



**TRADITIONAL AND INNOVATIVE  
APPROACHES TO SCIENTIFIC RESEARCH:  
THEORY, METHODOLOGY, PRACTICE**

Scientific monograph

Rīga, Latvia  
2022

UDK 0(082)  
Tr054

**Title:** Traditional and innovative approaches to scientific research: theory, methodology, practice

**Subtitle:** Scientific monograph

**Scientific editor and project director:** Anita Jankovska

**Authors:** Oleksandr Voznyak, Andrii Shtuts, Andrii Zahorulko, Aleksey Zagorulko, Oksana Lytvyniak, Yaroslav Lytvyniak, Viktor Matviychuk, Andrii Shtuts, Oleksandr Obodovych, Olesya Stepanova, Olexandr Sudarykov, Alyona Shved, Lilia Batyuk, Nataliya Kizilova, Anatoly Zelensky, Olena Honcharova, Mykola Kovalov, Yuri Bandazheuski, Nataliia Dubovaya, Viktor Sarancha, Viktoriia Shabunina, Svitlana Fiialka, Ivan Prylepa, Larysa Sushchenko, Kateryna Chekaniuk, Mariana Markova, Oksana Tur, Viktoriia Shabunina, Sergiy Selivanov, Maksym Romanov, Yuliia Aleskerova, Kateryna Burko, Tetiana Ganushchak, Olena Zhuk, Oksana Dovhun, Nataliia Mashchak, Lidia Fedoryshyna

**Publisher:** Publishing House "Baltija Publishing", Riga, Latvia

**Available from:** <http://www.baltijapublishing.lv/omp/index.php/bp/catalog/book/257>

**Year of issue:** 2022

All rights reserved. No part of this book may be reprinted or reproduced or utilized in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publisher and author.

Traditional and innovative approaches to scientific research: theory, methodology, practice: Scientific monograph. Riga, Latvia: Baltija Publishing, 2022. 668 p.

ISBN: 978-9934-26-241-8

DOI: <https://doi.org/10.30525/978-9934-26-241-8>

The scientific monograph presents traditional and innovative approaches to modern scientific research. General issues of technical and physical and mathematical sciences, economic sciences, agrarian sciences, law and public administration, social communications, historical sciences, philological and pedagogical sciences, etc. are considered. The publication is intended for scientists, teachers, graduate students and students, as well as a wide audience.

© Izdevniecība "Baltija Publishing", 2022  
© Authors of the articles, 2022

## Table of Contents

### CHAPTER «ENGINEERING SCIENCES»

*Oleksandr Voznyak, Andrii Shtuts*

INVESTIGATION OF THE PROCESS OF MEASUREMENT  
CONTROL OF THE CONCENTRATION OF CARBON DIOXIDE . . . . . 1

*Andrii Zahorulko, Aleksey Zagorulko*

INNOVATIVE METHOD OF MANUFACTURING FUNCTIONAL  
ORGANIC SEMI-FINISHED PRODUCTS OF A HIGH STAGE  
OF READINESS ON THE BASIS OF LOW-TEMPERATURE HEAT  
AND MASS EXCHANGE EQUIPMENT. . . . . 28

*Oksana Lytvyniak, Yaroslav Lytvyniak*

A SIMULATION OF COMPOSITE REINFORCED  
CONCRETE – FOAM CONCRETE FLOOR SLAB. . . . . 68

*Viktor Matviychuk, Andrii Shtuts*

CONSTRUCTION OF CURVE BOUNDARY  
DEFORMATIONS OF METALS. . . . . 90

*Oleksandr Obodovych, Olesya Stepanova*

NUMERICAL SIMULATION OF THE PROCESSES  
OF HYDRODYNAMICS AND HEAT TRANSFER PROCESSES  
IN ROTOR-PULSATION APPARATUS. . . . . 114

*Olexandr Sudarykov*

ANALYTICAL REVIEW OF INTERNATIONAL DOCUMENTS  
RATIFIED IN UKRAINE AND NATIONAL REQUIREMENTS FOR  
THE OPERATION OF EQUIPMENT THAT BURNS ORGANIC FUEL . . . . 135

*Alyona Shved*

EXPERT KNOWLEDGE ANALYSIS TECHNOLOGY  
WITH FUZZY PREFERENCE RELATION. . . . . 152

### CHAPTER «PHYSICAL AND MATHEMATICAL SCIENCES»

*Lilia Batyuk, Nataliya Kizilova*

BIOPHYSICAL BIOMARKERS OF HUMAN ERYTHROCYTES  
FOR EFFICIENT DIAGNOSTICS OF STROKE. . . . . 170

*Anatoly Zelensky*

THE METHOD OF INTEGRATING SYSTEMS OF HIGH-ORDER EQUILIBRIUM EQUATIONS OF THE MATHEMATICAL THEORY OF THICK PLATES UNDER INTERMITTENT LOADS (PART 2) . . . . .	188
---	-----

**CHAPTER «AGRICULTURAL SCIENCES»**

*Olena Honcharova*

EFFICIENCY OF COMPLEX TECHNOLOGICAL SOLUTIONS FOR GROWING FISH TO INCREASE RESISTANCE TO THE INFLUENCE OF ABIOTIC AND BIOTIC FACTORS UNDER THE INFLUENCE OF CLIMATE TRANSFORMATIONS. . . . .	218
--	-----

*Mykola Kovalov*

CULTIVATION OF FRAGARIA ANANASSA IN PROTECTED AND OPEN SOIL CONDITIONS. . . . .	236
--	-----

**CHAPTER «MEDICAL SCIENCES»**

*Yuri Bandazheuski, Nataliia Dubovaya*

HYPERHOMOCYSTEINEMIA AND FOLATE CYCLE GENES IN GIRLS AND BOYS LIVING NEAR THE CHERNOBYL EXCLUSION ZONE. . . . .	268
---	-----

