

3. Financial risk management as a component of the financial and economic activities of business entities

In today's realities, the problem of ensuring the financial security of the enterprise is urgent. This problem is especially acute in the conditions of the current economic and financial world crisis. Today, in the conditions of an unstable political situation, economic crisis, martial law in the country and a drop in the solvent demand of the population, domestic enterprises suffer from significant financial problems.

The financial activity of the enterprise is associated with many risks, the degree of influence of which on the results of its activity increases significantly with the transition to a market economy. The risks accompanying this activity are allocated to a separate group of financial risks, which play a dominant role in the general "risk portfolio" of the enterprise.

The increase in the degree of influence of financial risks on the results of the company's financial activity is associated with rapid changes in the economic situation in the country and on the financial market, the expansion of the sphere of financial relations, the emergence of new financial technologies and tools. Risks arise in the field of corporate relations with banks and other financial institutions and are associated with the probability of loss of funds or their non-receipt.

Since today the financial risks of enterprises are the most threatening and destructive, this necessitates their further research, study of the essence, types of financial risks and methods of their management. But the variability of the conditions of the economic environment requires further research into this problem. Despite constant scientific research, this issue needs further improvement, because in the conditions of the financial and economic crisis, including political instability, further research is needed to find optimal ways of analyzing and assessing financial risks and the most effective methods of minimizing them.

As a socio-economic category, risk is an integral component of industrial relations and is an organic part of the economic mechanism. In the general case, it is interpreted as a measure of the possibility of the occurrence of an adverse event or a certain combination of a number of such events. The manifestation of a risky situation

consists in the deviation of the actual values of critical indicators from the normal, stable, average or alternative level. Risk is an element of the results of any management decision due to the fact that uncertainty is an inevitable condition of business. Risk is a consequence of uncertainty. The emergence of uncertainty is due, first of all, to the fact that most processes related to entrepreneurial activity are initially non-deterministic (it is practically impossible to determine in advance the pace and directions of scientific and technical development, changes in the market situation, consumer preferences, the manifestation of these or other natural and climatic phenomena, etc.).

The peculiarity of financial risks is that they are the result of relationships between risk subjects, that is, they arise as a result of the human factor and do not have natural stabilizers of the risk level. Therefore, they have a dangerous property – they constantly change, cannot be generalized, are purely individual, etc. Therefore, the need for their classification, identification, measurement and management is of particular importance. Financial risk is the result of choosing an alternative financial solution by its owners or managers, aimed at achieving the desired target result of financial activity with the probability of economic loss (financial loss) due to the uncertainty of its implementation.

In a market economy, risk is a key element of entrepreneurship. Entrepreneurial activity is always influenced by internal and external factors. When managing risks, first of all, it is necessary to identify the existing risks (Table 1).

In this context, it is worth considering the cumulative risk, which is the sum of the business and financial risks of the enterprise and is determined by the formula:

$$\text{Cumulative risk} = \text{Business risk} + \text{Financial risk}.$$

Table 1

Definition of financial risks in regulatory acts

Financial sector	
<i>Methodical recommendations on organization and functioning of risk management systems in banks of Ukraine, National Bank of Ukraine</i>	• Risk (from the bank's point of view) is a potential opportunity to lose income or reduce the market value of the bank's capital due to adverse effects of external or internal factors.
	• Risk (from the point of view of the National Bank) is the probability that events, expected or unexpected, may negatively affect the bank's capital and/or income.
	• Financial risks are risks that can be quantified.
Non-financial sector	
<i>International Federation of Accountants, 1999</i>	• Risk – uncertain future events that may affect the achievement of strategic, operational and financial goals of the organization. • Financial risk – refers to the financial operations of the business entity.
<i>Financial Risk Manager FRM Exam (Global Association of Risk Professionals (GARP))</i>	• Financial risk is a risk that involves financial losses for firms. Financial risk mainly arises from volatility and losses in the financial market caused by changes in stock prices, currencies, interest rates, etc.

Source: Formed on the basis of [55]

Financial risk arises in the process of the enterprise's relations with financial institutions (banks, financial, investment, insurance companies, stock exchanges, etc.). The causes of financial risk are inflationary factors, increase in bank discount rates, decrease in the value of securities and others [42]. A feature of financial risk is the probability of loss, which depends on the conduct of any operations in the financial, credit, and stock exchange sphere, the implementation of operations with stock securities, that is, the risk arising from the nature of these operations.

The goal of financial risk management is to reduce losses associated with a specific risk to a minimum. Damages can be measured in monetary terms, and measures to prevent them can also be evaluated. There are four methods of risk management: cancellation, prevention, insurance and absorption. When choosing a specific method of financial risk management, the financial manager should proceed from such principles:

- not to risk more than own capital can allow;
- not to risk more for the sake of less;
- predict the consequences of the risk [58].

Financial risk is a risk associated with the probability of losing financial resources (money). Financial risks are primarily related to changes in the financial market and changes in the economy. These can be changes in interest rates, exchange rates, changes in the industry or a specific borrower. Financial risks include:

- *credit* – risk is considered as the risk of non-repayment of the loan and non-payment of interest on it,

- *interest* – the risk arises in the event of a change in interest rates on the provided credit resources,

- *currency* – the risk is possible in the event of a change in exchange rates, as well as a political situation when rates do not change, and the possibilities of free circulation of currencies are limited. These risks are associated with the revaluation of balance sheet items of foreign branches in the national currency and in reverse transactions,

- *sectoral* – related to the specifics of certain industries, which is manifested in the change in the investment quality and exchange rate value of securities and the corresponding losses of investors,

- *liquidity and capital structure* – the risk associated with the possibility of losses when selling a security due to changes in the assessment of its quality,

- *operational* – the risk associated with an error or improper organization, an irrational choice of the method of carrying out a financial transaction. This type of risk includes possible errors of managers,

- *country risk* – a set of political, economic and transfer risks [42, c. 10], related to the actual and expected political and economic conditions in the country and the impact of these conditions on the ability of the government, certain corporations and certain individuals to meet their external debt obligations.

Usually, all types of risks are interdependent and affect the activity of an entrepreneur. At the same time, a change in one type of risk can cause a change in most others.

The risk management system has the following main stages: identification, risk assessment, risk neutralization. At the first stage, inherent risks are determined for each

type of economic activity, on the basis of which a list of possible unsystematic risks of the enterprise is formed.

At the second stage, a list of systematic risks of the enterprise's economic activity is determined.

At the third stage, a basic list of all financial risks of the enterprise, both systematic and unsystematic, is drawn up [41].

Financial risks are based on the objective uncertainty of the external environment, caused by political, economic, social and other factors of the macroeconomic environment in which the organization operates. Uncertainty of the environment involves a set of factors that provoke the emergence of a risky situation due to the fact that the enterprise does not have complete information about all subjects or objects with which it is forced to face during the implementation of its statutory activities.

On the other hand, financial risks are also subjective because they are realized through human activity. It is the entrepreneur who chooses from many alternative solutions, assessing the risk situation. Thus, the personal qualities and professionalism of the entrepreneur play not the least role in the assessment of financial risks and the subsequent outcome of the case [57].

The causes of financial risks are diverse and can arise spontaneously in the course of the company's activity, they are divided into external and internal (Figure 1).

The main external causes of the formation of financial risks include the following: a weak and unstable economy; economic crisis; inflation; ineffective state regulation of the bank discount rate; increasing the level of competition; lower prices on the world market; political factors, etc. [52]. All these reasons are external to the enterprise and therefore the enterprise cannot control them.

The internal reasons for the formation of financial risks include: an increase in costs at the enterprise, unsatisfactory financial policy of the enterprise, inefficient management of costs, income and financial results.

