

**Zaika S.**

*Ph. D. in Economics, Associate Professor,  
Kharkov Petro Vasilenko State Technical University of Agriculture, Ukraine;  
e-mail: zaika.svitlana1975@gmail.com; ORCID ID: 0000-0001-8132-7643*

**Hridin O.**

*Senior Lecturer,  
Kharkov Petro Vasilenko State Technical University of Agriculture, Ukraine;  
e-mail: aleksandr.gridin2015@gmail.com; ORCID ID: 0000-0002-7236-2954*

**Sievidova I.**

*Doctor of Economics, Associate Professor,  
Kharkov Petro Vasilenko State Technical University of Agriculture, Ukraine;  
e-mail: sevidova.ia@gmail.com; ORCID ID: 0000-0003-3703-4610*

**Mandych O.**

*Doctor of Economics, Professor,  
Kharkov Petro Vasilenko State Technical University of Agriculture, Ukraine;  
e-mail: ol.mandych@gmail.com; ORCID ID: 0000-0002-4375-2208*

### **FINANCIAL RISKS OF BROKER'S ACTIVITY**

**Abstract.** Changes in the Ukrainian economy and the development of the financial market are of interest in solving the problems associated with brokerage activities. These issues are of particular relevance in connection with the increased attention of the state to investment activity and interest in the growth of financial literacy of the population. One of the important tasks in this context is the study of financial risks of professional participants in stock markets. As the dynamics of asset prices in the financial markets have a significant range of risks for both the investor and the broker. And if the investor's job is to choose the most optimal portfolio of assets and control over possible losses, then the broker assumes the risks of trading decisions of a set of clients. In addition, he should take into account the risks of liquidity and voluntariness of a set of customer positions.

Today, Ukraine has no single approach to the definition and classification of financial risks of brokerage activities, and therefore this study is intended to analyze the types of financial risks of brokerage companies in the stock market and to clarify certain concepts of types of financial risks.

The article identifies sources and causes of financial risks of brokerage companies. The interpretation of the concept of «financial risk» by domestic and foreign scientists is researched. Author's definition of financial risk for the broker is provided. The questions of classification and grouping of financial risks of brokerage companies that arise in the process of activity in the stock market, which allow reducing investor losses and increase the efficiency of management in an unstable market and increase the income of brokerage firms from the provision of services, are considered.

It is established that the most significant financial risks of brokerage activity are the risks of investor behavior, investment risks and risks of marginal lending, and the determining financial risks for a brokerage company are the risks associated with the behavior of the investor and the investment of capital in financial assets.

The study of the issues covered by this article will provide an opportunity to contribute to increasing the financial stability of brokerage companies and their investors and will contribute to the improvement of the financial system of the country.

**Keywords:** brokerage companies, financial risks, investor, broker, financial markets, brokerage activities.

**JEL Classification** G11, G23, G24, G32, O16

Formulas: 0; fig.: 0; tabl.: 2; bibl.: 26.

**Зайка С.**  
кандидат економічних наук, доцент,  
Харківський національний технічний університет сільського господарства  
імені Петра Василенка, Україна;  
e-mail: zaika.svitlana1975@gmail.com; ORCID ID: 0000-0001-8132-7643

**Грідін О.**  
старший викладач,  
Харківський національний технічний університет сільського господарства  
імені Петра Василенка, Україна;  
e-mail: aleksandr.gridin2015@gmail.com; ORCID ID: 0000-0002-7236-2954

**Сєвідова І.**  
доктор економічних наук, доцент,  
Харківський національний технічний університет сільського господарства  
імені Петра Василенка, Україна;  
e-mail: sevidova.ia@gmail.com; ORCID ID: 0000-0003-3703-4610

**Мандич О.**  
доктор економічних наук, професор,  
Харківський національний технічний університет сільського господарства  
імені Петра Василенка, Україна;  
e-mail: ol.mandych@gmail.com; ORCID ID: 0000-0002-4375-2208

## **ФІНАНСОВІ РИЗИКИ БРОКЕРСЬКОЇ ДІЯЛЬНОСТІ**

**Анотація.** Зміни в економіці України і розвиток фінансового ринку викликають зацікавленість у розв'язанні проблем, пов'язаних із брокерською діяльністю. Особливої актуальності ці питання набувають у зв'язку з підвищеною увагою держави до інвестиційної діяльності та зацікавленості у зростанні фінансової грамотності населення. У зв'язку з цим важливим є вивчення фінансових ризиків професійних учасників біржових ринків. Адже динаміка цін активів на фінансових ринках має значний спектр ризиків як для інвестора, так і для брокера. І якщо завдання інвестора полягає у виборі найбільш оптимального портфеля активів і контроль над можливими збитками, то брокер бере на себе ризики торгових рішень сукупності клієнтів. Крім того, він має враховувати ризики ліквідності та волонтильності сукупності позицій клієнтів.

