Valentina Dzobelova et al.
MAIN TRENDS IN INVESTMENT RISK…

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MAIN TRENDS IN INVESTMENT RISK MANAGEMENT

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Abstract

Assessment and management of investment risks are key aspects of successful investing, requiring special knowledge and strategies. Risk analysis and forecasting methods help investors make reasonable decisions and minimize potential losses. Effective risk management allows to minimize losses and maximize investment returns. To achieve these goals, various methods and strategies must be used. However, successful investing requires not only the ability to assess risks, but also to develop effective strategies for their management. Constant monitoring of the situation in financial markets, analysis of economic and political events, as well as the ability to quickly respond to changes will help to reduce risks and increase investment returns. This article considers the features of investment activity; the factors playing the most significant role in assessing the risk of investment projects; it also provides a classification of investment risks, determines their essence and causes of occurrence, as well as methods for their determination.

Keywords: investment risks, assessment methods, risk management, investment strategies, investment returns, risk analysis, financial instruments

I. Introduction

Investment activity is one of the most popular topics in the modern economic sphere of human activity. Popularity of investment activity has increased significantly with the increase in the level of financial literacy of the population. There is an understanding of how much investments help stabilize an individual's financial situation in a modern market economy.

The investment industry is a complex structure that includes various types of assets (shares, real estate, precious metals, derivatives, etc.). To get involved in investment activities as comfortably and easily as possible, it is necessary to study the basic concepts, structural elements, investment tools and strategies, types of assets, etc. It is understanding and knowing the answers to these questions that will allow you to minimize losses and maximize profits in the course of various investment activities.

Investment risks represent the probability of shortfall or complete loss of profit and/or invested assets in the course of implementation of investment projects where the object is the property interests of the investor.

The article examines methods of investment risk assessment and management, investigates quantitative and qualitative methods of assessment, diversification and hedging strategies, and

Valentina Dzobelova et al.
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defines the role of risk management in the overall investment process.

II. Methods

In the course of this synthetic research, the materials included publications in scientific journals referring to this issue, educational materials and textbooks related to the topic of the work, statistical data posted on the websites of the State Statistics Service, as well as the results of studies conducted in this area earlier. The main tools are observations, surveys and focus group discussions. Methods of logical and statistical analysis were also used in the research.

III. Results

Any activity related to the field of investment, as a type of commercial activity, is based on a number of features that significantly influence the process of determining the amount of investment risk. Multiple diversity of investment measures, that differ significantly both in their profitability and the level of inherent risk, significantly complicates the optimization of the investment portfolio. In addition, this area is the most susceptible to external economic, political and social effects.

Duration of the life cycle of the investment project; Due to the large scatter, it is quite difficult to take into account the 2 previous points and qualitatively and effectively predict the influence of factors on the profitability of an investment project and the amount of investment risk. Insufficient and sometimes complete absence of statistical data from the previous period on which one could rely when choosing tactics.

One of the main factors that directly influences the process of investment risk assessment is the degree of market volatility. The higher the volatility, the greater the opportunity for high profits, but the risk of loss also increases. As it is known, high volatility in economic theory indicates frequent and significant fluctuations in the value of an asset, wherein value fluctuations often exceeding 10% of the base value. With low volatility, prices are less susceptible to sudden fluctuations and price fluctuations do not exceed 2% of the base price.

Another important factor, in our opinion, is the degree of liquidity of investments. Illiquid assets may be difficult to sell in case of quick conversion into cash, that significantly increases investment risks. Liquidity is calculated using the following formula:

$$k = \frac{A1 + A2 + A3}{P1 + P2}$$

(1)

Where A1, A2, A3 are assets, and P1 and P2 are current and short-term liabilities, respectively. Another way to calculate the liquidity ratio is the ratio of current assets to short-term liabilities. The ideal result of the calculation is a result in the range from 1 to 2. Going beyond this range to a greater extent will indicate an imbalance in asset management, in the opposite direction – absence of profit or the presence of losses.

Also, an important factor is portfolio diversification, which is often recommended for novice investors. A variety of assets allows reducing the overall risk of investments, since losses on one type of asset can be compensated by profits on others. There are several types of diversification: according to the type of assets (investment in different investment instruments), by country, by economic sectors.

Finally, fundamental and technical analyses also have a significant impact on investment risk assessment. Analysis of market trends, financial condition of companies and macroeconomic indicators allows investors making reasonable decisions and managing risks more effectively.

As already mentioned above, geopolitical situation is another factor that most strongly influences the amount of investment risk. Global instability, political conflicts, military actions or changes in legislation have a great impact on the market and investment opportunities, due to the significant dependence of the investment sector on them. Investors should consider these risks to

Valentina Dzobelova et al.
MAIN TRENDS IN INVESTMENT RISK…

RT&A, Special Issue № 6 (81), Part-3,
Volume 19, December 2024

adapt strategy depending on the current environment.

