of foreign investment in Ukraine are the small amount of capital expenditures of domestic budgets compared to developed countries, differences in the timing of investment projects and budget planning, limited impact of public investment on economic growth, corruption in investment projects etc.

A. Sokolova mentioned that an important role in stimulating the reproduction processes in the economy is played by bank lending as the main source of providing monetary resources for current and investment activities of business entities [10]. However, macroeconomic instability in Ukraine had a negative impact on the development of bank lending, causing a sharp decline in the creditworthiness of borrowers and a significant deterioration in the loan portfolio quality.

In 2014–2020 the total volume of credit resources did not increase significantly. Thus, in 2020 it amounted to 827 billion UAH, which is 13.7 % more than in 2014 (Figure 8.3).

When lending, the size of the interest rate is essential. Average interest rates on loans to borrowers ranged from 4.68 % in 2014 to 18.6 % in 2020. (Figure 8.4).

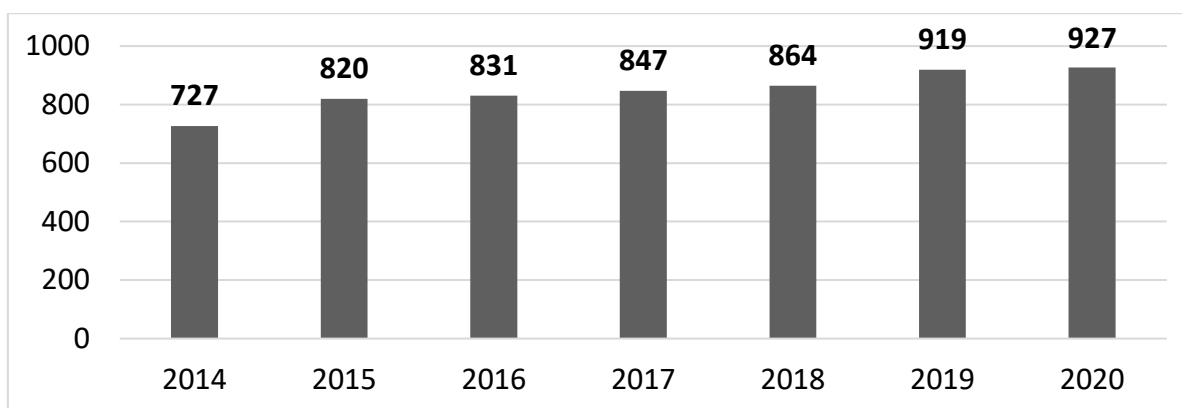


Figure 8.3. Dynamics of total volume of credit resources in 2014–2020, billion UAH

Source: Calculated according to the NBU data [7].

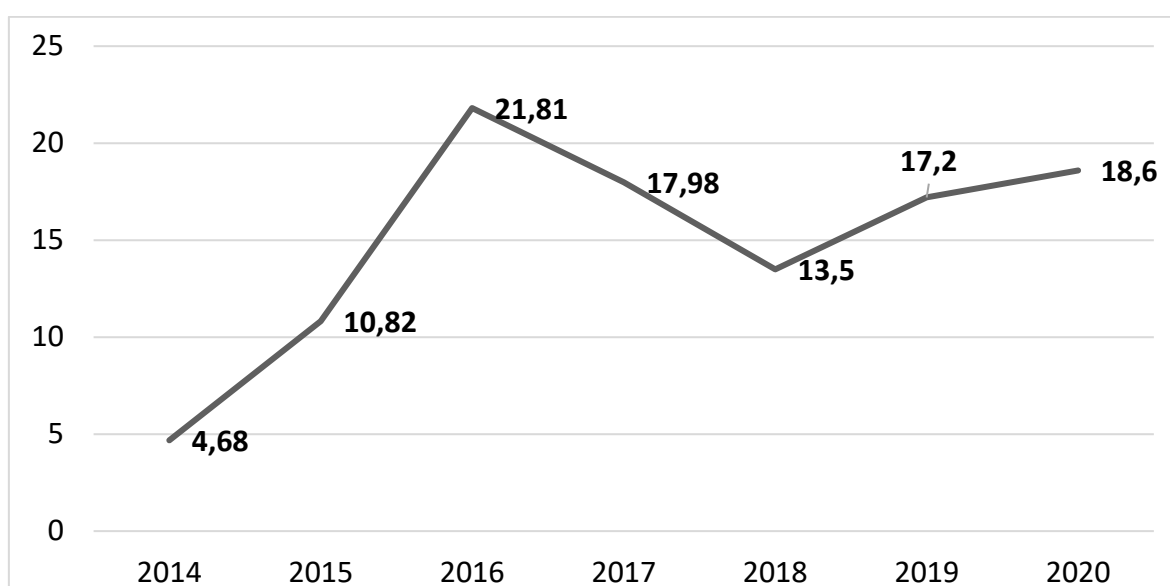


Figure 8.4. Dynamics of average weighted interest rate in 2014–2020, %

The highest level of interest rate was in 2016 and amounted to 21.81 %. During 2016–2020, the average weighted interest rate decreased by 3.21 % and in 2020 it was 18.6 %. This, the credit rates have now decreased and, but for many enterprises, lending remains an expensive tool to attract external funds.

Analysis of Table 8.5 data shows that in 2014–2020 there was an increase in the volume of loans granted by banks. Thus, in 2020, as compared to March 2013, the growth rate of loans granted by banks was 107.92 %. The highest growth rates were in 2015 – 111.78 %, and the lowest in 2017 – 95.90 %.

Table 8.5. Dynamics of volumes of bank credit investments in Ukraine in 2014–2020 (as of January 01)

Index	2014	2015	2016	2017	2018	2019	2020
Growth rate of loans provided by banks, in % compared to the previous year	98.79	111.78	110.42	95.90	104.23	103.06	107.92
Growth rates of loans granted to economic entities in % compared to the previous year	104.87	114.70	114.86	97.92	107.78	102.04	106.32
Growth rates of loans to individuals in % compared to the previous year	92.63	103.71	106.72	85.10	103.29	108.51	115.27
Ratio of loans granted to economic entities in loans granted by banks, %	74.71	76.67	79.75	81.43	84.21	83.38	82.14
Ratio of loans to individuals in loans granted by banks, %	19.84	18.41	17.79	15.79	15.65	16.47	17.59

Source: Calculated according to the NBU data [7].

In 2020, the growth rate of loans granted to economic entities was 106.32 %, which is by 1.45 % more than in 2014.

Growth rates of loans to individuals in 2014 were insignificant and amounted to 92.63 %. However, during 2015–2020 this index increased by 11.56 % and in 2020. It amounted to 115.27 %.

In 2014–2020 the volumes of loans granted to economic entities significantly exceed the lending to individuals, which indicates the weakening of the banks' lending to the latter and orientation of the credit policy towards the cooperation with enterprises. It is proved by the growth of loans ratio granted to business entities from 74.71 % in 2014 to 82.14 % in 2020. Last year the portfolio of hryvnia business loans increased by 2,7 % to 478,500 mln UAH, although in December it slightly decreased (by 1.5 %).

The share of loans to individuals for the analyzed period decreased by 2.25 and in 2020 amounted to 17.59 %.

