Управление инвестиционными процессами и оценка факторов риска

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Аннотация. В статье раскрывается понятие «управление инвестиционными процессами». Показано, что инвестиционные процессы есть связующее звено между инвестиционной деятельностью и инвестиционным потенциалом. Обзор различных подходов к пониманию данного термина позволяет представить управление инвестиционными процессами в виде схемы. Полученная схема позволяет сформулировать проблемы оценки риска, а проведенный обзор позволяет выявить основные модели, используемые в процессе принятия инвестиционных решений, в том числе детализировать модели, необходимые для оценки риска.

Ключевые слова: управление инвестиционными процессами, оценка риска, модели оценки, процесс принятия решений.

Investment process management and risk assessment

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Annotation. The article reveals the concept of «management of investment processes». It is shown that investment processes are the link between investment activity and investment potential. A review of various approaches to understanding this term allows us to present the management of investment processes in the form of a scheme. The resulting scheme allows us to formulate the problems of risk assessment, and the review allows us to identify the main models used in the process of making investment decisions, including detailing the models necessary for risk assessment.

Keywords: investment process management, risk assessment, assessment models, decision-making process.

At present, the development of sectors of the economy is impossible without investment. Most projects are currently being implemented with investment capital. An increase in interest in attracting investments leads to an increase in interest in investing them[1].

The importance of investment activity at present is not in doubt, since investment is the main driving mechanism for the development of various industries. The set of indicators characterizing investment and its effectiveness in a particular region forms the investment potential[2].

The connecting link between investment activity and the investment potential of the region are investment processes. This concept is often used in the literature; however, various authors define it differently.

In the work of O.G. Smeshko[3] when developing a system for managing the investment process in the regions, statistical methods are widely used, in particular, the distribution density of investments in fixed assets is analyzed, the specific gravities of investments in dynamics are calculated, and a structural analysis of investment activity by regions is made.

Research M.A. Meteleva[4] is devoted to assessing the quality of investment process management in the region based on econometric modeling, and an approach to improving investment management mechanisms based on the engineering of a process of continuous quality improvement that implements the functions of operational data monitoring, formation and evaluation of performance indicators of subjects of the regional investment management system is proposed. processes.

[1] Akimov, S.S. Development of an investment portfolio model / S.S. Akimov // Intellect. Innovation Investments. – 2016. – № 5. – P. 6-8.

[2] Akimov, S.S. Modeling the investment portfolio by identifying the distribution law / S.S. Akimov // Intellect. Innovation Investments. – 2018. – № 10. – P. 8-12.

[3] Smeshko O.G. The investment process management system in the regions of the Russian Federation: current specifics and construction features // Economics of the North-West: problems and development prospects. – 2015. – № 3. – P. 60-66.

[4] Meteleva M.A. Assessment of the quality of investment process management in the region based on econometric modeling // Bulletin of BSU. Economics and management. – 2017. – № 3 – P. 26-33.

Yu.K. Mashunin[5] with co-authors study investment processes through mathematical modeling, based on statistical data of the main economic indicators of the region's economy. D.A. Plekhanov[6] casts doubt on the effectiveness of rating ratings that are widely used today, having discovered their inconsistency with a number of key parameters calculated by statistical methods.

As a conclusion, we can point out that all authors express a common opinion that for an adequate assessment of investment processes it is necessary to apply statistical models and methods.

Thus, it can be determined that investment process management is most expediently performed by investment statistics methods.

This conclusion makes it possible to present the management of investment processes in the form of the following scheme (Figure 1).
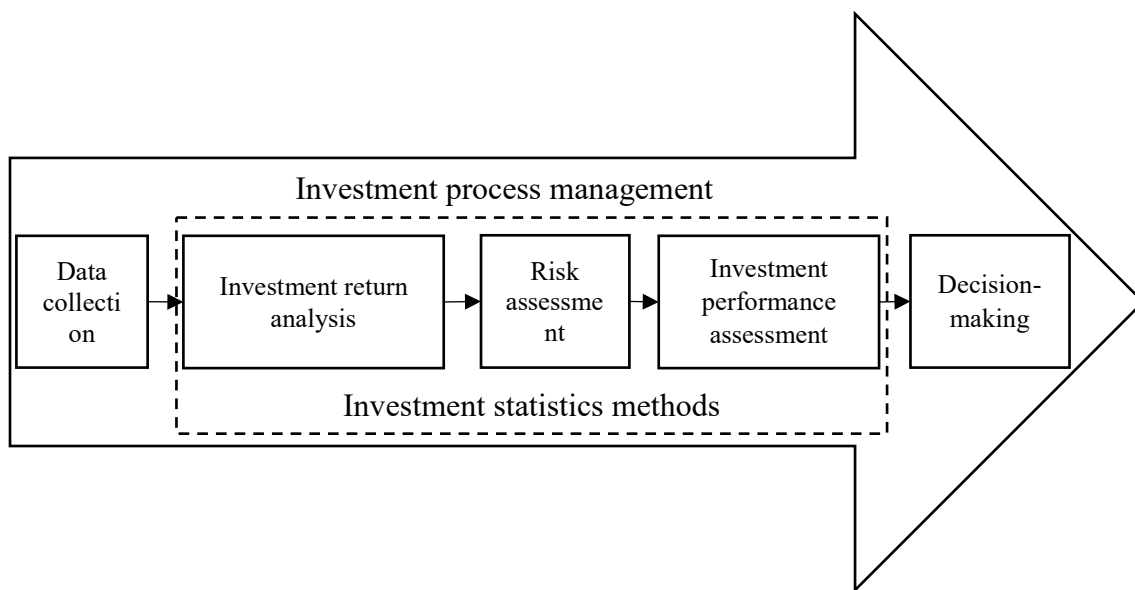

