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

Karazin Banking Institute

Department: **Banking Business and Financial Technologies**
Specialty: **072 Finance, Banking, Insurance and Stock Market**
Educational program: **Financial Technologies and Banking Management**
Group: **AF-23M full-time mode of study**

QUALIFYING MASTER'S THESIS

on the topic:

DEVELOPMENT OF FINANCIAL SUPERVISION OF NON-BANK FINANCIAL INSTITUTIONS

higher education student **Wei Lifeng**

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

Protocol No. 5 dated December 6, 2024

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Kharkiv – 2024

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APPROVED
Head of the Department
of Banking Business and Financial Technologies
Doctor of Economics, Professor
Galyna Azarenkova
« 25 » September 2024

TASK
FOR THE QUALIFYING MASTER'S THESIS

of Wei Lifeng

1.Topic of the work "DEVELOPMENT OF FINANCIAL SUPERVISION OF NON-BANK FINANCIAL INSTITUTIONS".
Scientific adviser PhD in Economics, Associate Professor Kateryna Oriekhova
(surname, first name, patronymic, academic degree, academic title)

Approved by order of the university dated September 17, 2024 No. 4601-5/1025.

2. Deadline for the student to submit the work November 18, 2024

3. List of issues to be developed:

In Chapter 1: to determine the essence of portfolio investment, types of investment portfolios and types of investors; to find out regulatory and legal provision of risk management and investor profitability; to consider methods of managing risks and profitability of the investor.

In Chapter 2: to evaluate the joint investment market as a lever for the accumulation of investment resources; to perform an analysis of venture funds' activity on the stock market of Ukraine; to analyze the foreign experience of joint investment institutes.

In Chapter 3: to perform modeling and forecasting of the investor's profitability; to form an optimal investment portfolio according to the criteria of "risk" and "profitability"; to evaluate the efficiency of the investment portfolio.

4. Work plan

No.	Name of work stages
1	The choice of the topic of the qualifying master's thesis
2	Approval of the plan and tasks of the qualifying master's thesis
3	Completion of a qualifying master's thesis
4	Submission of a qualifying master's thesis to the department to check for borrowings from other documents
5	Admission by the head of the department to the defense of a qualifying master's thesis
6	Defense of a qualifying master's thesis

5. Date of the task issue September 25, 2024

Student Wei Lifeng _____ Wei Lifeng
signature initials, surname

Scientific Adviser _____ Kateryna Oriekhova
signature initials, surname

ABSTRACT
ON THE QUALIFYING MASTER'S THESIS
"DEVELOPMENT OF FINANCIAL SUPERVISION OF NON-BANK FINANCIAL INSTITUTIONS"
of Wei Lifeng

The qualifying master's thesis comprises 82 pages, 14 tables, 5 figures, 16 formulas, and a list of 84 references.

The **object of research** is the investment strategies of investment funds.

The **subject of research** includes methodological approaches to risk management and investor profitability.

The **purpose of the qualifying master's thesis** is to identify the most effective methods for optimizing the investment portfolio and to develop an investment portfolio based on the risk-return criterion.

The **tasks of the qualifying master's thesis** are as follows:

- to determine the essence of portfolio investment, the types of investment portfolios, and the categories of investors;
- to analyze the regulatory and legal framework for risk management and investor profitability;
- to explore methods for managing risks and maximizing investor profitability;
- to evaluate the joint investment market as a tool for accumulating investment resources;
- to analyze the activities of venture funds in the Ukrainian stock market;
- to study the foreign experience of joint investment institutions;
- to perform modeling and forecasting of investor profitability;
- to develop an optimal investment portfolio based on the "risk" and "return" criteria;
- to assess the efficiency of the investment portfolio.

Based on the results of the research, theoretical and methodological approaches, as well as practical recommendations, have been formulated for improving risk management and enhancing investor profitability in modern economic conditions.

The obtained results can be applied to improve the functioning and development of mutual investment funds in Ukraine.

KEYWORDS: Risk, Return, Investor, Mutual Investment Institutions, Mutual Investment Fund, Asset Management Company, Institutional Investor, Investment Portfolio.

CONTENT

INTRODUCTION

Today, for the development of the economy of Ukraine, it is necessary to create a mechanism for the transformation of savings into investments. One such mechanism is the securities market. Investment practice shows that the complexity of making sound investment decisions on the securities market, and even its potential attractiveness, create prerequisites for investors to delegate authority to make sound investment decisions to professionals in the form of a fiduciary property management, that is. by creating collective investment funds - mutual investment funds.

In Ukraine, mutual investment funds are a promising competitive institutional investor in the securities market. Their competitive advantages over banks and credit unions are: high profitability, transparency, tax advantages.

The theoretical and methodological foundations of the development of mutual investment funds were reflected in the works of Zhama O. Yu., Sukhopera Ya. I.; Zherlitsyna D. M., Skrypnyka A. V., Klymenka N. A., Tuzhyka K. L.; Zhupanyna V. V. Zhupanyna V. V.; Ilchuk V. P., Shishkinoi O. V.; Ishchenko N. I.

The solution to this problem was also reflected in the works of foreign scientists: Amirgaliyev B., Andrashko Y., Kuchansky A.; Tkachenko A. M., Bugrim O. Yu.; Vysochyn I., Khmara A.; Zabedyuk M.

The analysis of the scientific works of the above-mentioned scientists made it possible to establish that the problem of risk management and investor profitability in the process of portfolio investment in modern economic conditions remains unsolved today.

The purpose of the work is to determine the most effective methods of optimizing the investment portfolio, as well as the formation of the investment portfolio taking into account the risk-return criterion.

To achieve the goal, the following tasks were set and solved in the work:

— determine the essence of portfolio investment, types of investment

portfolios and types of investors;

– find out nregulatory and legal provision of risk management and investor profitability;

– consider methods of risk management and investor profitability;

– evaluate the joint investment market as a lever for the accumulation of investment resources;

– perform an analysis of venture funds' activity on the stock market of Ukraine;

– to analyze the foreign experience of joint investment institutes;

– carry out modeling and forecasting of the investor's profitability;

– to form an optimal investment portfolio according to the criteria of "risk" and "profitability";

– evaluate the efficiency of the investment portfolio.

The object of the work is investment strategies of investment funds.

The subject of the work is methodical approaches to risk management and investor profitability.

The qualifying master's thesis consists of three sections.

The first chapter "Theoretical foundations of risk management and investor profitability" defines the essence of portfolio investment, types of investment portfolios and investor types; found outregulatory and legal provision of risk management and investor profitability;methods of risk management and investor profitability are considered.

In the second chapter "Assessment of risk and profitability of the investor" the joint investment market is evaluated as a lever for the accumulation of investment resources; an analysis of the activity of venture capital funds on the stock market of Ukraine was performed; the foreign experience of joint investment institutes was analyzed.

Chapter 3 "Improving risk management and investor profitability" includes modeling and forecasting of investor profitability; an approach to the formation of an optimal investment portfolio based on the criteria of "risk" and "profitability"

was developed; the efficiency of the investment portfolio was evaluated.

The theoretical and methodological basis of the research is the scientific works of Ukrainian and foreign scientists, as well as their applied scientific developments on risk management and investor profitability.

Materials of scientific conferences and symposia devoted to the problems of risk management and investor profitability are used in the work.

The following scientific methods became the methodological basis of the qualifying master's work: induction (to determine the essence of portfolio investment); deductions (to determine types of investment portfolios and types of investors); synthesis (to consider risk management methods and investor profitability); analysis (to determine the specifics of joint investment; to clarify the characteristic features of the activities of venture funds on the stock market of Ukraine; to study the foreign experience of the functioning of joint investment institutes); modeling (for modeling and predicting investor profitability); specification (for the development of an approach to the formation of an optimal investor according to the "risk-return" criterion).

Materials of scientific conferences devoted to the development of recommendations on risk management and investor profitability were used in the qualifying master's thesis.

The official statistical reports of the Ukrainian Association of Investment Business and the financial reporting of issuers of securities, which are presented on the website of the Agency for the Development of the Infrastructure of the Stock Market of Ukraine, became the informational basis of the qualifying master's thesis.

The validity and reliability of the research results is confirmed by the analysis of official statistical data, the application of empirical and theoretical methods of knowledge, the study of fundamental scientific developments of Ukrainian and foreign economists on risk management and investor profitability.

The reliability of the research results is ensured by the validity of the research methodology; conducting research at the theoretical and practical levels;

methods adequate to the subject, purpose and task of the research; using results assessment.

The practical significance of the obtained results is that the proposed theoretical and methodological approaches to risk management and investor profitability can be used to improve the functioning and development of mutual investment funds in Ukraine.

CHAPTER 1
THEORETICAL FOUNDATIONS OF RISK AND PROFITABILITY MANAGEMENT OF INVESTOR'S PROFIT

1.1. The essence of portfolio investment, types of investment portfolios and types of investors

Under modern business conditions, a characteristic feature of portfolio investing is the improvement of investment opportunities. This happens due to the acquisition by a set of financial instruments of the necessary and sufficient characteristics. A separate financial instrument from this collection is unattainable. It is possible only when combined with others.

Systematic risk for a common stock is always associated with changes in its market value. Based on this, the author of this work claims that the yield of one common stock always varies near the average yield of a stock in the securities market. It is quite obvious that this cannot be avoided. This is because the mechanism of the securities market works.

In the work [15;19;42;44] stated that the main task of the investor in forming an investment portfolio of securities is to minimize risk through the acquisition of various securities. This is done so that the specific features of individual companies are balanced among themselves. Based on this, the return of the investment portfolio tends to the average return of the share in the securities market.

Investment practice shows that the difference between the return on a share and the average return on a share in the securities market is perceived as a premium for market risk.

Thus, the results of the study by Sharp St. became known as long-term asset valuation models based on the assumption that in a competitive market the expected risk premium varies directly proportional to the ratioβ.

Sharp St., on the basis of the developed long-term asset evaluation model,

simplified the method of choosing the optimal investment portfolio. So Sharp St. presented the quadratic optimization function in the form of a linear one. In our opinion, this simplification made it possible to make investment portfolio optimization methods more accessible and widely used in investment practice.

The value (pFig) of such an agreement must coincide with the value of risk-free assets on the market, and since the share pFig subsequently changes, the value of the written option, which provides a risk-free agreement, must also change accordingly.

Probabilistic estimates of the value of the option can be obtained from these prescriptions.

According to the author of this work, the concept of portfolio investment by Buffett U. is interesting.

Buffett U. believed that the fundamental ideas of concentrated investing are determined by the existence of discrepancies between his understanding of investments and the ideas of many other authoritative experts in the field of finance, as well as with a set of ideas known under the general name - modern portfolio theory. According to the modern theory of portfolio investment, the degree of risk is determined by the instability (volatility) of share pFigs. However, throughout his career, Buffett U. always saw falling stock pFigs as an opportunity to make money. In this case, a short-term fall in the share pFig actually reduces the level of risk.

Based on the above, taking into account the analysis of works [48;49;51] the author of this paper believes that the selection of such financial instruments takes place in the process of forming an investment portfolio.

In works [24;31;36;39;47;50] stated that the investment portfolio should be understood as a set of investment objects purposefully formed in accordance with a certain investment policy.

Thus, the investment portfolio is a financial instrument that allows you to achieve the goal set for the investor. In turn, the components of the investment portfolio reflect the investor's interests.

In works [24;31;36;39;47;50] stated that the formation of the investment portfolio is based on the implementation of the developed investment strategy by selecting the most effective and sustainable investment objects.

Depending on the direction of the chosen investment policy and the specifics of the implementation of investment activities, the following goals can be defined:

- Capital growth maximization;
- Maximization of income growth;
- Minimization of investment risks;
- Ensuring the necessary liquidity of the investment portfolio.

The accounting of these goals for the formation of the investment portfolio is at the basis of the definition of normative indicators, which serve as a criterion during the selection of investments for the investment portfolio and its evaluation.

Depending on the adopted priorities, the investor can establish as such a criterion the limit values of the increase in capital value, income, the level of permissible investment risks, and liquidity. At the same time, the investment portfolio can combine objects with different investment qualities, which allows you to get a sufficient total income under the condition of risk consolidation in relation to individual investment objects.

The difference in the types of objects in the investment portfolio, investment goals, and other conditions determines the variety of types of investment portfolios, which are characterized by a certain ratio of the main investment qualities.

In works [14;21;28;31;33;42;43] it was noted that the investment portfolio can be classified into certain types by objects, forms, goals, investments.

According to the author of this work, the following are the priority investment goals:

- Growth investment portfolio;
- Income investment portfolio;
- Conservative investment portfolio;
- Investment portfolio of highly liquid assets.

The characteristics of growth and income investment portfolios are presented in fig. 1.1.

1. Growth investment portfolio. The growth investment portfolio is focused on the growth of the market value of securities. It is divided into the following types: simple growth investment portfolio and high growth investment portfolio.

A simple growth investment portfolio is created from securities whose market value increases. The goal of a simple growth investment portfolio is to increase the profitability of the investment portfolio.