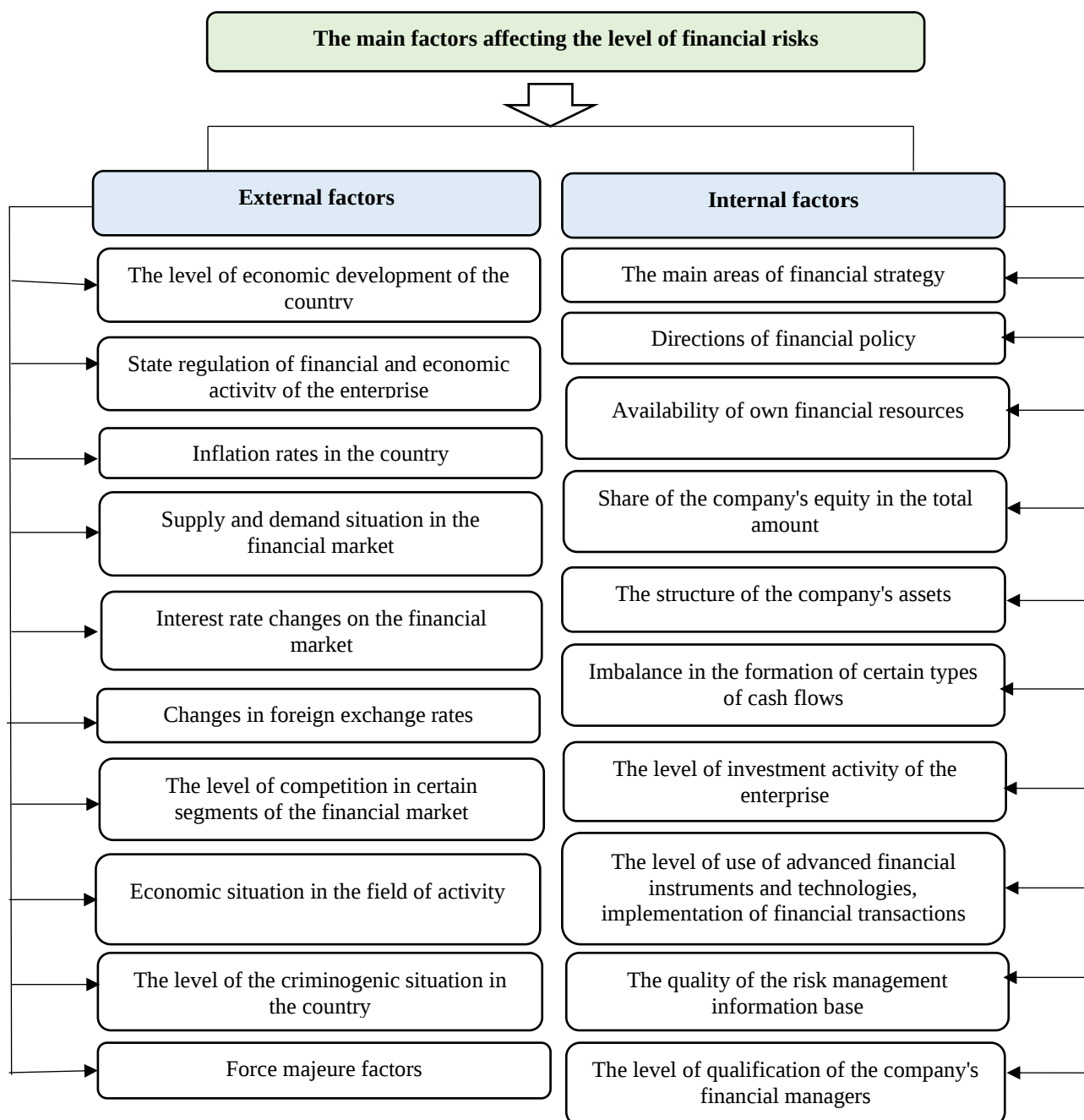


Figure 1. System of main factors affecting the level of financial risks of the enterprise

Source: formed based on research results

It should be noted that external financial risks may be caused by general economic and market factors. General economic factors include: general decline in production in the country, rising inflation, slowing down of payments, imperfection and instability of tax legislation, decrease in real incomes and purchasing power of the population, etc.

Among the market risk factors, the following can be distinguished: a decrease in the domestic market, a drop in market demand, an increase in the supply of substitute goods, instability of the financial and currency markets, insufficient liquidity of the

stock market [54]. Internal financial risks of the enterprise depend on the influence of production, commercial, investment and financial factors.

The main types of financial risks of the enterprise include: the risk of a decrease in financial stability, the risk of insolvency, investment, interest, currency, deposit, credit, tax, etc. According to the sources of occurrence, all types of financial risks are divided into two main groups: systematic (market risks) and unsystematic (specific risks) (Figure 2) [51].

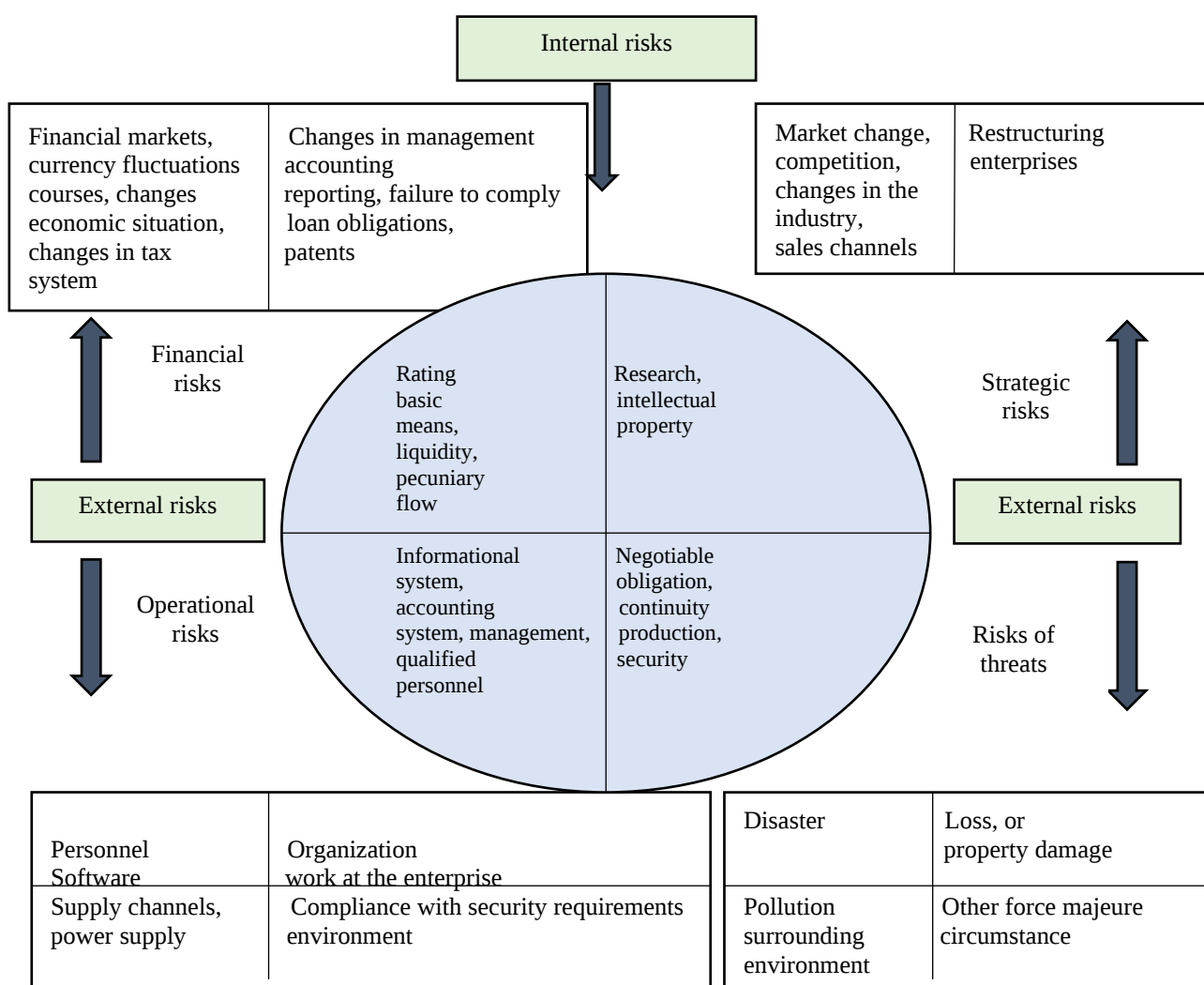


Figure 2. Types of enterprise risks

Source: formed based on research results

In the international practice of risk management, the system of risk classification based on the Generally Accepted Risk Principles (GARP), which was developed by the auditing group Coopers & Lybrand, is common, in which six types of risk are distinguished: credit, market, liquidity risk, operational risks, concentration risks, risks

of a business event, but this system does not cover all spheres of economic activity of a business entity [43].