During the analyzed period (Figure 8.5), the percentage of general overdue indebtedness on loans increased significantly from 7.7 % to 67.92 %, which is a negative and threatening phenomenon, as large amounts of problem loans can destabilize the financial condition of banks due to loss of income assets and growth of expenses in reserves to cover losses on bank credit operations. As a result, this will be manifested in the bank efficiency decrease, restraint of lending activity, deterioration of liquidity and solvency of those banks which loan portfolios are overloaded with problem loans.

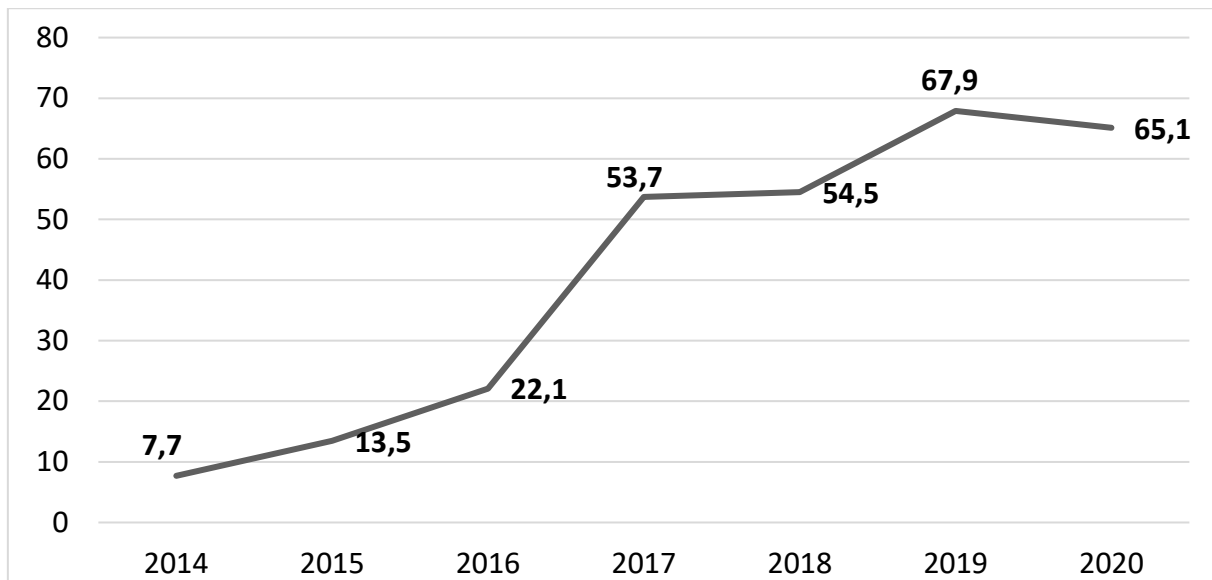


Figure 8.5. The share of overdue indebtedness on loans in the total amount of loans for 2014–2020, %

In a research study by H. Korniiichuk indicated that the banking system in Ukraine has some problems that require improvement and changes in its functioning mechanisms. To improve the financial sector and economic growth in Ukraine, it is necessary to create an effective mechanism for improving bank lending policies. To develop bank lending and create financial stability, it is necessary to make banking services more qualitative in order to improve their competitiveness; to improve procedures in the banking sector, such as reorganization and liquidation of banks; to encourage commercial banks to lend innovative projects; to increase capital resources of state-owned banks, increase their number and strengthen their role in the financial and credit market in Ukraine. The above measures can contribute to recovery of the national economy and improvement of the overall condition of banking institutions [11].

Conclusion. In 2018–2020 there was an increase in financial resources, but this trend, due to the increasing share of short-term liabilities in the total capital structure of enterprises, is negative and indicates an increase in dependence of domestic businesses on external sources of funding and signals a general deterioration in financial condition of Ukrainian enterprises.

In modern economic conditions, the optimization of sources of financial resources of Ukrainian enterprises should be based on the criteria of sufficiency of the latter, the optimality of their ratio depending on industry characteristics and specific business conditions, the economic feasibility of their involvement and efficiency.

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Chapter IX

ENTERPRISE'S FINANCIAL SECURITY IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Tetiana Korniienko

Candidate of Sciences (Economics), Associate Professor
Acting Head of the Department of Finance, Accounting and Economic Security
Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine
E-mail: korniyenko.t@udpu.edu.ua

ORCID ID: 0000-0001-8020-0771

Nataliia Gvozdej

Candidate of Sciences (Economics), Associate Professor
Associate Professor at the Department of Finance,
Accounting and Economic Security
Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine
E-mail: gvozdej.n@udpu.edu.ua

ORCID ID: 0000-0002-7251-7696

Introduction. The financial system of Ukraine as a country with a small open economy is especially affected by global turbulence. A significant imbalance of global financial resources, their significant gap from the real sector of the economy leads to the formation of permanent financial crises, which gives rise to internal instability of the financial sector of the economy, lack of confidence in the banking system and a decrease in demand for final products, which entails a decrease in the level of financial security of enterprises. In such conditions, ensuring the financial security of enterprises becomes important not only for the formation of financial security of the state, but also for protecting the financial interests of their owners, and other stakeholders – managers, employees, counterparties, banks and other financial institutions.

The financial security of enterprises is an integral element and foundation of the formation of the financial security of the state. It is the situation that develops at the micro level that determines the level of financial security of the state, because the more business entities have a high level of financial security, are able to timely and fully fulfil their financial obligations, including to other business entities and employees, to resist the negative influence of endogenous factors and absorb external threats, the

higher the level of financial security of the state will be formed. Recently, much attention has been paid to the study of the definition of “financial security”, primarily at the macroeconomic level, since most of the studies are devoted to the financial security of the state. In this regard, the question of determining the essence, place and role of the financial security of an enterprise in the system of financial security of the state becomes relevant.

The place of financial security of the enterprise in the system of financial security of the state can be defined first, proceeding from constituent elements of financial system of the state which provides existence of spheres of the state finances, finances of the population, finances of business entities, secondly, using system of national accounts, in particular finances sector, finance of non-financial corporations (real sector), financial corporations (financial sector), finance of other sectors. All sectors or areas interact with each other, which means that within each area of the financial system it is advisable to consider the essence of financial security. Considering the sphere of finances of economic entities, it is expedient to distinguish between financial security of economic entities of the real sector of the economy and the financial sector, as their financial activities have significant differences and generate several different types of financial risks [12].

Literature review. Research on financial security issues has begun to appear in the scientific literature recently. It should be noted that in recent years they have become increasingly relevant. Basically, the attention of scientists is focused on the issues of forming a system of financial security of an enterprise, building an effective mechanism for managing it, studying the theoretical and methodological foundations of financial security.

In their works, domestic economists began to use the category “financial security” only in the early 90 years last century. Research in this area was carried out quite actively, as evidenced by the large volume of fundamental works of famous scientists accumulated during that time. The experience of developed countries convinces us that the enthusiasm for the problem of monetary security grows sharply during economic crises, which led to the need for structural restructuring of the economy.

In Ukraine, the problem of ensuring the financial security of an enterprise is in the focus of attention of a wide range of scientists, such as I. Blank, T. Vasiltshev, K. Goryacheva, L. Donets, V. Dorofeev, A. McMack, R. Papekhin, V. Ponomarev and others.