The high-growth investment portfolio is aimed at maximum investment growth. The components of the investment portfolio are the securities of fast-growing companies. In a high-growth investment portfolio, investments are exposed to significant risk and also allow for high income.

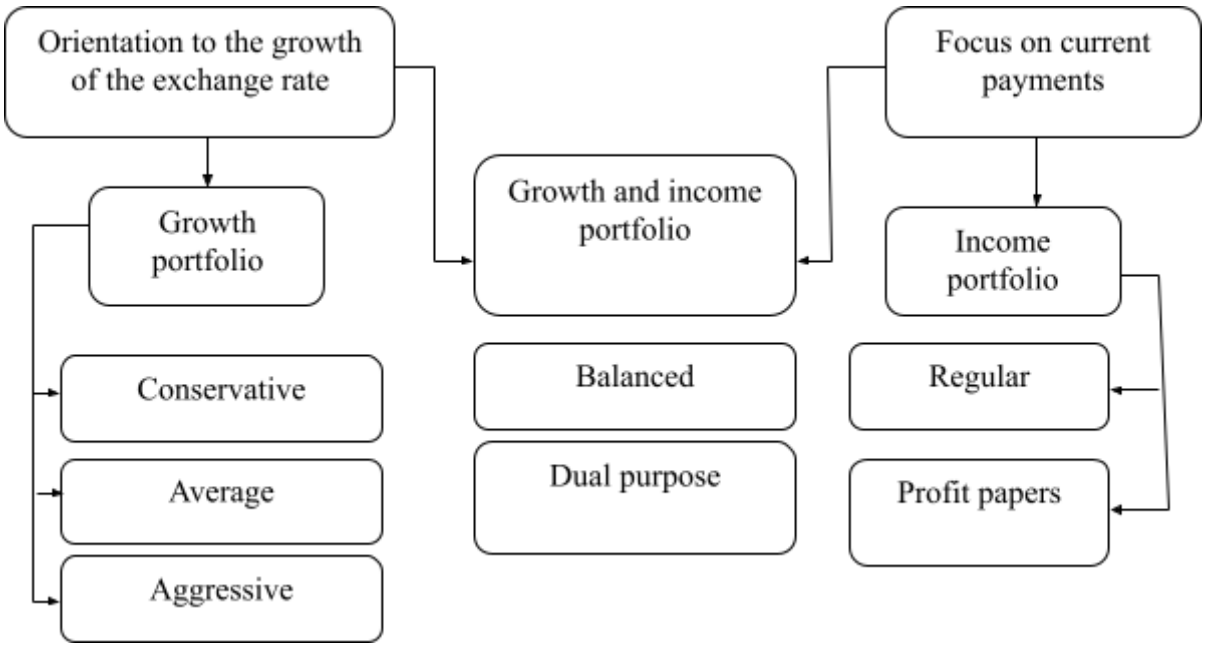

Fig. 1.1. Characteristics of growth and income investment portfolios

An investment portfolio of moderate growth is considered the least risky. It consists of securities of well-known companies. They are characterized by low, but stable rates of market value growth. The composition of the moderate growth

investment portfolio is stable over a long period of time. An investment portfolio of moderate growth is aimed at preserving investment resources.

An investment portfolio of medium growth combines the characteristics of investment portfolios of moderate and high growth. It guarantees average growth of investment resources and moderate risk. Today, the average growth investment portfolio is the most common.

2. Income investment portfolio. It is based on receiving income through dividends and interest. The income investment portfolio is formed from income shares. Their characteristic features are moderate growth in market value and high dividends.

3. Conservative investment portfolio. It includes companies with low growth rates in market value and revenues. However, a conservative investment portfolio is characterized by lower risk than a growth investment portfolio and an income investment portfolio.

4. Investment portfolio of highly liquid investment assets The purpose of its formation is to maximize liquidity. That is, it is oriented highly liquid objects. The latter must be transformed into funds quickly and without significant loss of market value.

The author of this work believes that in the formation of an investment portfolio, the choice of investment objects is carried out in accordance with the preferences of investors. Therefore, based on the analysis of works [16;19;23;25;33] highlighted the relationship between the type of investor and the type of investment portfolio (Table 1.1).

From the table 1.1 shows that the guaranteed income corresponds to a conservative investor, but it is very low. A moderate investor is characterized by a compromise approach to the "risk-return" ratio. An aggressive investor is defined by a high-profit approach, but it is characterized by a very high level of risk.

Table 1.1

Types of investor

Type of investor	Characteristics of portfolios		
	Nature and level of income	Risk level	Investment period
Conservative	Guaranteed, low	Low	Long
Moderate	Stable, average	Average	Not limited
Aggressive	Speculative, high	High	Limited by the duration of the investment transaction

In the table 1.2 presents the positions of the investor to achieve the ratio "risk/profitability of financial assets". As is obvious from the table. 1.2 conservative investors are interested in receiving stable income for a long time.

Table 1.2

Investor positions to achieve the ratio "risk/return of financial assets"

Type of investor	Purpose of investment	Degree of risk	Type of financial asset	Type of portfolio
Conservative	Protection against inflation	low	Government securities, shares and bonds of large stable issuers	Highly reliable, but low-profit
Moderate	Long-term investment of capital and its growth	average	A small share of government securities, a large share of securities of large and medium-sized, but reliable issuers with a long market history	Diversified
Aggressive	Speculative game, possibility of rapid growth of invested funds	High	A high proportion of highly profitable securities of small issuers, venture capital companies	Risky, but highly profitable
Strategic	Management and control in society	High	Shares of allocated issuers	A package of shares of the same name

They choose to receive income continuously through dividends and interest. It is quite obvious that conservative investors limit their own risk to a minimum. However, moderate investors do not limit the investment period. Components of income are dividends, interest, difference in exchange rates of securities. Moderate investors have some risk of their own.

It is interesting to pay attention to aggressive investors. Their goal is to get the maximum exchange rate difference from the deal. Characteristic features of such a transaction are high risk and limited investment period.

Based on the above, the author of this work believes that each type of investor corresponds to its own type of investment portfolio:

- a conservative investment portfolio corresponds to a conservative investor;
- an aggressive investment portfolio corresponds to an aggressive investor;
- the combined investment portfolio suits the moderate investor.

On the basis of the above, it is relevant to study methods of risk management and investor profitability.

1.2. Regulatory and legal provision of risk management and investor profitability

Establishment of joint investment institutions and development of the legal framework. Since 1994, the development of the joint investment market began, which contains many opportunities for attracting capital from various groups of investors and activating the investment market. On the other hand, due to the specifics of functioning and a number of regulatory restrictions, the institutions of this market are very sensitive to negative changes in the financial sector: the stock market, the banking system. As a result, after a phase of active growth, investment

funds found themselves in a difficult position, and now the first priority is to withstand the threatening impact of the crisis. Publications of Ukrainian scientists, which have recently appeared in scientific publications, emphasize the potential of the joint investment market and highlight general issues of the functioning of investment funds and foreign experience of their activities. But not enough attention has been paid to the peculiarities of the functioning of joint investment institutions (CIIs) on the Ukrainian market in the light of crisis phenomena.

The first NPA that regulated joint investment activity was the "Regulations on Investment Funds and Investment Companies" approved by Presidential Decree No. 55/94 of February 19, 1994, which became the basis for further development of legal regulation of joint investment. The regulations defined the concepts of investment funds, investment companies and their types. The persons who can be the founders of such funds and companies, as well as the requirements for them, as well as the participants of such funds, have been determined. The procedure for regulating relations between founders has been settled. The securities that can be issued by such funds and companies, the procedure for their issuance and the requirements for them are defined. The structure of mandatory bodies, which were to be created in such funds and companies, was determined. The issue of income distribution and the method of determining the remuneration for the investment manager have also been settled. A number of operations that could not be carried out by such funds and companies were determined. Some of the issues defined in this NPA have found their consolidation in the current legislation, which confirms their thoroughness.

With the adoption of the Law of Ukraine "On joint investment institutions (equity and corporate investment funds)" a new stage of legislative regulation of joint investment began. The law became the legal foundation on the basis of which several dozens of bylaws were adopted. He laid the foundations of a systemic approach to legal regulation and established the "rules of the game" in the joint investment market. Transitional provisions of the Law of Ukraine "On Joint Investment Institutions (Equity and Corporate Investment Funds)" introduced the

mechanism of transformation of "old" investment funds and companies, created in accordance with the procedure established by law before the Law came into force, into CII. With the entry into force of the Law, the establishment of investment funds and investment companies was prohibited. The law regulated the legal and organizational basis for the creation, activity and responsibility of joint investment entities, the specifics of their asset management, established requirements for the composition, structure and storage of assets, determined the specifics of placement and circulation of securities of joint investment institutions, the procedure and scope of their disclosure of the relevant information in order to attract and effectively allocate financial resources of investors. Regulation of public relations arising in the field of joint investment, ensuring guarantees of ownership rights to securities and protection of the rights of stock market participants are the central tasks of the studied Law.

On March 5, 2008, a draft of the Law of Ukraine "On Trust Management of Financial Assets" was submitted to the Verkhovna Rada of Ukraine, the purpose of which was to bring the management of financial assets outside the scope of the Law of Ukraine "On Joint Investment Institutions (Unit and Corporate Investment Funds)", but the law was not was accepted, despite the positive conclusion of the Main Scientific and Expert Directorate. The purpose of the law was to protect individuals who transferred their assets into trust management to trust companies and joint investment institutions. However, it remains unknown why in order to protect the interests of investors, it is necessary to divide one sphere of professional participation into several, it would be more logical and effective to establish separate norms regulating this type of activity, than to relegate it to a separate specialization, creating further inconveniences for CII and trust companies.

The main NPA, which in a certain way secures the right of individuals to create and dispose of property, is the Constitution of Ukraine, which in Article 41 defines that everyone has the right to own, use and dispose of their property, the results of their intellectual and creative activity.

Changes in the legislation on joint investment, which were expressed in the new Law of Ukraine "On Joint Investment Institutions" were caused by the adoption of the new Law of Ukraine "On Joint Stock Companies" at that time, since, after the Law of Ukraine "On Joint Stock Companies" came into force, there was a need to introduce of changes to the Law of Ukraine "On ISI". After all, the specifics of the creation, operation and liquidation of corporate investment funds (CIFs) continued to be regulated by the Law of Ukraine "On Business Societies". After the adoption and entry into force of the Law of Ukraine "On Joint Stock Companies", many practical problems arose related to the application of the CIF norms of this Law. This required the concentration of all legal norms regulating the activities of KIF in one legislative act. The stability of the legislation regulating joint investment is the basis for the stable functioning of this area of the financial market. Therefore, progressive representatives of joint investment developed a draft of a new law.

The main specialized NPA, which regulates the activity of CIIs, including as professional participants in the stock market, is the Law of Ukraine "On Joint Investment Institutions", which became a logical continuation of the Law of Ukraine "On Joint Investment Institutions (Unit and Corporate Investment Funds)". The new Law focuses on ensuring the attraction and effective allocation of financial resources of investors, defines the legal and organizational basis for the creation, operation, and termination of joint investment entities, features of asset management of the specified entities, establishes requirements for the composition, structure, and storage of such assets. features of issuance, circulation, accounting and redemption of CII securities, as well as the procedure for disclosing information about their activities. The law is the result of almost twenty years of development of the industry of investment funds in Ukraine. In terms of the system of legal regulation and the level of codification, it has practically no analogues in the countries of the European Community, as well as in the CIS countries. In addition to the already existing classification of CII depending on the order of activity (closed, open and interval type), terms of activity (term and indefinite),

diversification mechanism (diversified and non-diversified), Art. 7 of the Law introduces qualifying and specialized ISI. Yes, according to part 5th century 7 of the Law is considered specialized if he invests assets exclusively in asset classes defined by this Law. Specialized CIIs include investment funds of the following classes: money market funds; state securities funds; bond funds; stock funds; index funds; funds of banking metals.

A CII is considered qualifying if it invests assets exclusively in one of the qualifying asset classes and funds and does not have any asset structure requirements. Qualifying classes include the following asset classes: combined class of securities; real estate class; class of rental assets; credit asset class; class of exchange commodity assets; other classes of assets that the Commission may introduce and refer to as qualifying.

For a long time, the Law of Ukraine "On Joint Investment Institutions" and the normative legal acts of the Commission did not distinguish CIIs according to the specifics of investment activity. The classification of CII by areas of investment activity is of particular importance for "unqualified" investors. An investor's choice of one or another type of CII should be facilitated by his understanding of the benefits, investment goal and investment risk. In this context, the introduction of qualifying and specialized CIIs is a positive step towards the development of joint investment. But currently, Ukrainian legislation does not provide an answer to the question of what constitutes an asset class. Therefore, it would have been more expedient in the Law to expand the list of specialized funds by adding to them qualifying CIIs and indicating that these funds can invest only in one class of assets defined by the relevant list.

In order to comply with the provisions of the Law, the NCCPFR should limit in practice the use of the same type of investment declarations for CIIs with different investment strategies. The choice of the direction of investment activity of the CII is carried out by the AMC when it is created. It is quite obvious that the investment declaration of CII bonds with a balanced investment strategy should be different from the investment declaration of CII stocks with an aggressive strategy.