**CHAPTER «HISTORICAL SCIENCES»**

*Viktor Sarancha, Viktoriia Shabunina*

THE IMPACT OF THE FIRST WORLD WAR ON THE SOCIO-CULTURAL DEVELOPMENT OF THE POLTAVA PROVINCE AND THE PROVINCIAL SOCIETY IDEOLOGY. . . . .	283
---	-----

**CHAPTER «SOCIAL COMMUNICATIONS»**

*Svitlana Fiialka*

SCIENTIFIC JOURNAL AS SOCIO-COMMUNICATIVE PHENOMENON: FORMATION AND DEVELOPMENT TRENDS. . . . .	306
---	-----

## **CHAPTER «PEDAGOGICAL SCIENCES»**

*Ivan Prylepa*

TECHNOLOGIES FOR THE DEVELOPMENT  
OF CROSS-DISCIPLINARY COMPETENCE  
OF FUTURE TEACHERS OF PROFESSIONAL EDUCATION. . . . . 336

*Larysa Sushchenko*

METHODOLOGY FOR ORGANIZING  
THE RESEARCH ACTIVITIES OF STUDENTS  
IN EDUCATIONAL PROCESS: RESULTS OF THE STUDY. . . . . 384

*Kateryna Chekaniuk*

TECHNOLOGIES OF PROFESSIONAL DEVELOPMENT  
OF BIOLOGY TEACHERS IN THE EDUCATIONAL ENVIRONMENT  
OF GENERAL SECONDARY EDUCATION INSTITUTIONS. . . . . 409

## **CHAPTER «PHILOLOGICAL SCIENCES»**

*Mariana Markova*

THE PHENOMENON OF PETRARCHISM IN THE LIGHT  
OF DENNIS DE ROUGEMONT'S THEORETICAL IDEAS. . . . . 447

*Oksana Tur, Viktoriia Shabunina*

LEXICAL AND SEMANTIC ORGANIZATION OF UKRAINIAN  
TERMINOLOGY OF LAND MANAGEMENT AND LAND CADASTRE. . . . . 474

## **CHAPTER «STATE ADMINISTRATION»**

*Sergiy Selivanov*

FOREIGN EXPERIENCE IN PROFESSIONALIZING HUMAN  
RESOURCES CIVIL SERVICE AND OPPORTUNITIES  
FOR ITS IMPLEMENTATION IN UKRAINE. . . . . 505

## **CHAPTER «LAW SCIENCES»**

*Maksym Romanov*

TACTICAL PROVISION OF PRE-TRIAL INVESTIGATION  
OF ILLEGAL OBSTRUCTION OF THE ORGANIZATION  
OR HOLDING OF MEETINGS, RALLIES, MARCHES  
AND DEMONSTRATIONS. . . . . 527

## **CHAPTER «ECONOMIC SCIENCES»**

*Yuliia Aleskerova*

MANAGEMENT OF THE CREDIT PROCESS IN UKRAINE. . . . . 562

*Kateryna Burko*

SCOPE OF APPLICATION OF MANAGEMENT  
ACCOUNTING TOOLS FOR THE NEEDS  
OF MANAGEMENT OF THE BEEKEEPING INDUSTRY. . . . . 581

*Tetiana Ganushchak, Olena Zhuk*

FINANCIAL CONTROLLING AS A COMPONENT  
OF CORPORATE CRISIS MANAGEMENT  
AND INTEGRATION OF ITS TOOLS INTO ERP SYSTEMS. . . . . 599

*Oksana Dovhun, Nataliia Mashchak*

STATE AND PROSPECTS OF UKRAINIAN CLOTHING  
MANUFACTURERS AND BUSINESS IN GENERAL  
IN THE WAR CONDITIONS. . . . . 620

*Lidiia Fedoryshyna*

INCREASING THE EFFICIENCY OF THE FINANCIAL  
PROFITABILITY OF THE INSURANCE COMPANY  
(ON THE EXAMPLE OF ARKS INSURANCE COMPANY). . . . . 641

**INCREASING THE EFFICIENCY OF THE FINANCIAL  
PROFITABILITY OF THE INSURANCE COMPANY  
(ON THE EXAMPLE OF ARKS INSURANCE COMPANY)**

**Lidiia Fedoryshyna<sup>1</sup>**

DOI: <https://doi.org/10.30525/978-9934-26-241-8-26>

**Abstract.** *The purpose* of the article is to increase the efficiency of financial profitability of insurance activity. In terms of market relations, one of the performance indicators of all organizations is profitability. It becomes the economic development of the organization and the strengthening of the basis of its financial relations with all participants in the processes of entrepreneurial activity. At the same time, the result of the influence of a combination of negative factors is a decrease in the level of financial profitability of enterprises, receiving a loss or even ceasing operations. Achieving a high level of this indicator of improvement of the economic study of the formation of financial results of the organization's vital activities. Every enterprise strives to improve profitability. *The results.* The grouping of influencing factors into internal and external ones was carried out and the influence of these factors on the activity of the insurance company was revealed. The activity of the insurance company "ARKS" was considered. The main goal of managing the financial perspective of an insurance organization is to ensure the maximization of the welfare of the owners of the enterprise in the current and current period. This goal is designed to simultaneously harmonize the interests of the owners with the interests of the state and the company's personnel. Based on the conducted analysis, as well as the general view of various researchers of this issue, in order to increase the efficiency of the financial profitability of PJSC "ARKS Insurance Company" it is also necessary to reduce the level of costs and unprofitability of insurance operations in connection with the expansion of the level of coverage of the insurance field. *Value/originality.* In order

---

<sup>1</sup> Candidate of Historical Studies, Associate Professor,  
Vinnytsia National Agrarian University, Ukraine  
ORCID: <https://orcid.org/0000-0003-1577-6699>  
ResearcherID: L-5746-2018

to achieve the financial stability of insurance companies, the criteria for its provision have been studied in detail. Profitability is one of the most important indicators that reflect the economic state of the enterprise. It supports the purpose of entrepreneurial activity. *The main result* of the enterprise's activity is increased with the help of indicators, which are divided into absolute and relative: the absolute indicator is the profit of the enterprise; the relative indicator is the profitability of the enterprise. Profit is the economic difference between total income and expenses for the production and sale of products and services, taking into account losses from various business operations in the reporting periods. Profitability indicators, capable of using the final results of the organization's activities, help to trace the totality of consumed resources with invested capital.

