

ENHANCING THE METHODOLOGY FOR THE ANALYSING OF INVESTMENT PROJECTS

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СОВЕРШЕНСТВОВАНИЕ МЕТОДОЛОГИИ АНАЛИЗА ИНВЕСТИЦИОННЫХ ПРОЕКТОВ

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Abstract. *The subject of investment appraisal and risk analysis has become very topical in Uzbekistan recently because of the growth of investment potential and activity in the country. This paper presents the process of project analysis that consists of two main stages: qualitative and quantitative analysis of investment projects. The first part of the paper examines the main groups of investment project risks and the specific character of their identification in Uzbekistan. The second part presents the review of the most popular methods of quantitative risk analysis (sensitivity analysis, scenario analysis, simulation) and the peculiarities of their application in the environment of the Uzbek economy. This article tries to analyze the methodology for the analysis of investment projects. Since its independence, Uzbekistan has achieved sustained growth through its gradual*

transition to a market-based economy. This involved cautious economic policy reforms such as liberalizing prices of energy and fuel while maintaining a high level of state control. Consequently, Uzbekistan's economic growth decelerated, manufacturing exports declined, and employment growth was too low to adequately absorb the thousands of labor entrants every year. Given these development challenges, the new government introduced major reforms. The pace of reform is unprecedented, and the government has formulated its long-term economic strategy in its Vision 2030, which aims to double the country's gross domestic product by 2030 through a program of economic diversification. The article analysis key elements of the methodology to increase the methods of analysis of investment projects. The following article will discuss the possible ways of

improvement in the sphere as it affects the overall economic and social system of the country.

Keywords: *investment projects; improvement methodology; financial analysis; fiscal report.*

Introduction. The application of generally recognized investment decision criteria has become very topical in the conditions of the market economy in Uzbekistan; however, it is important to keep in mind the peculiarities of the Uzbek economy and take them into account during project development and execution. The main features of the Uzbek economy that should be remembered are as follows:

- Uzbek financial market is relatively undeveloped;
- Crediting rates are set too high;
- The peculiarities of inflation in Uzbekistan.
- The inflation is rather high, irregular, heterogeneous, and poorly forecast;
- Several currencies are used in the Uzbek economy simultaneously;
- The complexity of tax structure in Uzbekistan;
- The difference between Uzbek accounting standards and International Financial Reporting Standards (IFRS);
- Lack of government financing of the investment projects;
- Fluctuations in paying capacity of the population and contracting parties;
- Legislation instability.

All the above-listed features of the Uzbek economy have a significant influence on the methodology of investment analysis as a whole and project risk analysis in particular. The purpose of this article is to describe basic approaches to project risk analysis of the project investment in Uzbekistan [1].

According to the regulatory document of the Decree of the President of the Republic of Uzbekistan "On the development strategy of the new Uzbekistan for 2022-2026", it is noted that it is necessary to jointly discuss systemic problems and develop specific proposals for their solution with entrepreneurs, scientists, expert community and members of the public[19]. In addition, it should be noted that risk can be defined as a source of uncertainty that affects the result of an investment project [2]. This is why risk analysis is an integral part of investment appraisal. The purpose of project risk analysis is to provide the investors with all the necessary information for decision-making concerning the advisability of their participation in one or another investment project. Risk analysis usually begins with qualitative risk analysis which consists of project risk identification, risk description, risk classification, and analysis of initial assumptions. The outcome of the qualitative risk analysis is the description of project uncertainties, their sources, and consequently the description of project risks.

This paper is the first attempt to analyze the development of cost estimates in the early stages of quality assured projects. Very few of the projects have yet reached completion, which explains why studies of actual costs do not constitute a part of the present research. The objective is to develop an understanding of the current Quality-at-entry Regime and to point out its relevance and impact on the cost estimation process and how it could contribute to more realistic budgets. The paper is thus concerned with impacts of quality assurance concerning the efficiency issue, i.e., focus on the cost criterion. In a broader perspective, however, it also concerns the more substantial issues of project viability and long-term effects since the result of inaccurate estimates could

be that nonviable projects are prioritized (a central perspective in [2,3] for example) [3].