If we analyze in detail the investment declarations of Ukrainian CIIs, they contain general phrases, for example, "investments are made in securities, cash, including in foreign currency, and other assets, taking into account the restrictions established by the current legislation of Ukraine." The AMC's announcement of its investment strategy has become a common practice at the "launch" of the CII. If you carefully analyze the reports of the AMC on the composition and structure of the assets of the CII, there are not rare cases of inconsistency of the AMC's public statements with the composition and structure of the assets of the CII managed by it. Investors are guided by these statements, without proper confirmation of compliance with the chosen AMC strategy in the future.

CIs that do not meet the requirements of this Law and the regulations of the Commission for diversified, specialized or qualifying CIs are non-diversified. Open CIIs can only be diversified and specialized CIIs. Interval CIIs can only be diversified CIIs, specialized and qualifying CIIs.

The law also introduces such a new category as exchange CII. The exchange is CII, the prospectus for the issue of securities of which stipulates that:

1. the securities of such CII are subject to compulsory circulation on the stock exchange specified in the issue prospectus;

2. acquisition of securities during their initial placement or sale by the issuer of previously purchased securities or presentation of securities of such an institution for redemption is carried out by participants of such an institution or investors through the underwriter of such securities or by the underwriter at its own expense or at the expense of its clients;

3. the underwriter of securities of such an institution is obliged to maintain quotations (pFigs of demand and supply) of such securities on the stock exchange specified in the issue prospectus;

4. payment for the securities of such an institution during their sale or redemption by the issuer may be made in the appropriate proportion with the assets specified in the investment declaration of the said institution.

The prospectus for the issue of securities of the exchange CII may establish requirements regarding the minimum number or value of securities that can be purchased during their placement or presented for redemption. The order of interaction between the AMC of the exchange CII and the underwriter of the securities of such CII shall be established by the Commission.

The final provisions of the Law of Ukraine "On Joint Investment Institutions" begin with norms limiting the implementation of certain articles of the Law as such, the application of which requires preparation of the stock market for their implementation. Further, the Law makes changes to the Economic Code, the Central Committee of Ukraine, the Laws of Ukraine "On Investment Activity", "On Banks and Banking Activity", "On Securities and the Stock Market", "On Joint Stock Companies".

The activities of CII and investors making investments with the help of CII cannot fail to be subject to the Law of Ukraine "On Investment Activities". The law defines the status of CII as an investor at the legislative level, relations between investment subjects, the issue of legal personality of investors, as well as guarantees of such activity.

The Law of Ukraine "On Securities and the Stock Market" is one of the key NPAs that regulates the activities of CII. This law defines the concepts and types of securities, their features, the order of issue and issuers. For CII, this law is important because it defines the concept and list of institutional investors and regulates their activities on the stock market, as well as separates the shares of the corporate investment fund into a separate type of securities.

Joint investment institutions are financial institutions and it is logical that their activities are regulated by the corresponding specialized law - the Law of Ukraine "On Financial Services and Regulation of Financial Services Markets".

This law establishes general provisions on the creation and operation of financial institutions, since the CII is a financial institution, their activity is regulated by this law within the limits that do not contradict special legislation, it

establishes the means and methods of regulating the activities of financial institutions, including the CII, by the state.

The existence of the CII is directly related to the activity on the securities market. The securities market has always been considered an industry where the attention of the state is concentrated, which resulted in significant regulation and control by state authorities. Ukraine is no exception, the main law that regulates state intervention in the securities market is the Law of Ukraine "On State Regulation of the Securities Market in Ukraine", which establishes the forms of such regulation, the powers of state authorities and their tasks in this area. One of the tasks of this law is to establish responsibility for illegal actions on the RCP and to define such offenses.

Problems and ways of development of regulatory and legal support of the activities of the CIS in Ukraine. Despite all the advantages of the Law of Ukraine "On Joint Investment Institutions" over its predecessor, it does not solve a number of significant gaps in the legislation on joint investment. So, in particular, the issue of a unified understanding of such important concepts as "joint investment activity" and "asset management activity" has not been resolved. Today, there are conflicts in their interpretation in the legal framework. In the process of further transformation of market relations, it became necessary to distinguish between institutional and unqualified investors. This division fully corresponds to world practice and was partially embodied in Ukrainian legislation. Institutional investors in Ukraine include CII, investment funds, mutual funds of investment companies, non-state pension funds, insurance companies, and other financial institutions. Article 4 of the Law of Ukraine "On State Regulation of the Securities Market" defined asset management activities as the professional activity of a stock market participant - AMC, which is carried out by it for a fee in its own name or on the basis of a corresponding contract on the management of assets owned by its institutions investors on property rights. A similar definition is contained in Art. 18 of the Law of Ukraine "On Securities and the Stock Market", according to which the activity of managing the assets of institutional investors is the professional

activity of a stock market participant - the AMC, which is carried out by it on its own behalf or on the basis of an appropriate contract on asset management institutional investors. In addition, in some legislative acts, asset management activities are limited only to the management of assets belonging to institutional investors, the list of which is clearly defined.

So, it turns out that according to the Law "On State Regulation of the Securities Market" and "On Securities and the Stock Market", asset management, for example, of an open mutual investment fund whose investors are the owners of its assets, is not considered a professional asset management activity, since the institutional investor (mutual investment fund) does not own these assets. Thus, there is no single approach to the interpretation of the concept of "asset management activity" in Ukrainian legislation. One should agree with the definition of such activity proposed by Varnalii Z. S., Andreev O. A.: this is the professional activity of a stock market participant - AMC, which is carried out by it for remuneration in its own name or on the basis of a relevant contract on the management of assets owned by institutional investors, investment investors and pension fund participants.

More than one scientific article has been devoted to the problem of inconsistency of terminology in the legislation regulating joint investment, such as V. Harkava. F., Klishchevska A. Yu. determine the following: "The closest prospect for the development of legislation in the field of joint investment should be its detailed analysis for the purpose of harmonizing terminology and simplifying state regulation, since the field of investment is quite "mobile", therefore the regulatory and legal regulation should be appropriate."

Before the introduction of the Law of Ukraine "On Joint Investment Institutions", the United States Agency for International Development (hereinafter - USAID) identified certain comments to the new law, namely: the Law amends the Law "On Securities and the Stock Market" and singles out the shares of a corporate investment fund into a separate type of securities. This approach seems impractical. The law defines a corporate investment fund as a legal entity that is

formed in the form of a joint-stock company and conducts exclusively joint investment activities. The procedure for creating a corporate investment fund is similar to the procedure for creating an ordinary joint-stock company with features due to the nature of the investment fund. The EU Markets in Financial Instruments Directive ("MiFID") distinguishes among financial instruments, in particular, transferable securities and units in collective investment undertakings. Separately, USAID pays attention to the corporate management of KIFs, that the regulation of joint investment legal relations by the Law of Ukraine "On Joint Investment Institutions" is redundant, since it is already defined by the Law of Ukraine "On Joint-Stock Companies".

An important issue raised in USAID's analysis is the exclusion of the CII's liability for a decrease in the value of assets, which states the following: "Despite the generally stricter approach to operations with the CII's assets, the draft Law excludes the rule on the liability of the AMC in case of a decrease in the value of the CII's net assets. According to Law 2299, the AMC compensates such losses at the expense of the reserve fund, and in case of insufficient funds, at the expense of other company property. The specified exclusion is inappropriate, since the issues of responsibility of the AMC cannot be attributed to the competence of the NCCPFR, but must be determined by law."

1.3. Methods of risk management and investor profitability

When Ukraine transitioned to a market economy, it became important for businesses to forecast their revenues and expenses that arise in the course of their activities. The experience of the previous years of life in Ukraine showed that it is necessary to somehow protect one's enterprises from currency, financial and investment risks.

In general, most foreign companies or individual investors pay a lot of attention to forecasting, assessment and risk management, while Ukrainian

enterprises still wonder why they lose money from risky currency and investment operations.

The term "investment activity" is interpreted ambiguously, therefore there is a need to clarify its essence in the legislation of Ukraine. Investment activity is a set of practical actions of individuals, legal entities and the state to realize their right to invest.

Facing various risks is a common threat for any investor. most of the time investing his funds, the investor cannot have complete confidence in the results of his activities. in fact, its result depends on a successful combination of various factors, such as: inflation rate; exchange rate of national and foreign currencies; the human factor, which is quite unpredictable; tax policy of the state as a whole and individual regions; factor of time and place and many others.

Investing is a rather risky business, so the extent to which a company or an individual investor knows how to manage risks determines their profitability. high risk means not only costs, but also potentially higher income. With the risk of incurring costs comes the opportunity for greater income. it follows that the better an investment company can manage its risk, the higher its possible profitability.

Risk management is the management of the organization as a whole or its individual divisions taking into account risk factors (that is, random events affecting the organization) based on a special procedure for their identification and assessment, as well as the selection and use of methods for neutralizing the consequences of these events, exchanging information about risks and control of the results of the application of these methods.

The need to analyze the risks of an investment project is that investment projects are developed on the basis of certain predictions regarding capital and current sales volumes, pFigs for goods and services, etc.

Regardless of the quality and quantity of these predictions, the future development of events is always ambiguous, so the practice of capital investment planning also considers the aspects of uncertainty and risk.

In investment and financial management, risk is most often understood as the degree of uncertainty in obtaining expected income from given investments. if we specify the general definition of risk for project analysis, then project risk is a measure of uncertainty in obtaining the expected level of profitability during the implementation of this project.

Investment risk is the possibility of not realizing planned investment goals (such as profit or social impact) and receiving monetary losses. this risk must be assessed, calculated, described and planned when developing an investment project.

A distinction is made between general economic risk arising from adverse conditions in all areas of the economy and individual risk associated with the conditions of this project.

Depending on the factors, the following types of investment risk are distinguished: political risk; general economic risk; legal risk; technical risk; risk of project participants; financial risk; marketing risk; environmental risk; speculative or trading risk.

Political, legal and general economic risks can be caused by external conditions of investment implementation. other types of risks are caused by possible errors in the planning and organization of specific projects.

Technical risk is caused by a large number of errors of a wide range of investment parties, which are related to the quality of the design, the technical base, the chosen technology, project management, and budget overruns.

Financial risk arises from the non-implementation of expected events from the financial side of the project. These can be unplanned reductions or disappearances of sources and volumes of financing, unsatisfactory financial condition of partners, disruptions in revenue from the sale of manufactured goods or services, insolvency of product buyers and own increased costs.

Marketing risk arises from miscalculations during the assessment of the market conditions of the project, for example, sales markets or supply of raw

materials and materials, organization of advertising or sales network, market volume, market entry time, pricing policy, as a result of low product quality.

Environmental risk is related to issues of impact on the environment, possible accidents, relations with local authorities and the population.

Speculative, or trading, risk is associated with the activity of a firm or an individual trader on the financial market.

Trader risks associated with activities on the financial market, in turn, are divided into three groups: risks of lost profit; risks of reduced profitability; interest rate risks.

the risk of project participants may be associated with all unexpected events in the management and financial condition of partner enterprises.

The main mechanisms for neutralizing investment risks include: risk avoidance; risk retention (in combination with internal insurance); risk minimization (through diversification, limiting, hedging); risk transfer (ie external insurance).

In fig. 1.2 presents the risk management mechanisms of investment activity.

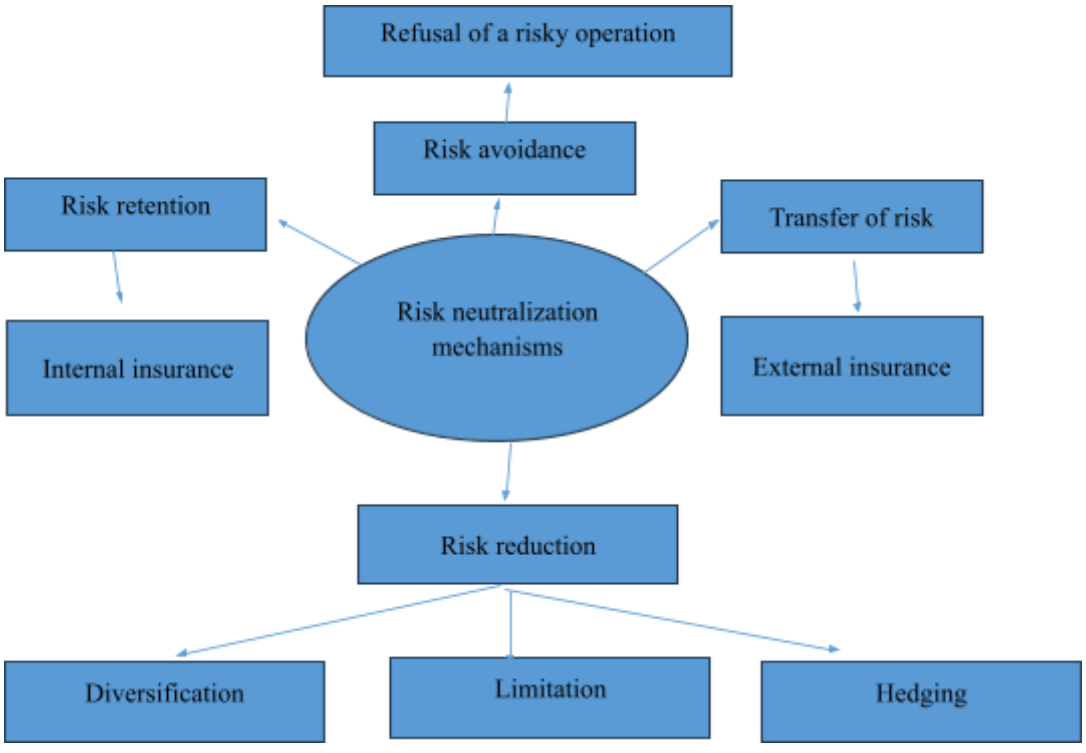

Fig. 1.2.Methods of risk management and investor profitability

Diversification of investment risks consists in reducing the level of their concentration [5]. This method of risk management is used only to avoid the negative consequences of unsystematic (specific) risks. Regardless of which risk is minimized through diversification, the principle of risk management is the same - to maximally distribute monetary investments between various assets in order to avoid significant financial losses when individual assets become unprofitable under the influence of external and internal factors [9].