Perhaps the most volatile aspect in the investment risk assessment is the human factor and market psychology. Emotions can significantly influence the decisions and behavior of market participants.

Finally, an important factor in investment risk assessment is the level of financial literacy. Having sufficient knowledge about financial markets, investment instruments and strategies allows making more reasonable decisions and effectively managing risks. Education, self-education and consultation with experts can significantly improve financial literacy and help investors achieve successful results in the market.

As for considering the risk management plan in general, it comes to defining the following actions:

1) Analysis of risks of the previous period, where the frequency and probability of occurrence of investment risks, as well as their mathematical expectation, are important elements.

2) Analysis of macro- and microeconomic trends, extrapolation of their development

3) Assessment of the impact of possible investment risks during project implementation.

4) Analysis of project flexibility under the influence of external effects

Investment risks, by their nature, represent potential threats and possible losses that may arise when investing capital in order to make a profit. The classification of investment risks includes financial, market, operational, political and other types of risks, each of which requires special attention and analysis when making investment decisions. It is important to remember that risk management plays a key role in achieving successful investment results, so it is necessary to carefully study and analyze all aspects of risk before making investment decisions.
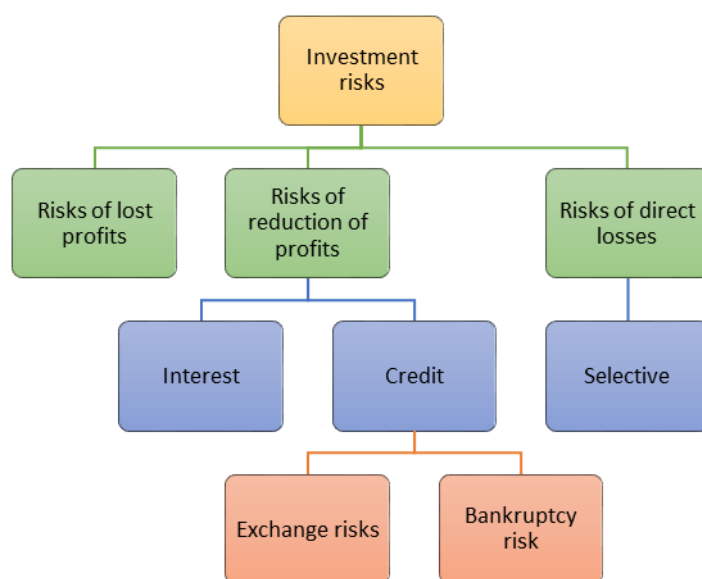

Figure 1: *Classification of investment risks*

The first level of classification is represented by three main risks: the risk of lost profits (the risk of indirect (incidental) financial damage as a result of activities), reduction of profits and direct losses (Fig. 1). The second level arises as a result of a decrease in interest and dividends and is divided into interest and credit risks. Selective risks are the risks of the wrong choice of type of investment.

Since we have examined the basic classification of investment risks, let`s consider in more detail the methods by which we can determine, in fact, the very amount of risk associated with investment activities (Fig. 2).
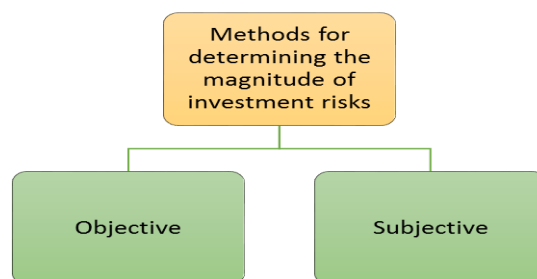
Valentina Dzobelova et al.
MAIN TRENDS IN INVESTMENT RISK…

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Volume 19, December 2024

Figure 2: *Methods for determining the magnitude of investment risks*

Objective methods for determining the magnitude of investment risks are based on the collection, processing and analysis of statistical indicators, while subjective methods are based precisely on personal experience and the assessment of experts, the opinion of other specialists. The first ones are applied in case of a representative statistical sample of risks in a certain structure of investment activities. Almost always, in objective methods of determination, probability theory and game theory are used, based on which the mathematical expectation of the occurrence of a necessary event is represented by the product of the absolute value of this event and the probability of its occurrence.

Investment risk assessment is based on two main criteria: the average mathematical expectation M(X) and the fluctuation of the possible result (σ), where

$$M(X) = \sum_{i=1}^{n} x_i p_i$$

(2)

Average mathematical expectation is the expected average profitability or loss from an investment, which is calculated as the product of the probability of an event occurring (p) and the magnitude of that event (x). This criterion allows investors to assess how profitable or risky an investment is in the long term.

Fluctuation or volatility shows the degree of the deviation results around the average expected value. It is calculated as the product of the quotient 1 and the number of observations reduced by 1 and the sum of the squared difference between the arithmetic mean and the price change.

$$\sigma = \frac{1}{n-1} \sum_{i-1}^{n} (m - x_i)^2$$

(3)

The higher the volatility of an investment, the greater the chance of both high profits and significant losses. Therefore, to fully assess the risk of an investment, fluctuations of the possible result must also be taken into account.