Financial risk is assessed by analyzing certain indicators, in particular, financial leverage, break-even and the ratio of the use of borrowed funds. An equally important element of risk assessment is taking into account the probability of financial risk. In general, the definition of the level of financial risk can be represented by a formula:

$$PP = BP * PB,$$

where PP – level of relevant financial risk;

BP – the probability of the occurrence of this financial risk;

PB – the amount of possible financial losses during the implementation of this risk in value terms [43].

As a rule, all types of financial risks are interconnected, and a change in one type of risk can significantly affect the financial and economic activity of the enterprise and lead to unexpected consequences. In the table 2 shows the main features of the classification of financial risks.

Table 2

The main features of the classification of financial risks

№	Classification of risks	Characteristics of risks
1	<i>The risk of a decrease in the financial stability (or the risk of an imbalance in the financial development) of the enterprise.</i>	• This risk is generated by an imperfect capital structure (the use of a significant share of borrowed funds), which do not balance the inflows and outflows of the company's funds by volume.
2	<i>Risk of insolvency (or risk of unbalanced liquidity) of the enterprise.</i>	• This risk is caused by a decrease in the level of liquidity of current assets, which creates an imbalance of incoming and outgoing cash flows of the enterprise over time.
3	<i>Investment risk.</i>	• It characterizes the possibility of financial losses in the process of investment activity of the enterprise. Types of investment risk are divided according to the types of this activity – the risk of real investment and the risk of financial investment.
4	<i>Inflation risk.</i>	• This type of risk is characterized by the possibility of devaluation of the real value of capital (in the form of financial assets of the enterprise), as well as the expected income from financial operations in conditions of inflation.

Continuation of table 2

5	<i>Percentage risk.</i>	• It consists in an unforeseen change in the interest rate on the financial market (both deposit and credit). The reason for this type of financial risk is a change in the financial market under the influence of government regulation, an increase or decrease in the supply of free monetary resources and other factors.
6	<i>Currency risk</i>	• This type of risk is inherent in enterprises engaged in foreign economic activity. It manifests itself in the absence of forecasted income as a result of the direct impact of changes in foreign currency exchange rates used in the enterprise's foreign economic operations on the expected cash flows from these operations.
7	<i>Deposit risk</i>	• It reflects the possibility of non-return of deposits (non-redemption of deposit certificates). This happens quite rarely and is associated with an incorrect assessment and an unsuccessful choice of a commercial bank for the enterprise's deposit operations.
8	<i>Credit risk</i>	• Takes place in the financial activity of the enterprise, when it provides goods (commercial) or consumer credit to buyers. The form of its manifestation is the risk of non-payment or untimely payment of finished products sold by the enterprise on credit, as well as exceeding the debt collection estimate.
9	<i>Tax risk.</i>	• This type of financial risk has a number of manifestations: the probability of introducing new types of taxes and fees for certain aspects of economic activity; opportunities to increase the level of current taxes and fees; changing the terms and conditions of individual tax payments; the probability of cancellation of existing tax benefits in the field of economic activity of the enterprise.
10	<i>Structural risk.</i>	• This type of risk is generated by inefficient financing of the company's current costs, which causes a high share of fixed costs in their total amount. A high coefficient of operating leverage in the event of adverse changes in the commodity market and a reduction in gross cash flow from operating activities generates a much higher rate of decrease in the amount of net cash flow from this type of activity.
11	<i>Criminogenic risk.</i>	• In the field of financial activity of the enterprise, it manifests itself in the form of an announcement by its partners about fictitious bankruptcy; falsification of documents that ensure the embezzlement of money and other assets by third parties; embezzlement of certain types of assets by own personnel and other persons.
<i>According to the characterizing object, the following groups of financial risks are distinguished:</i>		
12	<i>The risk of a separate financial transaction.</i>	• It characterizes the entire range of types of financial risks inherent in a specific financial transaction (for example, the risk inherent in the acquisition of a certain share).
13	<i>The risk of various types of financial activity</i>	• (For example, the risk of investment or credit activities of the enterprise).
14	<i>The risk of financial activity of the enterprise as a whole.</i>	• The complex of various types of risks inherent in the financial activity of the enterprise is determined by the specifics of the organizational and legal form of its activity, the capital structure, the composition of assets, and the ratio of fixed and variable costs.

Continuation of table 2

<i>Financial risks are divided into the following groups according to the payback of the instruments under study:</i>		
15	<i>Individual financial risk.</i>	• It characterizes the aggregate risk inherent in individual financial instruments;
16	<i>Portfolio financial risk.</i>	• It characterizes the aggregate risk inherent in a complex of single-functional financial instruments combined into a portfolio (for example, a company's credit portfolio, its investment portfolio).
<i>According to the complexity of the study, the following groups of risks are distinguished:</i>		
17	<i>Simple financial risk.</i>	• Characteristic for the entire period of financial transactions and associated with the action of fixed factors. An example of such financial risk is interest rate risk, currency risk.
18	<i>Temporary financial risk.</i>	• It characterizes a risk that is permanent and that arises only at certain stages of a financial transaction. An example of this type of financial risk is the risk of insolvency of an efficiently operating enterprise.
<i>According to the level of financial losses, risks are divided into the following groups:</i>		
19	<i>Acceptable financial risk.</i>	• It characterizes the risk from which financial losses do not exceed the estimated amount of profit from the financial transaction;
20	<i>Critical financial risk.</i>	• It characterizes the risk from which financial losses do not exceed the estimated amount of gross income for a specific financial transaction;
21	<i>Catastrophic financial risk.</i>	• Describes a risk whose financial losses are determined by a partial or complete loss of equity.
<i>According to the possibility of prediction, financial risks are divided into the following two groups:</i>		
22	<i>Predicted financial risk.</i>	• Describes the types of risks associated with the cyclical development of the economy, changing stages of the financial market.
23	<i>Unpredictable financial risk.</i>	• Describes types of financial risks that cannot be predicted. Examples of such risks are the risk of force majeure, tax risk.
<i>According to the possibility of insurance, financial risks are divided into the following two groups:</i>		
24	<i>Financial risks that can be insured.</i>	• Financial risks that can be insured
25	<i>Financial risks that are not insured.</i>	• They include those types for which there are no offers of appropriate insurance products on the insurance market.

Source: cformed on the basis of [53]

The most common tool for neutralizing the consequences of risks is the use for these purposes of a reserve fund of financial resources, which is intended to cover possible losses. Reserves are created in accordance with the current legislation or founding documents of enterprises at the expense of retained earnings or owners' funds [60].

The complexity of the task of ensuring financial and economic security lies in the extent to which heads of enterprises, its divisions, departments, managers will

ensure the normal functioning of the enterprise by neutralizing (reducing, accepting) dangers and threats [44], various destabilizing factors.

Management subjects affect the objects of management influence with the help of certain management methods, which reveal ways to counteract real and potential threats [44], dangers and risks in specific conditions and during a certain period of time and reflect the immediate state of enterprise security.

The choice of the risk assessment method and the correctness of its implementation have a significant impact on the development of the financial state of the enterprise, because if the influence of factors that increase financial risk is incorrectly determined, the enterprise may suffer losses or go bankrupt. At the stage of evaluating the effectiveness of financial risk monitoring, the necessary financial and analytical indicators are calculated, the results are compared with previous periods and the causes of deviations are identified [46]. Appropriate measures are taken to eliminate negative consequences.

Financial risk management of the enterprise is a system of principles and methods of developing and implementing risky financial solutions that provide a comprehensive assessment of various types of financial risks and neutralize their possible negative financial consequences.

There are two complementary types of risk assessment – qualitative and quantitative. Qualitative analysis also includes a methodological approach to quantitative assessment of acceptable levels of risk. Quantitative assessment of risk, that is, numerical determination of the size of individual risks and the risk of the portfolio as a whole, is usually carried out on the basis of mathematical statistics methods [47, c. 10]. The difficulty of their application lies in the absence and inaccessibility of accumulated statistical information.