Limitation is carried out by establishing appropriate financial restrictions (that is, limits) for individual areas of financial activity to fix possible financial losses at a level acceptable for the enterprise [9].

Hedging financial risks involves reducing the probability of their occurrence with the help of derivatives or derivative securities (futures, options). The hedging mechanism consists in carrying out opposite financial operations with futures contracts and options on commodity and stock exchanges [9]. The considered prevention methods make it possible to reduce the likelihood of financial risks, but at the same time, special funds and reserves are not created to compensate for possible financial losses when a risky event occurs. such a role is assigned to insurance (internal and external).

The conditions of economic uncertainty in which investors are forced to act will cause the impact of certain risk factors on their future earnings.

Investment risks threaten to reduce profits compared to possible or even losses. When making decisions about investment activities, the management of companies, banks or investment funds must take into account the impact of investment risks.

CHAPTER 2
ASSESSMENT OF RISK AND PROFITABILITY OF INVESTOR

2.1. Assessment of the joint investment market as a lever for the accumulation of investment resources

Solving the problem of financing investment activities is always relevant for every country, because investments are the main driving force for the development of any economic system. Joint investment institutions can become a powerful tool for the development of the country, as well as the stock market.

Let's analyze the current state of joint investment institutions on the stock market. Using the data of the Ukrainian Association of Investment Business during the last 10 years (Appendix A, Fig. A.1-Fig. A.3) [18].

From 2013 to 2016, there was a decrease in the number of joint investment institutions and, accordingly, their assets under management. This trend is connected with the annexation of the Crimean peninsula, as well as Russia's war in the Donetsk and Luhansk regions, which greatly affected the economic situation in Ukraine as a whole. Since 2016, we have been observing a gradual return to the positions of 2013, and since 2019, there has been a noticeable increase in both the number of joint investment institutions and the quality of their assets under management. During 2012-2021, the number of CIIs increased from 1,222 to 1,711 (that is, by 40%). The value of assets of investment funds increased from UAH 157,201 million to UAH 482,096 million (that is, by 207%). Over the past 10 years, we have seen the maximum indicators in 2021, when the number of CIIs amounted to 1,711, and their assets under management were equal to UAH 482,096.4 million.

Let's determine which joint investment institutes are the largest in our country (Table 2.1). Over the entire study period, the growth in the number of investment funds was driven by a 527% increase in the number of venture capital funds since 2012.

Table 2.1

The number of joint investment institutes of recognized funds for 2012-2021

Year	Mutual investment funds								Corporate investment funds		In total
	Open diversified	Open specialized	The intervals are diversified	Intervals are specialized	Closed diversified	Closed non-diversified	Qualifiers are closed	Closed non-diversified venture capital	Closed non-diversified	Closed non-diversified venture	
2012	41		38		13	45		829	110	144	1220
2013	38		35		11	43		861	90	170	1248
2014	26		29		10	35		846	75	160	1181
2015	21	5	21		9	30		803	65	193	1148
2016	15	5	20		5	28		765	55	237	1134
2017	14	6	19		4	31		748	53	287	1167
2018	13	6	18		4	27		742	51	363	1230
2019	12	7	16		3	27	2	745	45	462	1326
2020	10	7	16		3	24	4	726	44	639	1478
2021	7	10	14		4	20	4	692	48	903	1711
Increase	-82.9		-63.2		-69.2	-55.6		-16.5	-56.4	527.1	40.3

Their specific weight in the total number of investment funds in 2021 is 93%. All other types of investment funds gradually decreased over the course of 10 years. The dynamics of open-end funds is negative, open-end funds are obliged to buy securities from the participants of this fund and they are subject to the sentiments of investors. While in the world open funds are the most common type among investment funds. A powerful tool for attracting free capital in developed countries, it is almost not used in Ukraine.

Now we will analyze the qualitative indicator, namely the value of net assets (NAV) by types of funds (Appendix B, Fig. B.1).

Over the past 10 years, the total value of CII assets has increased by 241%. This shows that despite the unstable economic situation in Ukraine, the annexation of the Crimean Peninsula and the war in Donbas in 2014, and in 2020 and 2021 due to Covid-19 and quarantine, the public investment market is rapidly developing and growing. The value of net assets of open-end funds in 2021 was 55 million hryvnias, which compared to GDP was equal to 0.04%. Closed non-venture investment funds have become more common after venture capital funds. In 2021, their NAV was equal to UAH 16,930 million. Closed-end funds were the first to be allowed to be privatized in Ukraine in the early 1990s. 20th century, when the birth of the stock market of independent Ukraine began. We also draw attention to the fact that a huge part of the assets belongs to closed venture investment funds. Let's look at fig. 2.1 structure of NAV of closed IFs (except venture ones).

Closed-end non-diversified funds have no portfolio diversification requirements under the law. That is why they are considered more profitable, as it has a low level of diversification, and therefore a higher level of risk. This investment approach is not suitable for every individual investor.

Our next step will be to consider the asset structure of venture capital investment funds and closed-end funds (except for venture capital funds), to analyze how the funds dispose of investors' funds. The largest share in the assets of closed non-venture investment funds is made up of other assets, 86%.

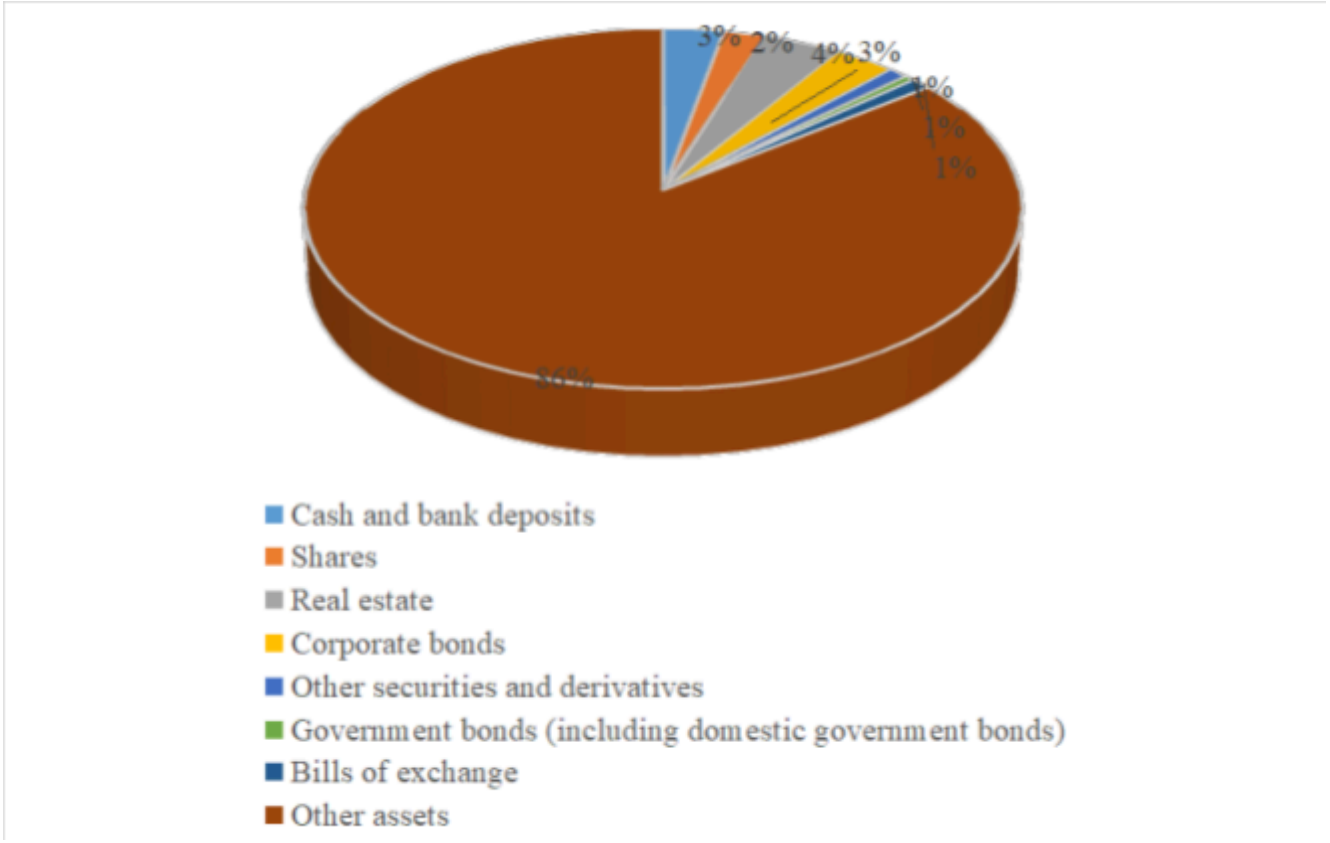

Fig. 2.1. Asset structure of closed-end investment funds (except for venture funds) as of 12/31/2021.

They include corporate rights that differ from shares (Fig. 2.2)

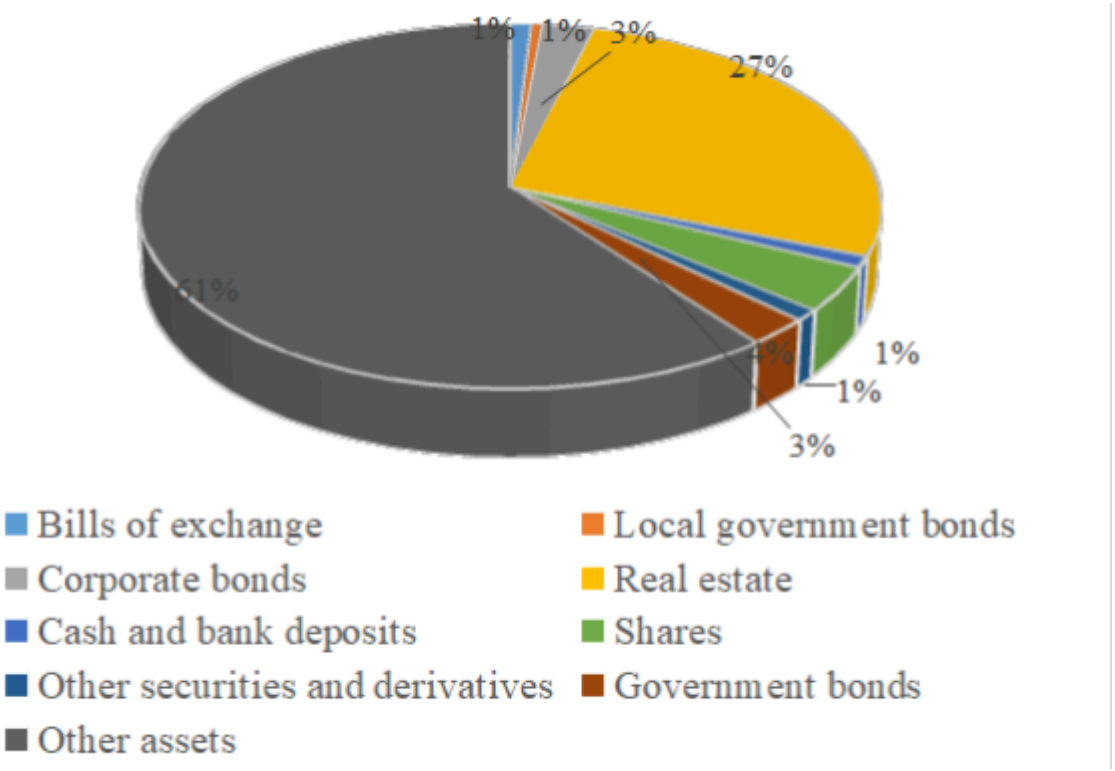

Fig. 2.2. Asset structure of venture investment funds as of 12/31/2021

As we can see from the diagram in fig. 2.2 other assets make up 61% of the total value of assets, they include corporate rights expressed in forms other than securities, as well as receivables, such as loans to companies in whose capital ISI owns shares [26].