Material and method. The scope of this paper is to improve the methodology for the analysis of investment projects. The author's preconception is that studying the development of the cost estimates from different actors through the stage of quality assurance can tell us something about how this affects the investment projects. In studying the divergence we are in effect studying the extent to which estimates may be biased.

South Korean experience. The Republic of Uzbekistan conducts international cooperation with the Institute of Korea (National Human Resources Development Institute-NHI). And in one of these events with Korean experts, the subject of evaluation and their concepts for the analysis of investment projects were considered. We would like to consider in detail their experience as one of the

advanced countries. The analysis of investment projects is carried out according to the concept of two directions: examination or evaluation of an investment project. This process is shown in Fig. No. 3.1. Let's start with consideration of project due diligence, which is understood as the process of analyzing the costs, benefits and risks of alternative ways to achieve goals. In Korea, project appraisal is considered as a process of analyzing data and obtaining information to make a decision on the implementation of the project, taking into account its feasibility, and the criteria for project appraisal include the followinga[4]:

- economic feasibility (cost-to-profit ratio, NPV - net present value, IRR - internal rate of return);
- financial feasibility (income/expenses, PI – profitability index);
- political feasibility (conditions/environmental aspect);
- technical feasibility;
- overall feasibility.

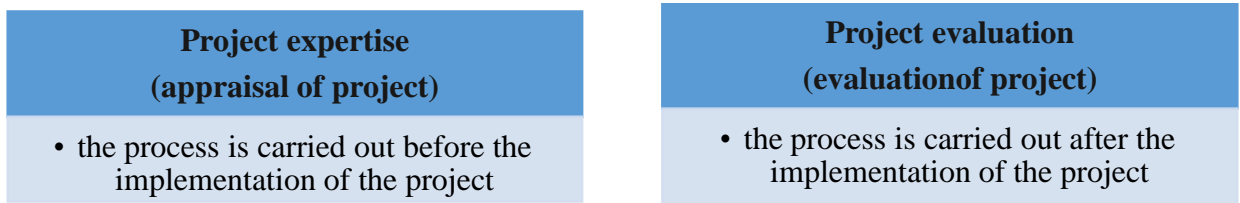


Figure 3.1. Concepts for investment projects in Korea[5]

It should also be noted that the justification for the examination of the effectiveness of an investment project in Korea consists of:

- understand the potential consequences, advantages and disadvantages, the overall impact of different options;
- prioritize among competing potential projects;

- prevent unexpected overruns and frequent changes;
- implement cost-effective projects.

All these above criteria give a full assessment of the investment project in terms of its efficiency and effectiveness. Next, consider the main objectives of the project review, which consist of the following items indicated in Fig. 3.2:

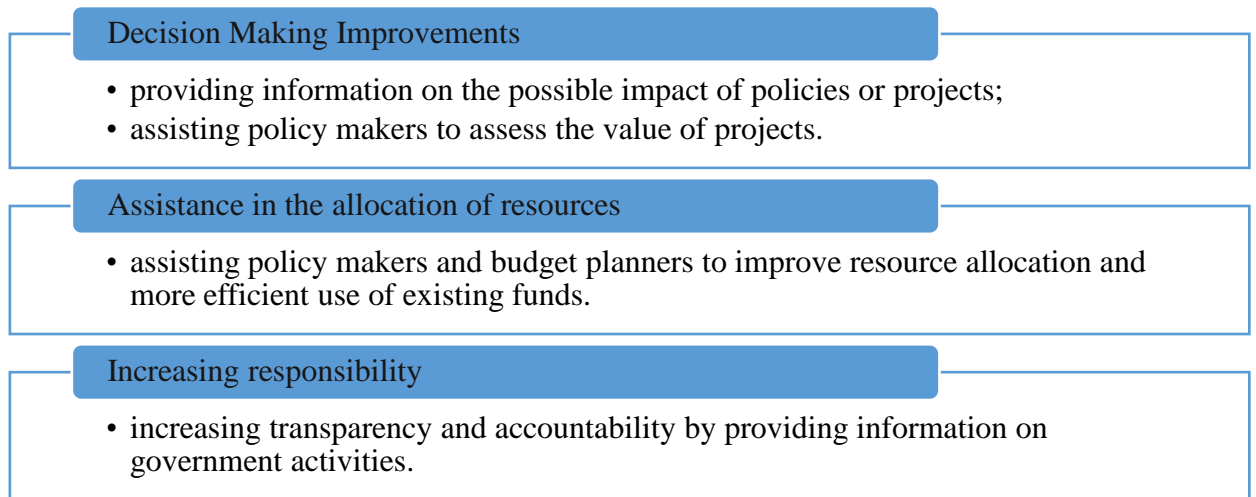


Figure 3.2. The main objectives of the examination of the effectiveness of an investment project in Korea[5]

Expertise of projects in Korea is carried out in the following areas[6][7]:

1. Public procurement projects. A preliminary feasibility study was introduced in 1999 to obtain budgetary information by analyzing the feasibility of major public infrastructure projects. In addition to the traditional feasibility studies conducted by line ministries, the PFS (Public Sector Comparator) conducted by the Ministry of Finance/Budget in Korea provides information on the overall feasibility of projects, including cost-benefit analysis.

2. Public-private partnership projects. One of the methods of PPP is the creation of joint ventures. This form of PPP has found wide application in domestic practice. The merger of public and private capital with the placement of strategic priorities for its use form the specifics of the created enterprise. These enterprises have an organizational and legal form in the form of a joint-stock company or an enterprise with equity participation. For public-private partnership projects, feasibility studies are also carried out using the same Pre-feasibility Study (PFS) method to analyze the socio-economic aspects of projects at the national level. Following a feasibility study, a thorough value for money (VFM: project agreement provides a net benefit to the

contracting authority, measured in terms of cost, price, quality, quantity, or risk transfer, or a combination thereof) is conducted to test the effects of budget savings against with the public sector comparator.

Now we will continue to analyze about the general information of the investment project management system in Korea, which are conducted as follows[8]:

PFS: Preliminary Feasibility Study - a preliminary examination of projects, carried out in order to obtain information for decision making.

The results of evaluation against various criteria provide a clear understanding of the overall feasibility of projects.

The Japanese authorities pay special attention to creating favorable conditions for the development and growth of the enterprise. Japan makes extensive use of the J-Net21 system, which provides continuous monitoring of the development and status of SMEs. On the basis of system data, studies are carried out, the effectiveness of the entire complex of measures of influence and regulation of the state is analyzed and evaluated. In the Japanese government, support is provided through the Business

Administration, which is part of the Japanese Ministry of Foreign Trade and Industry. Authorities in the center and locally provide all possible assistance to the creation of new and development through the provision of loans, loan guarantees, assistance in training and retraining of personnel, and ensuring unimpeded access to information necessary for conducting business activities. The State Corporation for the Development of Small Businesses in Japan also plays an important role in providing material assistance, providing loans for the implementation of projects to develop new products and production technologies, provided at the lowest possible interest rate. Japanese best practices in the use of information and communication systems to monitor the effectiveness of state support measures for enterprises can be very popular and relevant for Uzbekistan.

China has a public information service China SME Online (CSMEO), which operates in all regions of China, more than 200,000 customers use its services daily. The CSMEO information network was created to provide its users with the most up-to-date information on current changes and trends in the current rules, the emergence of new regulatory documents, the required supply volumes and demand in foreign and local markets. The network displays the most complete and up-to-date information about the state of the market, the characteristics of the highest quality products produced by the SME segment. Also, CSMEO reports on vacancies at enterprises in different regions and cities of the country. The network collects and provides information to employers about job seekers, consults entrepreneurs, and provides an extensive range of technical and educational services.