Qualitative risk assessment is carried out in several stages:

- factors affecting the growth and/or reduction of specific types of risk are identified. These factors are the basis for further risk analysis;
- a system of risk assessment indicators is determined, which must meet the requirements of adequacy, complexity, dynamism, objectivity, and also allow

replenishment and development;

- potential risk zones are determined: measures, operations, types of work, when performing which there may be uncertainty in obtaining a positive result;
- all possible risks are revealed, that is, identification of possible risks as a result of this action or inaction.

At the preliminary stage of the organization of risk management, the most important moment is its analysis. At the same time, risk factors are determined, which can be classified according to various criteria and characteristics, such as the degree of influence, the nature of the influence on the risk, the degree of control, and the source. In order to assess the probability of individual risks, it is advisable to use the following methods:

a) economic and statistical methods based on the mathematical theory of probability; allow you to get the clearest quantitative idea of the degree of probability of risk, but these methods can be used under the condition of sufficient statistical information;

b) calculation and analytical methods – allow you to get a relatively clear quantitative idea about the degree of risk probability based on the use of the company's internal information base (for example, the value of planned indicators of economic and financial activity); these methods can be used to assess economic risk, insolvency risk and risk of loss of financial stability;

c) analog methods – determine the degree of risk probability for some of the most massive operations of the enterprise; the use of these methods may be related to the assessment of the degree of probability of commercial, economic, price risk;

d) expert methods – are used only if the enterprise does not have the necessary information or statistical data for further calculations; these methods are based on a survey of qualified specialists (insurance, tax, financial) with subsequent mathematical processing of the results of this survey; expert methods can be used to determine the degree of probability of price, inflation, interest, tax, investment and other risks [60].

A special kind of financial risks is credit risk. There are various methods and ways of managing credit risks both at the level of each bank and at the level of the

entire banking system. To manage credit risks at all levels of the banking system, indicative methods are used, which include credit risk standards established by the Central Bank.

In Ukraine, the following standards are combined into the appropriate group: the standard for the maximum amount of credit risk per counterparty – H7; standard of large credit risks – H8; the norm of the maximum size of loans, guarantees and sureties provided to one insider – H9; the norm of the maximum aggregate amount of loans, guarantees and sureties provided to insiders is H10. These norms serve as a kind of indicators for banks [62].

When assessing risks, the basic values that are calculated are the amount of losses that the enterprise may suffer and the probability of these losses. Complex calculation algorithms are used to determine these values [51]. The results of the risk assessment are the basis for choosing appropriate measures for their neutralization. The main risk neutralization tools include: formation of appropriate reserves; risk diversification; hedging; risk insurance by insurance companies.

Financial risk management involves the development and implementation of economically justified recommendations and measures for the enterprise aimed at reducing the initial level of risk in financial transactions or monetary transactions to an acceptable final level. The assessment of the level of risk is carried out on the basis of the calculation of the probability of financial risk. This indicator is a measure of the frequency of the possible occurrence of an adverse event, which causes financial losses in the activity of the subject [51].

The process of financial risk management can be divided into six consecutive stages: determining the goal; ascertaining the risk; risk assessment; choosing a risk management method from 4: avoidance, acceptance, transfer, and prevention; implementation of management; summary of results (Figure 3).

Financial risks can be assessed in three main ways:

- with the help of fundamental indicators;
- through a comparative assessment of macroeconomic and financial multipliers;

– with the help of market indicators of the attractiveness of the sector according to free cash flows, dividend yield, technical indicators [49].

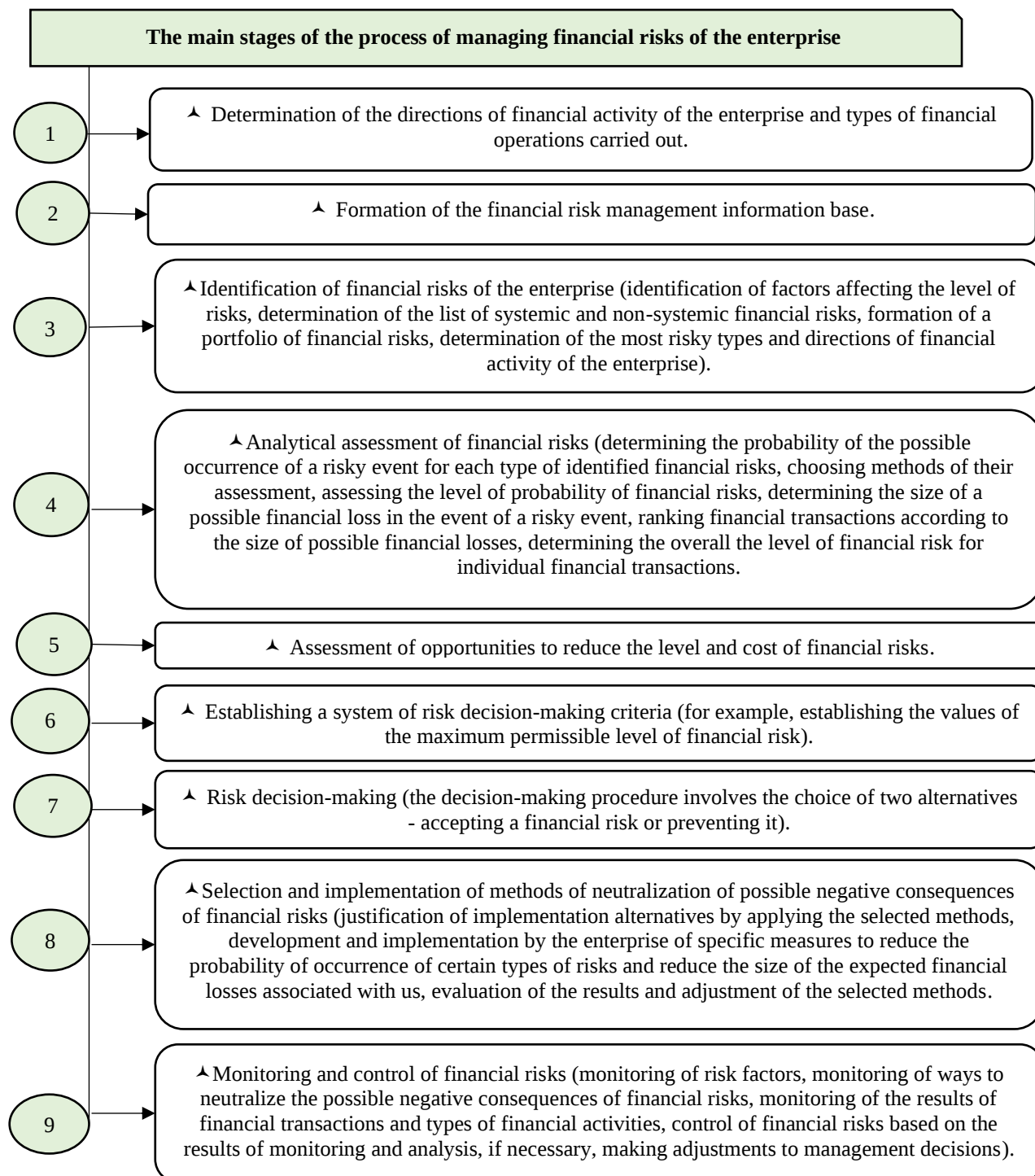


Figure 3. Stages of the financial risk management process

Source: formed based on research results

The main, basic stages of financial risk management are:

– planning and forecasting the level of financial risks of the enterprise, which occurs by using the method of expert assessments at the enterprise;

– implementation of the company's financial risk management strategy. The choice of strategy depends on determining the basic conditions of the enterprise. For example, whether the enterprise is ready to take a certain level of risk, whether it seeks to avoid risk and whether it does not seek to significantly maximize the level of profitability of its activities. Or the scheme of risk transfer using basic methods is more attractive to him;

– assessment of the effectiveness of financial risk management (performed using such indicators as the arithmetic mean; dispersion; mean square deviation; coefficient of variation) [47]. In the table 3 presents the main methods of financial risk management.