### **1. Introduction**

In terms of market relations, one of the most important performance indicators of all organizations is profitability. It forms the basis of the economic development of the organization and the strengthening of its financial relations with all participants in the processes of entrepreneurial activity. The study of financial stability as an economic category is one of the most important problems of the market economy, since the absence or low level of financial stability of any economic entity leads to its insolvency and, as a final result, to bankruptcy. On the other hand, a too high level of financial stability will prevent the business entity from carrying out profitable activities, burdening it with excessive stocks and reserves. Insurance risk determines the probabilistic nature of the insurance company's (insurer's) obligations, which requires additional financial guarantees for their fulfillment. In the market environment, the insurer, in addition to carrying out the main activity, participates in the investment process and various financial and credit relations. Therefore, an insurance company (IC) must be resilient not only in relation to the actual insurance risk – the main operational risk, but also to other risks that arise in the course of its activity. At the same time, the result of the influence of a combination of negative factors is a decrease in the level of financial profitability of enterprises, receiving a loss or even ceasing operations. Achieving a high level of this indicator is facilitated by a thorough economic study of the formation of the financial results of the organization's life activities. Every



enterprise strives to improve the efficiency of profitability management. The world experience of the theory and practice of enterprise profitability management is reflected in numerous foreign publications. Among the main methodologists of management and solving the problem of the formation of financial profitability of a modern enterprise, it is worth noting E. J. Dolan and D. Lindsay, R. Damar, K. R. McConnell, P. Samuelson, M. M. Shadurskaya, N. S. Davtyan et al. The work of the following domestic scientists was devoted to the study of certain aspects of the profitability of Ukrainian enterprises: T. Yu. Vlasenko, O. S. Starodubtseva, L. S. Gavatyuk, A. V. Dembitzka, Yu. A. Gaybura, L. A. Zagnitko, L. M. Dukhnovska, V. S. Pavlov, N. O. Kovalchuk, O. V. Melen, Yu. Yu. Kholondach, and others. Despite the constant scientific interest in the problems of profitability of enterprises, the essence of the concept of "profitability" is still debatable, the mechanism of ensuring financial profitability of domestic insurance companies needs to be clarified.

## 2. Economic crisis effects on consumer behavior

The assessment of the financial result of the enterprise's activity is its profitability. At any stage of business, entrepreneurs are interested in increasing the financial profitability of the enterprise, because profit is the ultimate goal of their own business. In the table 1 gives definitions of the concept of "enterprise profitability" proposed by Ukrainian and foreign scientists.

Table 1

### Interpretation of the concept of "enterprise profitability"

Author	Definition
O. V. Melen, Yu. Yu. Kholondach	A stable economic phenomenon that manifests itself as a confirmed ability of the enterprise to generate a positive financial result from the implementation of both the main and all economic activities, which consists in the excess of income over the incurred expenses in an amount sufficient for effective further functioning.
I. Yu. Epifanova, V. S. Humenyuk	An indicator that characterizes the efficiency of the enterprise from the point of view of its ability to generate profit and ensure effective reproduction of used resources.
A. V. Sukhanova, V. V. Gatsanyuk	The financial result of the economic activity of any enterprise, which is characterized by absolute (amount of profit) and relative (level of profitability) indicators.

Summarizing presented in the table. 1 interpretation, it can be concluded that profitability characterizes the absolute efficiency of enterprise management in all areas of its activity. It is this indicator that is decisive in the analysis and evaluation of the efficiency of the financial and production activity of the enterprise. Thus, financial profitability is one of the most important indicators reflecting the economic state of the enterprise. It defines the purpose of entrepreneurial activity. The profitability of the enterprise is characterized by two indicators.

Profit is an economic category of commodity-monetary relations, which includes a wide range of social relations related to both the formation and distribution and use of an additional product, which is reflected in the economic relations between the enterprise and the worker, between enterprises of various branches of production in the process of their economic activity, between enterprises and the state through the financial and banking system. At the present stage, for every enterprise of various forms of ownership, earning profit is a criterion for the efficiency of its economic activity, an important source of meeting the social needs of society, the driving force of the economic development of the state, and the main source of the formation of financial resources. Profit distribution has a direct impact on the socio-economic formation and indicates the level and quality of manufactured products and services, the state of labor productivity, the level of expenses and cost price. Profit expresses the absolute effect without taking into account the resources used. Therefore, for analysis, it is supplemented with an indicator of profitability. Profitability is the relative amount of profit per unit of revenue, cost, assets, etc. This is a relative indicator that has the property of comparison. Profitability is a value indicator that characterizes the level of return on investments or the level of use of resources available in the organization, related to the achievement of a certain economic result. If the amount of revenue from all types of activities in the reporting period covers not only expenses, but is also sufficient to generate profit, the organization is profitable.

Thus, profitability shows the efficiency of the organization's work, gives an idea of the organization's opportunities to increase its invested capital. It is profitability that characterizes the degree of profitability, profitability, profitability. Enterprise profitability management is a set of techniques and methods of purposeful influence on the financial and economic activity

of the enterprise with the aim of increasing the efficiency of its economic activity, obtaining a stable financial condition and profit for further functioning. Because profit is the main performance indicator activity of the enterprise, it is important to identify its dependence from various factors and evaluate their impact on profitability. external. Internal ones include : production, which determine the availability and use of production resources; non-production mediating the use of non-production resources. The level of state development, the level of economic development, the level of industry development, GDP dynamics, socio-economic policy, legal support for the functioning of enterprises, the level of inflation, the current tax system in the state, etc. The following methods of increasing the company's profit level are distinguished: cost reduction; increasing income; effective personnel management.

T. V. Oliynyk in his work systematized the list of all criteria for choosing measures to increase the profitability of the enterprise as follows (Figure 1).