На сьогодні в Україні не існує єдиного підходу щодо визначення та класифікації фінансових ризиків брокерської діяльності, а отже, наше дослідження має на меті проаналізувати види фінансових ризиків брокерських компаній на фондовому ринку та уточнити окремі поняття видів фінансових ризиків.

Визначено джерела і причини виникнення фінансових ризиків брокерських компаній. Досліджено тлумачення поняття «фінансовий ризик» вітчизняними і зарубіжними вченими. Надано авторське визначення фінансового ризику для брокера. Розглянуто питання класифікації і групування фінансових ризиків брокерських компаній, що виникають у процесі діяльності на фондовому ринку, які дозволяють знизити збитки інвестора та підвищити ефективність управління в умовах нестабільного ринку і збільшити дохід брокерських компаній від надання послуг.

Установлено, що найбільш значимими фінансовими ризиками брокерської діяльності є ризики поведінки інвестора, інвестиційні ризики і ризики маржинального кредитування, а визначальними фінансовими ризиками для брокерської компанії — ризики, пов'язані з поведінкою інвестора та з інвестуванням капіталу у фінансові активи.

Вивчення питань, яким присвячена ця стаття, надасть можливість зробити внесок у підвищення фінансової стійкості брокерських компаній та їхніх інвесторів і сприятиме оздоровленню фінансової системи країни.

**Ключові слова:** брокерські компанії, фінансові ризики, інвестор, брокер, фінансові ринки, брокерська діяльність.

Формул: 0; рис.: 0; табл.: 2; бібл.: 26.

**Заика С.**  
кандидат экономических наук, доцент,  
Харьковский национальный технический университет сельского хозяйства  
имени Петра Василенко, Украина;  
e-mail: zaika.svitlana1975@gmail.com; ORCID ID: 0000-0001-8132-7643

**Гридин А.**  
старший преподаватель,  
Харьковский национальный технический университет сельского хозяйства  
имени Петра Василенко, Украина;  
e-mail: aleksandr.gridin2015@gmail.com; ORCID ID: 0000-0002-7236-2954

**Севидова И.**  
доктор экономических наук, доцент,  
Харьковский национальный технический университет сельского хозяйства  
имени Петра Василенко, Украина;  
e-mail: sevidova.ia@gmail.com; ORCID ID: 0000-0003-3703-4610

**Мандыч А.**  
доктор экономических наук, профессор,  
Харьковский национальный технический университет сельского хозяйства  
имени Петра Василенко, Украина;  
e-mail: ol.mandych@gmail.com; ORCID ID: 0000-0002-4375-2208

## **ФИНАНСОВЫЕ РИСКИ БРОКЕРСКОЙ ДЕЯТЕЛЬНОСТИ**

**Аннотация.** Изменения в экономике Украины и развитие финансового рынка вызывают заинтересованность в решении проблем, связанных с брокерской деятельностью. Особую актуальность эти вопросы приобретают в связи с повышенным вниманием государства к инвестиционной деятельности и заинтересованности в росте финансовой грамотности населения.

Сейчас в Украине нет единого подхода к определению и классификации финансовых рисков брокерской деятельности, поэтому целью данного исследования является анализ видов финансовых рисков брокерских компаний на фондовом рынке и уточнение отдельных понятий видов финансовых рисков.

Изучение вопросов, которым посвящена данная статья, позволит внести вклад в повышение финансовой устойчивости брокерских компаний и их инвесторов, а также будет способствовать оздоровлению финансовой системы страны.

**Ключевые слова:** брокерские компании, финансовые риски, инвестор, брокер, финансовые рынки, брокерская деятельность.

Формул: 0; рис.: 0; табл.: 2; библи.: 26.

**Introduction.** Changes that are taking place now in the Ukrainian economy, connected with the development of the financial market, necessitate the study of issues related to brokerage activities. One of the main tasks in this context is the study of financial risks of participants in stock markets. The set of problems lies in the fact that at the moment there is no single approach to the definition and classification of financial risks, which complicates their assessment negatively affect the final financial results of companies.

Broker companies operate on the securities market as financial intermediaries. They play a major role in reducing investment risk by allowing the brokerage company, as a financial intermediary in providing services, to take on the part of the risks transferred by customers as a result of trading operations. Therefore, in order to increase revenues, the broker must serve part of these risks and assume certain expenses. In turn, the financial risks and the reasons for their occurrence have a significant impact on the activities of any brokerage company. The stability of the operation of brokerage business depends directly on the company's ability to analyze and manage the effects and consequences of each type of risk.