Table 3

Basic methods of financial risk management

№	Method name	Characteristics of the method
1	<i>Insurance</i>	Undertakes responsibility for financial risk indemnification to another party for a fee. The economic essence of insurance consists in the creation of a reserve (insurance) fund, contributions to which for an individual insured are set at a level significantly lower than the amount of expected losses and, as a result, insurance compensation.
2	<i>Creating a reserve of funds*</i>	- Is one of the methods of risk management, which involves establishing a relationship between potential risks of impact on the value of assets and the amount of funds required to eliminate the consequences of the risk. - Own insurance or reserving is not aimed at reducing the probability of risk and is primarily aimed at compensating material losses from the risk. (*to cover unforeseen costs)
3	<i>Hedging</i>	- Designed to reduce possible financial losses of investments due to market risk, and sometimes credit risk. As with insurance, hedging requires the diversion of additional resources. Hedging of market risk is carried out by carrying out balanced operations with derivative financial instruments - forwards, futures, options and swaps. Credit risk hedging instruments such as credit default swaps have recently emerged. - Hedging involves the complete exclusion of the possibility of receiving any profit or loss on this position by opening an opposite or compensating position. This "double guarantee" of both profits and losses distinguishes hedging from classical insurance.
4	<i>Diversification</i>	- It is a way of reducing the aggregate appetite for risk by allocating funds between different financial assets, the price or profitability of which is weakly correlated. The essence of diversification is to reduce the maximum possible losses per event. At the same time, the number of types of risks that require control is increasing. - Diversification is one of the most popular mechanisms for reducing market and credit risks when forming a portfolio of financial assets and a portfolio of bank loans, respectively. It is important to remember that diversification is only effective in reducing unsystematic risk (i.e. risk associated with a particular instrument), while systemic risks common to all instruments considered (eg cyclical downturn risk) cannot be reduced by changing portfolio structure.

Continuation of table 3

5	<i>Management of assets and liabilities</i>	• It aims to carefully balance cash, investments and liabilities to minimize changes in net worth. Asset and liability management is most widely used in banking practice to control market, primarily currency and interest rate risks. • Asset and liability management is aimed at avoiding excessive risk by dynamically adjusting the main parameters of the portfolio. In other words, this method is aimed at regulating risk appetite in the activity itself, unlike hedging, which is based on risk neutralization.
6	<i>Limitation</i>	• This is a quantitative limit imposed on certain characteristics of operations. The limit is necessary in those cases when, during operations, for necessary reasons, the necessary characteristics of the riskiness of operations are not included in the calculation. The reasons for setting the limit may be the technical impossibility of assessing risks directly during operations or a conflict of interests between shareholders and employees of the divisions (insufficient interest of the bank's business divisions in complying with the chosen risk management strategy). • For example, the term (duration) limit of bonds in the portfolio. At the same time, bond department employees are interested in buying long-term bonds because it increases their ability to earn a profit, but long-term bonds may carry unacceptable risk. • The restriction is inappropriate if the decision to conduct operations is based on the necessary risk assessments. For example, for a bank with a small loan portfolio, there is no need to limit commercial lending operations, since risk can be assessed and to some extent limited directly at the time of loan application, loan approval by the credit committee and senior management.

Source: cformed on the basis of [55]

It should be noted that risk analysis usually uses the following assumptions:

- risk losses do not depend on each other;
- a loss in one type of activity does not necessarily increase the probability of a loss in another, with the exception of force majeure circumstances;
- the maximum possible loss should not exceed the participant's financial capabilities [49].

Avoiding the risk of failure or making radical decisions to eliminate the threat of their occurrence can significantly inhibit innovative activity and reduce innovative opportunities in further development and cause a loss of profit/income/capital during the implementation of strategic and tactical plans and programs [48].

The main components forming the financial risk management mechanism are shown in Fig. 4.

Limitation of financial risks is carried out by establishing appropriate financial standards, i.e. the upper limit of funds or resources, for certain areas of financial activity in order to fix possible financial losses at an acceptable level for the enterprise.

Hedging is the use of financial instruments that avoid or limit the risk of financial transactions as a result of adverse changes in exchange rates, commodity prices, and interest rates in the future by buying or selling futures contracts [49]. If the financial and economic activity of the enterprise is constantly affected by factors whose fluctuations are difficult to predict by the relevant legal framework, it is advisable to supplement a certain system of measures that should be applied under certain circumstances, for example, exceeding the permissible fluctuations of financial risk factors.

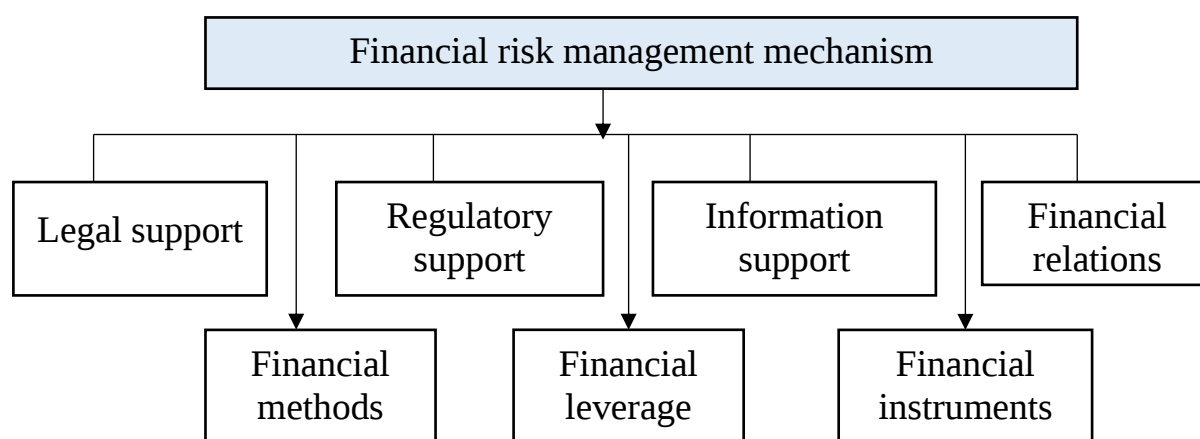


Figure 4. The main constituent elements forming the financial risk management mechanism

Source: formed based on research results

The speed of response of the monitoring system to the occurrence of unforeseen events is one of the most important properties. The content of this property consists in determining the current nature of the goals and objectives set in the system of enterprise plans and the available financial resources of the enterprise. At the same time, the monitoring system is expected to detect specific deviations in the state of influencing factors, the causes of such deviations, as well as prompt detection of specific consequences that may arise as a result of such deviations.

Implementation of operational control over the implementation of planned indicators is the main link in the regulatory system, as it expresses the state of financial resources and the rhythm of production in comparison with planned parameters. Therefore, the implementation of such control should occur synchronously with the

production process and should be a source of relevant information for the justification of management decisions throughout the vertical of financial risk management [45]. In Fig. 5 shows the stages of the enterprise's financial risk management process.

