

Algorithm for Identifying Risk Factors in an Industrial Enterprise



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Abstract: This article presents the results of studies on the algorithmization of economic risks using an example of a specific industrial enterprise. The purpose of the study was to generalize the experience in new economic conditions for domestic enterprises and the theoretical justification of the modern approach to managing entrepreneurial risks and developing a risk management program for a particular enterprise.

Keywords : industry, enterprise, risks, algorithm.

I. INTRODUCTION

In the economy of free enterprise, a huge share of business risks falls at the level of an individual company and the entrepreneur personally, because the decision to organize a business means consciously accepting the risk in anticipation of receiving something desirable - profit, influence, position in society.

Each enterprise is characterized by specific manifestations of risks that must be taken into account when substantiating and developing programs for managing business risks.

The results of the analysis of the main economic and financial indicators of its activity indicate that in general the company is not threatened with bankruptcy, it is quite stable in the market. However, you should pay attention to the following trends:

- volume of working capital is gradually reduced, which indicates a slowdown in cash flows;
- value of solvency and liquidity indicators decreases, which leads to the need to increase the amount of short-term credit;
- despite the fact that the values of the coefficients characterizing financial stability are favorable, nevertheless, the trend over a number of years is not in favor of the enterprise;
- decrease in the coefficient characterizing the profitability of borrowed funds indicates the lack of experience of financial managers in managing borrowed funds;

- decrease in the profitability of sales and the overall profitability of production leads to a decrease in profit margins. Identified trends suggest that the greatest impact of risk factors affects such objects as the loan portfolio and solvency of the enterprise. Despite the fact that the current situation is explained by the implementation of the new investment project of the plant, the management of the enterprise, among the urgent problems requiring urgent solutions, chose the formation of a risk management system aimed at improving business efficiency.

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II. RESULTS AND DISCUSSION

During the study, the following theoretical approaches were identified:

- the risk should not be perceived only in the form of financial losses or less profit, since under favorable conditions it is possible to achieve a higher level of profitability than was calculated in the planning process;
- along with an objective approach to the study of entrepreneurial risk, there is a subjective approach. Risk assessment and decision making are highly dependent on the individual. The same risky situation is assessed differently by different entrepreneurs in different ways, since the risk is perceived purely individually;
- risk is understood as a combination of risk events factors that can reduce or increase the effectiveness of a particular component of the enterprise's work (commercial, economic, social, financial, industrial, investment, etc.);
- risk management is the process of preparing and implementing certain activities whose purpose is to reduce the risk of making erroneous decisions or reduce the possible negative consequences of undesirable developments;
- when developing a risk management program, priority should be given to a preventive risk management model based on the study of objective and subjective assessments of risk factors. (We should not forget about the prevailing vicious practice in a number of enterprises when measures to eliminate the consequences of the risk that led to accidents were reactive in nature.) Entrepreneurial risk management is an integral element and an integral part in the overall management decision-making system. The main goal of the risk management system is to ensure the successful functioning of the enterprise in conditions of risk and uncertainty.

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The purpose and objectives of the risk management system should be consistent with the general and financial strategies for the development of the enterprise, and methods for reducing risk should be consistent with the principles of organizing and conducting business.

The stages of risk management are:

- identification of risk factors and their classification;
- assessment of a specific type of risk, determination of the relationship of risks, identification of integral risk;
- substantiation of risk management methods and measures;
- development of a risk management program; monitoring the results of the program and improving the risk management system.

The identification of risk factors involves a qualitative analysis of the current business situation, a forecast of possible development options, and identification of the causes of risks. The basis for identifying risk factors for a particular enterprise is the systematization of all risks known in business practice. Risk identification includes risk diagnosis, i.e. the process of identifying risk factors that may adversely affect the activities of the enterprise, and their analysis, assessment of the characteristics of implementation and manifestation. It is advisable to carry out the types and directions of activity of the enterprise. At this stage, a risk profile and a portfolio of risks are formed.

Information sources for diagnosis are as follows:

- a documentary kit of the enterprise and documents coming from outside;
- contents of the interview with employees of the company and other persons who may have information about the state of the company;
- data from surveys of company employees and other specialists on relevant issues;
- results of the "brainstorming": meetings held by special techniques, mainly aimed at generating as many ideas as possible for further study;
- directories, dictionaries and databases. The websites of many associations, government agencies, and advisory firms have databases that are useful to risk managers. Entrance to them, as a rule, is stipulated by some conditions: payment, registration in a targeted advertising database, entry into an association, etc.;
- Information from rating agencies of various profiles can be a very useful source of both methodological and factual information. Some of them, like Standard and Poor's, They assess the riskiness of large international investment projects. The use of their methods and examples of rating specific projects can be a useful basis for similar evaluations of their projects by various firms;
- The press (general, business, industry and special) on risk issues, which is quite extensive, especially in English.

At the first stage of enterprise risk analysis, the task was to identify the factors that form the external environment and internal conditions of the enterprise.