One of the most important tasks here is to find a balance between a high mathematical expectation of profitability and an acceptable level of volatility, which will not only maximize potential profits, but also minimize possible losses.

In addition to these two factors, for a more accurate assessment, it is also necessary to consider the correlation between different assets, which shows how strongly they move together, thus allowing to apply a diversification method and reduce the overall risk. For example, if assets are positively correlated, then losses on one asset may be partially compensated by gains on another asset.

Another important aspect of investment risk management is understanding the concept of statistical probability. Besides average expected value and fluctuations, investors should consider the possibility of occurrence of different investment results. This will help them determine not only expected profits, but also potential losses under various scenarios.

Finally, successful portfolio management requires a deep understanding of all aspects of risk, including average mathematical expectation, volatility, correlation and probability. Careful analysis of these factors will help investors make reasonable decisions, optimize their investments

Valentina Dzobelova et al.
MAIN TRENDS IN INVESTMENT RISK…

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and achieve their financial goals in the long term.

So, for example, an investor is considering purchasing shares of Company Z. The average mathematical expectation of this investment is 10% per annum, based on the analysis of historical data and the current situation in the industry. However, the volatility of Company Z shares is assessed as high, with possible fluctuations in profitability from -20% to +30% throughout the year.

Thus, the investment risk for this investment is average, since the average mathematical expectation is 10%, but the volatility is quite high, which increases the chances of both high profits and significant losses. An investor should carefully consider the pros and cons before deciding to purchase shares of Company Z.

Let's consider another example. We have two investment portfolios A and B. A: M(A)=10%, σ=20%, M(B)=5%, σ=10%.

Basing on the data, we can draw the following conclusions: the amount of investment risk for portfolio A is higher than for portfolio B. This is due to the higher volatility of portfolio A, that increases the chances of receiving both high profits and significant losses.

Thus, when assessing investment risk, it is important to consider not only the average mathematical expectation, but also fluctuations of the possible result to make a reasonable decision on choosing an investment portfolio.

In the economic literature there are three main investment strategies to which an investor can resort. All of them are distributed mainly according to the risk level and the type of assets used.

1) Conservative investment strategy (use of the most reliable instruments, such as deposits, government bonds, Eurobonds, stable currencies and precious metals, i.e. those ones, that will not lead to an absolute loss of profit in case of negative external effects). David Rubenstein said, "Persist – don't take no for an answer. If you're happy to sit at your desk and not take any risk, you'll be sitting at your desk for the next 20 years."

2) Balanced strategy (use of reliable assets and speculative instruments; the principle of diversification, which we discussed earlier, is quite often applied here). Ray Dalio said: "More than anything else, what differentiates people who live up to their potential from those who don't is a willingness to look at themselves and others objectively". In our opinion, it is this quote that defines the main task when applied.

3) Speculative or investment strategy (it includes a larger part of risky instruments). The investor is exposed to maximum risk using it. The most appropriate statement here is John C. Bogle's quote: "If you have trouble imagining a 20% loss in the stock market, you shouldn't be in stocks".

Let's consider an example: Olga saved up 100 000 rubles from her first job. She understands that money lying idle is most susceptible to inflation. She decides to invest her funds, creates a personal account in a bank for investing, and now she faces question of where to start from, where to invest them. She has two options to consider:

1) Investment in shares of Company A: the cost of 1 share is 100 rubles (i.e. Olga can purchase 1000 units of shares), the probability of success calculated by experts, is 50% (which is quite risky), the estimated possible profit is 150% (cost for 1 share will increase from 100 rubles to 150). Thus, in case of success, Olga's profit will be 50 000 rubles.

2) Investment in bonds of Company B. In this case, Olga's guaranteed profit will be 10 000.

The risk analysis shows that Company A shares are a riskier option since the probability of success is only 50% and the possible profit could be much higher or lower. While bonds of company B are a more reliable option, as they guarantee a fixed income.

And if we consider the option specifically for a beginner, then it is better for Olga to choose the second option, as the least exposed to risk.

Valentina Dzobelova et al.
MAIN TRENDS IN INVESTMENT RISK…

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IV. Conclusion

Thus, investment risk assessment is a complex and many-sided process that requires considering many factors, ranging from the degree of market volatility to the financial literacy and emotional stability of the investor. The ability to analyze emerging trends and manage these factors helps to minimize risks and increase one`s chances of achieving the desired results.

The famous economist John Keynes, in his work "The General Theory of Employment, Interest and Money," wrote "The game of professional investment is intolerably boring and over-exacting to anyone who is entirely exempt from the gambling instinct; whilst he who has it must pay to this propensity the appropriate toll". His quote quite clearly describes human activity in the field of investment.

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