Consequently, the study of financial risks of brokerage activities will contribute to increasing the financial stability of brokerage companies and their investors and contribute to the improvement of the financial system of the country as a whole.

Due to the high development of foreign financial markets, the problems of managing financial risks are widely covered in the writings of foreign scientists, such as J.H. Boyd, E.G. Prescott [1]; M. Fleuriet [3]; M. Crouhy, D. Gali, R. Mark [2]; S. Hammoudeh M. McAleer [5] and many others. The problems of financial risks emergence, the development of measures to prevent them and reduce the negative consequences were not left out of the attention of domestic economists, in particular: V.G. Babenko [8]; N.M. Vnukova, L.V. Vremenko, V.I. Uspalenko [13]; ABOUT. Zhikhora, MO Shtehana [14]; AB Kaminsky [15]; LO Kovalenko [17], V. Sharoy [26] and others. But, if the problem of risk management of transactions in the securities market is considered rather broadly, then the question of interpreting the financial risks of brokerage activities remains inadequately investigated. Of course, the risks of a broker and an investor are closely linked and the issue of their comparison, one way or another, is reflected in the scientific works of these scientists. But at the same time, the scientific approaches to the classification of financial risks of the brokerage company and sources and the reasons for their occurrence is not sufficiently identified. Therefore it is expedient to study the features of financial risks of brokerage activities, to classify them and to find out the sources and reasons for the emergence of financial risks of the brokerage company.

**Literature review and the problem statement.** The purpose of the article is to study the financial risks of the brokerage company that arise in the process of activity in the stock market, which allows to reduce the investor's losses, to increase the efficiency of management in an unstable market in the application of derivative financial instruments, increase the income of the brokerage company from the provision of services.

To realize the research goal, the following tasks were set:

- to study the interpretation of the term «financial risk» in the works of domestic and foreign scholars;
- to analyze the types of financial risks that the brokerage company is exposed to and to clarify certain concepts of types of financial risks for the company;
- to find out the sources and reasons for the financial risks of the brokerage company;
- to identify a complex of specific risks of the investor, which affect the financial stability of the brokerage company.

The methodological basis for the study is a systematic approach, which was reflected in the study of financial risks of brokerage activities. To conduct the research, such methods of scientific knowledge as monographic, analysis, synthesis and classification have been used.

**Research results.** Entrepreneurial activity is currently carried out in conditions of uncertainty, which in economic theory is perceived as a source of risks. Uncertainty is an objective phenomenon, which means that we cannot predict the future results of our choice, even with the help of probabilistic distributions. It is precisely this uncertainty that differs from the risk in which the future can be described with the help of probabilistic distributions, since both the number of cases is known and the probability of occurrence of each of them.

All of risks of business entities are caused by internal factors (which the company can influence) or external factors (not related to the activity of the enterprise). Internal factors include: insufficient staff qualification, change in the management of the enterprise, lack of a clear distribution of rights and responsibilities, etc. External factors include: competition, changes in legislation, economic changes, force majeure, etc. For effective enterprise management, all types of risks, as well as factors that affect them, must be taken into account [5; 14].

The possibility of risk management is contained in the very concept of «risk» – the negative outcome for one factor may be positive for another.

There is a significant amount of risk for different areas of activity. The basis of brokerage activities are operations with financial assets, which are the main source of income, as a result of which the key types of risks are financial. *Table 1* deals with the interpretation of the concept of «financial risk» by different scholars.

