



## EFFECTIVE RISK MANAGEMENT SYSTEMS AT MANUFACTURING ENTERPRISES

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### ANNOTATION

*Due to changes in market conditions and a drop in the rate of development of the domestic economy, industrial enterprises have to carry out entrepreneurial activities in the face of growing uncertainty of the situation and the volatility of the economic environment. In this connection, there is ambiguity and uncertainty in obtaining the expected final result, and, therefore, there is a risk, i.e. the danger of failure, unforeseen losses. Thus, modern conditions lead to the need to develop a new strategy for managing a manufacturing enterprise operating under risk conditions, to develop a methodology for analyzing and assessing risk, as well as procedures for making and implementing managerial decisions. To successfully manage risks, you need to be able to identify, analyze and predict them. The article discusses methodological approaches to drawing up a risk management system for industrial enterprises, approaches to assessing the risks of industrial enterprises. A general scheme of a risk management system for industrial enterprises is proposed in order to analyze and assess risk, and develop ways to reduce it in production management.*

**KEY WORDS:** *risks of an industrial enterprise, efficiency of economic activity, classification signs of risks, risk assessment, methods of risk analysis, production management*

### DISCUSSION

A necessary condition for the effectiveness of any economic system is economic freedom, which presupposes that an economic agent (producer, consumer) has a certain set of rights that guarantee him autonomous, independent decision-making. But economic freedom is a source of uncertainty and risk, since the freedom of one economic agent is accompanied at the same time by the freedom of others.

Any activity that legal entities are engaged in is always at risk. At each stage of the formation of an enterprise, management of its activities, certain risks are formed that negatively affect and have a negative impact on the formation of the financial result.

Despite the fact that in modern economic literature there are many views on the problem of risk, which gives rise to a variety of definitions of the concept of "risk" proposed by various authors, three types of definition of this category can be formulated:

- Risk is the probability of deviation from the planned results (losses or additional profits);

- Risk is an uncertainty that can be qualitatively and / or quantified;

- Risk is an action at random in a situation of uncertainty in the hope of a positive result.

With regard to the production sphere, risk is defined as the possibility of losing part of the resources or shortfall in income in comparison with the levels and values calculated on the basis of the assumptions about the most rational use of resources and the accepted scenario of the development of the market situation.

Production risk is a risk arising from any type of activity related to the production of products, their sale, commodity-money and financial transactions, marketing, commerce, the implementation of socio-economic and scientific and technical projects.

Drawing up a system of classification signs of risk gives an understanding of its nature, allows you to establish structural characteristics, and develop measures to reduce the level of risk based on the results of its assessment.

A feature of the classification risks of industrial enterprises is its conventionality, since it is



difficult to draw a rigid division of the boundaries between types of risks, since they are all interconnected, changing and complementing each

other, are of mixed nature, and can be an integral part of each other.

**Table 1 presents a system of classification signs of risks of an industrial enterprise.**

Classification attribute	Type of risks	Risk characterization
By the level of the economic system	Megaeconomic	Associated with the functioning of the economy as a whole
	Macroeconomic	Risks of the economic system of the state
	Mesoeconomic	Formed at the level of sectors of the national economy
	Microeconomic	Intercompany risks of an individual enterprise
Sphere of origin	Political	Associated with political instability, changes in legislation
	Ecological	Associated with emergencies, environmental pollution
	Industrial	Associated with forced interruptions in production: loss of working capital, failure of production assets
	Commercial	Associated with a change in the terms of the commercial activities, market conditions
	Transport	It is associated with the safety of the cargo during transportation and compliance with the delivery time
	Financial	Associated with the likelihood of loss of financial resources
Place of origin	External	Changes in economic policy, natural disasters, exchange rate risk
	Internal	Associated with the specialization of the enterprise: production, financial, insurance
The degree of the risk acceptability	Permissible	Risk, financial losses for which do not exceed the estimated amount of profit on the ongoing investment project
	Critical	Risk, financial losses for which do not exceed the estimated amount of gross income for the investment project being implemented
	Catastrophic	The risk for which financial losses are determined by the partial or complete loss of equity capital (this type of risk may be accompanied by the loss of borrowed capital)
Possibility / impossibility for project participants to influence risk factors	Non-systematic (internal)	Risk associated with factors, the negative consequences of which can be largely prevented through effective management of project risks (quality of management, structure of assets and capital, relationships with partners, etc.)
	Systematic (external)	It is typical for all participants in investment activities and all types of real investment operations. It occurs in a number of cases that the company cannot influence in the course of its activities (inflation risk, interest rate risk, tax risk)
By stages of project implementation	Pre-investment stage risks	Risks associated with the choice of an investment idea, the preparation of business plans, recommended for the use of investment goods, the validity of the assessment of the main performance indicators of the project
	Investment stage risks	Risks of untimely implementation of construction and installation work on the project; ineffective control over the quality of these works
	Post-investment stage risks	Risks associated with untimely production reaching the planned design capacity; insufficient provision of production with the necessary raw materials and materials; irregular supply of raw materials and supplies; low qualification of operating personnel; shortcomings in marketing policy, etc.