Summarizing the definitions of scientists and taking into account our own interpretation of the term we are considering, we can propose such a definition of the financial security of an enterprise – this is a complex multifactorial category, considered not only in the context of ensuring the effective use of resources by a business entity, the level of preventing them from endogenous and exogenous risks in the process of achieving economic goals development, but also in the context of ensuring the conditions for sustainable development of the enterprise.

The resources of an enterprise are understood as material and non-material, labour and financial resources, as well as the ability of employees to effectively use available resources to achieve their goals. We consider the risks of an enterprise as a threat to incur losses as a result of any activities related to the production of products, their sale, commodity-money and financial transactions, the implementation of socio-economic and scientific and technical projects. We interpret the development of the enterprise as qualitative changes in the functioning of the enterprise, the improvement of equipment, technology and labour organization in all structural divisions, which, as a result, affects the improvement of product quality and the maximization of profits.

The main problems arising in the formation of the theoretical and methodological foundations of the financial security of an enterprise can be grouped according to the following criteria:

- problematic issues requiring urgent solutions;
- topical problematic issues arising in the analysis of the main aspects of financial security, but not significantly affecting the formation of the security system;
- promising problematic issues that should be taken into account in the future and need innovative solutions.

The proposed systematization of problems in the formation of the theoretical and methodological apparatus of financial security of an enterprise allows us to focus on objective consideration and development of priority basic aspects of the financial security system, which is important to ensure its practical use in order to protect the enterprise and support sustainable functioning from the position of financial security.

The objects of financial security of entrepreneurial activity in Ukraine include the individual – his social and economic interests; society – its intellectual and material values, information and natural environment, natural resources; state, economic independence.

The subjects of the financial security of the enterprise are economic structures, financial institutions, legislative and executive authorities, law enforcement agencies, associations of citizens [7].

Results. The influence of the financial sector on the financial security of an enterprise is manifested through the existing and potentially possible capital structure, as the existing capital structure forms the financial risks of the enterprise. From this point of view, financial risk is the risk that business owners take on, using borrowed capital in the form of bank loans (banking sector) and corporate bonds – (stock sector), as well as regulating the capital structure through changes in equity from internal sources. its replenishment – net profit and external sources – further through a public offering of shares. The financial sector directly influences the financial security of an enterprise through its existing financial architecture, which includes the existing ownership structure (including the presence of majority and minority shareholders), a top management team formed by the owners, who together determine the corporate governance strategy and instruct managers to conduct operations, as well as the capital structure formed in the interaction of these stakeholders, taking into account the strategy of its further change. The essence of the financial security of the enterprise is the ability of the enterprise to independently develop and implement a financial strategy in accordance with the objectives of the overall corporate strategy, in an uncertain and competitive environment.

The financial security of an enterprise is a basic component of economic security, considered as the ability of an economic entity to ensure financial balance and high efficiency in the context of a transformation of the external environment and the presence of many financial risks.

An enterprise will be in financial security if its financial and economic interests are harmonized with the interests of the subjects of the external environment: buyers, suppliers, investors, competitors, the state and society as a whole.

The interests of the owners of the means of production – the subject of control over the enterprise – will be decisive. It is the subject of control that forms the system of interests of the enterprise and, accordingly, provides a decisive influence on the security of the enterprise. An important methodological provision is the definition of the nature and origin of sources of danger (threat, risk).

Sources of danger – the potential for disruption to the functioning and development of the facility. Such sources are conditions and factors, the

impact of which on the object is negative, or these are conditions and factors that include and, under certain conditions, by themselves or in different aggregates, manifest or find hostile intentions, harmful properties, destructive nature.

An important step in ensuring the financial security of an enterprise is the development of a financial security concept.

The concept of financial security is a specific set of views on ensuring financial security, which presupposes a comprehensive definition of threats and a systematic understanding of ways to eliminate them. The concept should include ways to identify and eliminate threats, the principles that need to be applied, a set of predictable situations with the state of financial security, the necessary tools and technologies for this, as well as an algorithm for ensuring financial security. The concept as a model is the basis for developing a strategy to ensure the monetary safety of the company.

An example of such a concept is the financial strategy of an enterprise I.A. Blank, which is defined as “one of the most important types of the functional strategy of the enterprise, providing all the main directions of development of its financial activities and financial relations through the formation of long-term financial goals, the choice of the most effective ways to achieve them, adequate adjustment of the directions of formation and use of financial resources for changes in conditions external environment” [1].

The following structural elements of the financial security of the enterprise are distinguished: monetary, credit, investment, budgetary and tax, stock and insurance. Each of the constituent elements of the financial security of an enterprise must ensure a high level of financial security and create certain conditions for counteracting destructive factors and threats of an external and internal nature.

The financial security of an enterprise is characterized by various kinds of risks: interest rate, liquidity, inflationary, currency, insolvent, reduced financial stability, credit; loss of profits, bankruptcy, political and legal, investment, informational, criminogenic, insolvent, innovative, deposit, selective. Today, the financial security of enterprises can only be ensured if an adequate scheme for identifying and neutralizing threats and dangers is determined and built [2].

Threats and dangers to the financial security of enterprises can be distributed in accordance with its structural components [3]:

- 1) for budgetary and tax:

– internal threats, which include a low level of payment and settlement discipline; ineffective tax management; ineffective management of accounts receivable and payable of the enterprise for settlements with the budget;

– external threats, these include: instability of fiscal legislation; increased fiscal pressure on the enterprise;

2) for insurance:

– internal threats, including: the choice of financially unstable and unreliable insurance companies; low level of property insurance of enterprises; inefficient management of accounts payable of the enterprise on insurance calculations;

– external threats, which include: rising insurance rates; delays in insurance payments; insurance fraud; imperfection of the regulatory framework in the field of insurance;

3) for investment:

– internal threats: inefficient investment policy of the enterprise; limited diversification of enterprise deposits; reduction of investment attractiveness of the enterprise; irrational depreciation policy; selection of financially unstable and unreliable banking institutions when concluding deposit agreements;

– external threats: imperfection of investment legislation; reduction of interest rates on deposits; deterioration of the investment climate in the country; the probability of non-return of part or all of the amount of deposit resources due to bankruptcy or temporary insolvency of the bank; imperfection of the legislation regulating banking activity; lack of a deposit guarantee fund for legal entities;

4) for stock:

– internal threats, which include the suboptimal distribution of profits between consumption by the owners and its reinvestment in the assets of the enterprise; ineffective dividend policy of the enterprise;

– external threats, which include a decrease in the market value of securities issued by the enterprise; low rates of sale of issued securities;

5) for cash:

– internal threats: a decrease in the volume of proceeds from sales; lack of own working capital; violation of the organization of the preservation of funds; violation of payment discipline, ineffective management of the company's accounts receivable and payable for settlements, including with foreign counterparties;

– external threats: devaluation of the national currency; imperfect monetary policy of the NBU; rising inflation; crisis of the state’s monetary system;

6) for credit:

– internal threats: unjustified growth in the volume of loan capital; decrease in the company’s solvency; slowdown in the rate of circulation of accounts payable; ineffective credit policy;

– external threats: instability of the financial market; growth of interest rates on loans; increased requirements for the creditworthiness of borrowers; crisis of the country’s financial and credit system.