Results. *Risk analysis or "probabilistic modeling" of investment projects:*

Risk analysis allows corporations, governments, and investors to assess the likelihood that an adverse event could adversely affect an economy, project, or investment. Risk assessment is important to determine how profitable a particular project or investment is, as well as to determine the best processes to reduce these risks [9]. Risk analysis offers various approaches that can be used to assess the risks and rewards of a potential investment opportunity.

Risk is, in essence, the possibility of financial loss. It is used as a synonym for uncertainty and refers to the volatility of returns associated with an investment project. Since projects can be independent or mutually exclusive, it is extremely important to use analytical methods in accordance with each specific situation [10]. The presence of uncertainty means that decisions and behavior are not based on routine. Indeed, financial decisions are made in an environment of uncertainty [11]. A risk event can be viewed as a single event that affects the project for better or worse, while uncertainty occurs when decision makers [9] do not have sufficient and clear information, which reduces confidence in the assessment alternatives and the risks associated with them, thus making it more difficult to make a decision[12].

Risk analysts often work in tandem with forecasting professionals to minimize future negative unintended consequences. All firms and individuals face certain risks. The problem is that too much risk can lead to failure. Risk analysis allows you to find a balance between taking risks and reducing them.

Project risks can be classified according to their manifestation at one stage

or another of the investment project (Ilona V. Tregub, 2017):

1. The risk of insufficient financial support for the investment project. This risk is associated with the possible default of sponsors and the impossibility of financing the project. This type of risk can be due to various reasons, such as the dishonesty of the project participants, the financial situation of the participants, the change of managers, various external causes (Jensen & Smith, Jr., 2005). The result of insufficient funding may be incomplete completion of the investment project (non-fulfillment of planned production capacity, inability to organize a full production cycle, etc.).

2. Risk of project cost increase. This risk is determined by the possibility of increasing investment costs after project financing has already begun (Bekefi et al., 2008). This may be due to non-fulfillment of obligations by suppliers, errors in forecasts, increase in prices, taxes, duties, etc. To reduce this risk in conditions, it is recommended to conclude contracts at fixed prices, inflate costs in the case of the participation of intermediaries [8].

3. Plan for risk. This type of risk is associated with non-fulfillment of supplier obligations, forecast errors, changes in the environment, administrative risks, accidents, force majeure and is associated with failure to complete the project on time due to delays in project construction, delivery times, etc. (Shevchenko & Ustinovichius, 2010) [13]. Specificity requires the adoption of appropriate measures to minimize this risk, for example, contractual sanctions for delays.

4. The risk of not completing the project to the required level of technical or quality indicators. We are talking about identified defects in the delivered equipment, errors that prevent the organization of production, reaching the

planned production capacity, ensuring the required product quality, etc. This risk usually results from supplier defaults and forecasting errors. To reduce this type of risk in the conditions of the Russian economy, it is recommended to conduct an examination of the project execution at different stages.

5. Risk of technical impracticability of the project. This type of risk is a borderline case of the previous risk. The technical impossibility of a project may be the result of gross errors in the development of the project, the selection of project results and the main process. This risk is typical for projects involving innovative products or technological innovation.

Processing Stage Risks

6. Production risks. The risks of this group are associated with interruptions in the production process, increased costs, technical problems (technical risk), supply interruptions (transport risk), environmental problems (environmental risk), management incompetence (management risk), etc[14][15].

7. Marketing risks. The risks of this group are represented by non-fulfillment of the planned sales volume, planned prices for products, delay in entering the market, etc. Risks arising both at the investment stage and at the processing stage.

8. Risk of default by suppliers. This type of risk is associated with non-delivery or incorrect delivery of equipment, delays or errors in construction and installation works, failure to perform warranty service. This risk is associated with increased costs, delays in procurement, failure to achieve the required level of performance and, therefore, with the objectives of the project as a whole.

