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THEORETICAL APPROACHES TO THE APPLICATION OF BEHAVIORAL FINANCE IN INVESTMENT PORTFOLIO MANAGEMENT

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Abstract

The article discusses theoretical approaches to the application of behavioral finance in investment portfolio management. The purpose of the work is to analyze the concepts and methods proposed within the framework of behavioral finance to improve investment portfolio management. The main cognitive biases of investors and their impact on portfolio formation are analyzed. Theoretical strategies for overcoming behavioral errors in asset selection and capital allocation are considered. The conceptual foundations of the role of financial consultants in the application of the principles of behavioral finance in portfolio management have been studied. The importance of taking behavioral factors into account in theoretical models for the development of investment products and services focused on the optimization of portfolio investments is substantiated.

Keywords

Behavioral finance, Investment portfolio management, Cognitive biases, Portfolio optimization.

Problem statement

Traditional approaches to investment portfolio management, based on the assumption of rationality of investors, often do not correspond to the real behavior of market participants. Behavioral finance offers an alternative view of the investment decision-making process, taking into account psychological factors and cognitive biases. However, the integration of behavioral aspects into the practice of portfolio management remains a difficult task that requires deep theoretical understanding. The problem is that classic models of portfolio optimization, such as Markowitz's theory, are based on assumptions about the complete rationality of investors and the efficiency of markets. However, numerous studies in the field of behavioral finance demonstrate that real investors are prone to systematic errors and irrational behavior. This leads to suboptimal decisions regarding the formation and management of the portfolio, which negatively affects their investment results.

There is a need to develop new theoretical models and practical approaches that would take into account behavioral aspects of investment portfolio management. Such models should not only describe the real behavior of investors, but also offer mechanisms to minimize the negative impact of cognitive biases on investment

decisions. In addition, it is important to develop methods that will allow financial advisors and institutional investors to effectively apply the principles of behavioral finance in their practical activities.

Relevance of the chosen topic

In the conditions of increasing volatility of financial markets and the complexity of investment products, consideration of behavioral factors is becoming increasingly important for achieving optimal results of investment portfolio management. Theoretical approaches that take into account the irrationality of investors and their cognitive biases can offer new methods of portfolio optimization and risk management strategies that better correspond to real market conditions.

The relevance of the study of theoretical approaches to the application of behavioral finance in investment portfolio management is determined by several factors:

1. The global financial crisis of 2008 and subsequent market shocks demonstrated the limitations of traditional models of risk management and portfolio optimization, which emphasized the need to integrate behavioral aspects into financial theory and practice.
2. The development of technologies and the emergence of new financial instruments create additional challenges for investors, increasing the complexity of making investment decisions. In such conditions, understanding the psychological factors influencing the behavior of investors becomes critically important for the development of effective portfolio management strategies.
3. The growing role of individual investors in financial markets, especially in the context of retirement savings and robotic advisors, increases the need for theoretical models that take into account the peculiarities of decision-making by non-professional market participants. Applying the principles of behavioral finance can help develop more effective investment products and services aimed at the mass investor.

Analysis of recent research and publications

The theoretical foundations of the application of behavioral finance in the management of an investment portfolio were studied by such scientists as D. Kahneman, A. Tversky, R. Thaler, M. Statman, H. Shefrin, N. Barberis, W. De Bondt. Their work laid the foundation for understanding the impact of psychological factors on portfolio formation and management. Recent studies, including the works of C. Egan, D. Hirshleifer, B. Barber, and T. Odean, focus on the development of theoretical models that integrate behavioral aspects into the portfolio optimization process. It is important to note that modern research in the field of behavioral finance is increasingly focused on the development of practical tools and strategies that allow taking into account behavioral aspects in the process of managing an investment portfolio. This includes developing new risk assessment methods, diversification strategies and approaches to communicating with investors.

Purpose of the article

The purpose of the article is to analyze the concepts and methods proposed within the framework of behavioral finance to improve investment portfolio management.

To achieve the goal, the following tasks must be solved:

- to determine the main cognitive biases affecting the formation and management of the investment portfolio;
- analyze theoretical models of portfolio optimization that take into account behavioral factors;
- to investigate the conceptual principles of applying the principles of behavioral finance in the work of financial consultants;
- consider theoretical approaches to taking into account behavioral factors in the development of investment products and services for portfolio management.

Presentation of the main research material and results obtained

The theory of behavioral finance revealed a number of cognitive biases that significantly affect the process of forming and managing an investment portfolio (Table 1). Such biases represent systematic deviations in thinking and decision-making that can lead to suboptimal investment results. Understanding these biases is key to developing effective portfolio management strategies. Cognitive biases that influence investment decisions are the result of evolutionary processes in the human brain. Such mental "shortcuts" often helped our ancestors respond quickly to threats and opportunities in the environment. However, in the complex world of modern

finance, these same mechanisms can lead to systematic errors. For example, the tendency to place more importance on recent events (the recency effect) may be useful for survival in natural environments, but may lead to suboptimal decisions in financial markets, where past performance is not always an indicator of future performance (Buss, 2019).

