



ON SOME QUESTIONS OF THE FORMATION UNIFIED RISK CLASSIFICATION SYSTEM IN INSURANCE ACTIVITIES

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Abstract: The article is devoted to the formation of a unified multitasking system of risk classification, in order to identify and assess them in general. The article argues that the problem of risk, therefore, lies not in the plane of mathematics, but in its formulation in the subject language. The author puts forward a hypothesis that the unity, integrity and structural and functional complexity of the risk transfer system in insurance activities, risk management and riskology require an adequate approach that would ensure the appropriate perception and study of the object, its functioning and development in the future.

Key words: uncertainty, measurable uncertainty, non-measurable uncertainty, risk, risk value, risk attribute, risk factor, risk cause, risk minimization, risk neutralization, risk transfer, risk assessment, insured risk, non-insurable risk, types of risks, risk classification, classification of endogenous risks, three-dimensional matrix of classification of endogenous risks, business process.

INTRODUCTION

Modern realities make it possible to reasonably assert that risk is always present where there is activity, respectively, there is risk, and, conversely, if there is no activity, there is no risk. The uncertainty of the situation, the importance of achieving the set goal, as well as the amount of resources that ensure the implementation of the predicted result are used as parameters characterizing the magnitude of the risk, expressed as a combination of consequences and their probability, the most promising strategy for preventing and neutralizing risks is described. In order to most accurately reveal the category of "risk", it is necessary to define such concepts as "probability" and "uncertainty", since they are the basis of risks.

In this context, the concept of probability is fundamental to the theory of probability and allows quantitative comparison of events in terms of their degree of possibility. The probability of an event is a

certain number, which is the greater, the more likely the event is. Probability is the possibility of obtaining a certain result. Obviously, the event that occurs more often is considered more likely.

Risk is an entity that emerges over time. In some circumstances, the risk is realized to the maximum, in others it remains in vain (fruitlessly, in vain, without result). In other words, this category is optional, often random [1]. Thus, first of all, the category of probability is associated with the practical concept of the frequency of an event. "The relative frequency of an event, or frequency, is the ratio of the number of experiences in which this event appeared to the number of all experiments made"¹. As a unit of measurement, it is customary to consider the probability of a certain event, i.e. such an event, which, as a result of any experience, a process of activity, must certainly occur. In this case, the probability of a favorable or unfavorable outcome can serve as a measure of the degree of risk. Dependence on the volume of initial information, on the one hand, and dependence on the subject, on the other hand, all this leads to the fact that uncertainty is added to the probabilistic situation. Uncertainty underlies systemically complex economic phenomena, interaction with which causes the corresponding behavior of both individual economic agents - subjects, and economic systems as a whole.

In order to distinguish between the terms measurable and non-measurable uncertainty, the categories "risk" can be used to denote measurable uncertainty and "uncertainty" for non-measurable uncertainty [2]. In this regard, the risk should be considered as the possibility of an unfavorable outcome under conditions of uncertainty. In this context, risk is a characteristic of uncertainty, since in situations of certainty it is absent due to the availability of information about the possible dangers of the outcome.

The word "risk" is usually used very loosely in relation to any type of uncertainty, in terms of the possibility of an unfavorable outcome, and the term "uncertainty" - in relation to the possibility of a favorable outcome [2]

The use of the term "risk" in insurance activities in connection with cases where the degree of uncertainty or the likelihood of an event occurring can be measured. In this case, such a "... risk is an event, the occurrence of which is not defined in time and space, independent of the will of a person, dangerous and, as a result, creating an incentive for insurance; this is the risk that can be assessed in terms of the probability of an insured event and the amount of possible damage [3].

Today, risk is firmly and inextricably accompanies the business activities of subjects, including economic ones, where the onset of a risky event entails both positive and negative results. In this case, a third party of risk opens up.² - its belonging to any activity. It is very difficult to think of an example of a "risk" in business for which the distribution of various possible outcomes could be calculated in advance.

A risk is a situation associated with the existence of a certain choice between several supposed (expected) alternatives. For example, in IFRS 17³ insurance risk is defined as "...risk, other than financial risk, transferred by the party holding the contract to the party issuing the contract", i.e. The definition of an insurance contract requires one party to assume significant risk, in this case meaning insurance risk, from the other party. The problem of risk, therefore, lies not in the plane of mathematics, but in its

¹ <http://www.itmathrepetitor.ru/uchebnik-po-teorii-veroyatnostej/>.

² <https://www.lexology.com/library/detail.aspx?g=e00248a1-f827-4da4-a9f0-7bd7d823ee53>.

³ IFRS 17 is applied retrospectively, unless this is not practicable, in which case a modified retrospective or fair value approach is applied. // <https://www2.deloitte.com/>.

formulation in the subject language. To do this, it is also necessary to represent the real process of risky activity and the behavior of different categories of subjects - players under changing circumstances. In other words, risk is the possibility of success or failure, in which case the event is hypothetical (assumed) in nature and is not inevitable.

In many scientific developments, risk is characterized as the possibility of realizing an undesirable result of an indefinite magnitude that occurs after some event. In this case, they mean: the risk is possible. The relationship established in this way between the occurrence of risk and the uncertainty of the database (information) makes it possible to reveal the economic nature of the risk, which manifests itself in a combination of the following systemic factors:

- ✓ the probability of losing part of the resources (in particular, one's own) or the appearance of additional costs;
- ✓ the possibility of obtaining additional profit as a result of the implementation of a certain business operation;
- ✓ non-deterministic efficiency of business operations (purposeful processes).

The types of risks in decision-making are also divided depending on the various classifications of a number of scientific developments. The concept of risk management tools⁴, determining the possibility of using similar tools in certain cases requires, as a theoretical justification, more detail on the types and varieties of risks. This task is solved in the course of risk classification: the allocation of classification features and the completion of one or more risk groups, one or another relevant feature.

Classification is understood as a system of subordinate categories of any field of knowledge or activity of the subject as a whole, used as a means to establish links between these system categories. Economists have been dealing with the problem of risks and their classification for a long time, but due to the versatility of this phenomenon, the tasks of defining the definition of "risk" [4] and the formation of a unified risk classification system have been solved only at the level of individual areas.

Given the above, we can make a preliminary conclusion that the risk is based on the probabilistic nature of the activity and the uncertainty of the situation. Further, it should be borne in mind that risk accompanies all processes, regardless of whether they are active or passive. It should be emphasized that the determining moment in the event of a risk is the mandatory presence of systemic factors at the same time, and the absence of at least one of them indicates the absence of risk as such.

Thus, the classification of risks means the systematization of a set of risks on the basis of some common features and criteria that allow us to combine risk subsets in a broader sense.

Literature review. A universally acceptable theory, as F. Knight wrote, "requires extensive reinterpretation and integration with the general theory, working in terms of equilibrium at full employment, before it can be recognized as reliable or useful" [5]. He believes that "the key to all confusion will be found in the concept of risk or uncertainty and the ambiguities hidden in them" [5].

Some researchers believe that risk is the only source of business profit. [6] This argument once again shows that risk is a complex phenomenon with many different and sometimes opposite real foundations [7].