9. Management risks. These risks may appear at the project processing stage as options for production risks or arise at the investment stage (USMAN &

MIKHAILOVA, 2020). This type of risk is usually associated with errors in management control, as a result of which it is not possible to complete the construction of a facility, purchase or install equipment, organize production and sale. The main risk factors are lack of experience and inadequate qualifications of managers, change of leadership.

10. Administrative risks. These risks are associated with difficulties in obtaining a permit or license, or changes in regulations during the course of the project.

11. Financial risks. These risks are associated with the possibility of obtaining negative profit in a situation of uncertainty (Maria Goreti usboko, 2018) [8]. The main financial risks are the risk of fluctuations in the purchasing power of money (inflation risk, deflationary risk, currency risk), interest rate risk.

The simulation is controlled so that the random selection of values from the specified probability distributions does not violate the existence of known or assumed correlation relationships between design variables. The results are collected and analyzed statistically to arrive at a probability distribution of potential project outcomes and to evaluate various measures of project risk.

- Predictive model - preparing a model capable of predicting reality;
- Risk variables - selection of key project variables;
- Probability distributions (step 1) - determination of the limits of the range of possible values of variables;
- Probability distributions (step 2) - distribution of probability weights over a range of values;
- Correlation conditions - setting relationships for correlated variables;
- Simulation - generating random scenarios based on established assumptions;

- Analysis of results - statistical analysis of simulation results.

The main constraint on the innovative activity of enterprises and organizations is traditionally the high level of risk that accompanies innovative projects (Kaleev, 2011). In addition, the COVID-19 pandemic today undoubtedly poses one of the most serious challenges the world has ever faced (Ramalingam & Prabhu, 2020). In this regard, global challenges will radically change socio-economic relations and interaction between states and economic entities in states require the concentration and unification of opportunities at all levels, determine the need to adjust the national strategy for socio-economic development and its innovative reorientation, encourage the fundamental formation of new approaches to the management of innovative activities of economic entities.

Discussion. The necessity and relevance of the study of innovative projects in the face of risks and today's global challenges, combined with the processes of integration, simultaneous Neo-industrialization and de-industrialization, are confirmed by the works of foreign authors Barton, Schenkeri and Walker (2003), which emphasize the beginning of the formation of the last stage of society development - "risk society" - and argue that humanity has already entered this stage of development. This is due to the fact that in modern conditions, most threats and risks are no longer local in nature, but become global. The main problem of future economic growth will be not so much the growing need for funds to finance new investments, but the need to reserve capital to meet the needs that will be caused by risks.

To ensure the objectivity of the analysis of the effectiveness of the innovative activity of an enterprise, it is necessary to quantify the risks of an

innovative project. The assessment of innovation risks is presented to us as an analytical procedure, during which risk parameters are identified and determined. The specifics of innovation activity, of course, leaves its mark on this procedure. (Kalev, 2011). The complex and multifaceted nature of innovative projects of enterprises, their impact on various areas of the organization's activities requires taking into account a huge number of risk factors. At the same time, non-economic factors are especially difficult to assess. These circumstances determine the predominance of qualitative assessments of innovative risks over quantitative ones. The risk of an innovative project is the probability that the company will incur losses or in the form of additional costs in excess of the forecast; or due to exceeding the planned deadlines for the implementation of the stages of an innovative project; or because of the loss of time due to the risk associated with the commercialization of innovations in the market; or earn less than expected.

Conclusion. Based on the research, the following conclusions can be made:

1. According to the results of the project implementation, statistics are accumulated, which allows in the future to more accurately identify risks and work with

them. If the uncertainty of the project is too high, then it can be sent for revision, after which the risks are reassessed.

2. The methodological tools for assessing the level of investment risk include economic-statistical, expert and analog methods for such an assessment. To this classification, it is necessary to add operational analysis as a method for assessing the degree of entrepreneurial risk, i.e. "risk in general". Economic and statistical methods form the basis for assessing the level of investment risk.

3. Use of the process of selection of effective investment projects to introduce a proposal to create a methodological framework for the initial examination of projects in order to avoid unnecessary work on a detailed assessment in the implementation of effective examination of investment projects.

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