Figure 1 – Detailing the management of investment processes

Such a view provides a fundamental opportunity to simplify the process of conducting investment statistical research through the following interpretation:

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[5] Mashunin Yu.K., Mashunin I.A., Vorobyova L.G. Modeling of investment processes in the regional economy // Vestnik TSEU. – 2012. – № 2. – P. 95-105.
[6] Plekhanov D.A. On compliance of the assessments of investment attractiveness of regions with real investment processes. Economic and humanitarian sciences. – 2010. – № 6 (221). – P. 28-30.

1. Investment efficiency depends on two indicators: profitability and risk, in other words, investment efficiency can be represented as a function of profitability and risk.

2. Investment return indicators are usually quite clearly defined: in real investment projects, this is return on investment expressed in terms of profit, in portfolio investment, it is return on changes in the value of an asset, which is affected by a fairly limited number of factors.

3. Since risk is a factor influencing the overall investment efficiency, the concept of efficiency can be considered as a function of profitability, adjusted for the risk function.

The points mentioned above allow us to exclude a random component from the profitability assessment and to analyze the dynamics of profitability using financial functional models. The deviation of real values from the calculated values can be considered as the influence of certain risk factors at a certain stage of the investment process. Thus, the process of evaluating investments becomes simpler - all probability models are excluded from the analysis of investment returns. At the same time, the implementation of this approach makes the risk assessment the most important and crucial step.

Let us turn further to the problems of assessing investment risk. An analysis of literary sources has shown that today there are three main ways to assess risk in investing: using financial models, statistical models, and probabilistic models.

Risk assessment using financial models is most often encountered when evaluating real investment projects. In the work of G.K. Dzhurabaeva[7] describes the risks of investment projects as some events that affect the process of investing in each of the stages of the investment project, and the assessment of which can be reflected through the cash flows from investments. In the work of A.A. Miloserdova and E.B. Gerasimova[8] provides a classification of financial indicators that reflect the

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[7] Dzhurabaeva G.K. The concept, classification and methods of analysis of investment projects. Economics and society: modern development models. – 2014. – № 8-1. – P. 104-121.

[8] Miloserdov A.A., Gerasimova E.B. Risk analysis of investment and financial activities: principles of classification and model building: Monograph. Tambov: Publishing House of TSTU. – 2006. – 80 p.

effectiveness of an investment project. L. Dyukaev[9] when evaluating investment efficiency notes that the key point is an adequate assessment of financial indicators.

The most common statistical approach to risk assessment. M.S. Kuvshinov and N.S. Komarova[10] in the process of improving the methodological tools for evaluating investment projects directly turn to statistical models that include the interlinking of ten enterprise performance indicators, and then, on this basis, receive an integrated performance assessment using the hierarchy analysis method. In the work of I.V. Volkova, I.V. Ryabova[11] uses dispersion as the main indicator at the stage of forming a strategic portfolio of investment projects, and the models themselves are time series on the basis of which spatially graphical risk functions are built.

Portfolio investment professionals also often resort to the construction of statistical models. I.Yu. Vygodchikov and A.A. Selivanova[12] assesses a portfolio of eight assets using a statistical analysis of options based on hierarchical analysis. In the work of V.V. Rossokhina and N.V. Chaprak[13] uses the relative range of asset price fluctuations estimated using statistical data analysis to analyze the investment portfolio.

Recently, there has been an increase in interest in building probabilistic models of investment risk. P.P. Kovalev[14] uses a matrix risk structure with probability distribution for each of them to assess the risk of an investment project. In his work S.N. Boykov[15] offers the author's method of probabilistic risk assessment of investment projects using the method of weighted estimation of a triangular fuzzy set. In the study A.A. Kurilova and T.V. Polteva[16] clearly reveals the possibilities of analyzing key

[9] Dyukaev L. Justification of the effectiveness of investments. World of transport. – 2011. – № 4. – P. 4.

[10] Kuvshinov M.S., Komarova N.S. Improving the methodological tools for evaluating investment projects. Economic analysis: theory and practice. – 2015. – № 5 (404). – P. 2-14.

[11] Volkov I.V., Ryabova I.V. New approaches to risk assessment when investing in industrial activities. Finance and credit. – 2015. – № 37 (661). – P. 23-30.