⁴ [HTTPS://LOGISTICS.RU/RISK](https://logistics.ru/risk)

Currently, there is no generally accepted classification of risks, however, research on this problem is being carried out quite actively within the framework of research and practical work on the development of risk transfer in insurance activities, risk management and riskology, which is also evidenced by a significant number of dissertations⁵ and publications in thematic journals published abroad and in Uzbekistan.

Almost every printed publication devoted to risk issues provides one of the options for classifying risks. In most cases, the selected criteria do not allow covering the entire set of risks, however, a number of major risks appear in the economic literature. Based on this, attempts to classify the subsets of risks included in these general concepts are quite frequent.

There are no well-established criteria that allow unambiguously classifying all risks for a number of reasons: the specifics of the activities of economic entities, various manifestations of risks and their various sources. Researchers are still working on the search for optimal criteria.

Thus, J.M. Keynes was one of the first to classify risks (Fig. 1).

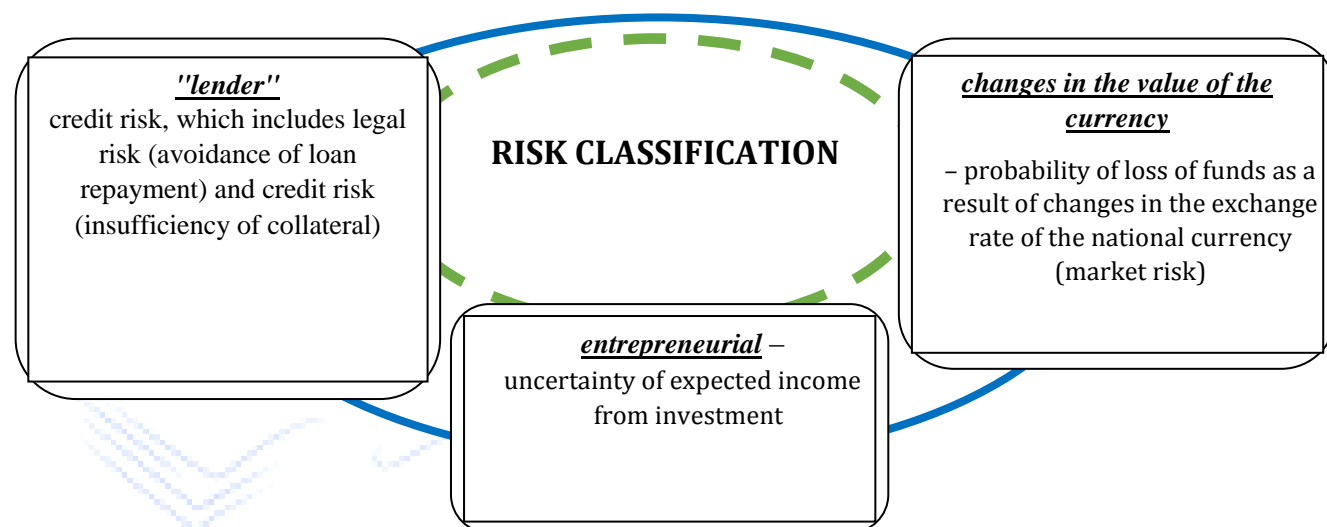


Fig.1. Classification of risks according to J. M. Keynes⁶

⁵ <https://www.dissercat.com/content/>

⁶ Compiled by the author, based on the classification of J. M. Keynes (Source: John Maynard Keynes General Theory of Employment, Interest and Money. // <https://socioline.ru/files/5/316/keyns.pdf>).

Keynes approached the issue from the perspective of an economic entity, identifying the following main types of risks:

- entrepreneurial - the uncertainty of obtaining the expected income from investing funds, i.e., in his opinion, "... this is the risk of an entrepreneur or borrower arising from doubts about whether he will actually be able to receive the expected income that he expects" [8] ;

- "lender" - the risk of non-repayment of the loan, which includes legal risk (avoidance of repayment of the loan) and credit risk (insufficiency of collateral). "But where there is a system of borrowing and lending money, by which ..." Keynes means "... lending against real security or in the good name of the borrower, there is a second kind of risk, which ... we can call the risk of the lender" [8];

- changes in the value of the monetary unit - the probability of losing funds as a result of a change in the exchange rate of the national currency (market risk). This "... type of risk is one that is associated with a possible change in the value of a monetary standard unit, as a result of which a monetary loan is to a certain extent a less reliable form of wealth than real property. However, such an opportunity should be wholly or almost wholly reflected in and, therefore, compensated for in the price of real non-expendable property" [8].

At the same time, J. M. Keynes notes that these risks are closely intertwined - for example, the borrower, participating in a risky project, seeks to get the largest possible difference between the interest on the loan and the rate of return; the creditor, given the high risk, also seeks to maximize the difference between the net rate of interest and his interest rate. As a result, the risks are "superimposed" on each other, which is not always noticed by the subjects of the economy, for example, investors. Theoretical achievements and his macroeconomic method were included in the golden fund of economic science.

We are most interested in the classification of R. Knight - D. Pretty (Fig. 2), where the sign is the management method, put in line with a certain type of risk. However, this sign is not clear due to the fact that the established correspondences are only of primary importance, and in practice, tools specific to another type can be applied to one type of risk, and it is also characteristic that the tools can be combined.

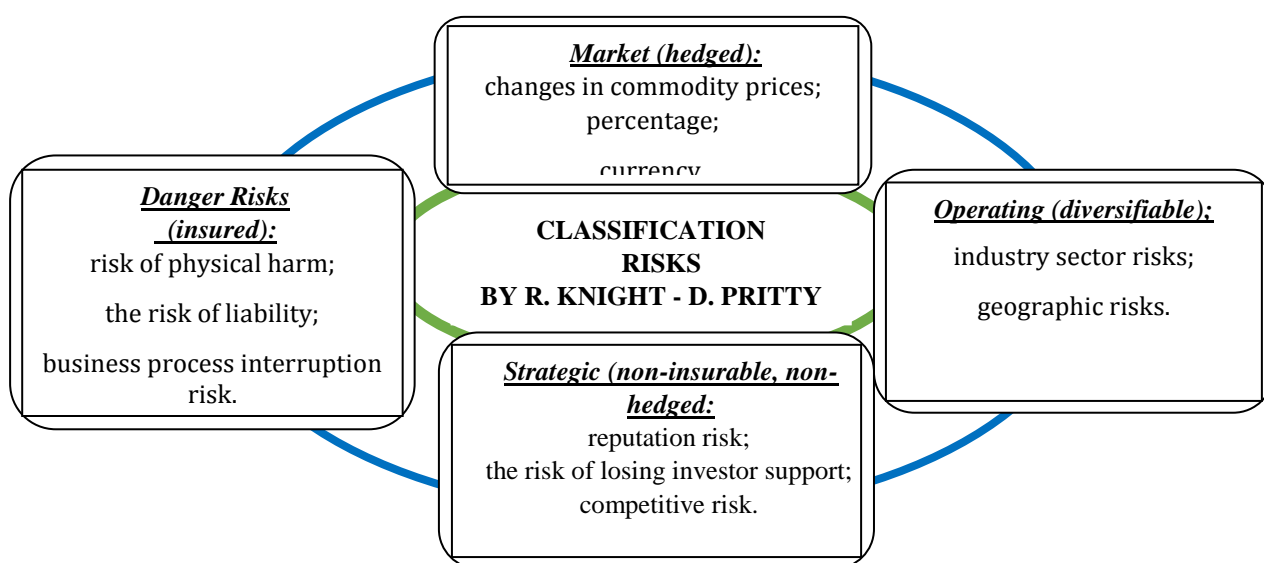


Fig. 2. Classification of risks according to R. Knight - D. Pretty⁷

–Currently, in almost every scientific development on the definitions of risk, there are several options for their classification. In most cases, the selected criteria (features) do not allow covering the entire set of risks, however, a number of the main risk features appear in them.