Assessment of the company’s financial security involves, above all, the identification of its financial condition. The conducted researches allowed to make certain steps on formation of system of indicators for an estimation of a level of financial safety, however its further specification is necessary. In principle, such a system should include various groups of quantitative indicators that characterize a particular direction in ensuring the financial security of the enterprise.

The level of financial security of enterprises should be based on the analysis of its financial condition. In general, the financial condition of the enterprise is assessed on the basis of indicators that reflect the financial and economic activities of the enterprise, the availability, location, use and movement of resources of the enterprise. As you know, the main areas of analysis of the financial condition of the enterprise are: analysis of the liquidity of the enterprise; analysis of solvency and financial stability of the enterprise; analysis of the company’s business activity; analysis of the company’s profitability. The characteristics of the company in these areas allows you to assess its financial condition as the ability to finance its activities and effectively use financial resources.

The analysis of the financial condition will be carried out on the basis of the enterprise PJSC “Novograd-Volynsky Bakery”. It is necessary to calculate indicators for the main groups, that is, indicators of liquidity and solvency, financial stability, profitability, business activity. The information base for calculating these characteristics is the main forms of the company’s monetary reporting, namely: the balance sheet and the statement of monetary results (Table 9.1).

Based on the Table 9.1, we can conclude that the coverage ratio during the study period exceeded the standard value (1), which indicates the sufficiency of current assets to cover current liabilities. This means that the

company has the opportunity to pay off its debts on time. But this indicator is characterized by a heterogeneous trend – in 2018 it increased by 84.26 % compared to 2017, in 2019 the indicator decreased by 56.09 % compared to 2018 and amounted to 1.55.

Table 9.1. PJSC “Novograd-Volynsky Bakery” for 2017–2019

Indicators	Years			Rate of increase, %		
	2017	2018	2019	2018/2017	2019/2018	2019/2017
Coverage ratio	1.92	3.54	1.55	84.26	-56.09	-19.09
Quick ratio	1.68	2.89	1.38	71.76	-52.42	-18.27
Absolute liquidity ratio	0.36	0.18	0.40	-50.70	+122.22	+12.36
Net working capital, thousand UAH	6,707.9	10,565.40	4,324.7	57.51	-59.07	-35.53

For the quick liquidity ratio, the standard value is 0.6–0.8. In PJSC “Novograd-Volynsky Bakery” in 2017–2019 this indicator exceeds the standard value. This situation indicates a high level of liquidity and solvency of the enterprise, since there are enough liquid resources to pay off all current liabilities. In 2018, it increased by 71.76 % compared to 2017, but in 2019 it decreased by 52.42 %.

Absolute liquidity ratio for 2017–2019 corresponded to the standard value – 0.2. In 2018, it decreased by 50.70 % compared to 2017. This decrease is due to a decrease in cash at the enterprise and an increase in current liabilities. In 2018, the absolute liquidity ratio increased by 122.22 % compared to 2017.

Net working capital for 3 years was marked with a “+”, which indicates the ability of the company to expand its activities without additional borrowing. During the period, net working capital decreased by 35.53 %. In addition to the relative characteristics of liquidity, it is necessary to find the liquidity of the balance sheet of PJSC “Novograd-Volynsky Bakery”. The liquidity of the balance sheet is calculated as the degree of coverage of liabilities of the enterprise with its assets, the term of transition to which in cash corresponds to the maturity of liabilities. Liquidity analysis of the company’s balance sheet for 2017–2019 presented in Table 9.2.

The ratio of the most liquid assets and term liabilities allows you to find out the current liquidity ($A1 > P1$), which indicates the company’s solvency for the next period of time. $A2 > P2$ – indicates a future trend towards an increase in current liquidity. $A3 > P3$ – means that in the future, with the timely receipt of funds from sales and payments, the company may be solvent for a period equal to the average duration of one turnover of

working capital after the date of the balance sheet; $A4 < P4$ – indicates the ratio of payments and receipts for the future [5].

Table 9.2. Liquidity analysis of the balance sheet of PJSC “Novograd-Volynsky Bakery” for 2017–2019, thousand UAH

Asset article	Years			Liability clause	Years		
	2017	2018	2019		2017	2018	2019
Most liquid assets (A1)	2,595.3	730.4	3,125.2	Most urgent liabilities (P1)	4,926.4	2,108.2	2,030.4
Quickly realizable assets (A2)	9,676.48	11,305.8	7,618.9	Short-term liabilities (P2)	2,369.7	2,056.8	5,789.1
Slowly realizable assets (A3)	1,732.2	2,694.2	1,400.1	Long-term liabilities (P3)	–	10,325.9	7,339.2
Hard-to-sell assets (A4)	11,270.2	14,534	15,907.2	Permanent liabilities (P4)	17,978.1	14,825.4	12,939.0

Let’s analyse the balance sheet liquidity for 2018. The situation at PJSC “Novograd-Volynsky Bakery” indicates that the liquidity of its balance sheet differs from absolute and can be represented as follows: $A1 > P1$; $A2 > P2$; $A3 < P3$; $A4 > P4$. So, we see that the current liquidity is at a sufficient level, since $A1 > P1$; $A2 > P2$. As for the prospective liquidity, it is at an insufficient level, since $A3 < P3$; $A4 > P4$, the enterprise does not have enough funds for promising activities. Analysis of the financial stability and solvency of an enterprise is an important stage in the analysis of its financial condition. In the long term, financial stability is characterized by the ratio of own and borrowed funds [6]. The financial stability of the enterprise also means the provision of reserves and expenses with sources of funds for their formation.

Financial stability is a state of an enterprise when the volume of its property (assets) is sufficient to pay off obligations, that is, the enterprise is solvent. For the property of monetary strength, companies use a system of absolute and relative characteristics. The most generalizing absolute indicators of financial stability are the conformity or inconsistency (excess or lack) of sources of funds for the formation of reserves and expenses, that is, the difference between the number of sources of funds and the amount of reserves and expenses.

Let’s calculate the indicators of solvency and financial stability of PJSC “Novograd-Volynsky Bakery” and give in Table 9.3.

Solvency ratio during 2017–2019 exceeds the standard value of 0.5, but in 2019 it decreased by 8.94 % compared to 2018 and is equal to 0.46. This means that the company is experiencing a shortage of its own funds to

carry out its activities, therefore it attracts borrowed funds, that is, the company has an insufficiently high level of financial stability and independence. During the period under review, it decreased by 35.26 %.

Table 9.3. Indicators of plateau-ability and financial stability of PJSC “Novograd-Volynsky Bakery” for 2017–2019

Indicators	Years			Rate of increase, %		
	2017	2018	2019	2018/2017	2019/2018	2019/2017
Solvency ratio	0.71	0.51	0.46	-28.91	-8.94	-35.26
Funding ratio	0.41	0.98	1.17	+140.85	+19.86	+188.68
Provision with own fixed assets ratio	0.48	0.72	0.36	+49.74	-50.35	-25.65
Equity capital flexibility ratio	0.37	0.71	0.33	+91.00	-53.10	-10.42

The financing ratio at the enterprise has a tendency to increase and during the period increased by 188.68 %. This situation indicates an increase in the company’s dependence on borrowed sources, that is, a decrease in financial stability. In 2017–2019 the ratio of the provision of own fixed assets corresponds to the normative values, which is positive at the enterprise. Over the period, the indicator decreased by 25.65 % and amounted to 0.36 in 2019. In 2017–2019 the equity capital maneuverability ratio is greater than 0, that is, it corresponds to the standard value. In 2018, the ratio increased by 91.00 % compared to 2017. However, in 2019, the equity capital flexibility ratio decreased by 53.10 % compared to 2018, which indicates a decrease in the degree of mobility of the enterprise’s equity capital use. those. the share of attracted funds in the total amount of liabilities and the insolvency of the enterprise to ensure the flexibility of using its own funds.