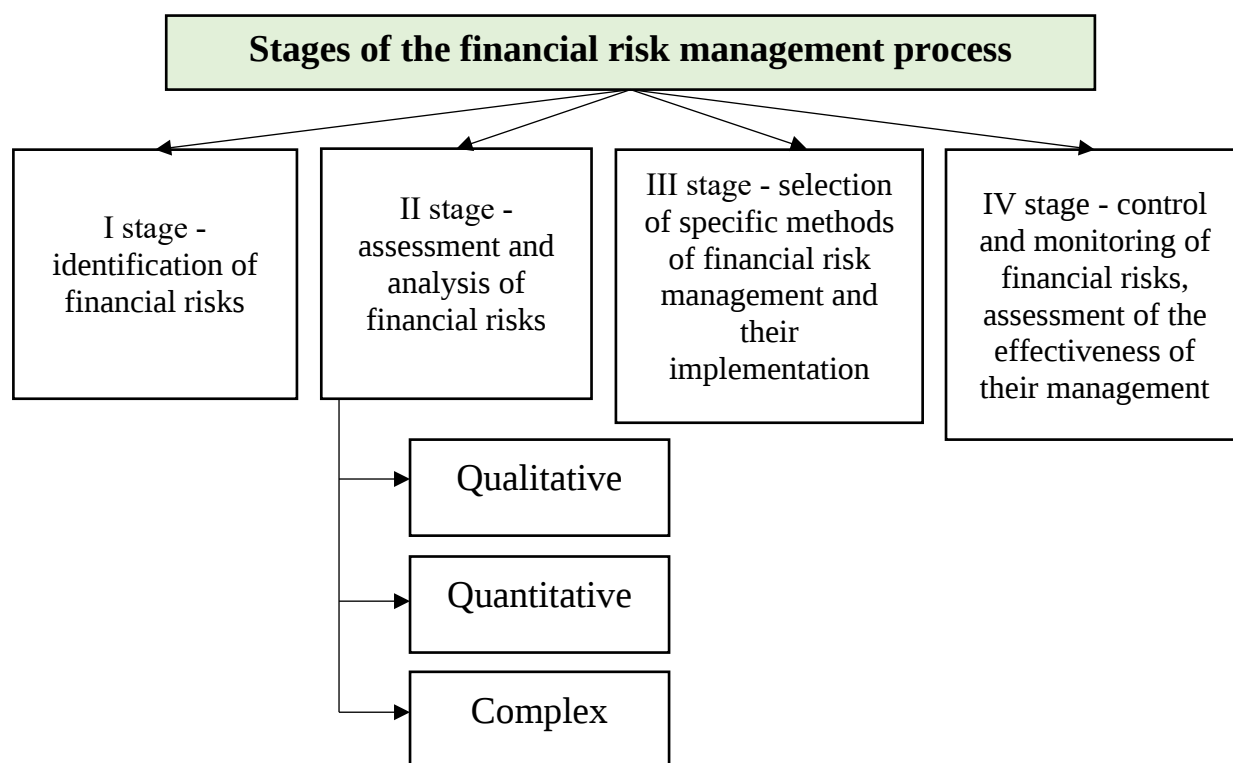


Figure 5. Stages of the financial risk management process

Source: formed based on research results

An important role in the management of financial risks at the enterprise is played by the risk neutralization mechanism. Its main advantage is that a high degree of alternative solutions depends on the implementation of financial activities and financial capabilities of the enterprise [49], and this, in turn, can be a prerequisite for external and internal insurance procedures.

The essence of financial risk insurance is to protect the company's property interests in the event of an insured event (insurance event) by special insurance companies (insurers) at the expense of funds generated by them from receiving insurance payments (insurance premiums) [49].

At the stage of risk neutralization (minimization), the most common in practice is the use of separate groups of methods (Table 4).

In the event that the level of financial risk cannot be accurately measured, the process of justifying the expediency of management decisions should be based on

general principles of decision-making under risk conditions. The financial security management system of any business entity highlights the management of financial risks at the stage of their prevention, neutralization and minimization of negative financial consequences [55, c. 16]. Each stage of financial risk management requires the use of specific methods and implementation of special measures.

Table 4

Groups of methods used at the risk neutralization (minimization) stage

№	Characteristics of methods
1	▲ Risk localization methods: allocation of "bottlenecks" to structurally or financially independent divisions of the enterprise (internal venture); ▲ Consecutive disintegration of the enterprise;
2	▲ Methods of minimizing risks or keeping risk within acceptable limits: – limiting financial risks; – establishing the minimum size of highly liquid assets of the enterprise, – establishing the maximum amount of loanable funds in economic circulation; ▲ Establishing the maximum size of a deposit placed in one bank; ▲ Limiting the concentration of risks; ▲ Obtaining certain guarantees from counterparties when providing commercial credits and loans; ▲ Sale of goods under the terms of financial leasing;
3	▲ Methods of dispersing risks: integrative distribution of responsibility between production partners; ▲ Diversification of activities, markets and business areas; ▲ Expansion of the circle of consumer partners and partners of suppliers of raw materials, materials, etc; ▲ Distribution of risks by stages of work in time; ▲ Diversification of the investment, currency and deposit portfolio of the enterprise, diversification of the portfolio of securities; ▲ Hedging.

Source: cformed on the basis of [56]

Prevention of financial risks requires timely identification of trends and prerequisites that contribute to their development, based on the analysis of which a system of preventive measures against financial risks is developed and implemented, aimed at reducing the probability of their occurrence and preventing threats to financial security. This goal is achieved by eliminating the prerequisites for future risk.

The basis of the prevention of financial dangers are methods that allow modeling and forming scenarios for the realization of a risky situation when implementing a specifically chosen strategy for the development of an enterprise. The most common among them are:

- 1) application of SWOT analysis;
- 2) modeling of business processes;
- 3) analysis of conflicting goals;
- 4) risk-benefit modeling based on the utility theory;
- 5) application of benchmarking based on the analysis of competitors and the best companies in the industry;
- 6) construction of financial balance matrices;
- 7) calculation of the financial stability reserve and determination of the break-even level;
- 8) forecasting the time of occurrence of risky situations and realization of specific risks;
- 9) monitoring of indicators of the financial state of the enterprise, detection of the threat of bankruptcy of the enterprise;
- 10) forecasting the bankruptcy of the enterprise in accordance with the officially approved methodology;
- 11) forecasting the foreign economic situation in the country, region of administration, etc.;
- 12) monitoring of the socio-economic and regulatory environment [56].

In the era of computerization of all financial operations, mathematical methods are used to manage the liquidity risk of financial institutions, which are associated with effective software and modern computer technology. The main direction of their application is the optimization of liquidity and profitability. These methods allow financial institutions to scientifically manage assets, optimize liquidity, profitability and profitability. In the table 5 shows the financial results before taxation of Ukrainian enterprises by type of economic activity for 2016-2020.

Linear programming connects the asset management problem with the liability management problem, taking into account the limitations on the profitability of financial transactions and liquidity [61]. Mathematical methods of liquidity management of financial institutions allow modeling any situation that may arise.

At enterprises, three areas of risk management are distinguished depending on the type of risk and company policy: neutral (risk avoidance), external (risk transfer) and internal (risk acceptance).

Table 5

Financial results before taxation of Ukrainian enterprises by types of economic
activity in 2016-2020 (million UAH)

№	Indicators	Years					Deviation 2020 (+/-) 2016
		2016	2017	2018	2019	2020	
1	That's all	-22201,5	274831,6	429129,3	664849,8	303219,3	325420,8
2	agriculture, forestry and fisheries	91109,5	69344,1	71478,5	94041,4	82230,6	-8878,9
3	industry	-7569,6	87461,7	154138,2	166753,2	-22289,6	-14720,0
4	construction	-9342,9	-3535,8	6433,9	15974,8	-2047,8	7295,1
5	wholesale and retail trade; repair of motor vehicles and motorcycles	7277,0	39296,3	86290,5	129113,3	45272,0	37995,0
6	transport, warehousing, postal and courier activities	12819,7	-16532,6	-22661,6	14414,8	17013,3	4193,6
7	temporary accommodation and catering	-1947,6	1976,8	2886,5	4648,0	-4440,9	-2493,3
8	information and telecommunications	4197,9	15195,3	18181,0	24838,8	16961,1	12763,2
9	financial and insurance activities	-91658,3	56159,7	84667,0	69326,6	196913,0	288571,3
10	real estate transactions	-42950,2	-15430,7	16,3	47317,5	-36027,1	6923,1
11	professional, scientific and technical activity	21079,8	45611,6	26147,7	84025,1	-9583,4	-30663,2
12	activities in the field of administrative and auxiliary services	-4347,7	-2967,3	482,5	11446,8	875,3	5223,0
13	education	102,8	121,5	178,6	377,7	143,8	41,0
14	health care and provision of social assistance	311,7	320,4	1249,3	1990,8	19616,0	19304,3
15	arts, sports, entertainment and recreation	-1512,8	-2198,1	-496,1	120,3	-1540,3	-27,5
16	provision of other types of services	229,2	8,7	137,0	460,7	123,3	-105,9

Source: cformed on the basis of [61]

In fig. 6 shows the financial results before taxation of large and medium-sized enterprises of Ukraine by type of economic activity for January-September 2021.

One of the main tasks at the enterprise is the formation of the enterprise's financial risk management program.

One of the possibilities of forming the above-mentioned program is the construction of an IDEF0 model.

