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**TRANSFORMATION OF APPROACHES AND MEANS OF DIAGNOSING  
RISKS OF INVESTMENT PROJECTS AND GOVERNMENT TARGETED  
PROGRAMS**

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*The article is devoted to the problem of risk assessment in the development of state programs and the implementation of investment projects, analysis of methods and techniques of risk management applied in this area today. The authors theoretically describe the place of evaluation in risk analysis and management as a new emerging function of government bodies. The article opens the scientific discussion on new challenges facing the scientific community in the field of methodological support and support of the processes of modernization of public administration in the field of risk management. The authors summarize the Ukrainian practice of risk assessment in the development of state target programs, designate areas for further research on the stated problem.*

*Key words: risk management, government targeted programs, public administration, investment project.*

**Introduction.** In the conditions of increased economic instability and dynamism of upward crisis trends, the increasing urgency for any investment project, regardless of its scale, types of activity and form of ownership, is becoming more efficient management decisions as an answer

to the problems posed by external uncertainty and the internal environment. Risk in the face of uncertainty is objectively inevitable. The higher the degree of uncertainty, the higher the degree of risk.

An analysis of the risk classification literature has shown that there are two main approaches to the definition of the concept of “risk”. According to the first, the risk is the probability of deviation of the actual result from the expected or the level of uncertainty that can be measured [1, pp. 5–6; 2, p. 798]. On the other hand, there is also a common view that risk is directly related to the possibility of damage. At the same time, risk is understood as a measurable part of uncertainty, which entails the possibility of adverse outcomes - the occurrence of losses, loss of income or the appearance of additional project costs. While the concept of “uncertainty” has a broader meaning and can generate not only negative, but also positive or zero consequences [3, p. 121; 4, p. 39]. Summarizing the various interpretations of this concept, one can identify the main elements that make up its content: - there is an uncertainty in the development of events; - there is the possibility of any (both negative and positive) deviations of the result from the intended goal; - the probabilities of possible outcomes and the expected results are known or can be determined. The classification of risks of an investment project, as well as any classification, is rather arbitrary, therefore there are many approaches to the division of types of risk into groups. This can be justified by the fact that for projects from different sectors of the economy, specific, individual risks can be identified. One of the classifications of risk for any industry is their division based on the influence of **s**ocial, **t**echnological, **e**conomic, **e**nvironmental and **p**olitical factors – *STEEP* factors [5, p. 208]. This classification is relevant for state target programs and for the construction industry (investment project), which can be strongly influenced by them, but it does not reflect all the specifics of the activity.

**Aim and tasks of the paper.** The aim of the paper is to identify the content and characteristics of technological modernization of the country's economy based on an integrated risk management system that is formed at different levels and related to the implementation of investment projects and state target programs. Integrated risk management system should become an important part of the overall system of national economy management, which can increase the efficiency of economic activity in conditions of uncertainty of the internal and external environment. The formation and functioning of the risk management system is designed to provide high-efficiency management decision making to achieve strategic and tactical government target programs.

**Main findings.** One of the main risk assessment tools for a project is scenario analysis, which generally involves developing scenarios (alternative scenarios for the future), forecasting the likelihood of a particular scenario and assessing the investment acceptability of a project in accordance with these outcomes. The development of modern methods and approaches for scenario analysis began as early as the 1960s, when the first definitions of the notion of “scenario” and methodological foundations of analysis were developed, the main focus of which was the prediction of social and political processes [6, p. 24-29]. Subsequent studies were related to oil price forecasting, the possibility of using scenarios in the development of strategic management decisions, psychological aspects of using scenarios - as a result, this approach has turned into a complex method of forecasting, different from other quantitative approaches to planning [7, p.116; 8, c. 180–184]. In this regard, among the main goals of scenario planning and analysis are the following: - anticipation of future threats (losses) and opportunities taking into account various circumstances [9, p. 13–14]; - revision of today's decisions taking

into account knowledge of the future; - the development of appropriate strategic decisions in the event of an event [6, p. 124].

*Global risks.* Due to the cyclical nature of the development, the world economy is going through a slowdown phase. A reduction in global demand and the simultaneous triggering of systemic risks in the largest economies of the world can significantly improve the situation in commodity markets over the medium term.

Continuing trends to reduce the growth rate of the global and national economies, as well as the level of investment activity, high inflation or excessive strengthening of the national currency, the likelihood of deterioration in the domestic and external prices for raw materials and technology, high interest rates on loans, the effects of the global financial and economic crisis may have a significant negative impact on the expected results of the Program.

*Legal risks.* Gaps in the legislative and regulatory framework limit the actions of federal and regional executive authorities, as well as the ability of business entities to respond effectively to a changing market situation, taking into account development prospects. Regulatory legal documents in the field of technical regulation, tax and budget legislation require improvement.

*Financial risks* are mainly due to the following factors:

- unsatisfactory current financial situation of a significant part of industrial companies (low profitability or unprofitability of current production);
- high financial burden on companies (almost all companies are currently lending);
- the source of the return of new loans (mainly / exclusively income generated by new investments in the industry (company));
- the payback period for investments is from 5 to 10 years.

*Technogenic and environmental risks.* Taking into account that the degree of depreciation of fixed assets in industry is about 60%, there is a high probability of industrial accidents and environmental damage.

*Innovative risks.* Among the innovative risks, the following should be considered:

- underfunding of research and development (R & D), will restrain the development and introduction of technologies, as well as the introduction of new products on the market;
- the risks of ineffectiveness of the transfer of rights of Ukraine to the results of intellectual activity created with the involvement of the federal budget for industrial use are largely determined by the imperfection of the current practice of securing the rights to the results of scientific and technical activities carried out under the state order;
- foreign manufacturers do not seek to implement advanced technologies in the Ukrainian production;
- technological risks of research and development (R & D), due to the technical condition of research, testing equipment, as well as equipment of pilot production.