possibility of insurance	Insured	Risks that can be transferred through external insurance to relevant insurance companies
	Uninsured	Risks for which there is no supply of relevant insurance products in the insurance market

The International Risk Management Standard, recognized worldwide, was developed jointly by the Risk Management Institute (IRM), the Association for Risk Management and Insurance (AIRMIC) with the participation of the National Risk Management Forum in the UK Public Sector. This standard is known as FERMA RMS. Unlike the COSO ERM Standard discussed above in terms of the terminology used, this standard follows the approach taken in the documents of the International Organization for Standardization, which is the ISO / IEC Guide 73 Risk Management - Vocabulary - Guidelines for use in standards. In particular, risk is defined by the standard as “a combination of the likelihood of an event and its consequences. Risk management in this context is considered as the central part of the strategic management of an organization, whose task is to identify and manage risks. Risk management as a unified risk management system should include a program for monitoring the implementation of assigned tasks, an assessment of the effectiveness of measures taken, as well as a reward system at all levels of the organization. In accordance with the FERMA Standard, four groups of organization risks

are distinguished: strategic, operational and financial, as well as hazard risks. In addition, the methods presented in the ISO standards are the basis for the risk assessment in the FERMA RMS standard. The creators of the standards agree with ISO / IEC that risk assessment is an analysis of risk, as well as its qualitative and quantitative assessment.

Today, there are a large number of risk minimization methods presented by various scientists.

The main ways to minimize risks include: risk distribution among different agents, risk insurance, self-insurance of risks, organization of production diversification, limitation, implementation of alternative planning, creation of a flexible production structure, creation of reserve funds, information monitoring, training and training of personnel, the use of flexible technologies, risk aversion.

Taking into account the sectoral characteristics of industrial enterprises in production management, it is necessary to highlight the methods of risk reduction aimed at resource provision of production and effective supply activities (Table 2).

Table 2

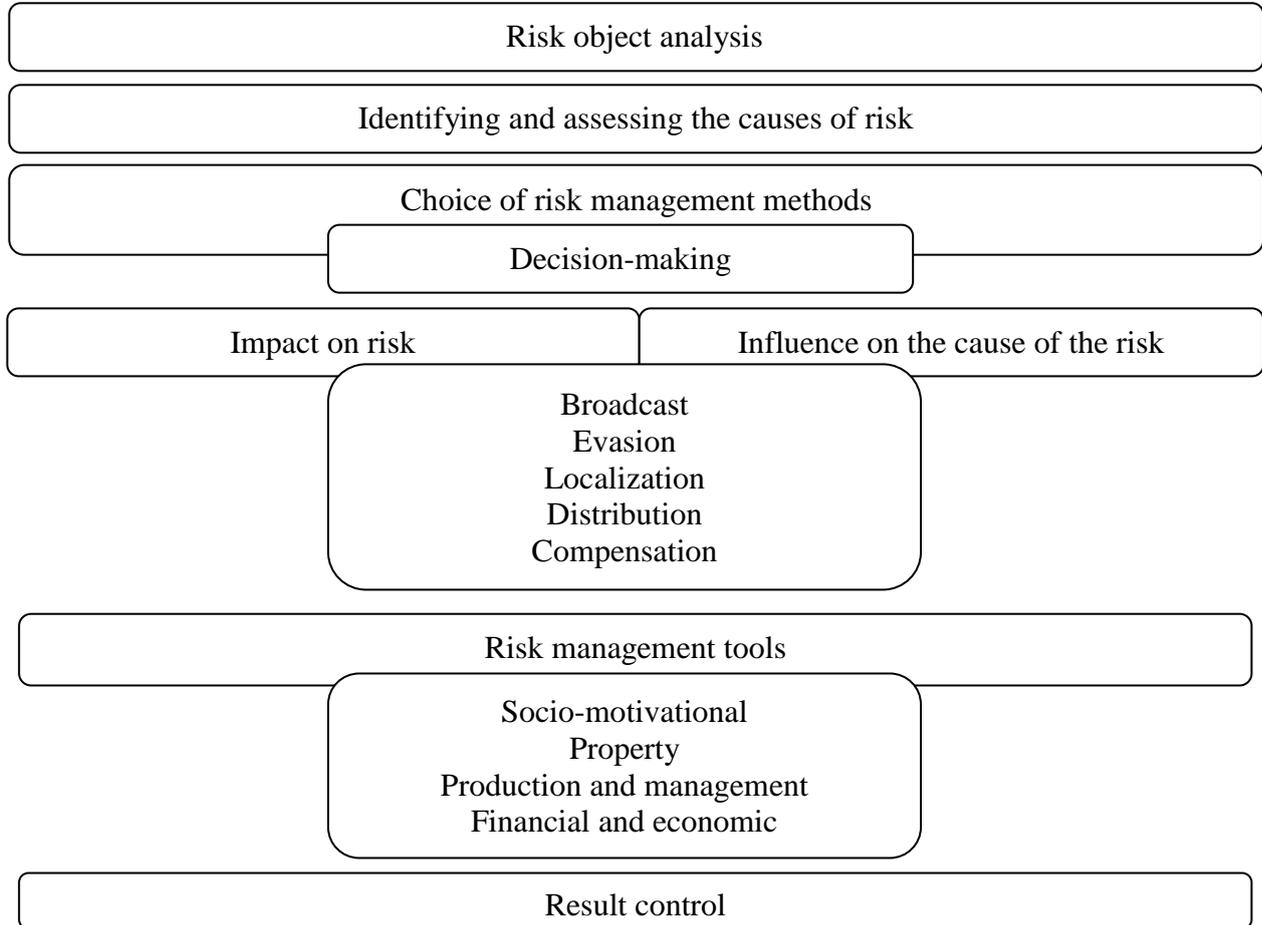
**Ways to reduce risk in the production management of industrial enterprises**