Today, increasing the company's profitability is also possible by creating additional value for business, products, and services for customers: customer orientation, formation, management of consumer loyalty; customer orientation as a way to increase profitability; finding out, analyzing the reasons for customer disappointment; marketing solutions, establishing trusting relationships with clients, developing client loyalty; evaluation of the effectiveness of marketing activities; determination of key business performance indicators; finding out indicators of marketing profitability.

Considering the given definitions, it is possible to observe the unity of scientists in that the essence of the concept of profit management consists in making managerial decisions aimed at its growth. At the same time, the concept of profitability is much broader than the concept of profit, because profit expresses the absolute effect of the company's activity, while profitability characterizes the level of its efficiency.

Enterprise profitability management is reduced to the development and implementation of an optimal organizational and economic system, which would include all the necessary elements of a methodical, informational and organizational nature, would contribute to market mobility and flexibility of the enterprise's production, improve the competitiveness of products and was aimed at ensuring high efficiency of the enterprise's functioning.

Criteria related to enterprise strategies	<ul style="list-style-type: none"><li>•compatibility of the project with the current strategy of the company and its long-term plans;</li><li>•admissibility of changes in the organization's strategy, taking into account the potential of the project;</li><li>•consistency of the project with ideas about the enterprise;</li><li>•compliance of the project with the enterprise's attitude to risk and innovations;</li><li>•compliance of the temporary aspect of the project with the requirements of the enterprise.</li></ul>
Marketing criteria	<ul style="list-style-type: none"><li>•compliance of the project with clearly defined market needs;</li><li>•total market capacity;</li><li>•market share that the company will be able to control;</li><li>•life cycle of a product in the form of a commodity;</li><li>•probable sales volume;</li><li>•time aspect of the market plan;</li><li>•pricing and consumer perception of the product;</li><li>•position among competitors;</li><li>•assessment of start-up costs, etc.</li></ul>
Scientific and technical criteria	<ul style="list-style-type: none"><li>•compliance with the enterprise strategy project;</li><li>•compliance of the product with existing distribution channels;</li><li>•cost and time of project development;</li><li>•the availability of scientific and technical resources for the implementation of the project.</li></ul>
Financial criteria	<ul style="list-style-type: none"><li>•cost of research and development;</li><li>•investment in production;</li><li>•investment in marketing;</li><li>•availability of finances at the right time;</li><li>•impact on other projects requiring financial resources;</li><li>•the time to reach the break-even point and the maximum negative cost value;</li><li>•potential annual profit;</li><li>•expected rate of return.</li></ul>
Production criteria	<ul style="list-style-type: none"><li>•new technological processes;</li><li>•sufficient number and qualification of production personnel;</li><li>•compliance of the project with the available production capacities;</li><li>•price and availability of materials;</li><li>•production costs;</li><li>•needs for additional capacities.</li></ul>

**Figure 1. Criteria for choosing measures to increase the profitability of the enterprise**

### 3. Results

The purpose of profitability analysis is timely identification and elimination of shortcomings in the development of the organization, finding reserves for improving the financial condition of the organization and ensuring the financial sustainability of its activities. Development, substantiation of the business plan, financial budgets of the enterprise should always reflect the possibility of increasing the profitability of the enterprise, including forecast reporting of profits, losses based on the results of analysis, other economic calculations.

The private joint-stock company "ARKS Insurance Company" serves as the empirical base of the research.

SC "ARKS" PJSC is an insurance company on the risk insurance market of Ukraine. The main activity of the company is to provide insurance services to individuals and legal entities, including foreign ones, using existing and developing new insurance products in accordance with the current legislation of Ukraine. The insurance company "ARKS" offers its clients – individuals, as well as small, medium and large enterprises – a wide range of products and services in the field of personal insurance, property insurance and liability insurance. The company has been working on the Ukrainian market for 27 years, 8 of which under the ARKS brand, demonstrating stable growth, bright innovations and a real example of improving the customer experience. Data for the analysis of profitability indicators of PJSC "SK "ARKS" are presented in the Table 2.

According to the results of 2021, PJSC "SK "ARKS" received a profit in the amount of UAH 298,658,000 – compared to 2020, the financial result increased by UAH 201,682 thousand, the insurance company's profit increased threefold. The organization's own capital has increased, which indicates that the company is increasing its financial resources.

The key indicator characterizing the efficiency of the company's activity is the profitability of sales (activity). In 2020–20201, the activity of PJSC SC ARKS was profitable, as a result of which the value of such indicators as the profitability of the main activity, the profitability of services, the profitability of the total capital, the profitability of equity capital are positive – that is, they were used effectively.

The profitability of JSC ARKS JSC is low, although it has a tendency to increase in 2021 compared to 2020. Other indicators of profitability have

**Profitability indicators of SC ARKS PJSC for 2019–2020**

Indicators	Years		Dynamics, %	Deviation (+, -)
	2020	2021		
Net earned insurance premiums, thousand UAH	2018548	2346190	+ 16.2	+ 327642
Premiums are signed, gross amount, thousand UAH	2332241	2680022	+ 14.9	+ 347781
Premiums transferred to reinsurance, thousand UAH	110926	148914	+ 34.2	+ 37988
Change in the reserve of unearned premiums, gross amount, thousand UAH	209671	206985	-1.3	-2686
Change in the share of reinsurers in the reserve of unearned premiums, thousand UAH	6904	22067	+ 219.6	+ 15163
The cost of the implemented services, thousand hryvnias	32583	35763	+ 9.8	+ 3180
Own capital, thousand UAH	606881	957336	+ 57.7	+ 350455
Assets, UAH thousand	2320082	3057783	+ 31.8	+ 737701
Net profit, thousand hryvnias	96976	298658	+ 208.0	+ 201682
Profitability:				
– activity, %	4.8	12.7	+ 165.0	+ 7.9
– services, %	297.6	835.1	+ 180.6	+ 537.5
– total capital, %	4.2	9.8	+ 133.7	+ 5.6
– equity, %	16.0	31.2	+ 95.2	+ 15.2

the same dynamics as the profitability of operations. In 2021, the company received UAH 0.127 per hryvnia invested. profit, for one hryvnia of equity – 0.312 hryvnia. profit

The main goal of managing the financial profitability of an insurance organization is to ensure the maximization of the welfare of the owners of the enterprise in the current and prospective period. This goal is designed to simultaneously ensure the harmonization of the interests of the owners with the interests of the state and company personnel.