The stability of the financial condition of an enterprise in a market economy is largely due to its business activity, depending on the breadth of markets for its products, its business reputation, the degree of fulfillment of the plan for the main indicators of economic activity, the level of efficiency in the use of resources and the stability of economic growth. The business activity of an enterprise in the financial aspect is manifested primarily in the rate of turnover of its funds. The results of calculating the indicators of business activity are given in Table 9.4.

Table 9.4. Indicators of business activity of PJSC “Novograd-Volynskiy Bakery” for 2017–2019

Indicators	Years			Rate of increase, %		
	2017	2018	2019	2018/2017	2019/2018	2019/2017
Asset turnover ratio	2.95	2.84	2.53	-3.66	-11.08	-14.33
Accounts payable turnover ratio debt	14.15	15.13	20.06	+6.93	+32.58	+41.77
Indicator of the duration of the turnover of accounts payable	25	24	18	-4.00	-25.23	-28.00
Equity capital turnover ratio	3.77	4.73	5.23	+25.38	+10.50	+38.54
Fixed assets turnover ratio	1.92	1.62	1.75	-15.63	+8.02	-8.85
Accounts receivable turnover ratio	9.18	7.79	7.67	-15.06	-1.56	-16.38
The indicator of the duration of accounts receivable arrears	39	46	47	+17.95	+2.17	+20.51

Based on the calculations given in Table 9.4. The following conclusions can be drawn about the indicators of business activity of PJSC “Novograd-Volynskiy Bakery”. Asset turnover ratio during 2017–2019 was constantly decreasing, this is a negative trend in the enterprise, since the efficiency of using the resources of the enterprise, regardless of the sources of their attraction, decreased. During the period under review, the ratio decreased by 14.33 %. Accounts payable turnover ratio for the period 2017–2019 constantly growing, at the same time, the maturity of accounts payable decreased, which indicates that the company’s ability to pay off its debts as quickly as possible is constantly increasing. During the study period, the accounts payable turnover ratio increased by 41.77 %, and the maturity period decreased by 28 %.

For the ratio of accounts receivable turnover and the maturity of accounts receivable for 2017–2019. there was a reverse trend in accounts payable. That is, the accounts receivable turnover ratio was constantly decreasing, and the maturity of accounts receivable was growing. During the period under review, the ratio decreased by 16.38 %, and the maturity of accounts receivable increased by 20.51 %. As a result, it is necessary to revise the policy for the sale of services on credit. The turnover ratio of fixed assets or capital productivity for the entire study period did not have a uniform trend. During the period under review, the ratio decreased by

8.85 %. Equity capital turnover ratio in the period 2017–2019 increased by 38.54 %, which indicates an increase in the efficiency of using equity capital.

A special place in assessing the financial condition is occupied by the calculation of profitability indicators, which determine how profitable the activities of the enterprise, products, assets and equity capital. The results of calculating the indicators of profitability are presented in Table 9.5.

Table 9.5. Profitability indicators PJSC “Novograd-Volynsky Bakery” for 2017–2019, %

Indicators	Year			Rate of increase, %		
	2017	2018	2019	2018/2017	2019/2018	2019/2017
Return on assets ratio	41.54	38.61	29.28	92.95	75.84	70.49
Return on equity ratio	69.23	64.26	60.54	92.82	94.21	87.45
Profitability ratio activities	15.64	13.58	11.58	86.83	85.27	74.04
Profitability ratio of products	33.87	27.85	21.58	82.23	77.49	63.71

The return on assets ratio for the study period tends to decrease, that is, the efficiency of using assets decreased by 29.52 %.

Return on equity ratio for 2017–2019 decreased, that is, the efficiency of its use. During the period, the decrease was 12.55 %. The profitability of operations as a whole during this period decreased by 25.99 %. The profitability of products has the same development trend as the profitability of activities, that is, there was a decrease by 36.29 % during the study period. Thus, the profitability indicators of PJSC “Novograd-Volynsky Bakery” are positive and quite high for Ukrainian enterprises, but for the period under review, the dynamics of their change is decreasing, which in the future, if the situation remains unchanged, may lead to unprofitableness of the studied enterprise [7].

Having analysed all the most important indicators of a comprehensive assessment of the financial condition of PJSC “Novograd-Volynsky Bakery”, we can say that most of the company’s indicators meet the standard values, that is, it is financially stable, independent, has a high level of liquidity and solvency. But the main danger for the monetary condition of the company is the value of the funding ratio. This situation is associated

with an increase in the share of borrowed funds in the liabilities of the balance sheet of PJSC “Novograd-Volynsky Bakery”, which in the medium term may lead to a deterioration in the level of the company’s solvency.

At the current stage of development of the country’s economy, in conditions of financial and economic instability and complex transformation processes, the conditions for domestic management are significantly complicated. The efficiency of business entities is determined mainly by the state of their finances, which leads to the need to consider the problem of ensuring the financial security of enterprises.

Lack of attention to the problems of financial security can lead, even with a high profitability of the business, to the fact that the enterprise will become the target of a hostile takeover, and also, on the other hand, the growth of business rates causes a higher dependence of enterprises on external sources of financing or a loss of independence in making managerial decisions [7].

Achieving profitability is a top priority for a business venture. An increase in profitability is possible due to an increase in sales and a decrease in costs.

The increase in sales involves:

- exploring the possibilities of conducting an offensive marketing policy;
- stimulating demand for the company’s products;
- comprehensive marketing research of potential sales markets;
- release of new competitive types of products;
- expanding the sales network and entering new sales markets.

Reducing production costs involves:

- search for suppliers offering more favourable conditions;
- reduction of fixed and variable costs due to savings;
- reduction of fixed costs by reducing excess production capacity.

The construction of the management of the financial security system of the enterprise should be based on the observance of the following principles:

- 1) legality;
- 2) the rights and freedoms of citizens;
- 3) centralized management; competence;
- 4) confidentiality;
- 5) the complex use of resources and funds;

6) independence and responsibility for ensuring the economic safety of the company;

7) advanced material and technical equipment.

The financial stability of a company depends on the effective management of financial resources and is determined by the ratio of its own and borrowed funds, assets and sources of their financing [8].

The problem of the investigated enterprise is the low level of financial stability indicators, due to the insufficient amount of equity capital to finance the activities of an economic entity. Today at the enterprise, the topical issue is optimization of the capital structure, the main criteria of which is to maximize the level of predicted financial profitability and minimize the cost of capital.

It is always important for an enterprise to correctly determine the optimal need for working capital, which will make it possible to obtain the profit planned for a given volume of production with minimal costs. Understating the value of working capital entails an unstable financial condition, interruptions in the production process and, as a result, a decrease in production and profits. In turn, the overestimation of the size of working capital reduces the ability of the enterprise to produce capital costs for the expansion of production.