To understand the prevalence of venture capital funds among types of investors, we will analyze the structure of the value of net assets by type of investors (Figure 2.3).

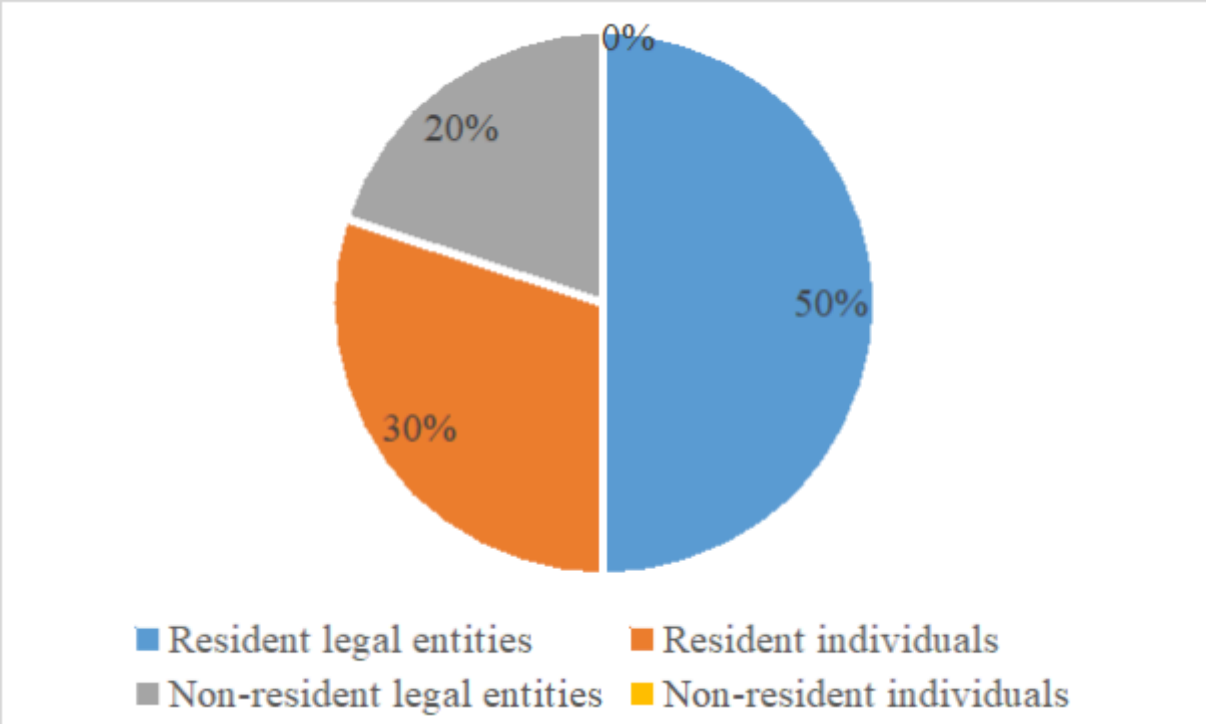

Fig. 2.3. Asset structure of closed-end investment funds (except for venture funds) as of 12/31/2021.

Among the investors, half of the NAV was invested by resident legal entities, non-resident legal entities invested 20% of the value of net assets. Individuals own 30% of the net asset value of the venture capital fund. Legal entities dominate, their share is equal to 70%, and the other 30% are natural persons.

We see a number of disadvantages of such a structure and functioning of joint investment institutions:

– the predominant closedness and non-transparency of reporting on the results of the activities of such funds;

— limited number of types of financial instruments and their reliability;

— Investors cannot include ordinary individuals with a sufficient level of income, because according to the law, participants in a venture fund can be a legal entity, and an individual under the condition of purchasing the corporate rights of the fund in the amount of more than 10,050,000. UAH

2.2. Analysis of venture funds on the stock market of Ukraine

Venture investment funds in Ukraine differ from venture funds in the developed countries of the world. In international practice, fund funds are directed to innovation, technological projects, "startups" and in the case of success in obtaining a high income. In European countries, venture investments are related to biotechnology, alternative energy, computers and electronics, and telecommunications [33].

Whereas in Ukraine, investors' funds are invested in construction and real estate, other investments, promissory notes, and they provide loans. Analysts claim that the majority of Ukrainian venture capital funds use funds as a tool for joint investments and optimization of taxation in the construction, financial and agricultural sectors [19].

Venture funds gained their popularity due to favorable tax conditions. How it happens: the developer forms a venture fund by selling investment certificates to a separate circle of investors. After that, the venture fund sends the funds received from the sale of certificates to the developer. After completion of construction works, he transfers the construction to investors as income. Investors then sell real estate and receive cash, and the fund itself continues to function without paying taxes, since it pays all taxes only in case of liquidation [20].

Also, according to the legislation of Ukraine, only venture capital funds can provide loans. In addition, the interest received from such a financial transaction is not taxable [21].

Usually, the ultimate beneficiary or owner is influential Ukrainian businessmen or deputies [19].

Only legal entities can be participants in such funds, while natural persons can be participants, provided they purchase corporate rights of a venture fund worth at least 1,500 minimum monthly wages, which currently amounts to 10,050,000. UAH

In order to assess the role of CII in the national joint investment market, we will calculate the specific weight of the assets of investment funds in the total GDP of Ukraine during the last 5 years (Table 2.2).

Table 2.2

The specific weight of CII assets in the total GDP of Ukraine for 2018-2021.

Indicator	Year			
	2018	2019	2020	2021
Assets of CII, million hryvnias	296,572	338 436	407,629	157 199
GDP, million hryvnias	3,558,706	3,974,564	4,194,102	5,459,574
Specific weight of CII assets in GDP, %	8	9	10	11

We can trace the trend of growth of the specific weight of the assets of investment funds in the total volume of GDP of Ukraine. To date, the assets of joint investment institutions have not reached the appropriate level. Funds play an insignificant role in the economy of Ukraine, the share of assets in GDP in 2021 is only 11%. Whereas in the Western countries of Europe and the USA, this indicator ranges from 30% to 90% [24].

So, for example, in the USA this indicator is equal to 81.4%, in France - 63.1%, in Great Britain - 38% [2].

2.3. Analysis of foreign experience of joint investment institutes

In the context of international legal practice, the definition of "Investment Schemes" is identified by the term "Collective Investment Schemes" (CIS). This term is translated in various ways, such as "collective investment schemes", "collective investment institutions", "collective investment programmes", "collective investment institutions", or "collective investment schemes". It is worth noting that in the developed countries of the world, in general, a large number of tools and programs allow attracting investors for professional asset management in order to achieve specific investment goals, but their legal organization may differ, regardless of the common goal.

In the member countries of the Organization for Economic Cooperation and Development (OECD), there are three main legal forms for Collective Investment Schemes (CIS). The first of them is a corporate form in which CIS are independent legal entities of the corporate type. In this form, the assets belong to the investment companies themselves, and the investors are their shareholders who own corporate shares. The second form is the trust form, in which CISs are organized in the form of a trust. Here, an identified pool of assets is created and managed by trust owners for the benefit of other parties who are the beneficiaries of the trust and the investors own units in the trust. The third form is contractual, where the investor enters into an agreement with an investment company, which undertakes to acquire a portfolio of securities and manage them on behalf of a specific investor. At the same time, the investor has his own proportional share in the investment portfolio [1].

These different legal forms provide different opportunities and structures for investors to participate in collective investment schemes and are used in different jurisdictions according to domestic law and regulatory frameworks.

Analysis of the legal regulation of investment cases in the United States of America reveals an interesting perspective on the organization and functioning of investment companies that are part of the joint investment sphere. At the fore in this context is the Investment Company Act of 1940, passed more than seventy years ago.

In accordance with this law, an investment company is considered a market entity that engages or intends to engage in such activities as primary investment, reinvestment, securities trading or issuance of nominal certificates in installments. This activity may be current or past, and if the company has any listed certificate in circulation, it is also considered an investment company. In addition, an entity that invests, reinvests, owns or trades securities and has investment securities worth more than 40 percent of the value of its assets (excluding government securities and cash) also falls under this definition .

Further consideration of this regulatory act allows us to classify investment companies into the following main categories: investment companies that raise funds by issuing nominal certificates (face-amount certificate company); unit investment trusts formed on the basis of contracts of trust management, guardianship, agency or other similar contract (unit investment trust); and management companies, which cover any other companies that do not fall into the previous two categories (management companies).

This system of classification of investment companies provides a clear differentiation and regulation of different types of activities related to joint investment in the United States of America. The high thoroughness of this legal regulation allows for the creation of an effective mechanism of supervision and control over investment companies, contributing to stability and trust in the financial market.

The above text examines the peculiarities of the operation of joint investment institutions (CIIs) in the United States of America and Great Britain with an emphasis on their legal regulation. In the US, important participants in the joint investment system are investment advisers, who have an obligation to act in the interests of investors and to observe a fiduciary duty. This duty includes care, loyalty, good faith, confidentiality, prudence and disclosure. Violation of these duties may result in personal liability of the investment advisor for wrongfully obtained profits.

In the UK, similar to the US, collective investment schemes are defined as Collective Investment Schemes (CIS). CIS relationships in the UK are mainly regulated by the Financial Services and Markets Act 2000. According to this Act, a CIS is any arrangement which involves the provision of an opportunity for persons to obtain a

profit or income as a result of the management or disposal of property. The arrangements should exclude day-to-day control over the management of the property, but may combine the contributions of the participants and the profits or income from which the payments are made, or the management of the property may be carried out by or on behalf of the operator of the institute.

Both laws recognize the importance of protecting the interests of investors and establish requirements for the activities of collective investment institutions and investment advisers.

In well-known publications dealing with collective investment schemes (CIS) in Great Britain, their classification system is used, which includes regulated schemes, recognized schemes and unregulated schemes [6]. Alternatively, there is another approach to CIS classification, which defines five types of collective investment, including unit trusts, open-ended investment companies, investment trusts, exchange traded funds -traded funds) and unregulated collective investment schemes (unregulated collective investment schemes) [7].

In the context of financial regulation and supervision, the Financial Conduct Authority (FCA) states that a regulated investment scheme is a collective investment scheme of mutual investment, which is defined in accordance with section 235 of the Financial Services Act and markets of 2000 (Financial Services and Markets Act 2000). This category includes both schemes that are authorized by the FCA in the UK (regulated schemes) and schemes that are recognized by authoritative bodies outside the UK (recognised schemes) [8; 9]. It should be noted that these schemes are available to UK investors under current legislation [8]. Regulated schemes and recognized schemes of investment are subject to strict requirements that regulate the conduct of their activities in accordance with UK legislation. For example, CIS activities must comply not only with general legislation, but also with specific rules laid down by the FCA.

There are two types of collective investment schemes authorized by the FCA. The first type is authorized unit trusts (authorized unit trusts, abbreviated as AUTs), where property is transferred to trust ownership by trustees (investors). The second type is

investment companies with variable capital (ICVC for short), which are a form of open investment company in Great Britain [6].

In the context of financial regulation and supervision, the Financial Regulation and Supervision Authority (FCA) provides detailed definitions and criteria for classifying collective investment schemes (CIS) as recognized schemes. These CISs are subject to FCA recognition and must be established outside the UK and recognized by the FCA. This defined category of CIS includes schemes established in countries that are part of the European Economic Area, as well as in certain other defined countries. Additionally, certain overseas schemes may also be recognized by the FCA [10].

A special type of CIS is unregulated schemes, which attract the attention of the FCA. If a CIS is not authorized and recognized by a supervisory authority, it is classified as an unregulated collective investment scheme (UCIS). Unlike regulated schemes, which are subject to the requirements of UK law and regulation regarding their investment powers and their management, UCISs are not subject to such requirements [11].

Among the key features of UCIS that distinguish them from other forms of collective investment is the ability of UCIS to invest in higher risk assets and use investment strategies with a significant level of risk. For example, UCIS can invest in film production projects, forest plantations, foreign property acquisitions and other similar assets. In addition, UCIS cannot be openly available to the general public of investors, but only limited to specifically defined categories of investors, such as individuals with large capitals, experienced investors, or individuals with relevant experience and qualifications [11].

Analysis of the legal regulation of joint investment in the countries of the European Union (hereinafter referred to as the EU) reveals features determined by the double level of its application. The first level is supranational, which includes norms and provisions established in EU legal acts, in particular, directives, and the second level is the national level.

It is important to note that in addition to the concept of "Collective Investment Schemes" (CIS) - collective investment schemes, which is actively used in legal

scientific works, there is also another specific terminology at the legislative level of the EU. In particular, the term "undertakings for collective investment in transferable securities - UCITS" is used in EU countries. This term defines a separate category of collective investment schemes that operates within the EU. According to research, UCITS represent about 75% of all collective investments made by small investors in Europe.

Supranational legal regulation of UCITS is carried out through Directive 2009/65/EC of the European Parliament and of the Council of July 13, 2009 "On the harmonization of laws, regulations and administrative provisions relating to institutions for collective investment in transferable securities". UCITS are investment mechanisms that pool investors' capital and direct it to an investment portfolio of financial instruments such as shares, bonds and other securities.