External factors - unregulated (uncontrolled) factors and conditions that cannot be changed by the enterprise team. They add up objectively. Internal factors can be divided into regulated (controlled) factors, which are determined by the activities of the enterprise (level of organization of production and labor, quality of management, degree of use

of resources, etc.), and hard-to-control (conditionally uncontrollable) factors and conditions characterized by high inertia, i.e. depending mainly on the functioning of the business entity, but in the study period only partially amenable to impact (volume and structure of fixed assets, technological level of production, composition of industrial production personnel, etc.). Taking into account industry specifics and systematization of risk factors, a classification of risks specific to metallurgical enterprises was developed. The detailed classification presents those factors that, in our opinion, play a significant role in the activities of the analyzed enterprise.

External (objective) risk factors

- Political: instability, inconsistency of legislation; unforeseen actions of state bodies, regulation of the enterprise by the state; the instability of the political situation in the country and region; unforeseen changes in the international environment.
- Scientific and technical: revolutionary leaps in scientific and technological development in the world; development of a new product that satisfies an existing need; the emergence of new types of materials; development of the latest technologies.
- General economic: unforeseen changes in the economic situation in the region; changes in tax standards, interest rates on loans of the Central Bank; changes in domestic and foreign markets; increase of tariffs for freight transportation by rail; fluctuation of the ruble over the forecast, high inflation or ruble devaluation; change of currency circulation rules; the impact of globalization processes.
- Sectoral: level of competition; main competitors in the relevant industry, regional markets; the development by competitors of a new technology that significantly reduces production costs; industrial espionage as a form of unfair competition; development and implementation of new technologies and ways of organizing labor by competitors; development by competitors of the production of a new replacement product.
- Social: instability of social conditions of the population; attitude to the industry, products, business, enterprise; hidden unemployment; professional unsuitability; purchasing power; demographic situation.
- Natural: introduction of restrictions on the use of local natural resources; toughening environmental requirements in the region of the enterprise; changing regional environmental conditions; the impact on the production process of the elemental forces of nature and the climate of the region.

Internal (subjective) risk factors

- Risk factors in the sphere of management: retirement of key employees of the enterprise (dismissal, disability); available opportunities for economic abuse and crime in the enterprise; incompetent work of management and other services; incorrect assessment of the strategic potential of the enterprise; inadequate formulation of strategic goals enterprises; ineffective management structure (decision making scheme, number of levels of coordination, time for making management decisions, etc.); lack of information

support; malfunctions in the information processing system and leakage of confidential information.

- Commercial factors: loss or deterioration in the quality of goods during transportation or storage; incorrect assessment of the competitive level of product prices in traditional segments of the enterprise market, errors in

price modification system; absence or weak marketing service (wrong choice of the target market segment, product range, etc.); bankruptcy or liquidation of enterprises - suppliers or consumers; loss of goods in the process of circulation; unclaimed products; violation of the terms of the contract (on the discipline of deliveries, on terms, on quality, etc.); increase in enterprise expenses, errors in calculating the cost of production per unit. - Factors in the field of personnel management: insufficient staff qualifications; incorrect assessment of the necessary period of training and retraining of personnel; inaccurate statement of the goals and objectives of the employee, lack of an accurate description of the functions and job responsibilities, errors in the regulation of labor; outflow of skilled labor; weak labor motivation (payment and bonus system); untimely reduction in the number of staff in the presence of not fully loaded jobs; various forms of staff disloyalty (corruption or theft, disclosure of confidential information, etc.).

- Risk factors in production: organization of the production process (duration of the production cycle, rhythm, etc.); novelty of technology; unforeseen changes in the production process due to a violation of technology; equipment failure, its moral aging, lack of reserve capacity; equipment shutdown or interruption of the production technological cycle due to the fault of other units; insufficient patent protection of the enterprise's products and technology of its production; accidents or overflow of storage facilities; failure to fulfill in due time their obligations by the instrumental sector to change the production of a product; interruptions in energy and fuel supplies; accidents of ventilation, water, steam supply and other auxiliary production equipment.

- Risks of financial activities and lost profits: irrational structure of financial resources associated with deficiencies in the financial planning of the enterprise; exceeding the level of allowable receivables and payables; insolvency of the enterprise; decrease in profitability of products, enterprises; deterioration of key performance indicators (capital productivity, labor productivity, profitability of fixed capital, etc.); decrease in enterprise income, default on obligations to major creditors; lost profits as a result of non-implementation of any measures (for example, insurance, hedging, investing, etc.).

- Risks of investment and innovation policy of the enterprise: low profitability of investment projects; violation of the deadlines for the implementation of investment projects; decrease in investment activity of the enterprise (project risk); risk of innovative inadequacy.

III. CONCLUSION

This classification is somewhat arbitrary, since it is rather difficult and not always possible to draw a hard line between different types of risk factors. The identification of the risk spectrum is the most difficult stage of risk management in the enterprise, since it is on the results of this stage that all the entrepreneur's further work in the field of risk management is

based. The proposed classification of factors is the initial stage of the study. It was built on the basis of a priori analysis. To determine the most significant factors, it is necessary to assess them.

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