Table 1

**Interpretation of the term «Financial risk»**

<b>Author</b>	<b>Treatment</b>
Babenco V.G. [2]	Financial risk is an economic category that reflects the existing uncertainty and conflict that arises in the processes of creating, distributing, redistributing and consuming value added and the part of national wealth among economic entities.
Balabanov I.T. [3]	Financial risk is the risk associated with the probability of loss of financial resources (cash).
Baldin K.V., Vorobiev S.N. [4]	Financial risk is the loss that an entrepreneur or financial intermediary (bank, pension fund, insurance company) can incur by performing operations in the foreign exchange market, securities market and insurance market.
Blank I.A. [5]	Financial risk is the result of the choice of owners or managers of an enterprise alternative financial solution aimed at achieving the expected target financial performance of the probability of causing economic losses due to the uncertainty of its conditions.
Vnukova N. M., Uspalenko V. I., Vremenko L.V. [25]	Financial risk is a risk arising from the uncertainty of financial factors that, under adverse conditions, will lead to losses, and in certain cases, to the bankruptcy of the enterprise.
Zhikhov O.B., Shtehan M.O. [26]	Financial risk is a specific economic category that arises in the process of economic activity and reflects the likelihood of a decrease in profit, loss of capital, bankruptcy in the event of uncertainty of financial, industrial and economic factors.
Kim Yu.G. [15]	Financial risk is the likelihood of a loss as a result of any transactions in the financial and credit and stock markets, the conduct of operations with stock values, that is, the risk arising from the nature of these operations.
Kovalenko L.O., Remnova L.M. [16]	Financial risks are the risks associated with the probability of unforeseen financial losses of resources (reduction of expected profits, income, loss of part or total capital) in the situation of uncertainty of the financial conditions of the enterprise. □
Litvin B.M., Stelmakh M.V. [18]	Financial risks are, firstly, the risk of a potential loss of resources or their lack of access; and secondly, this is the probability of obtaining additional risk-related profits.
Polyakova O.Y., Goltyayeva L.A. [20]	Financial risk is the possibility of a company failing to meet its financial obligations to partners in the process of using loans and other borrowed funds to finance its operations
Ruda R.V. [22]	Financial risks are commercial risks that are pure and speculative. Pure risks mean the possibility of a loss or a zero result. Speculative risks are expressed in the possibility of obtaining both a positive and a negative result.
Kutsyk P.O., Vasil'tsov T.G., Sorokivsky V.M., Stefanyak V.I., Sorokivska M.V. [17]	Financial risk is a risk that arises when enterprises enter into relations with different financial institutions: banks, investment, insurance, factoring, leasing companies, exchanges, etc.
Podderiyogin A.M., Bilyk M.D., Buryak L.D. [19]	Financial risk is a risk arising from the implementation of a financial business or financial transactions, based on the fact that in the financial business in the role of goods are either currency, or securities, or funds.
Holt R.N. [12]	Financial risk is a risk arising from the implementation of a financial business or financial transactions, based on the fact that in the financial business in the role of goods are either currency, or securities, or funds.
Sharii V., Taran V. [23]	Financial risks are speculative risks, the feature of which is the likelihood of a loss as a result of any transactions in the financial and credit and stock markets, the conduct of operations with stock securities, that is, the risks arising from the nature of these operations.

*Source:* summarized by the authors on the basis of [2—5; 12; 15—20; 22—23; 25—26].

Based on the studied interpretations and the features of brokerage activity, we consider that financial risk for a broker is a risk associated with the probability of resources loss (including cash), or the emergence of additional profits as a result of financial transactions under uncertain conditions of implementation its activities. This approach to the definition of financial risk in our opinion comes from the very essence of entrepreneurial activity and quite accurately reflects the essence of the work of the broker. Its task is to attract financial resources of investors, to ensure that investors receive income, while increasing their own profits and controlling the risks arising from the actions of investors. Consequently, all types of financial risks, one way or another, can lead to a loss of cash. In this case, in some cases, there may be an additional income. This can occur, for example, when hedging a financial asset.

For the purpose of our study, we consider the classification of existing types of financial risks. All financial risks can be divided into three groups:

1) risks associated with purchasing power of money (liquidity risks, currency risks, inflation and deflation risks). These risks are least controlled by the commercial enterprise, as they are caused mainly by external factors and changes in the economic situation.

2) risks related to investment of capital (risks of decrease in profitability, lost profits, direct financial losses, exchange, selective, risks of financial sustainability reduction, price risks, insolvency risks).

3) risks associated with the form of organization of economic activity of the enterprise, determining its stability.

When considering the types of financial risks, we see that some of them are the same for most types of entrepreneurial activity. As part of our study we will call them objective. Existing approaches and methods can be used to manage these risks. At the same time, based on the peculiarities of the type of activity in question, one can distinguish the risks inherent only to him. These financial risks in the context of our study will be called specific. To manage them it is necessary to analyze the possibility of applying existing approaches to risk management, or to develop new approaches. The problem of assessing the specific financial risks of brokerage activities requires a more detailed consideration. So, first, we will find out the sources and reasons for the financial risks of the brokerage company (*Table 2*).

Table 2

**Sources and causes of financial risks of the brokerage company**

Source	Reason
Personal broker	Mistakes in the work of a company employee, providing poor quality services, fraud Decrease in income level
Asset Management Risk Manager	Untimely hedging Lack of hedging Errors in the management of assets for their own needs Mistakes in working with institutional investors
Investor	Errors in investing in assets as a broker of investor funds Mistakes in providing margin loans Errors in determining investor type False investment decisions Untimely execution of orders Arrears in payment of commissions Debt to pay assets, interest, loans to a broker
Trustee manager	Mistakes in placement and investment of broker assets Errors in trust management of investors' funds
Exchange	Inability to realize or buy assets in a timely manner

*Source:* summarized by the authors on the basis of [7; 21; 24].