[12] Vygodchikova I.Yu., Selivanova A.A. Portfolio investment risk assessment based on a hierarchical model. News of the Saratov University. New series. Series: Economics. Control. Right. – 2016. – T. 16. – № 1. – P. 80-85.

[13] Rossokhin V.V., Chaprak N.V. Investment risk assessment using the relative range of asset price fluctuations. Finance and credit. – 2015. – № 29 (653). – P. 13-28.

[14] Kovalev P.P. Features of risk assessment of investment projects. Economy: yesterday, today, tomorrow. – 2017. – T. 7. – № 5A. – P. 251-260.

[15] Boykov S.N. A probabilistic method for assessing investment risk. Scientific notes of the Russian State Social University. – 2010. – № 8 (84). – P. 250-252.

[16] Kurilova A.A., Polteva T.V. Consideration of risk and uncertainty in assessing the effectiveness of investment projects. Karelian scientific journal. – 2016. – T. 5. – № 4 (17). – P. 181-184.

project indicators using probabilistic models, in particular, the importance of sensitivity analysis to identify key risk factors is shown.

The methods of probability theory and mathematical statistics are also widely applied to portfolio investments. I.A. Kiseleva and S.O. Iskajyan[17] uses scenario methods to model the risks of the investment portfolio, taking into account the probability of each of the possible events.

Thus, all three methods for assessing investment risks have a right to exist, and as the studies described above show, it is possible to combine these methods. In this case, the process of investment statistical research can be displayed in more detail (Figure 2).
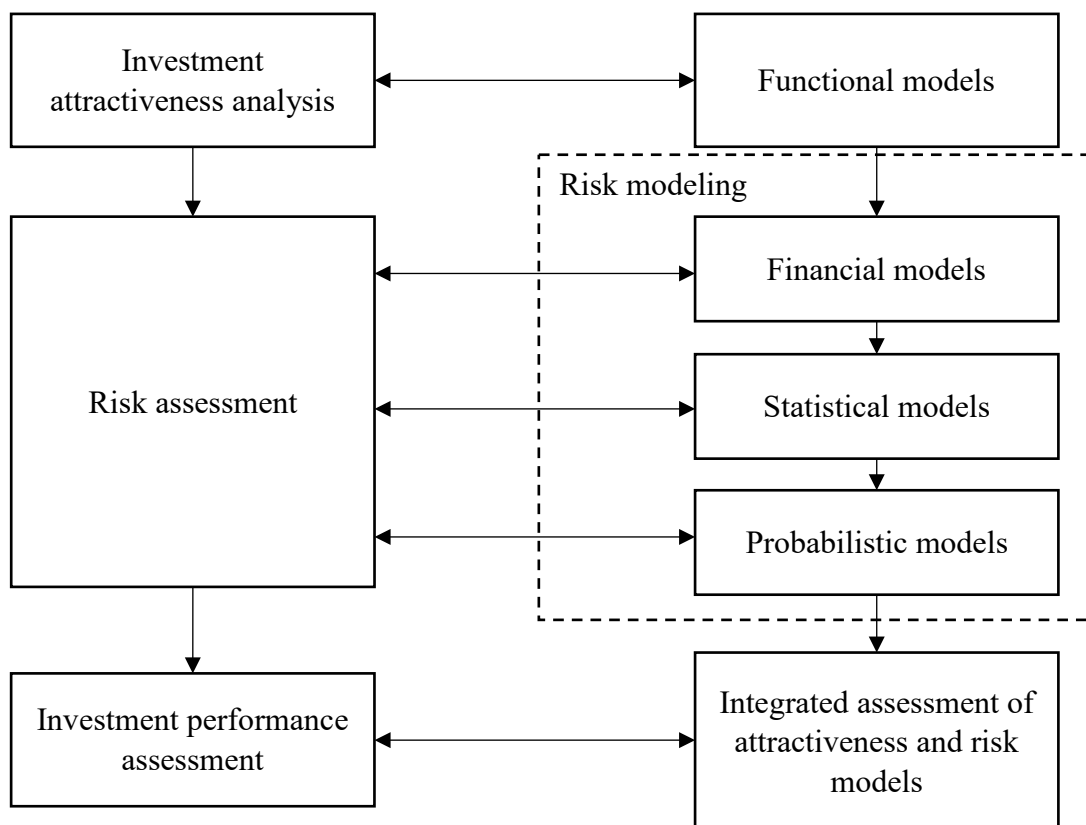
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Figure 2 – Detailed assessment of risk factors

Note that financial models are based on financial investment indicators; for statistical evaluation, the construction of regression models is legitimate; and to assess

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[17] Kiseleva I.A., Iskadzhyan S.O. Investment risks and their modeling. IT portal. – 2017. – № 1 (13). – P. 6.

probability, it is necessary to identify the law of probability distribution, to which the analyzed data are subject[18].

Thus, in this work, an attempt was made to detail the management of the investment process. Since investment statistics occupy a significant place in the field of investment assessment, the management process was presented as a sequence of steps in a standard statistical study. This approach allowed us to correlate different types of models to different steps of investment activity, as well as to more fully disclose the risk modeling process.

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