–It should be noted that there are a number of postulates (concepts) for a reasonable risk assessment [9]:

- ✓ the risk is associated with the assessments (expectations) and decisions of the subject, but at the same time does not exist without regard to them;

- ✓ risk reflects the decisions by which time is connected, although the future cannot be known sufficiently;

- ✓ risk-free behavior does not exist;

- ✓ It is necessary to distinguish between risk and its measures.

–Based on this, it is quite common to attempt to classify the subsets of risks included in these general interpretations. The vast majority of authors who have studied the signs (factors) of risks identify the following risks (Fig. 3):

- ✓ operational (risk associated with deficiencies in systems and procedures for management, support and control, as well as "... the risk of careless or incompetent actions, as a result of which material damage may be caused"⁸);



⁷ Compiled by the author, based on the classification Neil, A. Doherty// Neil, A. Doherty (1985). Integrated Risk Management Techniques and Strategies for Managing Corporate Risk Neil A. Doherty/ A. Neil. N. Y., McGraw. //http://ppm.your-assets.com.ua/_ld/1/110_Doherty_N._- _In.pdf.

⁸ http://dic.academic.ru/dic.nsf/fin_enc/26363.

Fig. 3. Classification of risks by signs (factors)⁹

✓ market (such a risk seems to be a derivative of the activity of the economic entity itself [10] and the problems of determining this risk in relation to the activities of economic entities require further research aimed at minimizing losses in their activities, including the study of behavior in the stock market during a slowdown in the economic cycle [11]);

✓ credit (this risk may be associated with the possibility of a regression of production or demand for the products of a particular industry, non-fulfillment of contractual relations for some reason, transformation of types of resources over time and force majeure circumstances).

This approach is followed by leading multinational companies, developers of risk analysis, measurement and management systems, as well as specialists in economic sectors.

To these basic risks, several more types of them are added, occurring in one sequence or another:

✓ business (the basic beginning of such a risk is a failure of a purely substantive nature in terms of increasing the economic effect of economic activity through the adoption and implementation of a management decision);

✓ liquidity risk (this is the risk of losses due to the inability of a credit institution to ensure the fulfillment of its obligations in full [11]. The same losses should include lost profits associated with the diversion of resources to maintain liquidity).

✓ legal risk (“... as inherent in human activity, objectively existing and within certain limits capable of assessing and volitionally regulating the probability of incurring negative consequences by the subjects of legal relations due to the occurrence of adverse events naturally associated with various prerequisites...” [12] factors);

✓ risk associated with regulatory institutions (such a risk can be defined as the probability of an undesirable event occurring, caused by the irrationality of institutions, the imperfection of the institutional environment, in particular, some scientists [13], considering such a risk, have in mind the volatility and irrationality of regulatory policy).

As noted earlier, the last four risks do not appear in all scientific developments. Thus, the risk associated with the regulatory institutions of the state is most relevant for economic entities, so it is more common in areas related to such activities.

Today, many scientists have a simplified view of the structure and parameters of risk. In this context, it should be emphasized that, despite the long study of risks, there are currently no generally accepted criteria that allow them to be systematized and classified. Nevertheless, the theoretical results of the risk study make it possible to identify common features of risks and present their typology.

Research methods. The unity, integrity and structural and functional complexity of the risk transfer system in insurance activities, risk management and riskology requires an adequate approach that would ensure the appropriate perception and study of the object, its functioning and development. There

⁹ Compiled by the author, based on the synthesis of risk classification by a number of authors, for example, Shapkin A. S., Shapkin V. A. Economic and financial risks. Evaluation, management, investment portfolio. 12th edition, revised. Moscow: Dashkov i K°. 2023. -539 p. and etc.

are numerous approaches that are characterized by different conceptual models, mathematical tools, starting positions.

Classifying approaches according to various criteria, they distinguish systemic, conceptual and aspect [14]. With the aspect approach, the choice stops at one facet of the problem. The conceptual approach involves the preliminary development of a set of key provisions that determine the general direction, architectonics and continuity of the study. The systemic approach, however, reflects a higher level of research methodology and requires the maximum possible consideration of all structural (factorial) aspects of problems in their interconnection and integrity, highlighting the priority and essential, determining the links and interaction between the components, characteristics and properties of the elements of the system and subsystems as a whole.

Results. The specifics of risk classification in developed countries is that these countries have a stable institutional system, as well as developed markets: insurance, currency, etc. Most of the works devoted to risk issues are inextricably linked with these institutions, as well as the institutions that regulate them. Thus, already at the initial stage, the first division of risks into risks inherent in individual institutions and risks not inherent in them is possible.

The problems and methodology of risks inherent in industries and sectors of the economy have been worked out quite thoroughly in developed countries. The most complete classification of risks is reflected in the document "Basic Provisions for Risk Management of Derivatives" [15].

With respect to derivatives, there are two types of risk assessment [16]:

- "book" represents the current value, reflecting the fair value of the contract (often zero initially, but subsequently positive or negative depending on the movement of this contract);
- nominal, depending on the terms of this contract. According to this document, entities face the following types of risks:
 - credit, including repayment risk (the risk that a counterparty participant will not fulfill its obligations in full either on the required date or at any time after this date);
 - market risk (the risk of losses recorded on the balance sheet and for the balance sheet positions due to changes in market prices; this is the risk of changes in the values of market parameters, such as interest rates, exchange rates, stock or commodity prices, the correlation between various market parameters and volatility) of these parameters);
 - loss of liquidity (the risk that the company will not be able to repay its obligations with available capital at a particular moment);
 - operational (risk associated with deficiencies in systems and procedures for management, support and control);
 - legal (the risk that, in accordance with the current legislation, the partner is not obliged to fulfill its obligations under the transaction).

Each of these risks above includes a significant number of specific risks, for example,

- operational - the risk of fraud, the risk of accidents, the risk of natural disasters;

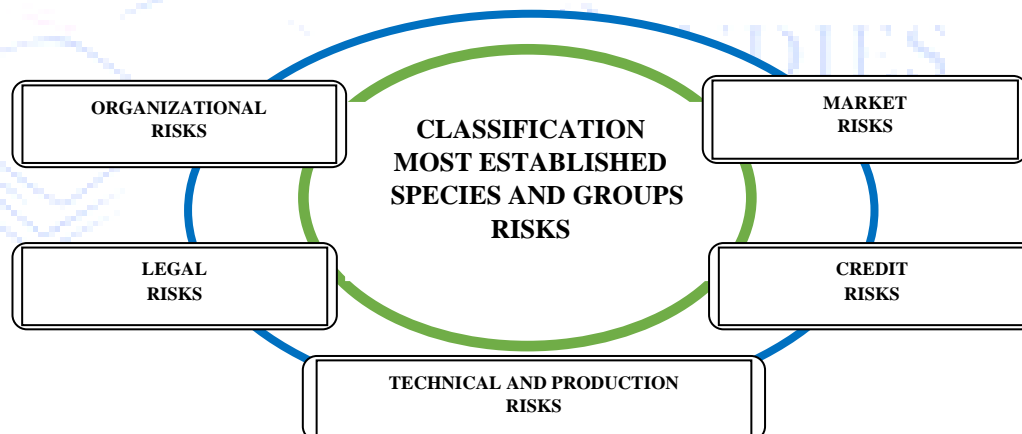
- credit - the risk of non-repayment of the principal amount of the loan, the risk of the borrower;
- market - interest rate risk, currency risk, etc.