So, we see that most of the financial risks are concentrated in the relationship of a brokerage company with the investor. Since investors and brokers are in close interconnection, the transfer of various financial risks can be done not only from financial intermediaries, but also back to them from customers [6].

The main risk that a broker receives from investors is the inappropriateness of action when making decisions about investing in various instruments of the financial market. This may also be due to a low level of financial literacy and distrust of financial institutions. Consequently, it is advisable to use the notion of subjective risk for a broker — «risk of investor behavior». According to the terminology adopted in our study, the risk of an investor's behavior is a subjective kind of financial risk for a brokerage company arising as a result of inappropriate actions and decisions of investors, which entails potential direct (in the form of loss of investment of customers, reduction of fees, losses marginal lending, etc.) and indirect (in the form of outflow of investors from the company) losses, as well as possible additional revenue broker. Taking into account the presence of

this type of financial risk from the broker, it is obvious that clarifications are required within the framework of the standard risk management system. At present, in scientific circles, mainly, separate problems of brokerage activity and separately — actions and problems of investors are considered. In the case of a two-way transfer of financial risk, we consider it appropriate to use an approach in which the risk management system of the brokerage company provides simultaneous risk management of investors. In the conditions of crisis in the economy of the country, competition among financial institutions for attracting investment resources increases, therefore, the management of financial risks takes a qualitatively new level — optimization of the investor's activity in order to increase the reliability and stability of the brokerage company. In our opinion, taking into account the interests of the investor is an opportunity to develop a synergistic approach to the bilateral management of financial risks of a broker.

The next important source of financial risk for a brokerage company is the offer of margin lending services, the size of which also largely depends on the actions of investors. The value of marginal and unsecured transactions in the functioning of the stock market is high; it is one of the important elements of trade organization in the developed markets. This type of activity is the second most significant after the trust management.

Then we propose financial risks grouping of the broker taking into account the specifics of the activity, which separates the financial risks by reason of occurrence and methods of managing them. At the same time, we do not divide the risks into the objective and specific, because this classification is proposed exclusively for brokerage activities.

So the financial risks of the broker are divided into:

1. Exterior:

– the risk of purchasing power of money (inflationary, deflationary, currency, liquidity);

– the risk of changing the cycles of business and economic activity;

– market risk (price, decline in profitability, commercial loan, negotiable, tax);

– risk of investor behavior;

– investment risk (real investment, portfolio, innovation investment, lost in the hour, selective).

2. Inside:

– margin lending risk;

– the risk of lowering financial stability (lack of equity to meet obligations, combining brokerage with its own operations, no hedging);

– operational risk (risk of investor loss in arrest of property, information leakage, loss of business reputation and customer confidence) [1; 10].

The advantage of such a systematization of financial risks is the allocation of key types of risks by management methods. The differentiation of risks to internal and external allows better understanding of the nature of occurrence and risk manifestation. The combination of certain previously allocated types of risk is due to the fact that these risks have one basis. For example, a group of risk as the risk of loss of investor funds, property arrest, information leakage, loss of reputation and customer confidence, structural grouped under one reason — operational risks. Because these types of financial risks are caused by a similar set of risk factors arising from problems with the broker. The risk of investor behavior and margin lending are singled out as they require specific approaches to valuation and management. The emergence of financial risks is possible in the presence of processes or phenomena that contribute to their appearance. Such phenomena are called risk-generating factors [1].

According to research results, the most critical financial risks that can significantly affect the financial stability of the broker, the formation of receivables and payables and their timely repayment, are the risks of investor behavior, investment risks and risks of marginal lending. At the same time, in our opinion, the key factors in the functioning of the brokerage company among all the selected set of financial risks are the risks associated with the behavior of the investor, and the risks associated with the investment of capital in financial assets. After all, when a broker provides an opportunity to carry out transactions with financial instruments to his clients, he receives a

commission for the volume of transactions concluded. In case if the client is successful in the process of carrying out operations, his motivation for further investment is increasing. Consequently, the amount of commission paid by the broker increases. Loss of money by the client, leads to a decrease in its propensity to further investing, to further refusal to carry out transactions. In this case, the amount of brokerage commissions is reduced [9].