Based on the conducted analysis, as well as the generalization of the points of view of various researchers of this issue, in order to increase the efficiency of the financial profitability of PJSC "Insurance Company

"ARKS" it is necessary to strive decrease in the level of costs and unprofitability of insurance operations in connection with the expansion of the level of coverage of the insurance field.

Among the main objectives of profitability management of PJSC "SK "ARKS" can be distinguished: management of income from insurance activities as the main source of generating income for the insurer; management of a comprehensive indicator of the profitability of insurance and investment activities; sales management in order to maximize the revenue (amount of insurance premiums) of the company; profit maximization for all types of activities, taking into account the level of development of insurance and the conditions of operation of the insurance organization. The main tasks of PJSC "SK "ARKS" in the context of the set goals are: cost optimization (estimation of composition, structure, identification of optimization reserves, recommendations for reduction, etc.); revision of the tariff policy of the insurer, in terms of determining the permissible level of reduction in the price of the insurance service; increase in the rate of growth of contributions; reduction of the cost ratio; decrease in the cost of capital; transition to investment activities as the main source of income generation; optimization of the structure of financial results; improving the quality of generated types of income. It is worth noting that the analysis of the financial profitability of an insurance company is an important part of the information support for making informed management decisions aimed at identifying reserves for ensuring the effectiveness of activities.

### 4. Finding

Modern trends, characteristic of the global economic space, cannot help but influence the process of forming a single foreign experience in the development of the insurance services market. The world insurance market includes a full range of economic relations that arise between participants of the world market regarding the purchase – sale and provision of insurance services, obtaining protection against one or another type of risk. As a rule, insurers operating at the international level participate in investment activities and participate in the implementation of financial projects. Therefore, they should be characterized by high financial stability and solvency. But in fact, even the most successful insurers when forming a portfolio of contracts can have several insurance events simultaneously or separately, so it is

impossible to completely distinguish insurance coverage. In this regard, mechanisms such as reinsurance will govern the global insurance market and transfer risk to reinsurers to protect their insurance portfolio from the consequences of a series of major insurance events. In this case, recognizing the reinsurance market as originating from the insurance market reveals the following: All issues in the global insurance market are reflected in the reinsurance segment. The problem of foreign experience in the development of the insurance market includes several problems. The first is due to the lack of consensus regarding the completion of the global insurance market. To date, many authors believe that there is no single global insurance market, only segments formed around the world's largest center of regional associations of insurers. It operates the North American insurance market around the US and the European insurance market around Western Europe. The area around Japan is the Japanese insurance market, which includes most Asian countries. Another issue is related to the unclear definition of the impact of globalization on the development of the insurance segment. It is an obstacle or a condition for achieving the planned growth. Solving these problems is possible taking into account the dynamics of qualitative and quantitative indicators of the world insurance market, which can be assessed using statistical data. According to the results of 2019, the total volume of insurance services reached 4.555 trillion dollars. USA, which is 3.8% more compared to 2018. This is due to the growth of the world economy and, as a result, the growth in demand for insurance services.

The global reinsurance market is smaller than the global insurance market, estimated by the International Monetary Fund (IMF) to be approximately \$600 billion. Today, the experience of applying block-chain in insurance is particularly relevant in the development of the insurance services market in the world. In 2018–2019, the total amount of investments in the field of blockchain startups in the world amounted to more than 800 million dollars. More than 200 block chain projects are registered in the McKinsey database, 20 of which are related to the insurance sector, and all of them offer block chain solutions that go beyond the 63 framework of payment acceleration. Even traditional insurance giants such as AXA, Generali and Allianz have started investing in block chain initiatives.

According to the Deloitte report, presented as part of the World Economic Forum, which was compiled by more than 800 economists and experts in the



field of technology and innovation, in the near future about 10% of world GDP will be stored in the block chain. And by 2025, respectively according to the data of the same study, about 58% of business projects will use bitcoin and block-chain. These and huge capitals need insurance services. The latest study, commissioned by the Long Finance fund by Z / Yen with the support of PwC in 2019, shows that the insurance market is positively accepting the introduction of block chain solutions. The information for the report was obtained during interviews with brokers, insurers, reinsurers, regulators and professional organizations from various countries operating in the global insurance market.

The potential of block-chain in the field of providing financial services is really huge. For example, according to recent estimates by experts from PwC, the systematic application of block-chain solutions in banking activities only as part of the preliminary verification of customers and combating money laundering can provide savings in the amount of 2.5 billion dollars, out of those 10 billion, which are spent on information processing in this sector annually.

However, the insurance sector's interest in blockchain is not limited to these potential benefits. Block-chain can become the very technology that, along with reducing costs and increasing the efficiency of processes, can radically change the methods of work of the insurance industry, contributing to the growth of profits and the development of the sector. Agreements based on the block-chain are gradually removing intermediaries from the market, providing an accurate account of documents, allowing the formation of a single global, error-free database, which has not existed until now. Companies Z / Yen and PwC note that relations with consumers, regulators and business partners should improve as block-chain will allow to speed up the decision-making process and increase the accuracy of data. Scott Gottlieb, a representative of the American Enterprise Institute (AEI), believes that block-chain technology will help optimize the process of creating insurance portfolios. According to Gottlieb, a portfolio formed with the help of a block chain will be able to automatically adjust insurance payments in real time, while the level of anonymity and protection of health data will increase. Block-chain can also be used to prevent unauthorized changes or falsification of medical documents. This proposal is expressed in an article by two doctors – Greg

Irving and John Holden. They offer to sign medical documents using the SHA-256 algorithm, which converts the signature into a bitcoin address. It will be possible to check the originality of the document in the bitcoin block chain. Such measures will prevent data manipulation and increase trust in scientific research and insurance companies.