There are a large number of classifications depending on the specifics of the activities of economic entities.

An analysis of research and practical work on the development of risk transfer in insurance activities and risk management [17], as well as the content of Internet resources, allows us to identify the following most established types and groups of risks (Fig. 4):

- organizational risks are the risks associated with errors in the management of the company, its employees; with problems of the internal monitoring and control system, developed regulations and others, i.e. risks associated with the organization of work in the subject;

- market risks are risks associated with the instability of the economic situation: the risk of financial losses due to changes in market conditions, the risk of a decrease in demand for products, translational currency risk, the risk of loss of liquidity, etc. Such a specification of this category allows using it: in a narrower meaning - as a limited list of market risks included in prudential capital requirements; in a broader sense - to organize a risk management system that is sensitive to market fluctuations caused by a variety of influence factors, the list of which remains open. This gives this concept a certain flexibility when used for the intended purpose);



*Fig.4. Classification of the most established types and risk groups*¹⁰

¹⁰ Compiled by the author, based on the synthesis of the classification of risks by a number of authors, for example, Kapustina N.V. Theoretical and methodological approaches to risk management: monograph / N.V. Kapustin. - M.: INFRA-M, 2016. -140 p.; Poskochinova O.G. Problems of implementing system solutions in the field of enterprise risk management. // Scientific and technical statements of St. Petersburg. GPU. Economic Sciences No. 6–1(185) 2013. P. 279-286. and etc.

- credit risks - the risks that the counterparty will not fulfill its obligations on time. For example, these risks exist both for banks (the classic risk of default on a loan), and for entities that have receivables, and organizations operating in the securities market.

- legal risks - these are the risks of losses associated with the fact that the legislation was either not taken into account at all, or changed during the period of the transaction; risks of non-compliance with the laws of different countries; risks of incorrectly drawn up documentation, as a result of which the counterparty is not able to fulfill the terms of the contract, etc.;

- technical and production risks – risks of damage to the environment (environmental risks); risks of man-caused accidents; risks of malfunctioning of the facility due to design and installation errors, a number of construction risks, etc.

This classification most fully covers a variety of risks and, accordingly, will allow the most competent approach to the problem of identifying risk-forming factors and studying them.

Depending on the area of occurrence, they distinguish (Fig. 4):

- internal risks (these are risks arising within the organization that are controllable and must be eliminated or excluded. The main risk of a subject of this nature is the incompetence of the staff).

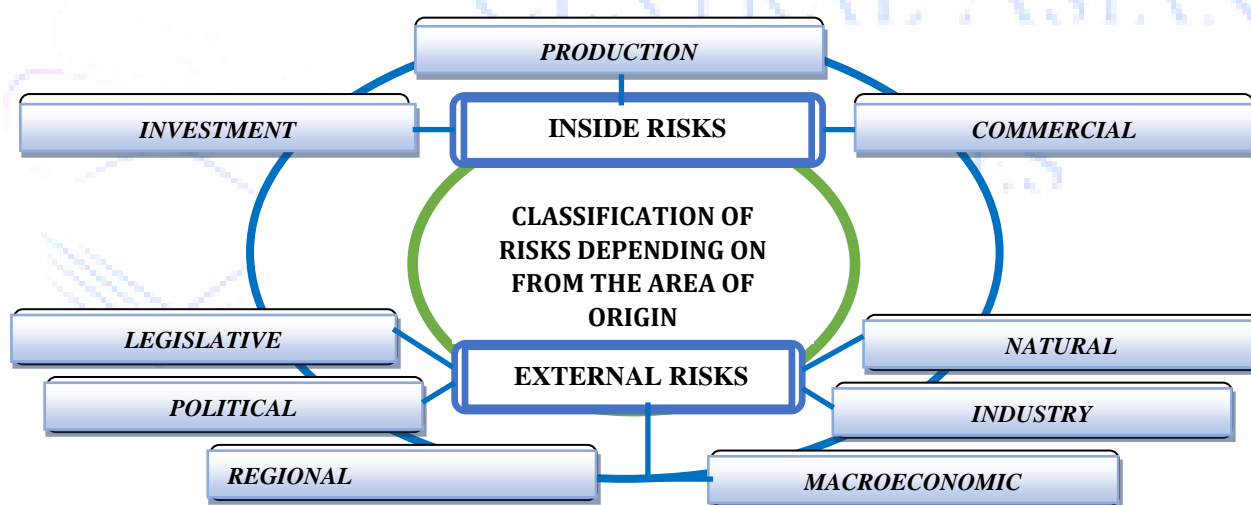


Fig.4. Classification of risks depending on the area of occurrence¹¹

– In this context, internal risks are directly caused by the activities of the economic entity or its

¹¹ Compiled by the author, based on the synthesis of risk classification by a number of authors, for example, Panyagina A.E. Approaches to understanding and classifying risks. Journal "Modern Economics: Problems, Trends, Prospects", No. 6, 2012. http://www.mivlgu.ru/site_arch/educational_activities/journal_ec/journal_arch/N6/panyagina.pdf. и др.

contact audience and are divided into three types:

- ✓ production - related to the peculiarities of the technological process at a particular enterprise, the level of qualification of employees, the organization of the supply of raw materials and materials and the implementation of transportation;
- ✓ investment - carrying a potential threat of non-receipt of the planned result;
- ✓ commercial - usually caused by improperly conducted marketing research, as a result of which the company cannot sell the entire volume of manufactured products, underestimation of competitors in the product market, erroneous pricing policy, etc.
- ✓ external risks (the factors are: competition, the degree of novelty of the product, changes in consumer preferences (new trends). You can predict their occurrence, prepare for them to minimize the negative ones, but it is impossible to somehow prevent their occurrence)¹² and they arise in the external environment of the subject, among these risks are:
 - ✓ political - related to the political situation in the country and the activities of public authorities (revolution, military operations, nationalization of private property, confiscation of property, etc.);
 - ✓ legislative - changes in existing norms with the release of new laws and regulations, for example, worsening the situation of the company (introduction of new taxes, abolition of tax incentives, increase in tax rates, etc.);
 - ✓ natural - associated with possible natural disasters and environmental pollution (floods, fires, earthquakes, etc.);
 - ✓ regional - due to the state of individual regions, their legislation, etc.;
 - ✓ sectoral - depend on the trends in the development of the industry;
 - ✓ macroeconomic - due to the development of economic processes in the country and in the world as a whole. In turn, macroeconomic risks include inflationary (deflationary), currency, interest rate and structural risks.

The basis for the following classification of risks is also the nature of the impact on the performance of economic entities. So, the risks can be:

- ✓ net (meaning the possibility of a loss or a zero result);
- ✓ speculative (expressed in the probability of getting both a positive and a negative result);
- ✓ neutral (which do not affect the expected result).