A special role in the new economic conditions is assigned to the rational and efficient use of circulating assets, first of all, monetary resources. This is due to the fact that the presence of an optimal balance of funds is one of the most important factors in the continuity of the production process. Therefore, it is so important in the conditions of modern economic management to ensure the optimization of cash flow at each enterprise [9].

The negative consequences of excess cash flow are expressed in the loss of the real value of temporarily free funds during inflation, the loss of potential profit from the free part of cash in the field of their short-term investment, which ultimately also negatively affects the level of return on assets and equity capital of the enterprise.

Methods for optimizing the money deficit depend on the nature of this deficit – short-term or long-term. Balancing the deficit cash flow in the short term is achieved through the USE of the “System of acceleration-deceleration of payment turnover”. The essence of this system lies in the development of organizational measures at the enterprise to accelerate the attraction of funds and slow down their payments.

Acceleration of fundraising in the short term can be achieved through the following measures [10]:

1. Search for additional cash receipts from fixed assets of the enterprise:

- to analyse the degree of use of property (equipment) in order to determine the list of property that is not used in the current economic activity; discuss with the engineering staff what equipment is needed to maintain the current and expected level of production, the possibility of optimizing the use of premises;

- to determine the circle of potential buyers (users) of excess equipment by studying competitors or the possibilities of alternative use of the property in question;

- choose the most suitable communication channels to effectively inform market participants about the sale (lease) of property.

2. Debt collection in order to accelerate the turnover of funds:

- create a customer assessment system that would summarize all the risks associated with this partner, and which should lead to accelerated collection of overdue receivables;

- make sales managers responsible for monitoring and restoring client status;

- use modern forms of receivables refinancing – factoring, issue of bills;

3. Reorganization of inventories:

- to classify reserves by categories according to their importance for the stable operation of the enterprise, to analyse the turnover of reserves by type, to reduce the volume of those types of stocks that are not critical for the functioning of the business;

- reduce the size of fixed stocks (or rotating as a buffer) by reaching an agreement on a shorter lead time for the supply of such goods, if possible;

- improve the activity in the field of purchase orders by introducing more effective control procedures, such as centralizing the storage and release of goods, reallocating space or maintaining the improvement (minimization) of document flow;

- consider selling off dependent stocks at a discount to raise additional funds.

4. Increase in sales:

- carefully evaluate the projected mark-ups for groups of goods sold in order to determine the groups of goods that bring the greatest profit;

- overestimate consumer demand factors, such as consumer properties (priority) when purchasing, price, quality, fashion trends, seasonal factors, etc.;
- identify the groups of products that are best suited to changing market conditions and focus on them;
- to analyse prices and the volume of products sold, to find the most reasonable compromise, which will help increase the receipt of additional funds, despite the decrease in sales;
- increase the size of price discounts for cash;
- to provide partial or full subscription for manufactured products that are in high demand in the market;
- to speed up the collection of payment documents of product buyers.

It should be noted that in conditions of economic and political instability, the functioning of enterprises largely depends on rational, balanced management decision-making and an effective system for organizing their activities.

The low level of efficiency of the financial security management system is the cause of crisis phenomena, their focus on combating the results of the negative influence of external and internal factors, and not on the prevention and timely neutralization of potential risks and threats.

An effective tool for solving such a problem is a well-grounded goal-oriented financial security management strategy aimed at creating long-term adaptation mechanisms to changes in the external and internal environment, developing a high level of resilience to existing and potential threats, in order to increase the efficiency of activities, to provide financial support for sustainable growth in the current and perspective periods.

Measures to increase the level of financial security should be coordinated with each other, since the use of one method can lead to a decrease or increase in the level of financial risks in other areas of the company's financial activities. Therefore, the most effective will be such a management of financial security, which will ensure the comprehensive use of measures to increase its level [11].

Consequently, the above considered ways to increase the level of financial security of an enterprise can be used directly in the activities of the investigated enterprise and will help to strengthen its financial security.

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The most important stage in the management of the financial security of an enterprise is strategic planning and forecasting of its financial security. This stage provides for the development of a strategic plan – the purpose of which is to achieve the long-term goals of the enterprise, which can ensure its effective functioning, a high level of competitiveness and efficiency of the business entity. Strategic planning requires a study of the company's prospects, identifying trends and patterns, as well as situations that can negatively or positively affect the activities of an economic entity, because it is focused on the development of tools that ensure sustainable long-term management and reduce the likelihood of making inappropriate decisions [12].

After the development of a strategic plan and recommendations for implementation, strategic planning of financial and economic activities is carried out. The current planning of the financial security of the enterprise is based on the development of alternative scenarios for the development of the situation and the calculation of the values of the aggregate criterion of financial security for each of them. After choosing the best option based on the results of calculations and analysing others, operational recommendations are made on the current planning of the enterprise's activities.

In the course of planning, operational and annual financial plans, concepts, strategic programs and forecasts of the level of financial security of the enterprise are developed.

The organization of financial security management at an enterprise includes the need to form an organizational chart of financial security management, the establishment of centres of responsibility for the

implementation of its tasks; determination of the rights, duties, responsibilities of managers and employees of individual structural units for the level of financial security of the enterprise; organization of constant monitoring of the level of financial security.

Analysis of the level of financial security of the enterprise provides for:

- analysis of the external and internal environment in order to identify threats to its financial and economic interests; assessment of threats and their possible consequences at the enterprise; calculation and assessment of the main indicators-indicators of the level of financial security of business entities [13].

Based on the analysis of the level of monetary security of the company, strategic, current, operational planning of the monetary security of the company is carried out. The result of strategic planning should be a strategy for ensuring the financial security of the enterprise. Current planning includes the development of current financial plans of the enterprise, and operational – short-term financial planning documents.

At the stage of organization and regulation, the subject of management applies a variety of financial instruments and technologies in order to purposefully influence the object.

The motivation for making effective management decisions to ensure the financial security of the enterprise and their proper implementation is associated with the construction of a system of incentives and penalties for the subjects of financial security management of the enterprise, as well as individual executors of decisions made for the achievement or non-achievement of relevant management objectives, regulatory indicators of financial security, implementation or failure to meet planned targets.

The main purpose of the control system is the timely identification of deviations from the normal course and the implementation of adequate management measures to improve the situation to ensure the implementation of the developed plans, the achievement of the established performance goals.

As part of the mechanism for managing the financial security of an enterprise, we propose to carry out two types of control:

- current control carried out during the operation of the enterprise and the implementation of anti-crisis measures. Its main task is to compare the compliance of the actual results with the tasks set;

– the final control is carried out at the end of the reporting period or the implementation of anti-crisis measures. Its purpose is to check the compliance of the achieved results with the set goals, as well as to assess the effectiveness of the measures taken and to decide on the need for additional measures to manage the financial security of the enterprise.

Methodological support of the financial security of an enterprise may include the following research methods: technical and economic calculations, balance, economic and statistical, economic and mathematical, expert assessments, reengineering, logistics, optimization.