Alternative investment fund managers (AIFM) are another important group of collective investment schemes in EU countries. Supranational legal regulation of AIFM activities is regulated by Directive 2011/61/EU of the European Parliament and the Council of June 8, 2011 "On managers of alternative investment funds and amendments to Directives 2003/41/EC and 2009/65/EC and Regulation (EU) No. 1060 /2009 and (EU) No. 1095/2010". This directive applies to managers of alternative investment schemes designed for professional investors, which include hedge funds, private equity funds, real estate funds and other types of institutional funds.

Within the framework of the legal system of the countries of the European Union, there is a concept of a retail investor (retail investor), who is an individual investor, does not have the status of a professional participant in the investment market, and is engaged in the purchase and sale of securities or investment products, such as mutual funds and funds traded on stock exchange [16]. We transfer this concept to the context of Ukrainian legal legislation and scientific doctrine on investment entities, and we have the opportunity to determine that it is retail (individual) investors who constitute the main audience of investment schemes in the modern Ukrainian context. It is worth noting that these same retail (individual) investors are the most vulnerable group in the

world of investments, because they do not have professional experience and the necessary knowledge in the field of investment operations.

This fact emphasizes the importance of introducing special legal regulation at the level of the European Union to ensure maximum protection of retail investors and minimize their risks when participating in investment schemes. In this context, Regulation No. 1286/2014 of the European Parliament and of the Council of 26 November 2014 on key information documents for bundled retail and insurance investment products (PRIIPs) states that the lack of transparency in the information documents relating to each specific investment scheme has serious implications for retail investors. Thus, increasing the degree of transparency of key information documents for package retail and insurance investment products offered to retail investors becomes an important step in ensuring investor protection and restructuring the trust of retail investors in the financial market [17].

In accordance with Regulation No. 1286/2014, the term "key information document" (or "key information document") means an information document related to investment products. This document must include all important characteristics of such a product and must be developed in accordance with the norms and requirements of the specified Regulation, as well as published on the website of the manufacturer of the investment product. The content of the Regulation indicates that the key information document is a prerequisite for concluding an investment contract. It should be accurate, objective, clear and not mislead the investor. The key information document must contain basic information and comply with the terms and conditions of the packaged retail and insurance investment products, reflecting the content of the offer and contractual obligations related to these products.

It is important to note that the key information document must be separate from the marketing materials and must not contain references to them, except for the possible provision of links to other materials and documents, such as the prospectus. The document must also include materials related to each basic option of investment products and, in the case of voluminous content, at least a general description and references to additional pre-contractual information documents that relate to investment

products. The key information document should contain only the key information necessary for retail investors and the presentation style should be clear, concise and understandable.

Among other requirements specified in the Regulation, there are also technical requirements for the execution of a key information document. In particular, this document must be drawn up in the form of a short document, written concisely and placed on A4 paper, not exceeding 3 sheets. The font used in the document should be easy to read.

The academic analysis points to the fact that the method of explaining investment schemes for individual investors, which is considered in this context, is an integral part of the mechanism for protecting the interests of these investors and is aimed at reducing the risks associated with their participation in the relevant investment schemes. This goal is achieved thanks to a careful and reasonable approach to the transfer of financial resources for further investment.

An analysis of the experience of the legal regulation of the activities of investment funds (CI) in the United States, Great Britain and the countries of the European Union shows that special attention is paid to ensuring the safety of the placement of assets of ordinary participants of the CI in these jurisdictions. Considering this feature in the context of Ukraine, it is important to note that this approach may have a high potential for actualization in our country and should be taken into account during the process of reforming legal relations in this area.

CHAPTER 3
IMPROVEMENT OF RISK MANAGEMENT PROFITABILITY OF INVESTOR

3.1. Modeling and forecasting of investor profitability

Today, the securities market is developing in Ukraine. New securities are put up for auction. The volume of transactions with securities is growing every year. In the field of trade, it is difficult for an investor to form an optimal investment portfolio taking into account risk and profitability.

Based on the study of works [42;47;50;51] established that the solution of such a task is possible by the formation of an objective function that determines the preferences of the investor. In order to get an idea of the type of objective function, it is advisable to introduce a number of restrictions that allow simulating the activity of the investor [42;47;50;51]. It is appropriate to introduce such a restriction on the profitability of securities. The profitability of securities depends on external factors. Various macroeconomic and financial indicators are primarily considered as factors capable of influencing the fluctuations of quotations on the stock market [40;42;50;51].

Determining the only factor in the formation of the profitability of stock assets led to the need to find an indicator capable of being an indicator of the profitability of the market portfolio. The direct use of the profitability indicator of the market portfolio turned out to be difficult due to its extremely wide composition, therefore, when describing the characteristics of the market portfolio, a narrower option is used, which includes the stock market or its individual segments [40;42;50;51].

Thus, the function of the market investment portfolio will be performed by the stock market as an indicative portfolio, and the stock market index was adopted as the appropriate indicator of the value of this investment portfolio.

The share market index can include all components of the market investment portfolio. Its close connection with the dynamics of the overall investment market

allows it to act as an acceptable approximation to it.

According to the works [40;42;50;51] stock index, being a "good" approximation of the market portfolio, can play the role of the only factor that determines the amount of systematic market risk and, accordingly, the level of profitability of each asset or instrument.

In our opinion, a stock index, for example, the MICEX index, should be taken as an indicator of the dynamics of the market investment portfolio. Then the relationship between the yield of a security and the yield of the stock market can be characterized by the following linear regression model:

$$m_i = a_i + \beta_i m_i + \varepsilon_i, \quad (3.1)$$

where m_i – security yield for a certain period (– dependent variable);i

m_r - return on the market index for the same period (- independent explanatory variable);r

a_i – displacement coefficient;

β_i – slope coefficient (– coefficient);β

ε_i – random error ($\varepsilon_i = m_i - (a_i + \beta_i m_i)$.

Based on the study of works [39;43;47] determined that the profitability of the investor's stock assets should be calculated through the closing pFigs according to a simple formula without taking into account dividend payments:

$$m_t = \frac{P_t - P_{t-1}}{P_{t-1}} * 100, \quad (3.2)$$

where is the closing cost of the current period and the previous period.$P_t P_{t-1}$

In our opinion, another factor in the profitability of stock assets is that when targeting an investor with a low tolerance for risk, one should choose stocks with the

greatest stability of pFig indicators.

To optimize stock assets, the following criterion should be selected as an objective function:

$$F(x) = \sum_{i}^{n} b_i x_i \rightarrow min, \quad (3.3)$$

where is the vector-string of coefficients in the objective function, which is determined from the relation:$B = (b_1, b_2, ...b_n) B = RA * R$;

RA – Vector row of securities fluctuation ranks;

R – Correlation matrix built on the residuals of the regression of the yield of stock instruments on the market index;

$x = (x_1, x_2, ..., x_n)$- Vector string of unknowns.

Based on the fact that when solving the problem of optimization of fund assets, the specific weight of investments in one or another financial instrument should be determined, then the sum of all specific weights of investments in homogeneous investment portfolios should be equal to 1:

$$\sum_{i=1}^{n} x_i = 1. \quad (3.4)$$

We note that the target function of the optimization of stock assets proposed by the author of this work does not take into account "short sale" transactions.

In the work [34] stated that "short sale" transactions should be understood as the sale by a stock market participant of securities that he does not have and that he receives at the time of their delivery. Operations of the "short sale" type are used:

- to profit from the expected decline in securities pFigs;
- to preserve profit from a "long" position of securities pFigs.

That is, "short sale" operations do not involve borrowing securities. To date, this

is due to the practice of the stock market in the United States of America and Europe.

However, on the stock market in Ukraine, "short sale" operations have not become widespread.

Based on the above, the author of this work believes that all specific weights of investments in one or another financial instrument should be integral:

$$x_i \geq 0. \quad (3.5)$$

On the basis of the above, the author of this work formulated the general task of optimizing fund assets taking into account the interests of the investor with linear constraints and a linear objective function.

It is quite obvious that the solution to the general task of optimizing fund assets, taking into account the interests of the investor, is a single structure of the investment portfolio, which is optimal.

The practice of the stock market shows that for different types of investors the risk they are willing to take is different.

In my opinion, the optimal structure of the investment portfolio depends on the investor's risk appetite. This limitation should be considered in the model of optimization of the investor's stock assets by introducing the indicator.IN

The indicator characterizes the investor's risk appetite. Thus, the mandatory restriction when optimizing the structure of the investment portfolio will look like this IN:

$$\sigma_p = \sqrt{X^T * COV * X} \leq IN, \quad (3.6)$$

where - Covariance matrix built on the residuals of the regression of the profitability of stock instruments on the market index;COV

$X^T = (x_1, x_2, ..., x_n)$;

IN-given value of portfolio risk. The smaller it is, the less risk-averse the investor

is.IN

Thus, based on the above, the author of this work formulated an investment portfolio taking into account the individual preferences of the investor (Table 3.1).

The author of this work believes that an investor can determine the profitability of an investment portfolio using the indicator as follows:ID

$$m_p = \sum_{i=1}^{n} x_i\left(a_i + \beta_i m_i\right) \geq ID. \quad (3.7)$$

Table 3.1

The structure of the investment portfolio

Name	Fatex_j
Enterprise No. 1	0.693
Enterprise No. 2	0.016
Enterprise No. 3	
Enterprise No. 4	
Enterprise No. 5	
Enterprise No. 6	
Enterprise No. 7	
Enterprise No. 8	0.118
Enterprise No. 9	
Enterprise No. 10	
Enterprise No. 11	
Enterprise No. 12	0.173
Enterprise No. 13	
Enterprise No. 14	
Risk	4

Source: developed by the author

It should be noted that the advantage of the methodological approach to the optimization of the investor's stock assets developed by the author of this work is that it allows determining the optimal ratio between profitability and risk. In our opinion, this is especially important in the context of a developing securities market.

In the table 3.2 presents the results of optimizing the investor's stock assets,

taking into account the determination of the ratio between risk and profitability.

For greater sustainable and dynamic development, that is. to optimize the risk of deviations from development trends while ensuring profitability not lower than an acceptable level, the author of this work suggested modifying the investment portfolio.

Based on the above, the essence of the proposed modification of the investment portfolio is to determine the optimal ratio between profitability and risk, taking into account the attitude of the investor to risk, as well as volatility using the objective function and all restrictions.

Table 3.2

The structure of the investment portfolio

Name	Fatex_j
Enterprise No. 1	0.459
Enterprise No. 2	
Enterprise No. 3	
Enterprise No. 4	
Enterprise No. 5	
Enterprise No. 6	
Enterprise No. 7	
Enterprise No. 8	0.541
Enterprise No. 9	
Enterprise No. 10	
Enterprise No. 11	
Enterprise No. 12	
Enterprise No. 13	
Enterprise No. 14	
Risk	7.1
Profitability	7

Source: developed by the author

In the table 3.3 presents the structure of an investment portfolio with an optimal ratio between profitability and risk, taking into account the investor's risk appetite, as well as volatility using the objective function and all restrictions.

The practice of the stock market shows that some restrictions are imposed on the investment portfolio that do not follow from the market essence of financial

instruments. First of all, these are restrictions that determine the number of financial instruments included in the investment portfolio and the specific weight of financial instruments in the investment portfolio.

In our opinion, the expediency of introducing certain restrictions on the investment portfolio is determined by investment practice.

Table 3.3

The structure of the investment portfolio

Name	Fatex_j
Enterprise No. 1	0.660
Enterprise No. 2	0.019
Enterprise No. 3	
Enterprise No. 4	
Enterprise No. 5	
Enterprise No. 6	0.004
Enterprise No. 7	
Enterprise No. 8	0.157
Enterprise No. 9	
Enterprise No. 10	
Enterprise No. 11	
Enterprise No. 12	0.161
Enterprise No. 13	
Enterprise No. 14	
Risk	4
Profitability	6

Source: developed by the author

Based on the fact that it is of particular importance for investors to ensure the timely fulfillment of obligations, the author of this paper proposes to take into account the urgency of financial instruments included in the investment portfolio, as well as the level of their liquidity, when optimizing fund assets.

Based on the above, the author of this paper proposes to introduce restrictions on the maximum ratio of instant liquidity and the maximum urgency of the investment portfolio into the investment portfolio.

In works [3;23;33;37] stated that a minimum lot of securities is established in the

organized securities market.

The purchase or sale of a package of non-multiple lots of foam papers is associated with high costs or is impossible at all. Therefore, if the task is solved on a large number of financial instruments, it is necessary to take into account the size of lots of financial instruments that are bought or sold.

Based on the study of works [43;47;50;51] the author of this work proposes to introduce the following notations for optimizing the investor's investment portfolio:

d_1- the minimum permissible number of homogeneous investment portfolios in the general investment portfolio;$d_1 \in [1; n]$

d_2- The maximum permissible number of homogeneous investment portfolios in the general investment portfolio, provided.$d_2 \in [1; n] d_2 \geq d_1$

The author of this work believes that the limit on the minimum possible number of financial instruments in the investment portfolio should be calculated as follows:

$$\sum_{i=1}^{n} x_i \geq d_1. \tag{3.8}$$

The introduction of a limit on the maximum possible number of homogeneous investment portfolios in the general investment portfolio requires specification.