It is also generally accepted to classify risks according to the nature (factor) of occurrence, while the following groups are distinguished: political risks, natural (environmental), economic, transport, production.

Another approach is interesting, which speaks about the risks of financing, in particular project financing, dividing them into risks that pose a threat to the economic efficiency of the project, and credit risks that are associated with the possibility of improper settlement of obligations to repay the loan and interest [18].

There is also another approach to risk classification that is more commonly used. In particular, one of the most famous publications in this field is the yearbook on most countries of the world in seven volumes called "Political Risk Year-book", published by the American firm "International Business

¹² Risk24.ru: <http://www.risk24.ru/vidi.htm>.

Company USA (Publications) INC.", assesses the following risks: , financial transfers, exports, direct investment.

Moreover, risks (groups of risks) are assessed on a 12-point system (from "A +" - the best assessment, to "D-" - the worst assessment), and the overall assessment is not displayed. The American firms Business Environment Risk Intelligence, International Reports, and the German firm BERI give both individual and aggregate risk, scoring them on a 100-point scale (100 is the best estimate).

The following three groups are distinguished:

- ✓ political risks (including some social ones);
- ✓ financial risks, which mainly determine the solvency of the country in terms of providing it and its legal entities with loan capital;
- ✓ risks of operations, and in particular:
- ✓ risks for foreign trade activity (foreign trade risks);
- ✓ risks for production activities (production risks).

Risk assessment is extremely important for any investor, but especially for those who invest abroad, as they enter an unknown environment, so they should clearly understand the advantages and disadvantages of investment climate assessment systems:

- ✓ selection of risk factors and their share in any system cannot be completely objective. Therefore, it is advisable to compare risk assessments given by different systems;
- ✓ when analyzing risk factors, it is advisable for an investor to pay special attention to those that he will encounter more often;
- ✓ all the above systems for assessing business risks are not specific enough and poorly specialized in the industries in which the company intends to invest.

It should be noted that the scientific literature most fully and structured presents the risks associated with various types of lending (factoring, financial and credit activities). At the same time, most authors consider only the risks of the creditor. Among the risks to which the lender (supplier providing commodity credit) is exposed, the following groups of risks are distinguished: financial, commercial, operational and macroeconomic.

Given the fact that the risks of the lender are directly related to the well-being of the borrower, when studying investment risks, it is necessary to consider the risks of the borrower as well. Depending on who the borrower is - an individual as an individual or a commercial organization - the composition of risks varies significantly, while the risks to which an individual entrepreneur is exposed include both.

Let us consider, as an example of classification according to the "cause of risk" feature, the risks of a mortgage loan borrower, i.e. the borrower is an individual. Thus, the group "risks of loss and decrease in income" is detailed into three subgroups: the risk of permanent and temporary disability and the risk of loss of employment. Both. Similarly, in relation to borrowers that are legal entities, the following subgroups can be distinguished:

- ✓ the risk of reducing the number of orders;
- ✓ price risk (the actual sale price of the goods is lower than the calculated one);
- ✓ risk of losing a license for the right to carry out activities.

In many works, the classification is based on the division of risks into insured (insured, insured) and not subject (not insured), which is argued by the fact that insurance is the most common tool for protecting against risks [19]. In addition, such a classification has become widespread due to the fact that it is reflected in the existing regulatory framework [20]. “American businessmen practically distinguish between two types of risks:

- ✓ inevitable risks (risks of losses from natural disasters, accidents, thefts, civil unrest, transportation of goods, as well as losses from dishonesty and negligence of the company's employees, from violation of obligations by counterparties);
- ✓ risks that are associated with the inevitable uncertainty of the business process itself (losses due to unpredictable changes in market demand and supply for goods and services, changes in the world conjuncture of shares and other securities, exchange price play, fashion changes, the emergence of unexpected achievements in scientific and technological progress etc.” [21].

Financial, commercial, entrepreneurial and investment risks require separate consideration. On the one hand, these types of risks are distinguished by almost all authors, and on the other hand, the content of these concepts is not exactly defined and varies from author to author. For example, according to the classification proposed by some researchers [22], financial risks include the following risks: commercial, investment, innovative, banking, currency.

Commercial financial risks include:

- ✓ risks of non-fulfillment by counterparties of obligations to pay for goods/works/services;
- ✓ risks of financial losses due to market reasons;
- ✓ risks of unforeseen legal expenses;
- ✓ risks of loss of investments in non-own objects of investment and decrease in profitability on them; inflationary risks (depreciation of cash income);
- ✓ risks of unforeseen costs due to insurmountable reasons (natural disasters, epidemics, loss of funds in bank accounts, illegal actions of third parties);
- ✓ risks of financial losses in connection with the execution of surety agreements;
- ✓ leasing risks, risks of financial losses due to non-fulfillment by the state of obligations under securities and contracts.

Investment risks include:

- ✓ credit risks, i.e., risks associated with default on the loan by the borrower;
- ✓ risks of lost profits, i.e. risks of shortfall in income compared to income received from approved objects (purchase of stable securities, real estate, bank deposits);
- ✓ portfolio risks, which consist in possible losses of income depending on the structure of investments (ie the ratio of real and portfolio investments);
- ✓ risks of reducing the return on investment;
- ✓ risks of partial or complete loss of the entrepreneur's investments.

Despite the fact that this classification indicates only the negative component of investment risks, these risks (with the exception of credit risks) should be considered speculative.

After analyzing and summarizing the risks listed above, attributable to the groups of commercial, entrepreneurial and financial, one cannot but agree that the concept of "entrepreneurial risks" is broader and includes a group of financial risks [23].

Financial risks are the risks of events that directly affect the turnover of funds of an economic entity, and entrepreneurial risks also include events that directly affect the process of production of goods (works, services), tangible property and intellectual rights of an economic entity, etc. Composition of entrepreneurial risks largely depends on the type of activity of the economic entity, i.e. from industry specifics.

Commercial and trading risks include:

- risks of returning products due to the supply of poor-quality or otherwise unsatisfactory goods to the buyer;
- transport risks associated with damage to goods during the journey;
- risks of fraud on the part of the buyer (borrower), which can mislead the supplier (creditor) in order to purchase goods with a deferred payment (take a loan), and then hide without paying for it (without repaying the loan).

To form a multi-tasking classification of risks, it is advisable to consider these five types of risks from the perspective of risk owners, risk managers, as well as internal and external factors that affect the likelihood and consequences of risk events. The risk owner is understood as a person or a management body that, by virtue of its authority and official duties, can and must manage this risk.

In an organization, the following main groups of risk owners can be distinguished: owners, top management, internal auditors, risk management unit and other structural divisions of the organization. Business processes will be used as internal factors of the organization that carry threats and opportunities. Based on the analysis and synthesis of a number of works [24], an approach was proposed in which four groups of business processes are distinguished, each of which has its own distinctive features:

- ✓ core business processes - generate income for the organization;
- ✓ providing business processes - support the infrastructure of the organization;
- ✓ management business processes - manage the organization;
- ✓ development business processes - develop the organization.

This division is suitable for multi-tasking risk classification, since all organizations have the business processes mentioned above.