Allianz insurance companies Risk Transfer AG (ART) and Nephila Capital Limited successfully tested a system of smart contracts that allows transactions with financial instruments tied to insurance against natural disasters. The annual report of the rating agency S & P reflects the problems that characterize the difficult operating conditions for reinsurers. First of all, the problems are related to the extremely high growth of competition, the ongoing reduction of tariffs, the consolidation of the reinsurance sector caused by globalization. The most noticeable reduction in tariffs was observed under unprofitable surplus contracts and amounted to about 20%. Reinsurance companies faced the following problem: they must maintain the necessary level of capitalization at the formed level of rates, while profitability drops to minimal values.

At the moment, there is a trend of decreasing demand for reinsurers' services due to the improvement in the quality of risk management by insurance companies and the improvement of their balance sheets. In this regard, there is no need for primary insurers to purchase reinsurance protection. Thus, the growth prospects of the global reinsurance market are slowing down. The principle solution to such a problem is to carry out mergers and acquisitions of companies, which leads to cost synergies, an increase in reinsurance capacity, and the diversification of accepted risks. After getting acquainted with the statistics of foreign experience in the development of the insurance services market based on international reports and reviews, it was found that there are no Ukrainian companies among the largest. In this case, it is impossible to talk about the full-fledged formation of a single insurance market, since Ukraine was not included among such centers, despite the fact that the value of the KOF index, which reflects the degree of economic globalization, exceeds the index of Japan (the KOF index for Ukraine is 65.9, and for Japan – 65.87). Currently, the Ukrainian market of insurance services cannot be integrated into the world space due to insufficient capacity. According to experts, the entire Ukrainian market of insurance services is only 0.6% of the world market.

This situation is explained by the small average retention per risk, which, as a rule, does not exceed 50 thousand US dollars. When placing large risks, an unimaginably large number of insurance companies is required. This factor makes reinsurance on the Ukrainian market unprofitable for foreign insurance companies. Thus, the development of foreign insurance markets testifies to the fact that insurance is an important sector of national economies, ensuring the redistribution of 8-12% of the gross national product. Funds accumulated by insurance organizations serve as a source of large investments. State regulation of insurance activities abroad is mainly aimed at controlling the financial side of the work of insurance companies. The experience of using block-chain in insurance is of particular relevance today in the development of the insurance services market in the world 66.

In modern conditions, in the world of the listed systemic problems of the Ukrainian insurance market, it is necessary to create a coherent scientific system that will ensure further improvement and development of insurance. In our opinion, it should consist of the following measures: implementation of state support and business development measures; provided by the state business support and development program "Business Roadmap-2025"; introduction of new information technologies in insurance; application of block-chain in insurance. Let's consider these measures in more detail. The state support and development of business should provide for a number of measures regarding the development of the market of insurance services of Ukraine. As part of the improvement of the most widespread class – mandatory insurance, it is proposed to revise the method of accounting and calculation of the "bonus-malus" coefficient, taking into account insurance cases of drivers acting on behalf of legal entities. Currently, the "bonus-malus" is used when drawing up contracts only for individuals, however, a large percentage of road accidents occur with drivers in, as well as employees of legal entities. However, these insurance cases do not affect the "bonus-malus" coefficient. Accordingly, the cost of insurance for them does not increase after an accident, as it happens with individuals. It is also necessary to determine a set of measures, including the introduction of a periodic mechanism for making insurance payments under the mandatory civil liability insurance of vehicle owners in the event of a citizen's death. In addition, the state needs to pay attention to the further development of civil liability insurance by implementing it in the following directions:

1. Owners of facilities for mass occupancy of people (MPL) with the need to determine the list of objects related to MPL.
2. Professional responsibility of medical organizations and medical workers.
3. Lawyers, appraisers.
4. Lessors.
5. Construction and assembly works (from the design stage to commissioning).
6. Cargo carriers, etc.

For businesses, insurance should become a guarantor of property obligations to third parties, for insurers – a starting point for growth. Despite the fact that the insurance market has been forming for almost three decades, infrastructural institutes for combating insurance fraud have not yet been created in its ecosystem. According to insurers, the functionality and accumulated statistics of the Unified Insurance Database can be an excellent solution here. For example, in order to prevent fraudsters from receiving insurance payments in several insurance companies, it is necessary to implement the function of detecting a coincidence in insurance cases. In order to effectively fight against insurance fraud, it is proposed to add to the Criminal Code, in the section "Criminal offenses against property", an independent composition of the crime "Fraud in the field of insurance". The topic of combating insurance fraud is acute all over the world. Thus, according to experts' estimates, the annual losses of insurance companies in the world are estimated at hundreds of billions of dollars, illegally obtained by fraudsters, due to the underdevelopment of countermeasures and the weak legal framework. In general, this has a negative impact on the development of insurance. In terms of the development of life insurance companies, it is necessary to implement the following measures: the introduction of a joint pension annuity, which involves combining the pension savings of spouses and redistributing income in favor of women, since, most often, the amount of pension deductions for women is lower than for men, and lifetime would be more. In addition, a joint retirement annuity of spouses allows the second part of the annuity to be inherited in the event of the death of one of them. 68 – the participation of the insured in the state educational savings system, which consists in state subsidization of educational deposits by 5%-7% and is based on cooperation with second-level banks. A big problem for many years remains the underdevelopment of classic accumulative life insurance,

which is explained by a certain mistrust of potential clients in long-term investments. Although this class can be a good protection tool in various situations: loss of income as a result of an accident or illness; in case of loss of breadwinner; savings for children's education; provision in old age, etc. Another important issue for life insurance companies is non-compliance by employers with the legislation on mandatory insurance of the employee against accidents during the performance of his work (official) duties and low control over its compliance by state authorities. One of the distinctive features of the modern economy is the wide use of information technologies. The scale of the transformation, which is taking place under the influence of the information revolution, allows us to talk about the formation of a new economic model – the digital economy, in which the key factor of production is data in digital form. Such technologies are used to one degree or another in the insurance market. Their use allows to significantly increase the efficiency of many processes in insurance activity. At the same time, it is obvious that the opportunities provided by digital technologies are far from fully realized. Expanding their use in insurance activity is an important area that allows for the development of insurance. In particular, with their help, you can:

- a) create additional channels for informing the population about insurance companies and the insurance services they offer;
- b) to improve methods of interaction between insurers and policyholders in the field of sale and performance of insurance services;
- c) use more effective procedures for obtaining information for assessment of risks accepted for insurance and liquidation of the consequences of insurance cases;
- d) use new methods of storing the necessary information and transferring it to interested persons.