At the same time, clients want to receive higher income in the process of financial transactions, which is accompanied by the use of margin loans, increased risks, the presence of which can lead to partial or complete loss of primary investment. Based on this relationship, the purpose of the broker is to maximize the continuation of trading and investment activity of their customers by reducing their potential losses.

The research of the role of a broker in the economy, carried out by a number of authors [8, 11], confirms that the external environment demands a brokerage company: broker services should improve the ratio of risk and profitability of his client, as the actions of brokerage companies together make a significant impact on the economy. All stakeholders, including intermediaries, are interested in resolving risk management issues in the financial market and implementing measures aimed at minimizing risks throughout the investment chain. In the process of performing their functions, intermediaries should ensure the protection of the rights and interests of financial market participants, which depends first of all, on how well the market operator is able to manage the risks associated with its activities. However, for today, for most financial intermediaries, risk management, as a rule, has a random, fragmentary character [13]. The solution to this problem may be an approach that involves brokers offering various investment products to their clients under the guidance of experienced investment managers. In this case, the entire responsibility and obligation to provide a certain level of income broker puts on himself.

**Conclusions.** The article proposes an alternative approach to determining the totality of financial risks of a brokerage company, which differs from existing ones by the fact that the risks of a broker and investor are considered as a single system, which allows to form more effective ways of managing financial activity of the company.

The theoretical and practical significance of the research lies in the possibility of further developing the theory of financial risk management, in identifying the aggregate risk of brokerage companies and investors in the stock market, as well as in determining their interconnection and system assessment.

The obtained conclusions about the necessity of the partial acceptance of investors' risks in order to increase the income from brokerage activities necessitate an analysis of the financial risks of investors and the identification of the relationship with the financial risks of the brokerage company. This will allow us to formulate an approach to reduce the specific financial risks of the broker that arise in the course of his work with investors and further suggest ways to manage the complex of risk data.

#### Література

1. Boyd J. H. Financial Intermediary Coalitions / J. H. Boyd, E. G. Prescott // *Journal of Economic Theory*. — 1986. — Vol. 38. — P. 211—232.
2. Crouhy M. The Essentials of Risk Management / M. Crouhy, D. Galai, R. Mark. — 2d ed. — New York : Mc Graw-Hill, 2014. — P. 672.
3. Fleuriet M. Investment banking explained: An insider's guide to the industry / M. Fleuriet. — New York : McGraw-Hill Finance & Investing, 2008 — P. 368.
4. Grechuk K. B. Inverse portfolio problem with coherent risk measures / K. B. Grechuk, M. Zabaranin // *European Journal of Operational Research*. — 2016. — № 249. — P. 740—750.
5. Hammoudeh S. Advances in financial risk management and economic policy uncertainty: An overview / S. Hammoudeh, M. McAleer // *International Review of Economics and Finance*. — 2015. — № 40.
6. Hull J. C. Risk Management and Financial Institutions / J. Hull. — 4d ed. — Hoboken; N. J. : Wiley, 2015. — P. 714.
7. Авдошин С. М. Информатизация бизнеса. Управление рисками / С. М. Авдошин, Е. Ю. Песоцкая. — Москва : ДМК Пресс, 2011. — 176 с.
8. Бабенко В. Г. Страхування фінансових ризиків як механізм надання гарантій суб'єктам підприємницької діяльності / В. Г. Бабенко. — Суми : Вид-во Укр. акад. банк. справи Нац. банку України, 2007. — 21 с.
9. Балабанов И. Т. Риск-менеджмент / И. Т. Балабанов. — Москва : Финансы и статистика, 1996. — 192 с.
10. Балдин К. В. Управление рисками : учеб. пособие для студентов вузов, обучающимся по специальностям экономики и управления / К. В. Балдин, С. Н. Воробьев. — Москва : ЮНИТИ-ДАНА, 2012. — 511 с.
11. Бланк И. А. Управление финансовыми рисками / И. А. Бланк. — Киев : Ника-Центр, 2005. — 600 с.