Analysis of the relationship between the main types of risks, their owners and business processes allows you to establish the internal risks of the organization and can be represented as a three-dimensional matrix for the classification of endogenous risks (Fig. 5). The cells formed at the intersection of three planes contain private endogenous risks of an economic entity related to a certain individual type

of risks, due to the corresponding business process and directly controlled by the risk owner.

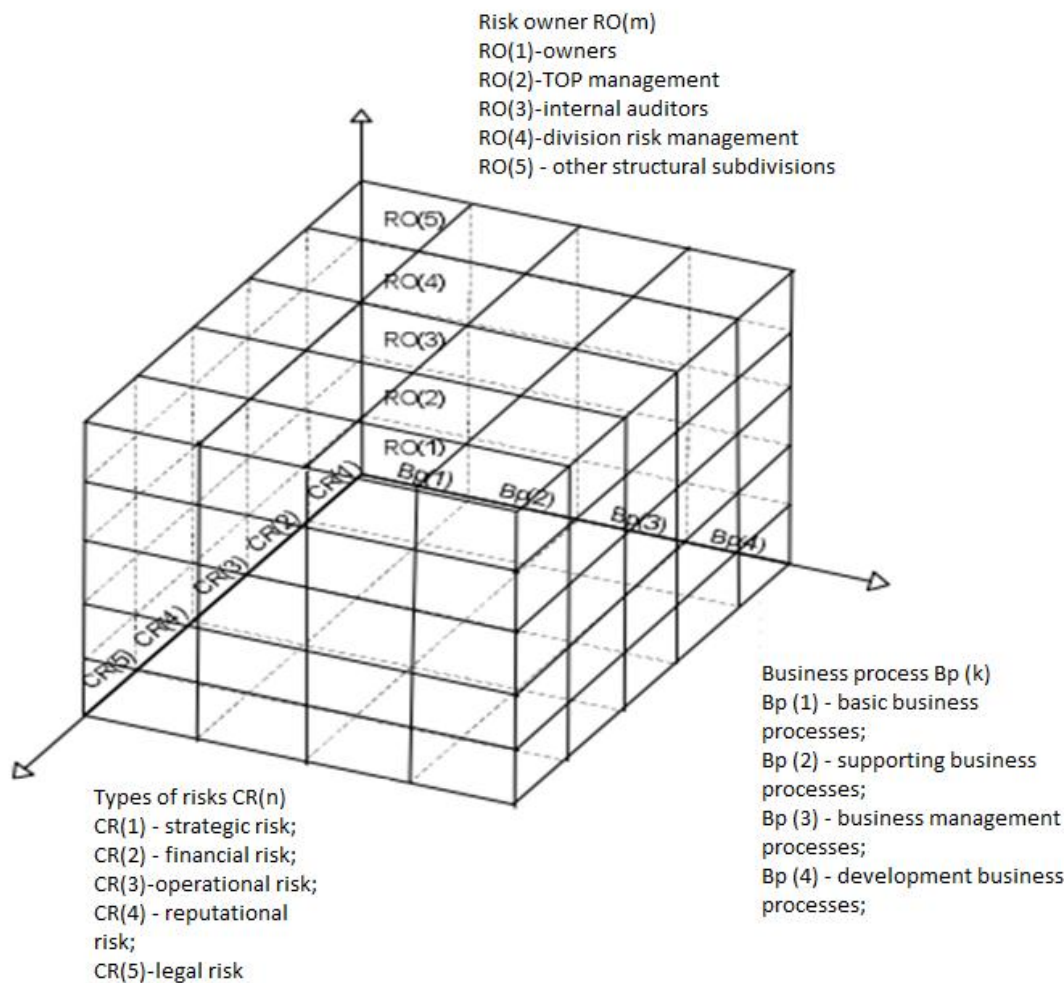


Fig.5. Internal risks of the subject of the economy
in the form of a three-dimensional matrix of classification of endogenous risks¹³

Combined together, the endogenous risks of an economic entity represent a set of risks inherent in the relevant business processes $EnBpR(k)$, types of risks $EnCR(m)$ and risk owners $EnROR(n)$.

¹³ Compiled by the author, based on the synthesis of risk classification by a number of authors, for example, Sokolov DV Risk classification as a multi-tasking tool for organization risk management. // Management of economic systems: electronic scientific journal, 2011//<https://cyberleninka.ru/journal/n/upravlenie-ekonomicheskimi-sistemami-elektronnyy-nauchnyy-zhurnal?i=998515>; Malov D.N. Methods and tools for forming the investment policy of enterprises (on the example of the automotive industry) Specialty: 08.00.05 - Economics and management of the national economy: Economics, organization and management of enterprises, industries, complexes (industry) Dis. on sois. scientific art. cand. economy Sciences, - Novgorod. 2022. -231 p. and etc.

Formula for calculating subgroups of endogenous risks $EnR(k, m, n)$, arising from internal sources (factors) and risks managed by owners, has the following form:

$$EnR(k, m, n) = \sum Enr(k, m, n) \quad (1)$$

Where, k – sequence number of the business process group;

m – ordinal number of risk owner group;

n – ordinal number of risk type group;

$Enr(k, m, n)$ – the amount of private risk emanating from the business process k , managed by risk owners m and belonging to the risk group n .

Formula for calculating groups of endogenous types of risks $EnCR(n)$ as follows:

$$EnCR(n) = \sum_{m \rightarrow 5}^{k \rightarrow 4} EnR(k, m, n) \quad (2)$$

The value of the business process risk group $EnBpR(k)$ is calculated using the following formula: is calculated using the following formula:

$$EnBpR(k) = \sum_{n \rightarrow 5}^{m \rightarrow 5} EnR(k, m, n) \quad (3)$$

Accordingly, the size of the risk group of risk owners $EnROR(m)$ is calculated using the following formula:

$$EnROR(m) = \sum_{n \rightarrow 5}^{k \rightarrow 4} EnR(k, m, n) \quad (4)$$

If necessary, each group of business processes and risk owners of the matrix can be divided into private business processes and specific risk owners, which will make it possible to understand the specifics of the activity of a particular entity, as well as provide an opportunity to study in detail the most risky business processes and the volume of risks managed by each owner risk.

The cells presented as a three-dimensional matrix at the intersection of these planes contain private endogenous risks related to a certain type of risks, due to the corresponding business process and directly controlled by the risk owner. In these cells, instead of the names of risks, their values can be entered, but only if the subject uses quantitative indicators of risk assessments.

If qualitative risk assessments are used, their values should not be entered, as this may cause problems with the comparability of the given indicators. As a result of the combination, private endogenous risks are classified according to the classification groups inherent in the respective business processes Bp (k), types of risks CR (m) and risk owners RO (n). If necessary, each group of aggregate business processes and risk owners can be subdivided into separate business processes, which will make it possible to understand the specifics of the activity of a particular entity, as well as make it possible to predict in detail the most risky business processes and areas of responsibility of risk owners.

External factors affecting the subject from outside are divided by a number of specialists [25] into the following subgroups: economic, political, market, competition, international and socio-behavioral (Fig. 6).