Types of risk	Ways to reduce your risk
<i>In the field of production</i>	
Technical risk	Carrying out preventive measures, formation of reserve funds, insurance
Technological risk	Quality control, situation monitoring
Production organization risk	Development of promising areas of development, building a rational production structure, pursuing an effective innovation and investment policy
Labor resource risk	Professional development, personnel training, certification, accident insurance
Executive risk	Methods of motivating employees, contributing to the achievement of the goals of the enterprise (association)
Natural disaster risk	Insurance, self-insurance - formation of reserve funds
<i>In the field of supply and sales</i>	
Market risk	Integration processes (conclusion of long-term contracts, agreements), diversification of production
Transport risk	Self-insurance, introduction of penalties, forfeits
Warehouse risk	Introduction of resource-saving, energy-saving technologies
Risk of purchasing raw materials	Implementation of scientific inventory management methods
Marketing Risk	Marketing research, diversification of sales markets, creation and promotion of a trade mark (brand)



In many ways, the reasons for the low competitiveness of industrial enterprises are the lack of a specialized contour (and/or special functions) for risk management in their management system. Risk management of industrial enterprises must be holistic

and orderly in a certain way. For the integrity and orderliness of risk management, this system can be represented as the following diagram:



**Fig. 3. General scheme of the risk management system of industrial enterprises**

Let us give a description of each element of the risk management system of an industrial enterprise. In accordance with the presented scheme, the first element is a risk analysis subsystem, the purpose of which is to obtain information about the structure, properties of an industrial enterprise at the present time and changes in its state in the future;

The second element is identifying, characterizing and assessing the existing causes of risks of an industrial enterprise, determining the likelihood of the size and possible damage;

The third element is responsible for choosing a method for developing a management decision aimed either at eliminating the cause or at minimizing the consequences;

The fourth element implements the process of influencing the risk, which consists in the application of specific methods of influencing the risk;

In the fifth element, the choice of risk management tools is carried out, and in the sixth stage, the result of the implementation of measures for risk management of machine-building enterprises is monitored. The system should be filled with risk management tools.

Modern economic conditions in which industrial enterprises operate, lead to the need to improve the risk accounting system, the basis of which is the classification of risk.

Industrial risks of enterprises should be considered the risks arising in the process of economic activity of enterprises of the main industries, which may have the nature of large, special or natural disaster risks.

The considered methodological recommendations for the analysis and assessment of risk will make it possible to build an effective risk prevention mechanism, focused on solving the



problems of stabilization and development of industrial enterprises, can be used as a toolkit in the procedure for making and implementing decisions in production management.

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