12. Брейли Р. Принципы корпоративных финансов / Р. Брейли, С. Майерс ; пер. с англ. Н. Барышниковой. — Москва : ЗАО «Олимп-Бизнес», 2008. — 1008 с.
13. Внукова Н. М. Страхування: теорія та практика : навч.-метод. посібн. / Н. М. Внукова, В. І. Успенко, Л. В. Временко та ін. ; За заг. ред. проф. Н. М. Внукової. — Харків : Вид-во «Бурун Книга», 2004. — 377 с.
14. Жихор О. Б. Сутність поняття «фінансовий ризик» та його класифікація / О. Б. Жихор, М. О. Штехан // Науковий вісник НЛТУ України. — 2013. — Вип. 23.10. — С. 145—150.
15. Камінський А. Б. Концептуальні підходи до вимірювання фінансових ризиків / А. Б. Камінський // Фінанси України. — 2006. — № 5. — С. 78—85.
16. Кім Ю. Г. Фінансові ризики в системі фінансово-економічної безпеки підприємства / Ю. Г. Кім // Фінанси України. — 2005. — № 6. — С. 13—18.
17. Коваленко Л. О. Фінансовий менеджмент : навч. посіб. / Л. О. Коваленко, Л. М. Ремньова. — 2-ге вид., перероб. і доповн. — Київ : Знання, 2005. — 485 с.
18. Литвин Б. М. Фінансовий аналіз : навч. посібник / Б. М. Литвин, М. В. Стельмах. — Київ : Вид-во «Хай-Тек Прес», 2008. — 336 с.
19. Полякова О. Ю. Основні засади формування комплексу моделей управління фінансовими ризиками підприємства / О. Ю. Полякова, Л. А. Гольцяєва // Бізнес-Інформ. — 2013. — № 6. — С. 106—110.
20. Руда Р. В. Фінансовий ризик: макроекономічні та мікроекономічні причини його виникнення / Р. В. Руда // Вісник Бердянського університету менеджменту і бізнесу. — 2011. — № 2 (14). — С. 139—141.
21. Рэй К. И. Рынок облигаций. Торговля и управление рисками : пер. с англ. / К. И. Рэй. — Москва : Дело, 1999. — 600 с.
22. Тишин М. Профессиональный подход к оценке рисков — путь к эффективному управлению инвестициями / М. Тишин, Ю. Стецева // Рынок ценных бумаг. — 2015. — № 2. — С. 35—37.
23. Куцик П. О. Управління фінансовими ризиками : навч. посібник / П. О. Куцик, Т. Г. Васильців, В. М. Сороківський, В. І. Стефаняк, М. В. Сороківська. — Львів : Растр-7, 2016. — 318 с.
24. Поддєрьогін А. М. Фінанси підприємств : підручник / А. М. Поддєрьогін, М. Д. Білик, Л. Д. Буряк та ін. ; наук. ред. А. М. Поддєрьогін. — 6-те вид., переробл. і доповн. — Київ : Київ. нац. екон. ун-т ім. В. Гетьмана, 2006. — 551 с.
25. Холт Р. Н. Основы финансового менеджмента : пер. с англ. / Р. Н. Холт. — Москва : Изд-во «Дело», 2005. — 236 с.
26. Шарий В. Державне управління ризиками у фінансовій сфері виконавчої гілки влади України / В. Шарий, В. Таран // Економіка та управління підприємствами і національним господарством. — 2013. — № 3. — С. 135—142.

Статтю рекомендовано до друку 21.05.2020

© Заїка С., Грідін О., Севідова І., Мандич О.