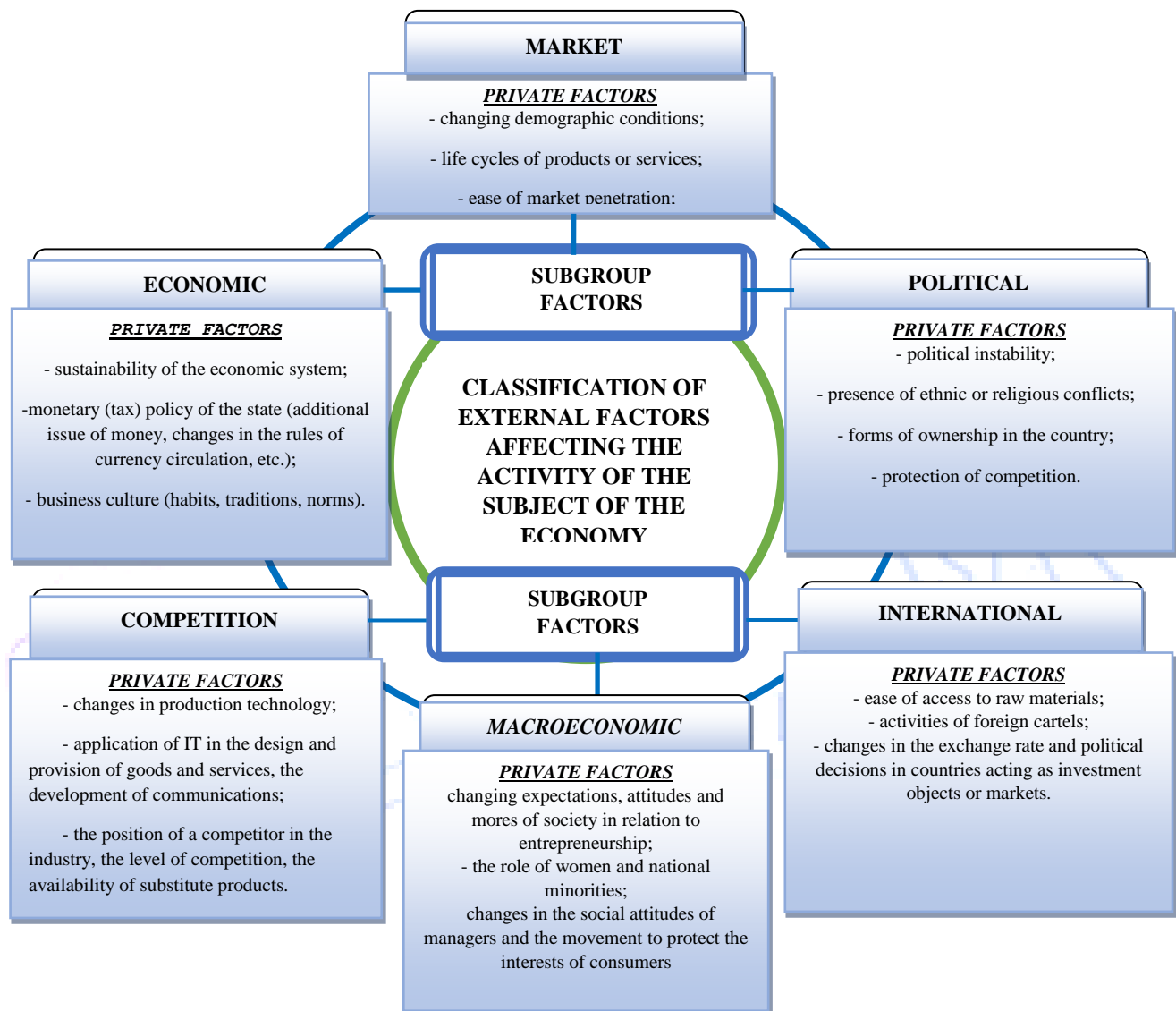


Fig. 6. External factors affecting the activity of the subject of the economy¹⁴

¹⁴ Compiled by the author, based on the synthesis of risk classification by a number of authors, for example, Zinger O.A., Ilyasova A.V. Factors influencing the sustainable development of industrial enterprises // Modern problems of science and education. - 2015. - No. 1-1. // <https://science-education.ru/ru/article/view?id=18044> (date of access: 07/29/2023).; Lazareva M.V. Factors influencing the organizational and economic mechanisms of management in

In our opinion, for the formation of a multitasking classification of risks, the division of factors into subgroups indicated in Table. 1 is not suitable, and they need to be finalized:

firstly, exclude the market and international subgroups;

secondly, to supplement the natural-ecological subgroup, which includes threats and opportunities of a natural-ecological nature.

Thus, the main external factors of the multitasking risk classification will be political, economic, technological, competitive, social and environmental.

As a result of combining environmental risk factors with the main types of risks and their owners, a three-dimensional matrix for classifying the subject's exogenous risks is formed (Fig. 7). Filling in the cells of the matrix of exogenous risks is similar to filling in the matrix of endogenous risks.

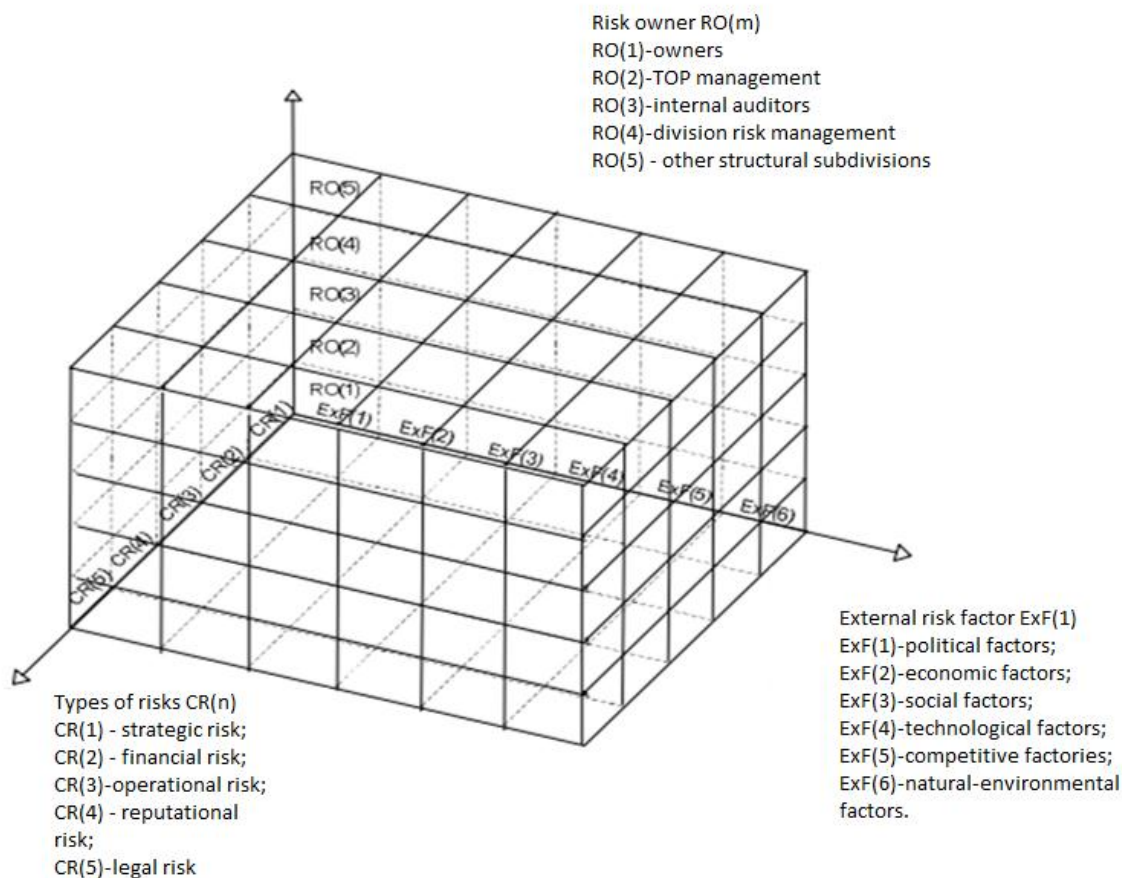


Fig. 7. Three-dimensional classification matrix of exogenous risks
subject of the economy¹⁵

the chemical industry // Universum: technical sciences: electron. scientific magazine 2022.5(98). // <https://7universum.com/ru/tech/archive/item/13740> (date of access: 07/29/2023). and etc.