Thus, the use of digital technologies makes it possible to reduce insurers' costs for concluding and servicing insurance contracts and reduce the cost of insurance services, making them more accessible and convenient by increasing the speed and quality of service. This, in turn, should contribute to increasing interest in insurance and lead to an increase in the volume of insurance operations. Among the areas of internetization in insurance, the following can be distinguished:

- bringing information about insurers and the services they provide to clients;

- sale of insurance services;
- collection of information about policyholders;
- settling the consequences of insurance cases;
- creation of a channel for feedback between the insurer and the insured.

In general, the development of interaction between insurers and policyholders through the wider use of electronic sales channels and the transfer to electronic document management of insurance contracts, including settlement of losses in, is an important direction of the use of digital technologies in the insurance market. It can become, on the one hand, a convenient and easy way for insurance organizations to attract a new client base and retain current clients, and on the other hand, a way to increase the speed and quality of service. In addition, the transition to electronic document management will enable insurers to collect valuable information about customers, as well as gain direct access to them, which will allow insurers to develop direct sales of insurance products. When considering the issue of the application of big data technology in insurance, special attention should be paid to the foreign experience of introducing block-chain in insurance, according to which the following main directions of block-chain implementation in the Ukrainian insurance market can be identified today:

- improvement of customer interest;
- proposals of new economically profitable products for developing markets – development of insurance products – related to the "internet of things".

Let's now consider them in more detail. Increasing customer interest. An important tool of influence on customers, which allows to increase their interest in the company's services, will be the use of the benefits of block-chain to work with their personal information. The fear of customers losing control over personal data at the time of their transfer to the company and dissatisfaction with the need to regularly answer the same questions could be eliminated with the help of a separate block-chain for checking customer data, managed directly by them. Block-chain can be useful for reducing administrative and management costs due to automated verification of the identity of the policy holder and the validity of the contract with him, registration of claims for insurance payments, verification of data coming from 3rd parties (for example, encrypted data transmission between a doctor and the affected person to confirm the need for payment) using the payment infrastructure on basics and block-chain and smart contracts.

Another promising area of block-chain implementation in insurance is the creation of a single database of insurance histories. A successful transition to block-chain in the insurance business on a global scale is restrained by internal factors (possible technical limitations, issues of transparency and principles of interaction of equal subjects of the system), as well as uncertainty in the field of regulatory regulation, confidentiality and taxation. The problems of a technical nature are:

1. The problem of the 51st percent. Its essence is that if one of the Miners owns more than 51 percent of the operating capacity of the system, then he can process a double purchase before other nodes know that his money has been spent. This attack can be dangerous for small networks. The larger the network, the more difficult it is for one user to accumulate more than 51% of capacity.

2. The problem of development. Since each node transmits a message to all its neighbors, and these neighbors, in turn, transmit this message to all their neighbors, the volume of transmitted information in the network increases at each step.

3. The problem of openness / closure of data, which consists in the possibility of easy access to the data of any network participant.

In order to eliminate it, a version of the "closed" block-chain was developed, but it is more difficult to fulfill the requirement of "transparency" of transactions, which is a necessary condition for the functioning of the system. The next problem is the lack of centralized management, in a system that is designed to eliminate it. But for its full launch, a centralized leadership is needed for the development of standards and protocols of operational interoperability for numerous open or private block-chain networks used in the insurance industry. The problem of excessive transparency, not allowing to observe trade secrets, patents, research data, etc. The problem of personnel changes is that automation based on this technology will lead to the disappearance of many specialties, and completely new qualification requirements will be imposed on new roles. The problem of regulatory compliance lies in the ambiguous reaction of the governments of various countries. The problem of a radical change in jurisprudence may eventually lead to the termination of the existence of the legal system as such. Thus, the key problems of block-chain implementation in the insurance business are: technical problems; lack of centralized management; excessive transparency;

the problem of personnel changes; the problem of legal compliance. The solution to the problem of personnel changes is that it is necessary to carry out continuous training of personnel, gradually accustoming them to the specifics of working with this network, thereby removing priorities in educational programs. These measures will complement the centralized management measures to a large extent, just like the issue of regulatory and legal compliance. The problem of a radical change in jurisprudence is currently not possible to solve either, because it is a problem only in the future.

Separately, we note that in the current conditions, block-chain implementation is expected to proceed slowly over the next few years, as standards and protocols for each industry are currently being developed, as well as tax and regulatory regulation are being discussed. Summarizing all of the above, the following conclusions can be drawn. The development of foreign insurance markets indicates that the market of insurance services of Ukraine foresees the introduction of new technologies and the improvement of the dominant segments of the market of insurance services, will allow to create new opportunities for conducting economic activity, and will also be decisive for the construction of a new direction in the field of insurance. Therefore, the development of the insurance market in Ukraine increasingly depends on the introduction of new information technologies. Their use in insurance activity makes it possible to increase the volume of insurance operations, improve the quality of insurance services, reduce costs and, ultimately, increase the effectiveness of insurance as a risk management method. At the same time, the opportunities provided by digital technologies are far from fully realized in the insurance sector. Both objective and subjective circumstances prevent this. These include, on the one hand, the material and financial capabilities of insurance organizations, and on the other hand, a number of legislative and infrastructural restrictions that currently exist in Ukraine. In particular, an important task is to increase the level of information provision of the insurance market. For this purpose, it is necessary to integrate the information resources available to insurance market participants into a single system; ensure interaction between information resources of insurers and state authorities and management; connect state databases to databases of insurance entities. It would also be worthwhile to take measures that make it possible to use electronic insurance policies and electronic signatures more widely, as well as establish