It is quite obvious that the higher the level of diversification of the investment portfolio, the lower the overall risk of the investment portfolio:

$$\sum_{i=1}^{n} x_i \leq d_2. \tag{3.9}$$

But at the same time, an increase in the number of homogeneous investment portfolios leads to an increase in the maintenance costs of the general investment portfolio.

The function describing the dependence of the total risk of the investment

portfolio on the number of instruments is decreasing and concave down. Thus, adding to the total investment portfolio each subsequent homogeneous investment portfolio brings less effect.

It is substantiated that when more than 15 financial instruments are included in the investment portfolio, the effect of further increasing their number will not be significant [44].

In the opinion of the author of this work, restrictions on the specific weights of homogeneous financial instruments included in the general investment portfolio are also due to the actions of regulatory bodies, which make it necessary to adhere to a certain structure of the investment portfolio.

Let's enter the notation:

u_j^1 – The minimum share of the -th security in the general investment portfolio;j

$u_j^1 \epsilon [0,\ 1]$;

u_j^2– the maximum th security in the general investment portfolio;j

$u_j^2 \epsilon [0,\ 1]$.

In our opinion, it is advisable to define the limits for optimizing the investment portfolio as follows:

$$x_j = u_j^1 \qquad\qquad x_j = u_j^2. \tag{3.10}$$

Under conditions for all$u_j^1 \le u_j^2 j$.

In the table 3.4 presents the results of optimization of the investment portfolio taking into account the above limitations.

The author of this paper believes that the limitation on the urgency and liquidity of the investment portfolio is applied in the event of the investor's obligations to withdraw funds from the investment portfolio.

It is quite obvious that in the practice of the stock market, the investor's assets

must be tied to his liabilities. This also applies to their liquidity and urgency.

In works [40;42;50;51] it is stated that the investor also places loan funds, then the term of their placement cannot exceed the term of their loan.

For example, if the investor's task is to place a certain part of funds for one month, and the remaining part for three months, then the urgency of the general investment portfolio can be determined.

The author of this work believes that it is appropriate to introduce a limit on the terms of investment of funds from the linking of the urgency of the assets to the liabilities of the investor.

Table 3.4

The structure of the investment portfolio

Name	Fatex_j
Enterprise No. 1	0.451
Enterprise No. 2	
Enterprise No. 3	
Enterprise No. 4	0.072
Enterprise No. 5	
Enterprise No. 6	0.1
Enterprise No. 7	
Enterprise No. 8	0.3
Enterprise No. 9	0.22
Enterprise No. 10	
Enterprise No. 11	
Enterprise No. 12	0.145
Enterprise No. 13	
Enterprise No. 14	
Risk	4
Profitability	<5.48

Source: developed by the author

Based on the study of works [43;47;50;51] the author of this work proposes to introduce the following notations for optimizing the investor's investment portfolio:

λ_i - The term for which the group's funds will be mixed;i

λ- Urgency of the general investment portfolio.

The author of this work believes that the urgency of the general investment

portfolio should be defined as follows:

$$\lambda = \sum_{i=1}^{n} (\lambda_i \sum_{j=1}^{m} x_{ij}). \quad (3.11)$$

Note that if the investor has a limit level of urgency of the investment portfolio, then the limitation in the formation of the optimal investment portfolio taking into account the interests of the investor is:λ^*

$$\sum_{i=1}^{n} (\lambda_i \sum_{j=1}^{m} x_{ij}) \leq \lambda^*. \quad (3.12)$$

According to this approach, it is possible to calculate the limit of the investment portfolio based on the coefficient of instantaneous liquidity.

In works [34;38;41] it is stated that the coefficient of instant liquidity reflects the amount of losses that an investor can suffer in case of instant realization of the investment portfolio.

It should be noted that the coefficient of instant liquidity does not characterize losses associated with a decrease in the market value of financial instruments. The coefficient of instant liquidity takes into account the losses incurred due to the urgent realization of financial instruments.

On the basis of the above, the author of this work proposes to introduce the limit value of the instantaneous liquidity ratio and define the following limitations:L^*

$$\sum_{j=1}^{m} (L_j \sum_{i=1}^{n} x_{ij}) \leq L^*. \quad (3.13)$$

The author of this paper believes that the proposed model for optimizing the investor's stock assets can be subject to a minimum number of homogeneous stock

assets in the general investment portfolio.

In our opinion, when solving this task of optimizing the investment portfolio, this limitation can be fulfilled only formally. Thus, the specific weight of any homogeneous investment portfolio can be so low that they can be neglected.

For example, in the overall investment portfolio, the specific weight of any homogeneous investment portfolio may be less than 1%. Yes, the restriction on the minimum number of homogeneous investment portfolios will be formally fulfilled.

However, if the specific weight of the stock asset in the overall structure of the investment portfolio is low, then the investor will not introduce a new type of financial assets into the investment portfolio, monitor its reliability and have transaction costs.

In this case, it is appropriate to determine the minimum step of changing the specific weight of investing a homogeneous investment portfolio.

The practice of the stock market shows that the limitation of the investor's funds creates a problem related to the availability of minimum lots for the purchase of financial instruments.

Based on the study of works [43;47;50;51] the author of this paper determined that the size of the minimum lots of different financial instruments is not the same.

If, according to the solution to the problem of optimizing the investment portfolio, the investor must send to the purchase of a financial instrument an amount that will not be sufficient for the purchase of at least one minimum lot, then it is impossible to include this financial instrument in the investment portfolio.j

In our opinion, it is possible to determine the optimal structure of the investment portfolio, taking into account the funds at the disposal of the investor -D:

$$\sum_{i=1}^{n} c_i x_i \leq D. \qquad (3.14)$$

where is the value of the security.c_i

Thus, based on the above, it is appropriate to evaluate the effectiveness of the formed investment portfolios according to the investor's interest in profitability and risk.

3.2. Formation of the optimal investment portfolio according to the criteria of "risk" and "profitability"

In our opinion, to evaluate the effectiveness of the proposed methodical approach to modeling and forecasting the profitability of shares, it is advisable to use the approach presented in the works [14;17;48;50;51].

In works [19;24;26] determined that the task of evaluating the efficiency of the investment portfolio can be solved on a time interval. Note that traditionally, the profitability of investment portfolios is calculated for periods within a time interval. For example, an investor can determine monthly or quarterly returns on investment portfolios.

Investment practice shows that the time interval should not be too short. This will help smooth out the impact of individual events or periodic patterns on the investment portfolio. For example, one of such periodic patterns is the seasonality factor [14;17;48;50;51].

Based on the study of works [19;23;29] established that the next task in evaluating the efficiency of an investment portfolio is to determine its average profitability.

If during the analyzed period the investor did not make additional contributions or withdrawals of funds, then the profitability of the formed investment portfolio is determined as the difference between its final and initial value, divided by the initial [14;17;48;50;51].

However, if during the analyzed period the investor made additional contributions or withdrawals, then the average periodic return of the investment portfolio can be calculated in various ways, not so trivial [14;17;48;50;51]. This involves determining the internal rate of return of the investment portfolio and its time-weighted return.

On the basis of the above, on the basis of studying the works [25;29;31;41] the author of this paper proposes to consider the first method of evaluating the efficiency of the investment portfolio. This method involves comparing the profitability of the

formed investment portfolio with the profitability of alternatives.

In the opinion of the author of this work, it is advisable to choose the following as alternative investment portfolios:

– The first investment portfolio consists of assets. Assets mean the shares themselves, which are in the formed, but defined with equal weights;

– The second investment portfolio is focused on the optimal specific weights of assets, selected based on the criterion of risk minimization with acceptable profitability.

Based on the above, table. 3.5 presents the different structure of investment portfolios.

Table 3.5

Structure of investment portfolios

Name	Share of assets		
	The portfolio formed according to the proposed methodical approach	A portfolio formed from the same shares as the one under consideration, but taken with equal weights	A portfolio formed on the basis of the criterion of risk minimization at a given allowable return
Enterprise No. 1	0.273	0.143	0.140
Enterprise No. 2	0.050	0.143	0.047
Enterprise No. 3	0.018	0.143	0.053
Enterprise No. 4	0.016	0.143	0.092
Enterprise No. 5			
Enterprise No. 6	0.304	0.143	0.304
Enterprise No. 7			
Enterprise No. 8	0.213	0.143	0.171
Enterprise No. 9			
Enterprise No. 10			
Enterprise No. 11			
Enterprise No. 12	0.125	0.143	0.089
Enterprise No. 13			0.037
Enterprise No. 14			0.068
Risk	5,000	5,030	4,636
Profitability	7.9	7.5	7.9

Source: developed by the author

As can be seen from the table. 3.5, the investment portfolio formed according to

the proposed methodical approach shows a yield no lower than that of two alternative investment portfolios.

The author of this work notes that an analysis of the monthly profitability of shares was performed to evaluate the effectiveness of the developed investment portfolio.

Evaluating the efficiency of the portfolios, the author of this paper assumed that the investor did not make additional contributions or withdrawals of funds during the entire analyzed period.

It should be noted that the investment portfolio formed according to the proposed methodical approach showed an average profitability for the analyzed period higher than that of alternative investment portfolios (Table 3.6).

Table 3.6

The results of the assessment of the profitability of the investment portfolio

Characteristics of the portfolio	The portfolio formed according to the proposed methodical approach	A portfolio formed from the same shares as the one under consideration, but taken with equal weights	A portfolio formed on the basis of the criterion of risk minimization at a given allowable return
Portfolio profitability for the period	69,370	41,035	60,869
Average portfolio return	5,984	3,675	5,287

Source: developed by the author

In the opinion of the author of this work, after calculating the periodic profitability of the investment portfolio for a certain time interval, it is advisable to calculate the level of its riskiness for a full assessment of its effectiveness.

Based on the study of works [30;31;34;41] the author of this work determined that there are two types of investment portfolio risk:

– market risk of the investment portfolio It is calculated using the "beta" coefficient. Note that in the practice of the stock market, the market risk of an investment portfolio is still called systematic;

– the total risk of the investment portfolio. It is determined by the standard

deviation.

In works [30;31;34;41] it is noted that the assessment of the efficiency of the investment portfolio is usually based on the calculation of either market risk or general risk.

In our opinion, it is expedient to evaluate the efficiency of the investment portfolio by the total risk based on the standard deviation.

According to the works [14;17;48;50;51] the standard deviation of the investment portfolio, which determines its total risk for the analyzed time interval, must be compared with the standard deviations of alternative investment portfolios.

In the table 3.7 shows the results of risk assessment of the developed investment portfolio with alternative investment portfolios.

Table 3.7

The results of the risk assessment of the investment portfolio

Characteristics of the investment portfolio	The portfolio formed according to the proposed methodical approach	An investment portfolio formed from the same shares, but taken with equal weights	An investment portfolio formed on the basis of the criterion "minimization of risk at a given allowable return"
Standard deviation of the investment portfolio	5,702	6,343	5,763

Source: developed by the author

As can be seen from the table. 3.7, the overall risk of the investment portfolio formed according to the proposed methodical approach is lower than the risk of alternative ones.

In works [1;5;7;8;15;43] the process of evaluating the efficiency of the investment portfolio is based on the determination of its excessive profitability. In this case, the standard deviation of the excess return of an investment portfolio is used to estimate its overall risk.

The author of this paper considers it necessary to accept the risk-free return of the

investment portfolio equal to 1%. per month

Based on the above, the efficiency of investment portfolios was evaluated based on the average excess return of the investment portfolio and its standard deviation.

3.3. Evaluation of the efficiency of the investment portfolio

During the analyzed period, the average excess return of the market investment portfolio or the MICEX index amounted to 4.744%. At the same time, the standard deviation of the excess return of the market investment portfolio was 6.605%. In the table 3.8 shows the results of evaluating the investment portfolio based on its excessive profitability.

Table 3.8

Results of portfolio performance evaluation based on excess returns

Characteristics of the investment portfolio	The portfolio formed according to the proposed methodical approach	An investment portfolio formed from the same shares, but taken with equal weights	An investment portfolio formed on the basis of the criterion "minimization of risk at a given allowable return"
Average excess return of the investment portfolio	5,984	3,675	5,287
Standard deviation of the excess return of the investment portfolio	5,702	6,343	5,763

Source: developed by the author

As can be seen from the table. 3.8, the average excess yield of the investment portfolio formed according to the proposed methodical approach is greater than the yield of both alternative investment portfolios and the market one. In this case, we are talking about the MICEX index.

Note that the risk of an investment portfolio formed according to the proposed methodical approach, determined by the standard deviation of excessive profitability, is less than the risk of alternative and market investment portfolios.

Based on the analysis of economic literature [30;31;34;41] the author of this work determined the need to calculate the Capital Assets Pricing Model (CAPM). This is necessary for a full assessment of the efficiency of the formed investment portfolio.