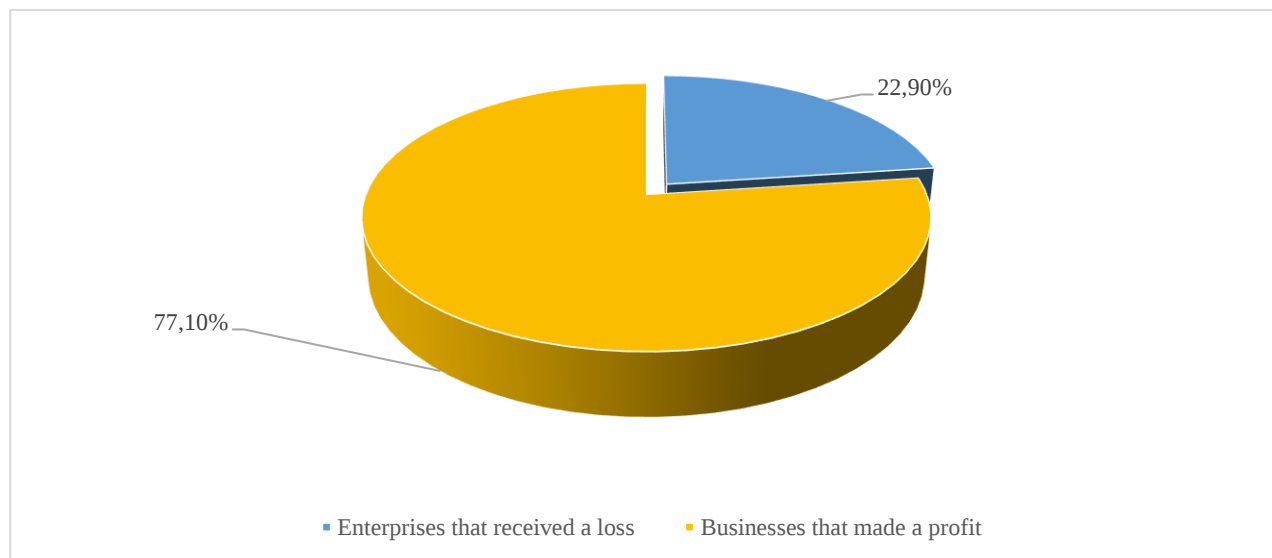


Figure 6. Financial results before taxation of large and medium-sized enterprises of Ukraine by types of economic activity for January-September 2021, %

Source: *cformed on the basis of [61]*

The purpose of building the IDEF0-model is the formation of the financial risk management program of the enterprise; subject – financial risks; the subject is the process of managing the company's financial risks (Figure 7) [47].

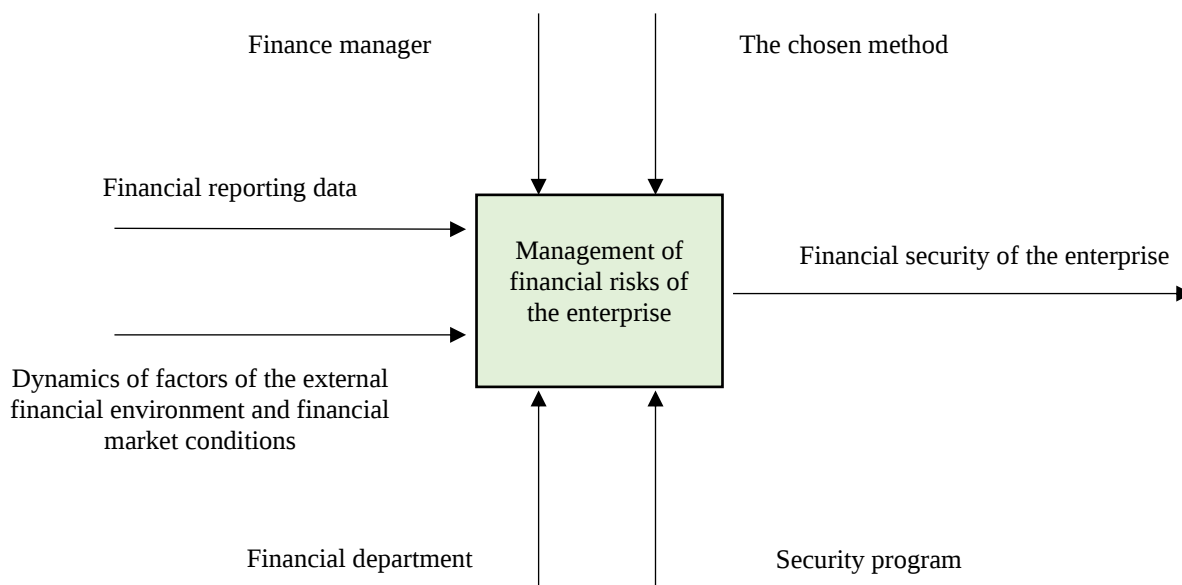


Figure 7. Model of financial risk management of the enterprise

Source: *formed based on research results*

The prevention of financial risks and the minimization of their negative impact on the operation and development of the enterprise requires the study of the conditions and nature of each factor that can cause financial losses, and therefore negatively affect the investment attractiveness and competitiveness of enterprises in the domestic and foreign markets [48].

The following risk management techniques are used to reduce risk:

- 1) risk prevention (risk avoidance);
- 2) loss prevention (loss prevention and control);
- 3) take risks (risk retention);
- 4) risk transfer.

1. Risk avoidance is a conscious decision not to be exposed to the relevant types of risks. For example, there are people who do not play in the stock market at all, but invest in real assets, the price of which may increase over time. To prevent credit risk, banks and leasing companies conduct a thorough financial and economic analysis of the borrower's property and financial condition.

2. Loss prevention and control consists of actions taken to reduce the probability of losses and minimize their consequences. Such actions can be carried out before the occurrence of losses, during the occurrence of the loss and after its occurrence.

3. Risk retention consists in covering losses at the expense of one's own resources and funds.

4. Risk transfer (risk transfer) is the transfer of risk to other persons. Like the movement of monetary resources through the financial system, risks move. In the financial system, there are financial intermediaries, such as insurance companies, which carry out their risk transfer activities and collect insurance premiums from their customers who wish to reduce their risk [62]. Insurance companies transfer these risks to investors who, for a fee, agree to pay insurance claims and bear the assumed risk.

A correctly constructed enterprise risk management system allows you to stabilize the most important strategic and tactical performance indicators (for example, business value, profitability), optimize the allocation of resources, capital in accordance with the assessment of risks, prevent losses (for example, by implementing

mechanisms for timely exit from the project and evaluating the project as real options) [51] in order to prepare the business for actions in an emergency situation and increase the reputation of the enterprise.

Any necessary decision requires the development of a detailed strategic risk management plan. There are various ways (methods) of reducing the level of risk. These include risk avoidance, risk localization, risk distribution and compensation [46]. In order to avoid financial risks, the enterprise must have information about the market situation, reliability of partners, contractors, suppliers, their reputation, financial and economic condition, etc.

Reduction of financial risks can also be achieved through the mechanism of diversification. Diversification is one of the ways to minimize financial risks, which consists in the distribution of risks by expanding investment objects, the range of goods and services, financial instruments, etc. Diversification of investments, products and production is taking place.

Regarding risk management mechanisms and tools in the agricultural sector, we note that they are divided into three levels:

1. Tools that an agricultural enterprise can use independently.
2. Tools for the use of which the agricultural producer must contact a bank, credit union, investment or insurance company, leasing company, etc.
3. Macroeconomic methods based on state regulatory policy in the agricultural market and state programs to support the agricultural sector (Figure 8) [59].

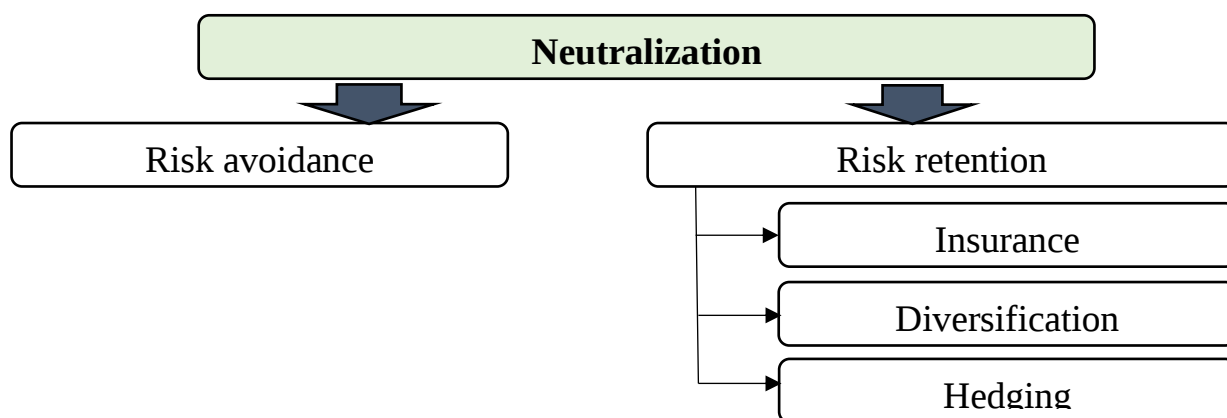


Figure 8. Forms and methods of enterprise risk management

Source: formed based on research results

Rapid changes in the economic situation in the country and financial market

conditions, the expansion of financial relations, the emergence of new financial technologies and tools accelerate the growth of the impact of financial risks on the financial results of the enterprise. Therefore, the application of the proposed block diagram will allow skillful management of all processes during risky situations and timely response to these changes [46]. The main task of entrepreneurs is to take timely measures and adequate decisions to support the financial condition of the enterprise.