a standard information exchange protocol for processes and operations related to the sale of insurance services, extension of insurance contracts, settlement of the consequences of insurance cases. In order to expand the capabilities of insurers in the field of digitization of loss settlement processes, it is important to introduce changes to the tax legislation that allow the amount of insurance payments to be attributed to the costs of insurance organizations based on documents confirming the fact and reasons for the occurrence of insured events, as well as the size of the losses caused by them in , as and received via telecommunication communication channels. The main tasks of the state regarding the development of the insurance services market are: ensuring full protection of the rights of consumers of insurance services; improvement and introduction of modern insurance technologies; improvement of the system of internal control of insurers; training of highly qualified personnel for the market of insurance services; increasing the level of insurance literacy of the population; increasing the level of insurance and reinsurance protection; strengthening the role of the Ukrainian insurance market at the international level.

### 5. Conclusions

Thus, profitability is one of the most important indicators reflecting the economic state of the enterprise. It defines the purpose of entrepreneurial activity. The main result of the enterprise's activity is determined using indicators that are divided into absolute and relative: the absolute indicator is the profit of the enterprise; the relative indicator is the profitability of the enterprise. Profit is the economic difference between total income and expenses for the production and sale of products and services, taking into account losses from various business operations in the reporting periods. Profitability indicators, which can determine the final results of the organization's activities, help to trace the ratio of consumed resources to invested capital. Financial sustainability as an economic category is the main factor in the stable activity of a business entity, which must be maintained regardless of the degree of negative impact of external and internal factors on it. In the market environment, the insurer, in addition to carrying out the main activity, participates in the investment process and various financial and credit relations. The identification of risks made it possible to outline the list of factors that have a negative impact on the level of financial stability of

the insurance company. A list of internal factors that have a positive impact on the financial stability of the enterprise is also compiled, which includes: positive dynamics of the insurer's profitability and capitalization, ensuring a sufficient level of insurance reserves and the guarantee fund of the insurance company, active development of reinsurance programs, diversification of the insurance portfolio of the insurance company, taking into account and reduction of investment risk of SC, etc. The development of the above directions for increasing the financial stability of a certain insurance company should take into account the effects of financial and investment levers and ensure the balance of its insurance portfolio. The direction of further research is the study of existing approaches to determining the level of financial stability of an insurance company. The most important task of profitability management is to identify reserves for its further growth and, on this basis, to increase the level of the company's income. The analysis of the profitability of the enterprise is an extremely important direction of the analysis of the enterprise as a whole, since the identification of reserves for profit growth, in turn, should contribute to the strengthening of its financial condition. Based on the analysis of the profit and profitability of the private joint-stock company "Insurance company "ARKS" in 2020–2021, ways to increase the efficiency of the company's financial profitability, namely, to reduce the level of costs and unprofitability of insurance operations in connection with the expansion of the level of coverage of the insurance field, have been determined. In the study, the main goals and objectives of profitability management of JSC ARKS SC are defined.

### References:

1. Aleskerova Yu., Fedoryshyna L. (2021) Insurance support in tourism. Development of scientific, technological and innovation space in Ukraine and EU countries: collective monograph. Riga, Latvia: "Baltija Publishing", pp. 1–16. ISBN: 978-9934-26-151-0
2. Aleskerova Y., Kovalenko L., Havryliuk V. (2019) Innovative financial criteria for methodological approaches to the assessment of agrarian insurance. *Baltic Journal of Economic Studies*, vol. 5, no. 4. pp. 34–41. DOI: <https://doi.org/10.30525/2256-0742/2019-5-4-34-41>
3. Yuliia Aleskerova, Olena Sakovska, Yuliia Didenko (2020) Analysis of the essence of pension insurance and its place in the system of social protection of the population. *Baltic Journal of Economic Studies*, vol. 6, no. 2, pp. 9–16. DOI: <https://doi.org/10.30525/2256-0742/2020-6-2-9-16>

## Chapter «Economic sciences»

---

4. Aleskerova Y., Titenko Z., Skrypnyk H., Grytsyna O. (2020) Modeling The Level Of Investment Attractiveness Of The Agrarian Economy Sector. *International Journal of Industrial Engineering & Production Research*, vol. 31, no. 4, pp. 490–496.
5. Aleskerova Y., Todosiichuk V. (2022) Financial monitoring Stabilities of the banking system. Scientific monograph. Riga, Latvia: Baltija Publishing, pp. 1–58.
6. Aleskerova Y., Todosiichuk V. (2022) Planning and forecasting of financial activities in Oschadbank. Theoretical and practical aspects of the development of modern scientific research: Scientific monograph. Part 1. Riga, Latvia: Baltija Publishing, pp. 1–38.
7. Kardash V. E. (2004) Economic aspects of insurance medicine and logistics in health care. *Glavnyj vrach*, vol. 4, pp. 45–48.
8. Kozmenko S. (2012) Analysis of Legislative Initiatives on Compulsory Health Insurance in Ukraine. *Visnyk Ukrain's'koi akademii bankivs'koi spravy*, vol. 2, no. (33), pp. 62–68.
9. Diachenko Ye. V. (2011) The current state of corporate health insurance in Ukraine. *Teoretychni ta prykladni pytannia ekonomiky*, vol. 26, pp. 270–275.
10. Moskalenko V. F. (2008) Pryntsypy pobudovy optimal'noi systemy okhorony zdorov'ia. Principles of building an optimal health care system. Kyiv: Knyha pliu.

Izdevniecība “Baltija Publishing”  
Valdeķu iela 62 – 156, Rīga, LV-1058  
E-māil: [office@baltijapublishing.lv](mailto:office@baltijapublishing.lv)

---

Iespiests tipogrāfijā SIA “Izdevniecība “Baltija Publishing”  
Parakstīts iespiešanai: 2022. gada 30. septembris  
Tirāža 300 eks.