¹⁵ Compiled by the author, based on the synthesis of risk classification by a number of authors, for example, Malov D.N. Methods and tools for forming the investment policy of enterprises (on the example of the automotive

As a result of this, a summary of the organization's exogenous risks should be obtained, grouped not only from the position of belonging to the types of risks $ExCR(n)$, as well as from the position of belonging to external factors $ExFR(l)$ and risk owners $ExROR(m)$.

Formula for calculating subgroups of risks arising from external $ExR(l, m, n)$ sources has the following form:

$$ExR(l, m, n) = \sum Exr(l, m, n) \quad (5)$$

Where, l – serial number of the group of external risk factors; m – sequence number of the group of risk owners; n – serial number of risk type group; $Exr(l, m, n)$ – the amount of private risk emanating from an external risk factor l , owner-managed risk m and related to the group of types of risks n .

Formula for calculating the group of exogenous types of risks $ExCR(n)$ as follows:

$$ExCR(n) = \sum_{m \rightarrow 5}^{l \rightarrow 6} ExR(l, m, n) \quad (6)$$

The value of the risk group of external factors $ExFR(l)$ is calculated using the following formula:

$$ExFR(l) = \sum_{n \rightarrow 5}^{m \rightarrow 5} ExR(l, m, n) \quad (7)$$

Accordingly, the size of the risk group of risk owners $ExROR(m)$ is calculated using the following formula:

$$ExROR(m) = \sum_{n \rightarrow 5}^{l \rightarrow 6} ExR(l, m, n) \quad (8)$$

For the purpose of greater detail, an organization can identify private external factors and risk owners within groups and analyze them in more detail to determine the most risky areas of its activities and analyze areas of responsibility.

In practice, a situation is possible when one particular risk arises under the influence of several groups of factors simultaneously. In this case, there are two options for filling the matrices shown in Fig. 5-6:

- risk belongs to the cell $EnR(k, m, n)$ or $ExR(l, m, n)$, in accordance with the main factor, the impact on which allows you to most effectively manage the likelihood and / or consequences of a risk event;

industry) Specialty: 08.00.05 - Economics and management of the national economy: Economics, organization and management of enterprises, industries, complexes (industry) Dis. on sois. scientific art. cand. economy Sciences, - Nizhny Novgorod. 2022. -231 p.; Barchukov A.V., Sokolov D.V. Multitasking risk classification. // Bulletin of the Siberian Institute of Business and Information Technologies. 2015. No. 3. P. 23.; Shitikov V.K., Mastitsky S.E. (2017) Classification, Regression and Other Data Mining Algorithms Using R. 351 p. – E-book, access address: <https://github.com/ranalytics/data-mining>, etc.

- the risk belongs to several cells $EnR(k, m, n)$ или $ExR(l, m, n)$, distributed among all factors, the impact on which allows you to manage the likelihood and / or consequences of the initial risk, in proportion to the degree of this impact. At the same time, it is necessary to introduce appropriate designations that allow a clear understanding of the causal relationships of each factor with the same risk.

The organization itself determines which filling option to use. However, it must be understood that the second option for filling in the tables is more time-consuming than the first. Its application is possible only in conditions of full automation of risk management procedures and the availability of an extensive database of risk relationships. Having considered the main types of risks of the organization, risk owners, as well as business processes and external threats and opportunities that cause these risks, the author created a multi-tasking risk classification in the form of three-dimensional matrices of classifications of endogenous and exogenous risks, which provide mechanisms that allow them to be finalized in accordance with characteristics of the activities of each particular organization.

Considering the above classifications of risks by criteria, one can come to the argument that minimization of most of the listed risks is possible due to well-designed management decisions, and the target function of the system may be different depending on the cost and volume of products (goods, services). For large volumes, the objective function is defined as minimizing risk while maintaining specifications in accordance with standards.

Conclusions and offers. Having studied the groups and types of risks presented above and based on the principle of highlighting the priority feature of the classification, we can formulate the following types of risks in insurance activities:

- according to the desirability of the consequences - speculative, pure, neutral;
- according to acceptability of consequences – pure risks are divided into acceptable and unacceptable;
- according to the ability of the subject to manage the risk - manageable, unmanageable;
- if forecasting is possible – forecasted (estimated), not estimated;
- according to the assessment method – assessed by mathematical and statistical methods, assessed by experts;
- if possible insurance – insurance, non-insurance;
- by risk value – high, medium, low;
- by sphere of occurrence – external and internal;
- by nature causes of occurrence - political (country), man-made, natural and climatic, "human factor";
- by content (by nature of consequences) – risks of material damage, financial risks (risks of financial losses), risks of damage to human life and health; environmental risks.

In addition, in order to manage risks during the transfer of risks in the insurance activities of individual entities, it seems appropriate to group certain types of risks characteristic of the type of economic activity under consideration. In this regard, taking into account industry specifics, the following risk groups can be formed:

— risks directly related to material production (including construction and installation risks, agricultural risks, production risks, etc.).

—risks of financial and credit, investment and innovation, trade and logistics (including transport and storage) and special areas of activity;

- risks of research activities;
- risks in the social sphere;
- life insurance risks.

The problem of risk, therefore, lies not in the plane of mathematics, but in its formulation in the subject language. To do this, it is also necessary to represent the real process of risky activity and the behavior of different categories of subjects - players under changing circumstances. In other words, risk is the possibility of success or failure, in which case the event is hypothetical (assumed) in nature and is not inevitable. Based on this, in order to form a multi-task classification of risks, it is advisable to consider from the perspective of risk owners, risk managers, as well as internal and external factors that affect the likelihood and consequences of risk events.

As a result of the aggregation, private endogenous risks are classified according to the classification groups specific to the respective business processes, risk types and risk owners. If necessary, each group of aggregate business processes and risk owners can be subdivided into separate business processes, which will make it possible to understand the specifics of the activity of a particular entity, as well as make it possible to predict in detail the most risky business processes and areas of responsibility of risk owners.

In conclusion, based on the selected types, it is possible to propose a classification of the risks of economic activity. However, it should be noted that the use of this classification does not solve the problem of risk management in general, since the classification is only one of the elements of the risk management system. But despite this, the proposed classification, of course, is not complete, but can be used both in solving scientific and methodological problems of studying risks and managing them in economic activity, and in practice for a better understanding of the nature of risks and management decisions in general.

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