The Capital Assets Pricing Model (CAPM) will allow you to determine how successfully an investment portfolio was formed in relation to similar and conditions of the securities market [14;17;48;50;51].

In works [1;5;7;8;15;43] stated that the efficiency of the investment portfolio is traditionally evaluated on the basis of the Sharpe ratio or the "yield-spread" ratio:

$$RVAR_p = \frac{AR_p - AR_j}{\sigma_p}. \quad (3.15)$$

where AR_p – Average risk-free return over a temporary period.t

In the table 3.9 presents the results of evaluating the efficiency of the investment portfolio taking into account the Sharpe ratio.

As can be seen from the table. 3.9 the Sharpe ratio for the investment portfolio formed according to the proposed methodical approach is higher compared to similar indicators for alternative investment portfolios. According to the author of this paper, this indicates that the efficiency of the formed investment portfolio is higher than that of alternative investment portfolios.

Table 3.9

The results of evaluating the efficiency of the investment portfolio based on the Sharpe ratio

Characteristics of the investment portfolio	The portfolio formed according to the proposed methodical approach	An investment portfolio formed from the same shares, but taken with equal weights	An investment portfolio formed on the basis of the criterion "minimization of risk at a given allowable return"
Sharpe coefficient	0.874	0.422	0.744

Source: developed by the author

Based on the study of economic literature [30;31;34;41] the author of this paper considers it expedient to calculate the posteriority of the investment portfolio using the "beta" coefficient.

For this purpose, the profitability of the formed investment portfolio was compared with the profitability of similar investment portfolios for a certain time interval. In our opinion, the MICEX index can be taken as an example.

It is quite obvious that the MICEX index cannot be considered a characteristic of a market investment portfolio, but such a substitution is appropriate. The author of this work emphasizes that the market investment portfolio itself is a conditional concept. In fact, it is impossible to calculate the profitability of the stock market.

In works [30;31;34;41] to evaluate the efficiency of the investment portfolio, the Treynor coefficient or the "return-volatility" coefficient is considered.

The Treynor coefficient is calculated as the ratio of the difference between the average return of the investment portfolio and its risk-free return to the beta coefficient [14;17;48;50;51]:

$$RVOL_p = \frac{AR_p - AR_j}{\beta_p}. \quad (3.16)$$

Based on the above, the author of this work calculated the Treynor coefficient for the formed and alternative investment portfolios.

In the table 3.10 presents the results of evaluating the efficiency of investment

portfolios taking into account the Treynor coefficient.

Table 3.10

The results of evaluating the efficiency of the investment portfolio based on the Treynor ratio

Characteristics of the investment portfolio	The portfolio formed according to the proposed methodical approach	An investment portfolio formed from the same shares, but taken with equal weights	An investment portfolio formed on the basis of the criterion "minimization of risk at a given allowable return"
Treynor coefficient	5,843	3,035	4,615

Source: developed by the author

As can be seen from the table. 3.10 Treynor's coefficient for the investment portfolio formed according to the proposed methodical approach is a large number of similar indicators for alternative investment portfolios. According to the author of this paper, this indicates that the efficiency of the formed investment portfolio is higher than that of alternative investment portfolios.

Thus, the calculations performed to evaluate the effectiveness of the formed investment portfolio according to the criteria of "profitability" and "risk" show its practical value and the possibility of using investors in modern business conditions.

The practice of the stock market shows that some restrictions are imposed on the investment portfolio that do not follow from the market essence of financial instruments. First of all, these are restrictions that determine the number of financial instruments included in the investment portfolio and the specific weight of financial instruments in the investment portfolio.

The higher the level of diversification of the investment portfolio, the lower the overall risk of the investment portfolio.

In the work, a methodical approach to the formation of an investment portfolio based on the "risk-return" criteria was formed. To evaluate its effectiveness, alternative investment portfolios have been determined.

It has been established that it is advisable to choose the following as alternative

investment portfolios:

– The first investment portfolio consists of assets. Assets mean the shares themselves, which are in the formed, but defined with equal weights;

– The second investment portfolio is focused on the optimal specific weights of assets, selected based on the criterion of risk minimization with acceptable profitability.

The investment portfolio formed according to the proposed methodological approach showed an average return for the analyzed period higher than that of alternative investment portfolios.

It was determined that there are two types of investment portfolio risk:

– market risk of the investment portfolio It is calculated using the "beta" coefficient. Note that in the practice of the stock market, the market risk of an investment portfolio is still called systematic;

– the total risk of the investment portfolio. It is determined by the standard deviation.

The standard deviation of the investment portfolio, which determines its total risk for the analyzed time interval, must be compared with the standard deviations of alternative investment portfolios.

The average excess return of the market investment portfolio or MICEX index was 4.744%. At the same time, the standard deviation of the excess return of the market investment portfolio was 6.605%.

The average excess yield of the investment portfolio formed according to the proposed methodical approach is greater than the yield of both alternative investment portfolios and the market one. In this case, we are talking about the MICEX index.

The Sharpe coefficient for the investment portfolio formed according to the proposed methodical approach is higher compared to similar indicators for alternative investment portfolios. According to the author of this paper, this indicates that the efficiency of the formed investment portfolio is higher than that of alternative investment portfolios.

The Treynor coefficient for the investment portfolio formed according to the

proposed methodical approach is greater than similar indicators for alternative investment portfolios. According to the author of this paper, this indicates that the efficiency of the formed investment portfolio is higher than that of alternative investment portfolios.

Thus, the calculations performed to evaluate the effectiveness of the formed investment portfolio according to the criteria of "profitability" and "risk" show its practical value and the possibility of using investors in modern business conditions.

CONCLUSIONS

The work solves an important scientific and practical task dedicated to the development of theoretical and methodological approaches to risk management and investor profitability; development of practical recommendations for their improvement. The main conclusions and recommendations are as follows:

1. It is substantiated that the following are distinguished according to priority investment goals: growth investment portfolio; income investment portfolio; conservative investment portfolio; investment portfolio of highly liquid assets.

2. The growth investment portfolio is focused on the growth of the market value of securities. It is divided into the following types: simple growth investment portfolio and high growth investment portfolio.

- A simple growth investment portfolio is created from securities whose market value increases. The goal of a simple growth investment portfolio is to increase the profitability of the investment portfolio.
- The high-growth investment portfolio is aimed at maximum investment growth. The components of the investment portfolio are the securities of fast-growing companies. In a high-growth investment portfolio, investments are exposed to significant risk and also allow for high income.
- An investment portfolio of moderate growth is considered the least risky. It consists of securities of well-known companies. They are characterized by low, but stable rates of market value growth. The composition of the moderate growth investment portfolio is stable over a long period of time.An investment portfolio of moderate growth is aimed at preserving investment resources.
- An investment portfolio of medium growth combines the characteristics of investment portfolios of moderate and high growth. It guarantees an averagegrowth of investment resources and moderate risk. Today, the average growth investment portfolio is the most common.

3. An income investment portfolio is based on receiving income through

dividends and interest. The income investment portfolio is formed from income shares. Their characteristic features are moderate growth in market value and high dividends.

4. The conservative investment portfolio includes companies with low growth rates of market value and income. However, a conservative investment portfolio is characterized by lower risk than a growth investment portfolio and an income investment portfolio.

5. The goal of the investment portfolio of highly liquid investment assets is to maximize liquidity. That is, it is oriented highly liquid objects. The latter must be transformed into funds quickly and without significant loss of market value.

It was determined that there are currently three types of investors: conservative, moderate and aggressive.

Conservative investors are interested in receiving stable income over a long period of time. They choose to receive income continuously through dividends and interest. Conservative investors limit their risk to a minimum.

Moderate investors do not limit the investment period. Components of income are dividends, interest, difference in exchange rates of securities. Moderate investors have some risk of their own.

The goal of aggressive investors is to get the maximum exchange rate difference from the deal. Characteristic features of such a transaction are high risk and limited investment period.

It was determined that risk management methods are divided into three groups: risk avoidance methods, risk application methods, methods of detection, assessment, and development of risk minimization approaches.

Risk avoidance methods.In the practice of investing, risk avoidance methods have become the most widespread. These methods are preferred by investors who do not wish to draw. If investors use subjective risk methods, they refuse to deal with unreliable partners. They prefer to work with contractors who have already confirmed their reputation. Usually, such investors do not increase the number of their partners. Investment practice shows that in this case it is impossible to fail from the adverse consequences of investing.

Risk assessment methods. These methodsassume that the investor first begins to take risks. He continues to take risks until the losses from adverse investment consequences are already irreparable. This group of risk management methods has ceased to be optimal.

Methods of identification and assessment,development of approacheson risk minimization. This method is rarely used by investors. This can be explained by the following reasons:

- opportunities for obtaining profit and excess profit, regardless of the market conditions of business. This concerns the criminal sectors of the economy and the connection with corrupt officials;
- reluctance of economic entities to introduce positive foreign experience of economic activity;
- economic activity with low culture;
- the lack of a sufficient number of positive financial results of economic activity;
- the lack of information infrastructure that would allowto discover, to evaluate,develop approacheson risk minimization.

6. The work proposes a methodical approach to optimizing the investment portfolio of the inverter according to the criteria: "yield" and "risk".

To evaluate its effectiveness, alternative investment portfolios have been determined.

It has been established that it is advisable to choose the following as alternative investment portfolios:

- The first investment portfolio consists of assets. Assets mean the shares themselves, which are in the formed, but defined with equal weights;
- The second investment portfolio is focused on the optimal specific weights of assets, selected based on the criterion of risk minimization with acceptable profitability.

7. The effectiveness of the proposed and similar investment portfolios was evaluated according to the Sharpe and Traynor criteria.

Thus, the Sharpe ratio for an investment portfolio formed according to the proposed methodical approach is higher compared to similar indicators for alternative investment portfolios. This suggests that the efficiency of the formed investment portfolio is higher than that of alternative investment portfolios.

The Treynor coefficient for an investment portfolio formed according to the proposed methodical approach is a large number of similar indicators for alternative investment portfolios. This suggests that the efficiency of the formed investment portfolio is higher than that of alternative investment portfolios.

Thus, the calculations performed to evaluate the effectiveness of the formed investment portfolio according to the criteria of "profitability" and "risk" show its practical value and the possibility of using investors in modern business conditions.

The practical significance of the obtained results is that the proposed theoretical and methodological approaches to risk management and investor profitability can be used to improve the functioning and development of mutual investment funds in Ukraine.

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Онлайн сервіс створення та перевірки кваліфікованого та удосконаленого електронного підпису

ПРОТОКОЛ
створення та перевірки кваліфікованого та удосконаленого електронного підпису

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Результат перевірки підпису: Підпис створено та перевірено успішно. Цілісність даних підтверджено

Підписувач - 1: ОРЄХОВА КАТЕРИНА ВІТАЛІЇВНА
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Країна: Україна
РНОКПП: 2980818183
Організація (установа): ФІЗИЧНА ОСОБА
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Серійний номер: 5E984D526F82F38F0400000062272F019936AB05
Тип носія особистого ключа: Незахищений
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Тип підпису: Удосконалений
Тип контейнера: Підпис та дані в одному файлі (CAdES enveloped)
Формат підпису: З повними даними ЦСК для перевірки (CAdES-X Long)
Сертифікат: Кваліфікований

Підписувач - 2: АЗАРЕНКОВА ГАЛИНА МИХАЙЛІВНА
П.І.Б.: АЗАРЕНКОВА ГАЛИНА МИХАЙЛІВНА
Країна: Україна
РНОКПП: 2571514226
Організація (установа): ФІЗИЧНА ОСОБА
Час підпису (підтверджено кваліфікованою позначкою часу для підпису від Надавача): 12:47:16 09.12.2024
Сертифікат виданий: КНЕДП АЦСК АТ КБ "ПРИВАТБАНК"
Серійний номер: 5E984D526F82F38F04000000E4DA710112DF3D05
Тип носія особистого ключа: Незахищений
Алгоритм підпису: ДСТУ 4145
Тип підпису: Удосконалений
Тип контейнера: Підпис та дані в одному файлі (CAdES enveloped)
Формат підпису: З повними даними ЦСК для перевірки (CAdES-X Long)
Сертифікат: Кваліфікований

Підписувач - 3: Омеляненко Денис Олегович
П.І.Б.: Омеляненко Денис Олегович
Країна: Україна
РНОКПП: 3634714115
Час підпису (підтверджено кваліфікованою позначкою часу для підпису від Надавача): 17:17:23 19.12.2024
Сертифікат виданий: "Дія". Кваліфікований надавач електронних довірчих послуг
Серійний номер: 382367105294AF9704000000EF5A070009B10B03
Тип носія особистого ключа: ЗНКІ криптомодуль ІІТ Гряда-301
Серійний номер носія особистого ключа: Не визначено
Алгоритм підпису: ДСТУ 4145
Тип підпису: Кваліфікований
Тип контейнера: Підпис та дані в одному файлі (CAdES enveloped)
Формат підпису: З повними даними ЦСК для перевірки (CAdES-X Long)
Сертифікат: Кваліфікований

Версія від: 2025.01.15 13:00