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IDENTIFICATION, MEASUREMENT, AND MITIGATION STRATEGIES OF FINANCIAL RISKS

Abstract

Financial risk management is one of the most important factors for the successful operations of companies and investors in modern economies. When companies and investors fail to properly measure and manage the financial risks they face, they may encounter serious problems related to potential losses and market uncertainties. These problems can result not only in financial losses but also damage to the reputation and market credibility of companies. Therefore, accurately assessing and managing financial risks is crucial for ensuring the sustainable and successful operations of companies and investors. This study thoroughly examines various tools and strategies used for measuring and mitigating financial risks. Specifically, financial instruments such as Value at Risk (VaR), Expected Shortfall (ES), forward and option contracts, as well as swap operations, play a significant role in risk assessment and mitigation. These tools help investors and financial institutions identify risks in advance and take appropriate actions to address them. Additionally, these tools ensure the protection and optimization of financial portfolios in response to market changes. The methods applied in managing various financial risks also require accurate risk measurement and analysis, which helps reduce future uncertainties.

Keywords: *financial risks, risk management, financial instruments, value at risk, expected shortfall.*

INTRODUCTION

Financial risks are an inherent part of every economic activity and one of the main challenges faced by companies and individuals in modern economies. Every financial decision carries certain risks, and the proper identification, measurement, and mitigation of these risks are crucial for successful financial management. Especially in the context of global financial markets and the dynamic changes in the economy, managing financial risks becomes even more complex.

Financial risks are generally classified into various types, such as credit risk, market risk, liquidity risk, and operational risk. Each risk type is associated with different factors and requires distinct management approaches. Effectively identifying these risks involves not only understanding their existence but also forecasting how these risks will impact the financial situation of an organization.

There are several scientific approaches and methods available for measuring financial risks. These methods allow for evaluating the magnitude and potential impacts of risks. Measuring risks gives organizations and investors the ability to anticipate the financial pressures they may face and take appropriate actions in advance.

Mitigating financial risks plays a key role in ensuring the long-term success of any organization. Various risk management strategies, including diversification, hedging, insurance, and other tools, are aimed at preventing or minimizing the impacts of financial risks.

This article will explore the approaches to identifying, measuring, and mitigating financial risks, discussing various strategic methods and their areas of application. The goal is to present the most modern approaches to effective financial risk management and analyze the prevailing trends in this field.

Identification of financial risks

The risk management process begins by identifying the potential risks that a company may face in the future. This process differentiates between insignificant risks that pose no threat and major risks that could lead to serious consequences. Risk awareness is built by identifying key risks, and companies must focus on the ones that are most relevant to them and take preventive actions. Therefore, the identification of financial risks is considered the initial phase of financial risk management [1].

In identifying financial risks, the company needs to have in-depth knowledge of its operating environment, the sector it is part of, industry trends, the political climate, customer expectations, and the position of competitors. This information enhances the company's ability to analyze risks. At this stage, it is crucial to conduct a direct or indirect analysis and maintain a realistic perspective. If the company takes an unrealistic approach, there is a high potential for significant misjudgments regarding important risks. Following this stage, it is necessary to explore which risks are likely, and to create scenarios for both negative and positive outcomes. If errors are made in this process, it will become impossible to identify risks accurately and assess potential damages [2].

Measurement of financial risks

Value at Risk (VaR) is one of the most commonly used methods for assessing the risk of losses in a portfolio. This approach is based on statistical analysis and reflects the negative risks associated with trading financial assets. It has been endorsed by financial regulators and committees for evaluating and predicting market risks. VaR can be described as the expected maximum loss over a defined period [3].

The confidence level is typically explained as a 5% probability of losses at a 95% confidence level, meaning there is a 95% chance that the losses will not exceed this threshold. Those working with VaR often choose lower confidence levels for analysis. They may also opt for higher risk confidence levels, depending on the conceptual framework and the objectives of risk assessment. Factors like the rapid ownership period, the portfolio's ability to maintain its value over time, and priorities for retrospective analysis or model validation are considered important depending on the expectations [4].

Although VaR represents potential losses, it is typically presented as a positive figure. However, if it is shown as a negative number, it suggests that there is a possibility of profit within the portfolio. While VaR is often used as a method for accumulating risk within an organization, it has various limitations. VaR forecasts the maximum potential loss over a specific period but does not provide information on what happens beyond that point. If certain events occur, the organization may predict greater losses than those indicated by VaR, but the exact amount of those losses is not specified by VaR. Additionally, the same VaR figure could apply to two different positions with the same confidence level over a given period, but one may involve greater tail risks. In such cases, VaR may inaccurately suggest equal risk for both positions. Moreover, using VaR-based data at multiple confidence levels is not always consistently applied to address such issues, since the extent of losses beyond VaR is not accounted for in VaR-based risk-return analysis. Even when there is a substantial increase between expected returns and VaR, VaR-based decisions do not guarantee positive expectations in risk-return evaluations [5].

Expected Shortfall (ES), also referred to as expected tail loss, conditional value at risk, tail conditional expectation, worst-case conditional expectation, or average value at risk, is used for evaluating the credit and market risks of a portfolio. It is also described as the expected value of losses that occur beyond the VaR threshold.

While Expected Shortfall (ES) shares similar functions with VaR, it is considered a superior method for measuring risk due to five key reasons. Unlike VaR, which does not provide details about the size of losses if they exceed the threshold, Expected Shortfall gives a clearer picture of potential losses when they surpass the VaR level. Expected Shortfall is viewed as a more reliable risk measure since it addresses the subadditivity problem that VaR fails to manage [6].