The toolkit aimed at ensuring effective financial security management is divided into two groups: financial and economic methods (profit, cost, capital management, financial accounting, financial analysis, financial planning, financial regulation, insurance, etc.); economic leverage – profit, income, financial sanctions, dividends, price, financial incentives, wages.

The regulatory framework for financial security management occupies an important place in the enterprise management mechanism and presupposes the existence of a financial security concept, which is the basis for the development and implementation of a financial security strategy and management decisions in this area. The concept of a specific enterprise has an arbitrary form, but contains the main provisions for the formation and organization of financial security management of the enterprise.

An important element of the mechanism for managing the financial security of an enterprise is information and analytical support, containing the following data: qualitative and quantitative values of indicators of financial security, the presence or potentiality of risks and threats, formalized financial interests and the state of their implementation, a strategic plan for ensuring the financial security of an enterprise, qualitative and quantitative parameters of the use of financial resources, the volume of the latter, as well as the sources of their receipt.

Formation of the financial security system of an enterprise requires an assessment of their financial condition, monitoring of the use of the enterprise's potential. Monitoring the state of financial security implies the ability to constantly diagnose the financial condition of an enterprise, which will allow at an early stage to identify signs of crisis development, to determine its scale, to study the main factors of its manifestation, to develop measures to prevent a crisis and prevent bankruptcy.

Conclusion. Diagnostics of the enterprise's activities in the financial security system is a systematic analysis of the environment of its functioning

by means of interrelated and complementary indicators that reflect the state of use of the enterprise's potential and an assessment of the security level. Diagnostic results are the basis for making appropriate management decisions. At the same time, the combination of strategic and operational planning, forecasting, analysis, monitoring, control, determination of parameters, methods and tools for the implementation of financial diagnostics and timely response to changes in indicators of the state of economic security and bringing them up to standard will ensure effective management of financial security at the enterprise.

Solving the problems of building and functioning of the financial security management mechanism should be individual for each specific enterprise and require taking into account its strategic goals and features of problems related to individual elements of the economic system, directions and objects, available capacity and resources.

Measures to increase the level of financial security should be coordinated with each other, since the use of one method can lead to a decrease or increase in the level of financial risks in other areas of the company's financial activities. Therefore, the most effective will be such a management of financial security, which will ensure the comprehensive use of measures to increase its level [14].

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CONCLUSIONS

The represented in the monograph results of scientific and practical researches allowed to study and improve the characteristics of certain aspects of the whole system, which is the financial policy and security policy of sustainable development.

The study of the financial management system of the united territorial communities made it possible to identify areas for improving financial management to achieve their sustainable development:

1. The main purpose of the national reform is to expand the powers of local governments to make decisions and give them full budgetary independence in the implementation of budgets and the implementation of production powers. The proposed definition is more relevant and has the following characteristics: purposefulness, systematization, organizational consistency and efficiency, regardless of the ease of voters and the activities of the state.

2. In the context of financial decentralization in Ukraine, the finances of united territorial communities should be dominant in the national financial system, as they are the main indicators of the effectiveness of local government reform and regional state organizations and communities.

The evaluation of the methodology of rating old industrial regions in the context of sustainable development security allowed to improve the methodological basis for assessing the security of sustainable development in these regions:

1. Improved methodological support for assessing the security of sustainable development by introducing the method of the sum of places for annual values of indicators for 10 years. The expediency of separating the economic, social and environmental components of security of sustainable development of old industrial regions and the proposed assessment indicators for each of the components are substantiated.

2. The ranking of old industrial regions of Ukraine for each of the three components of sustainable development security is carried out. At the same time, the ranking of the economic component is carried out by GRP per person per year, annual index of industrial production, annual capital investment per enterprise, annual sales volume per 1 enterprise and annual productivity per 1 employee. The rating of the social component is based on the average monthly salary of a full-time employee, the annual unemployment rate in the region for the year according to the ILO

methodology, arrears of wages per employee per year, annual income per capita, annual labour costs per enterprise. The rating of the environmental component is based on capital investments in environmental protection per enterprise per year, current environmental costs per enterprise per year, annual emissions of pollutants into the atmosphere from stationary sources of emissions per capita, annual carbon emissions from stationary sources per station. person, the annual amount of waste per person per year.

Assessment of budget funding for the cultural sphere at the subnational level in the context of sustainable development of Ukraine helped to develop conclusions:

1. From the standpoint of the sustainable development, the situation of the CS budgetary financing of Ukraine at the subnational level indicates the uncertainty of the priorities in the national policy reform in this sphere.

2. It is appropriate to use the following scientific approach to evaluate trends in budgetary funding for the CS at the subnational level: to specify the major factors that affect the amount of LB expenditures on the C&A by region; to carry out factor analysis by the method of principal components for structuring factors and their ranking by region; to identify a sample regression function in order to determine the peculiarities of the impact of defined factors on LB expenditures on the C&A in the regions of Ukraine. According to the results of the factor analysis by the principal components method and correlation-regressive analysis the LB expenditures on the C&A mainly were influenced by situational, random and unpredictable events, economic relations in the allocation of the IGT, existing social and economic situation in the regions and regional peculiarities in financing of environmental protection measures.

3. The improvement of budgetary funding for the CS in Ukraine at the subnational level should be based on a clear definition of approaches to the allocation of budgetary resources to this sphere, be related to strengthening the fiscal capacity of local budgets, measures concerning stimulation of business activity and improvement of the social and demographic situation. Prospects for further research are related to the social and economic factors evaluation of the integration of the national CS into the EU.

Theoretical and practical aspects of developing the financial potential of the insurance market in the direction of sustainable development allows Ukraine to grow market economy, the emergence of new areas of management for all market participants necessitated theoretical clarification of insurance, life insurance, social and property insurance, search for new

methods of insurance protection and compensation of losses to all market participants:

1. Today, any country with a stable economy must have a reliable insurance system that effectively mitigates uncontrolled and unpredictable risks that can cause damage and threaten the existence not only of individuals but also unbalance the activities of economic entities.

2. Analytical assessment of the use of accumulative insurance funds is related to the analysis of the financial condition of life insurance insurers. The comparative characteristics of such indicators of their activity make it possible to identify the advantages and disadvantages of the financial condition of such companies and their position in the insurance market. According to official data of the State Commission for Regulation of Financial Services Markets in Ukraine and the NBU, the total number of insurance companies in Ukraine as of June 30, 2021 is 181, and on the same date a year earlier – 215, including life companies – 19 (20). At the same time, 166 insurance companies submitted reports on the activities of the regulator. The Ukrainian insurance market is attractive to foreigners because, firstly, it is only developing and competition is insignificant, and secondly, favourable legal conditions interest foreigners to work in the Ukrainian market.

3. For the period 2015–2020, the insurance market of Ukraine is characterized by dynamism and expansion of the list of insurance services by voluntary types of insurance, as well as increasing requirements for the establishment of an insurance company. At the same time, the current state of the insurance market is characterized by many negative trends and significant imbalances in its development, which require increased attention from government agencies to control insurance activities and take into account in managing the development of individual insurance business.

4. Ukraine's insurance market still needs significant transformations to meet the needs of legal entities and individuals and the requirements of the global insurance market. The number of insurers has been declining in recent years due to the application of the solvency and capital adequacy ratio of insurance companies; there was a decrease in the number of insurance contracts due to the difficult economic situation and the corona crisis; the level of insurance penetration in the country is too low – the ratio of gross insurance premiums to GDP over the last decade did not exceed 2 %; The level of insurance payments is low – on average in 2015–2019 it is 26 %,

although the volumes of gross insurance premiums received and gross insurance payments made are steadily growing.