Measures aimed at the economically justified modernization of the research and experimental base of scientific and engineering organizations should also be aimed at minimizing innovation risks.

*Commercial risks.* This type of risk includes risks associated with the cyclical nature of demand for industrial products. This also includes the risks of default in commercial transactions, the risks of choosing strategic partners and suppliers of components and materials, the risks of marketing errors in assessing the internal market outlook, and the risks of "late launch" of a new product to the market.

*Social risks.* Solving the tasks of the state program, on the one hand, will require an influx of managerial and production personnel adapted to the

new realities of business, and on the other hand, restructuring and modernization of industrial production will inevitably lead to a reduction in employment in industry and the associated emergence of social tensions in certain regions. These risks can be mitigated through the effective implementation of new cluster development projects - by supporting regional cluster initiatives - by creating targeted training and retraining programs coordinated with enterprises.

The social risks should also include the preservation of hazardous industries, injuries, hidden unemployment, the transfer of the most competent and informed employees of Ukrainian enterprises to representative offices of foreign companies. Insufficiently effective solution of these tasks can prevent the implementation of this program in full. It should be noted that, in general, this state program is of a subsidiary nature, thus, in most cases, the management of the listed risks will be implemented through a flexible mechanism for coordinating software tools and management decisions of enterprises involved in the implementation of program activities. For example, a deterioration in market conditions and a reduction in the resource needs of enterprises for the development of production will lead to a reduction in the volume of subsidies, but in general it will not affect the quality of the implementation of program activities.

Scenario analysis and self-construction of scenarios - assumptions about several scenarios for the development of events - can be implemented using various methods and techniques, the main ones are discussed below. Due to the fact that the methodology of scenario analysis and planning was developed by many researchers, there are a large number of technologies for constructing plausible scenarios that are different in nature and types. Conventionally, they can be classified into three groups of methods [8, p. 91]:

- methods of intuitive logics;

- methods of trend-impact analysis;
- methods of cross-impact analysis.

If we turn to the practice of developing scenarios for the development of industry, then it can be argued that the operation and development of industry, as well as increasing its competitiveness in the implementation of state targeted programs (hereinafter referred to as the Program), is of a scenario nature.

In developing the Program, three possible scenarios for the development of industry and its competitiveness were considered:

- inertial (pessimistic) scenario of industrial development;
- a realistic scenario for the development of industry, which presupposes maintaining state support for the manufacturing industry at the same level as in previous years;
- modernization (optimistic) scenario of industrial development, which is based on the forecast estimates of the main indicators and indicators of the Program.

*Inertial (pessimistic) scenario.* The inertial development scenario envisages the rejection of the implementation of new long-term large-scale projects and programs with state participation, a decrease in the technological competitiveness of the manufacturing industries, and stagnation in the development of the manufacturing industry.

The lack of government support for the industry in the form of state guarantees, subsidizing part of the cost of paying interest on loans received from credit institutions for implementing investment projects, introducing new products, new or improved technological processes or production methods into production, will lead to the preservation of the existing industry structure.

Measures to update and modernize production facilities will be limited, random.

The manufacturing industry will develop mainly on the basis of outdated technological structures, which will lead to a further increase in material intensity and energy intensity, as well as to a decrease in the competitiveness of products. Thus, the targets and indicators of the Program will not be achieved.

*Realistic script.* A realistic scenario of the implementation of the Program implies financial support within the limits of already existing measures of state support for the development of basic industries. This scenario assumes the preservation of a moderate dynamics of industrial development in Ukraine.

The realistic scenario takes into account the dynamics of indicators and indicators of the functioning of the manufacturing industry and the trends prevailing in the retrospective period.

Government support for the manufacturing industry will remain at a level not exceeding its value in recent years. Maintaining the stability of manufacturing enterprises in this scenario for the period up to 2020 will lead to a gradual improvement in the economic position of the industry, provided that the basic parameters of macroeconomic stability are preserved during the program implementation period. The tasks of creating industries focused on the production of new types of products in general will not be solved.

*Optimistic scenario.* The optimistic scenario assumes active state participation in the support and development of the manufacturing industry. An optimistic development scenario, along with the use of competitive advantages, implies a breakthrough in the development of high-tech industries. This scenario serves as a target for economic policy, since only it fully allows implementing the strategic guidelines for the development of Ukraine.



The implementation of the optimistic scenario will allow the country to reach the level of socio-economic development characteristic of developed post-industrial countries by increasing the competitiveness of the economy, its structural diversification and efficiency gains.

The four strategic areas of investment activity differ in several parameters:

- the duration of waiting for the base investment effect;
- the value of the required initial and expected subsequent investments;
- degree of risk and probability of achieving a strategic investment goal;
- optimal expected investment effect.

**Conclusions.** The modern methodology of project and program management requires increased attention and effort the design team for managing project deviations, as the variability of the external environment (in political, legal, economic, social and other aspects) leads to instability and volatility of the state of the project, which may negatively affect achievement of its result.

The main thing is to make the right choice of model based on the specific situation. Naturally, it is necessary to take into account the deliberately subjective nature of a particular model chosen and to make an amendment to a certain schematism, excessive regulation or predetermination of the economic and legal situation. Nevertheless, it is the models that make it possible in general to forecast a specific situation and evaluate possible investment risk. Currently, there is a certain set of ready-made software products such as Crystal Ball, SAS, SPSS, @Risk, and others that allow it.

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