In this context, it is worth considering a computational and analytical method that is based on theoretical ideas, but, unfortunately, the applied theory of risk is well developed only for the insurance and gambling business. The most common varieties of this method are: building a "decision tree" and the method of analogs. When using the "decision tree" method (if the sequence of actions is known), appropriate graphs of all possible solutions are built [62]. This method is also statistically probabilistic. The branches of the "decision tree" correlate subjective and objective assessments of the possible probabilities of events and their outcomes.

By moving the branches of such a tree, the probability of obtaining the greatest profit with minimal risk is determined. This method is also used to evaluate investment projects. In the quantitative analysis of risk, risk is understood as the probability (threat) of the enterprise losing a share of its resources, loss of income or occurrence of additional costs as a result of certain production and financial activities. Let's consider known approaches to calculating risk indicators, denoting the value of risk in absolute terms through W :

- 1) $W = P_i$, where P_i – the likelihood of adverse consequences;
 - 2) $W = P_i x$, where x – the size of adverse consequences;
 - 3) $W = M(X) = M_x = m_x$, where m_x – mathematical expectation of adverse consequences (loss of profit);
 - 4) $W = D(X) = \sigma^2 X$,
- where $\sigma^2 X$ – the dispersion of the values of a random variable around the mean value.

Assuming that X_1 i X_2 – the amount of profit, then at $m_1 > m_2$ i $\sigma_1 < \sigma_2$ a situation

characterized by magnitude will be more attractive X_1 .

The risk will be determined as a function of the ratio of the maximum possible losses and the size of own resources. This ratio is considered the risk factor:

$$W = Y : C,$$

where Y – maximum possible losses; C – the volume of own financial resources, taking into account precisely known inflows of funds [62].

Financial risk, like the result of any decision made in the presence of alternatives, always carries the risk of financial loss. The amount of financial losses depends on the uncertainty, unpredictability of the final result, especially on the innovative activity of the enterprise related to the technological renewal of fixed assets, the introduction of new technological processes, the creation of innovative products, the development of new markets, etc.

In these areas of activity there are relevant influencing factors that cause risks of financial losses, which leads to a decrease in the level of financial security of the enterprise.

Today, the insurance market has a large list of services provided by insurance companies to eliminate (minimize) financial risk. The main ones include:

- credit risk insurance (commodity, export, etc.);
- insurance of innovative risks;
- deposit risk insurance;
- liability insurance;
- risk insurance in case of failure to achieve the planned level of profitability, etc. [49].

Risk avoidance is the development of internal measures that completely exclude a certain type of financial risk. This method allows you to avoid potential losses associated with financial risks, but, on the other hand, does not allow you to profit from risky activities. In addition, it is simply impossible to avoid financial risk [51]. Therefore, as a rule, this method is used only to avoid very serious and high risks.

To build an effective financial risk management system, it is necessary to develop a concept of financial risk management, which includes the formation and

implementation of financial risk management strategies depending on the choice of management method and risk level, as well as the determination of informational and methodological support for these processes (Table 6).

Table 6

Proposals for the formation of a financial risk management system at enterprises

№	Characteristics of offers
1	• Introduce a risk management system at enterprises as an element of the enterprise management system as a whole;
2	• Implement risk management technologies in the work of financial managers of enterprises;
3	• Create an information database of financial security risks, which would allow to accumulate statistical information about changes in dynamics;
4	• Introduce the selection of the optimal level of financial security using the provisions of the concept of compromise between risk and profitability;
5	• Develop and implement a risk management strategy, which would include: assessment and management of financial and economic risks of the enterprise's production and economic activity; assessment of the possible consequences of implemented decisions in the future for the enterprise itself; calculation and establishment of the zone of permissible risk, when the volume of possible losses from the adoption of a certain management decision does not exceed the volume of the forecasted profit; carrying out a comparative analysis of possible benefits and losses from the implementation of certain management decisions; implementation of preventive measures aimed at avoiding risks;
6	• Develop and implement a risk management mechanism at enterprises;
7	• Introduce risk identification based on the analysis of hierarchical models of business processes and process operations. This will allow to identify, describe and classify the risks of business processes and technological processes in the field of financial management and cost management. Based on the analysis of the purpose of the business process, determine the main characteristics of the process, as a list of factors that indicate its success (or failure) and directly affect the main characteristics of the process;
8	• Introduce the recording of each of the identified risks with a mandatory indication of the name of the risk; risk probabilities; the causes of the risk and establishing the potential degree of its impact on the financial security of the enterprise during implementation; specific risk management mechanism; responsibility for risk management.

Source: cformed on the basis of [56]

The concept of financial risk management of the enterprise is aimed at minimizing the financial losses of enterprises from the negative impact of risks, establishing the organization of the financial activities of the enterprise, forming a sufficient amount of financial resources, which helps to quickly maneuver and mobile use them, as well as to concentrate funds on the most important directions of the enterprise's development; development of different duration of financial plans [60]; creation of reserves in case of unforeseen situations, ensuring a high level of financial security.

The consequences of the armed conflict that is taking place in Ukraine are felt in various spheres of personal life, the functioning of enterprises, society and the state as a whole. In order for the economic activity of Ukrainian enterprises to be effective during the Russian Federation's war with Ukraine, it is not enough to restore their work. Modernization and partial reorientation to other sales markets are needed. Therefore, it makes sense to implement energy-saving, ecological and innovative technologies during the reconstruction of destroyed regions, which will significantly increase the competitiveness of regional enterprises and increase their investment attractiveness.

One of the most important functions of management is to create the necessary conditions for the further functioning of the organization. For this reason, in the West, the main focus of risk managers is not profit maximization, but successful risk management, which ensures the greatest profit and minimum losses for the enterprise in the long term.

Modern technologies make it possible to create ERM systems at enterprises (Enterprise Risk Management – a comprehensive risk management system at the enterprise). The attractiveness of using ERM systems lies in improving the business situation, reducing risk management costs, and increasing competitiveness [57]. Corporate risk management is a process of identifying, evaluating and controlling the influence of internal and external factors that can negatively affect the value of a business entity.

The difference between ERM and point risk management is that risk management is carried out "from top to bottom" at the initiative of the board, board of directors and shareholders, that is, it creates a whole system that is part of the corporate governance structure. With this approach, it becomes possible to obtain comparable estimates for all types of financial risk and aggregate them. Such a structure contributes to the information security of all links of the corporate structure.

The sustainable development of entrepreneurship operating in a competitive environment is possible under the conditions of an appropriate level of financial security, which is determined by the effectiveness of countering the risk factors of the external and internal environment that negatively affect their financial results [48].

Therefore, the development of an effective mechanism for managing financial risks of enterprises is an urgent task, the solution of which will create appropriate conditions for their successful operation and sustainable development.

In modern realities, the most effective methods of reducing and neutralizing financial risks are their minimization, insurance (external and internal) and diversification.

In order to minimize the negative consequences of the current global economic crisis, companies need to make unconventional and bold decisions. Enterprises need to identify all possible risks in a timely manner and correctly assess their possible consequences in order to make effective management decisions in order to avoid financial losses and negative consequences.

The financial risk management process is a purposeful activity of a business entity to limit or minimize risks when conducting financial transactions. Financial risk management includes risk identification, risk assessment, selection of risk management strategies and tools, risk monitoring.