5. The financial potential of the insurance market has its own specifics, priorities and development trends and is determined by the amount of own and borrowed funds of insurers that can be used at a given time. Currently, the financial potential of the insurance market of Ukraine, despite the fact that it shows a slight increase in total assets (after declining in 2015–2016), is assessed, compared to economically developed countries, as insufficient.

6. The investment portfolio of insurers in Ukraine is assessed as imperfect primarily due to the predominance of technical reserves in the structure of existing insurance reserves. In addition, in recent years the structure of insurers' assets has grown mainly due to bank deposits; decreased the volume of assets represented by stock instruments, in particular, corporate securities; Insurers did not invest in some types of assets – investments in the economy of Ukraine in certain areas identified by the Cabinet of Ministers of Ukraine, mortgage certificates and more.

7. At the same time, in the insurance market of Ukraine there is an insufficient use of insurance companies of modern opportunities to develop communications with customers, as well as the use of information technology to improve internal business processes.

Identifying the problems and prospects of sustainable development in the lending activities of Ukrainian banks revealed the deteriorating economic situation in the country and inefficient management of the loan portfolio of JSC CB “PrivatBank” significantly affected the quality of its lending operations. Therefore, the directions of improving the credit climate are identified:

1. Over the last 5 years of the bank's activity, the share of overdue loans has increased significantly, the level of credit risk, respectively, also tended to increase. In order to reduce the risk of lending activities of JSC CB “PrivatBank” uses various debt repayment options, limited lending to corporate clients, foreign currency lending, lending to large loans, increased credit requirements and a number of other measures taken. By the end of 2019, the bank managed to increase the security of its loan portfolio and obtain the largest profit in the banking system of Ukraine.

2. JSC CB “PrivatBank” is a leader in the domestic market of banking services. The innovativeness of its activities and effective management allowed to obtain in 2019 12.79 billion UAH of net profit, which provided

1st place in this indicator among the banks of Ukraine. This is a record for the banking system of Ukraine since the beginning of the economic crisis.

3. Assessing the effectiveness of banks' loan portfolios revealed that a high-yield, low-risk loan portfolio is effective. The calculations show a strong direct link between the profitability of banks' lending activities and their riskiness.

4. Based on the results obtained, it is proposed to determine the efficiency of the loan portfolio based on the ratio of the relative value of profitability to the relative value of the risk of credit operations. The higher the value of this indicator, the more efficient the bank's loan portfolio.

5. As a result of the analysis it was established that more loans were provided to both individuals and legal entities of the last class of debtors with a high level of credit risk. As an explanation, it was assumed that this situation is due to the fact that in previous years, borrowers who received loans in foreign currency, due to significant exchange rate fluctuations, automatically became debtors in critical financial condition. In addition, this may indicate that a significant proportion of loans are issued by banks to insiders, and according to the law, such borrowers are classified as high-risk debtors.

6. The main directions of further development of lending in Ukraine should be the use of best practices in assessing the creditworthiness of borrowers, legislative regulation of relations between credit institutions, including between collectors and debtors, encouraging borrowers to improve their creditworthiness. rating, increasing the level of financial literacy of the population and confidence in banking systems.

The assessment of the accounting aspects of cryptocurrency operations management made it possible to identify the impact on the economic and social components of any country. The European Union's Sustainable Development Strategy aims to develop the information component. Cryptocurrency is a centre that influences the development of telecommunications, digital economy, e-business and commerce. This can encourage countries around the world to develop all areas of activity to control such a particular asset. Cryptocurrency affects:

1. At the economic level, cryptocurrency affects how certain transactions are carried out. In the future, if they can be recognized internationally and locally, it will displace paper money and electronic money because they are completely protected from counterfeiting. During the coronavirus, most bacteria exist on the surface of paper money, so

people use electronic payment formats or cryptocurrencies. You can pay with cryptocurrency using the QR code in your digital wallet. The amount of cryptocurrency affects the calculation of monetary aggregates in the country. Such a specific type of activity as mining allows the state to receive additional revenues from the taxation of such activities.

2. At the social level, humanity is constantly striving for self-development. Cryptocurrency is a future form of cash that can be easily and safely used in everyday life. It does not depend on the bank or the country, you may not worry, however, it will not be a country – there will be no money that if the bank goes bankrupt, it will remain guilty of certain deposits. The main thing here is for countries to develop a mechanism for recognizing and controlling such assets. For example, most people in the United States trust cryptocurrency because, after President Donald Trump ordered \$ 1,200 per person to support the pandemic, the Coinbase cryptocurrency exchange registered a large number of people who began buying cryptocurrencies equivalent to \$ 1,000. That is, people are trying to keep their assets in this digital format.

3. Virtual currency is a huge amount of computing power and digital assets. At this stage of technological development of mankind cryptocurrency is gaining a stable position in the international market. Rapid development causes further growth in power and interest, but may eventually lead to collapse. However, if the stability of the cryptocurrency price is achieved, it can be used in international transactions, not just for speculative gain. However, this issue will be directly related to the legalization of the new currency and its recognition by central banks as a means of exchanging or storing money. Further research is needed to understand the basic conditions for the use of digital currency in the payments market.

A study of venture capital management as a type of financial resources revealed that the intensification of venture financing processes in Ukraine can positively affect the development of innovation in the reorientation of venture funds to finance traditional processes to finance innovation, and draw conclusions that ensure sustainable development:

1. Domestic venture funds have access to financial resources that can be used to develop financial support for innovation processes.

2. The process of development and implementation of a risky innovation project consists of a number of successive stages, i.e. is a chain of successive components.

3. Unlike simple investments, venture capital is the riskiest form of investment. However, if the project is successful, venture capital is the most profitable.

Analysis of the formation of financial resources of enterprises in 2018–2020 showed that there was an increase in financial resources, but this trend, due to increasing share of short-term liabilities in the overall capital structure of enterprises, is negative and indicates increasing dependence of domestic business on external sources. and signals a general deterioration in the financial condition of Ukrainian enterprises.

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1. Combination of strategic and operational planning, forecasting, analysis, monitoring, control, definition of parameters, methods and tools for financial diagnostics and timely response to changes in economic security and compliance with standards will ensure effective financial security management in the enterprise.

2. Solving the tasks of construction and operation of the financial security management mechanism should be individual for each enterprise and require consideration of its strategic goals and features of problems related to individual elements of the economic system, areas and facilities, available capacity and resources.

3. Measures to increase the level of financial security should be consistent with each other, as the use of one method may reduce or increase the level of financial risks in other areas of financial activity of the enterprise. Therefore, the most effective will be the management of financial security, which will ensure the integrated use of measures to improve its level.

The ways of raising the level of financial and security policy of sustainable development discussed in the monograph can be used directly in the activities of financial institutions, including banking institutions, enterprises of any level, management staff of national and international importance.

Scientific Publication

FINANCIAL AND SECURITY POLICIES FOR SUSTAINABLE DEVELOPMENT

Collective monograph

Edited by
Maksym Slatvinskyi

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