In contrast to VaR, which does not promote risk diversification, the VaR of a diversified portfolio is typically greater than that of a non-diversified one. However, Expected Shortfall does not present such barriers to risk diversification.

Sensitivity analysis is described as a powerful and straightforward method for eliminating uncertainty. The process begins with the identification of parameters that indicate uncertainties. Such parameters include cost revenues and others. In the second stage, it examines how all variables might change when the appropriate distribution occurs [7].

Mitigation of financial risks

Futures contracts are described as the buying and selling of commodities or financial instruments with a settlement date in the future. The derivatives market plays a crucial role in the advancement of a country's financial system. Economic growth has been fueled by derivative products. Derivatives are beneficial for enhancing capital markets in both developed and developing countries, as these financial instruments offer opportunities for both domestic and foreign investors to mitigate risk [8].

Forward contracts are favored by investors and institutions due to the significant obligations they entail. These contracts, primarily used for hedging, are among the oldest forms of trading. Forward markets are regarded as the cornerstone of financial markets. A forward contract is defined as an agreement to buy or sell a specific commodity at a set price on a future date. Currency forward contracts involve trades based on currency and exchange agreements. Forward contracts are considered unconventional [9].

Options are not regarded as new derivative products, as they have an established history. They are considered complex and well-known derivatives. Option contracts provide the right to buy or sell a specific commodity within a given timeframe [10].

Unlike futures contracts, option contracts do not carry an obligation to execute the trade. Options only grant the right to buy or sell. A premium is paid for the right to buy or sell, which depends on market conditions at the time of expiration. Options are seen as riskier investments compared to others [11].

Swap refers to the act of exchanging or trading and is an English-origin term. Swap agreements were introduced by the Austrian National Bank in 1923, after they became widely adopted and turned into a significant financial tool. A swap is essentially the exchange of debts. Both the principal amount and the interest, as well as the principal debt, can be swapped together. Different currencies are exchanged through a swap contract on the same day [12].

RESULT

Financial risk management is a crucial area that forms the foundation of success for companies and investors in modern economies. Due to the complexity and global nature of financial markets, this field is becoming increasingly important. In this study, various financial instruments and strategies, including VaR, Expected Shortfall (ES), forward and option contracts, as well as swap operations, were discussed in terms of their application in measuring and mitigating risks.

VaR is one of the most widely used approaches for measuring financial risks, but it has certain limitations, particularly because it does not provide information about future events. In contrast, Expected Shortfall (ES) offers a broader and more reliable risk measure, as it allows for a better prediction of the likelihood and significance of potential losses beyond VaR.

Forward and option contracts are tools used by investors and financial institutions to manage risks. Each contract type has its own distinct characteristics: forward contracts are based on serious obligations and provide both rights and obligations, while options only grant rights and are considered riskier investment tools. Swap operations, on the other hand, are more complex financial instruments that help reduce risks through the exchange of various debts and interest payments.

In conclusion, effective financial risk management enables companies and investors to make better decisions in market conditions, take appropriate actions, and minimize potential losses. The continuous

development of this field and the improvement of financial instruments are important steps toward ensuring the stability and sustainable development of financial markets.

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Maliyyə risklərinin müəyyən edilməsi, ölçmə və azaltma strategiyaları

Xülasə

Maliyyə risklərinin idarə edilməsi müasir iqtisadiyyatda şirkətlərin və investorların uğurlu fəaliyyətləri üçün ən vacib amillərdən biridir. Şirkətlər və investorlar qarşılaşdıqları maliyyə risklərini düzgün ölçüb idarə etmədikdə, potensial zərərlər və bazar qeyri-müəyyənlikləri ilə əlaqəli ciddi problemlərlə üzləşə bilərlər. Bu problemlər, yalnız maliyyə itkiləri ilə deyil, həm də şirkətlərin nüfuzlarına və bazar etibarlarına zərər vurmaqla nəticələnə bilər. Məhz buna görə də maliyyə risklərinin düzgün şəkildə qiymətləndirilməsi və idarə edilməsi, şirkətlərin və investorların dayanıqlı və uğurlu fəaliyyət göstərmələri üçün əhəmiyyətlidir. Tədqiqatda, maliyyə risklərinin ölçülməsi və azaldılması üçün müxtəlif alətlər və strategiyalar müfəssəl şəkildə araşdırılmışdır. Xüsusilə, riskin dəyəri (VaR), Gözlənilən Çatışmazlıq (ES), forvard və opsiyon müqavilələri, habelə swap əməliyyatları kimi maliyyə alətləri riskin qiymətləndirilməsi və azaldılmasında mühüm rol oynayır. Bu alətlər, investorların və maliyyə qurumlarının qarşılaşdığı riskləri əvvəlcədən müəyyən etməyə və həmin risklərə qarşı müvafiq tədbirlər görməyə kömək edir. Həmçinin, bu alətlər, bazar dəyişikliklərinə cavab olaraq maliyyə portfellərinin qorunmasını və optimallaşdırılmasını təmin edir. Müxtəlif maliyyə risklərinin idarə edilməsində tətbiq olunan metodlar, həmçinin risklərin ölçülməsinin və analizinin dəqiq aparılmasını tələb edir, bu da gələcəkdə qarşılaşılacaq qeyri-müəyyənliklərin azaldılmasına xidmət edir.

Açar sözlər: maliyyə riskləri, risk idarəetməsi, maliyyə alətləri, riskin dəyəri, gözlənilən çatışmazlıq.