#### References

1. Boyd, J. H., & Prescott, E. G. (1986). Financial Intermediary Coalitions. *Journal of Economic Theory*, Vol. 38, 2, 211—232.
2. Crouhy, M., Galai, D., & Mark, R. (2014). *The Essentials of Risk Management*. New York: Mc Graw-Hill.
3. Fleuriet, M. (2008). *Investment banking explained: An insider's guide to the industry*. New York: McGraw-Hill Finance & Investing.
4. Grechuk, K. B., & Zabarankin, M. (2016). Inverse portfolio problem with coherent risk measures. *European Journal of Operational Research*, 249, 740—750.
5. Hammoudeh, S., & McAleer, M. (2015). Advances in financial risk management and economic policy uncertainty: An overview. *International Review of Economics and Finance*, 40, 1—7.
6. Hull, J. C. (2015). *Risk Management and Financial Institutions*. Hoboken; N.J.: Wiley.
7. Avdoshin, S. M., & Pesockaya, E. Yu. (2011). *Informatizaciya biznesa. Upravlenie riskami [Business Informatization. Risk management]*. Moscow: DMK Press [in Russian].
8. Babenko, V. H. (2007). *Strakhuvannia finansovykh ryzykiv yak mekhanizm nadannia harantii subiekтам pidpriemnytskoi diialnosti [Insurance of financial risks as a mechanism for providing guarantees to business entities]*. Sumy: Vyd-vo Ukr. akad. bank. spravy Nats. banku Ukrainy [in Ukrainian].
9. Balabanov, I. T. (1996). *Risk-menedzhment [Risk management]*. Moscow: Finansy i statistika [in Russian].
10. Baldin, K. V., & Vorob'ev, S. N. (2012). *Upravlenie riskami [Risk management]*. Moscow: YUNITI-DANA [in Russian].
11. Blank, I. A. (2005). *Upravlenie finansovymi riskami [Financial risk management]*. Kyiv: Nika-Centr [in Russian].
12. Brejli, R., & Majers, S. (2008). *Principy korporativnykh finansov [Principles of corporate Finance]*. (N. Baryshnikova, Trans.). Moscow: ЗАО «Олимп-Бизнес» [in Russian].
13. Vnuкова, N. M., Uspalenko, V. I., & Vremenko, L. V. (et al.). (2004). *Strakhuvannia: teoriia ta praktyka [Insurance: theory and practice]*. N. M. Vnuкова (Ed.). Kharkiv: Vyd-vo «Burun Knyha» [in Ukrainian].
14. Zhykhor, O. B., & Shtekhan, M. O. (2013). Sutnist poniattia «finansovyi ryzyk» ta yoho klasyfikatsiia [The essence of the concept of «financial risk» and its classification]. *Naukovyi visnyk NLTU Ukrainy — Scientific Bulletin of NLTU of Ukraine*, 23.10, 145—150 [in Ukrainian].
15. Kaminskyi, A. B. (2006). Kontseptualni pidkhody do vymiryuvannia finansovykh ryzykiv [Conceptual approaches to financial risk measurement]. *Finansy Ukrainy — Finance of Ukraine*, 5, 78—85 [in Ukrainian].
16. Kim, Yu. H. (2005). Finansovi ryzyky v systemi finansovo-ekonomichnoi bezpeky pidpriemstva [Financial risks in the system of financial and economic security of the enterprise]. *Finansy Ukrainy — Finance of Ukraine*, 6, 13—18 [in Ukrainian].
17. Kovalenko, L. O., & Remnova, L. M. (2005). *Finansovyi menedzhment [Financial management]*. Kyiv: Znannia [in Ukrainian].
18. Lytvyn, B. M., & Stelmakh, M. V. (2008). *Finansovyi analiz [Financial analysis]*. Kyiv: Vyd-vo «Khai-Tek Pres» [in Ukrainian].
19. Poliakova, O. Yu., & Holtiaieva, L. A. (2013). Osnovni zasady formuvannia kompleksu modelei upravlinnia finansovymy ryzykamy pidpriemstva [Basic principles of formation of a complex of financial risk management models of the enterprise]. *Biznes-Inform — Business-Inform*, 6, 106—110 [in Ukrainian].
20. Ruda, R. V. (2011). Finansovyi ryzyk: makroekonomichni ta mikroekonomichni prychny yoho vynyknennia [Financial risk: macroeconomic and microeconomic causes]. *Visnyk Berdianskoho universytetu menedzhmentu i biznesu — Bulletin of Berdyansk University of management and business*, 2 (14), 139—141 [in Ukrainian].

21. Rej, K. I. (1999). *Rynok obligacij. Torgovlya i upravlenie riskami [Bond market. Trading and risk management]*. Moscow: Delo [in Russian].
22. Tishin, M., & Steseva, Yu. (2015). Professional'nyj podhod k ocenke riskov — put' k effektivnomu upravleniyu investiciyami [Professional approach to risk assessment—the way to effective investment management]. *Rynok cennyh bumag — Securities market*, 2, 35—37 [in Russian].
23. Kutsyk, P. O., Vasylytsiv, T. H., Sorokivskyi, V. M., Stefaniak, V. I., & Sorokivska, M. V. (2016). *Upravlinnia finansovymy ryzykamy [Financial risk management]*. Lviv: Rastr-7 [in Ukrainian].
24. Poddierohin, A. M., Bilyk, M. D., & Buriak, L. D. (et al.). (2006). *Finansy pidpriemstv [Enterprise Finance]*. A. M. Poddierohin (Ed.). Kyiv: Kyiv. nats. ekon. un-t im. V. Hetmana [in Ukrainian].
25. Holt, R. N. (2005). *Osnovy finansovogo menedzhmenta [Fundamentals of financial management]*. Moscow: Izd-vo «Delo» [in Russian].
26. Sharyi, V., & Taran, V. (2013). Derzhavne upravlinnia ryzykamy u finansovii sferi vykonavchoi hilky vlady Ukrainy [State risk management in the financial sphere of the Executive branch of power of Ukraine]. *Ekonomika ta upravlinnia pidpriemstvamy i natsionalnym hospodarstvom — Economy and management of enterprises and national economy*, 3, 135—142 [in Ukrainian].

*The article is recommended for printing 21.05.2020*

© Zaika S., Hridin O., Sievidova I., Mandych O.