Analysis of the Table 1, allows us to draw a conclusion about the significant impact of cognitive biases on the investment portfolio management process. Overconfidence, for example, can cause investors to rely too much on their own judgment, ignoring important market information, which can result in an under-diversified portfolio that carries increased risk (Hirshleifer, 2015) (Barberis & Thaler, 2003).

The anchor effect demonstrates how investors can become attached to certain price levels or historical indicators, which can prevent them from adequately evaluating new opportunities in the market. Such a bias can result in lost potential gains due to reluctance to sell assets that have fallen significantly in price, or to overinvesting in assets that appear "cheap" simply because they were priced higher in the past.

Particular attention should be paid to the disposition effect, which was empirically investigated by Shefrin and Statman (Shefrin & Statman, 1985). This bias leads to asymmetry in the behavior of investors regarding profitable and unprofitable positions. Investors tend to lock in profits too soon for fear of losing them, and hold unprofitable positions too long in the hope of recovery. Such behavior can significantly reduce the overall efficiency of the portfolio.

Herd instinct is another important factor that can lead to ineffective investment decisions. Following the "crowd" can create market bubbles and lead to excessive concentration of capital in certain sectors or assets, which increases the systemic risk of the portfolio.

Table 1: Cognitive biases and their impact on investment portfolio management.

No. z/p	Cognitive bias	Features	Impact on portfolio management
1	Excessive self-confidence	Investors tend to overestimate the accuracy of their forecasts and ability to select the best assets for a portfolio	May lead to insufficient diversification and excessive risk taking
2	The anchor effect	When valuing assets, investors are often "tied" to certain numerical values (for example, historical prices)	May lead to suboptimal allocation of assets in the portfolio and ignoring new important information
3	Disposition effect	Tendency to hold unprofitable assets too long and sell profitable ones too soon	It negatively affects the overall performance of the portfolio, disrupting the optimal balance of risk and profitability
4	Herd instinct	A tendency to follow the actions of other investors when forming a portfolio, even if it contradicts one's own analysis	It can lead to the formation of inefficient portfolios and an increase in systemic risk in the market
5	Mental accounting	A tendency to consider each asset in the portfolio separately rather than as part of the whole	May lead to inefficient capital allocation and portfolio structure decisions

Source: Summarized and adapted from (Kahneman & Tversky, 1979), (Shefrin & Statman, 1985), (Barber & Odean, 2000), (Thaler, 1999), materials of Hochschule Mittweida.

Finally, mental accounting, a concept developed by (Thaler, 1999), shows how investors can misjudge the risks and returns of their investments by considering each asset separately rather than as part of a complete portfolio, which can lead to suboptimal portfolio structure and insufficient diversification.

It is important to note that the influence of cognitive biases on investment decisions may vary depending on the cultural context and individual characteristics of the investor. Research in the field of cross-cultural psychology shows that some prejudices may be more pronounced in certain cultures. For example, the dispositional effect may be stronger in cultures where "loss of face" is considered a particularly negative

phenomenon. This highlights the need to consider cultural factors when developing portfolio management strategies and educating investors.

In addition, it is important to understand that cognitive biases are not static – they can change over time and under the influence of external factors. For example, periods of market turbulence can increase the tendency to avoid losses, while prolonged periods of market growth can lead to overconfidence, indicating the need for constant monitoring and adaptation of portfolio management strategies according to changes in the behavioral patterns of investors. Understanding these cognitive biases is critical to developing effective portfolio management strategies. Financial advisors and institutional investors should consider these factors when developing investment recommendations and creating financial products. Additionally, educating investors about these biases can help them make more rational and informed investment decisions.

The classical portfolio theory developed by (Markowitz, 1952) is based on the assumption of rationality of investors. However, behavioral finance offers alternative theories and models that take into account the irrationality and cognitive biases of investors (De Bondt & Thaler, 1985). Such models seek to more accurately reflect the real behavior of market participants and offer more effective approaches to portfolio management (Table 2). The development of behavioral models of portfolio optimization is a response to the limitations of classical portfolio theory, which often does not take into account the real behavior of investors. These new models try to integrate psychological factors into the investment decision-making process, creating a more realistic picture of portfolio formation and management. It is important to note that these models do not negate the classical theory, but rather complement it, offering a more nuanced view of the investment process.

The analysis of the given theoretical models demonstrates significant progress in the development of approaches to portfolio optimization that take into account behavioral factors. The behavioral portfolio theory proposed by (Shefrin & Statman, 2000) introduces the concept of a multi-layered portfolio, where each layer corresponds to different investor goals, which allows for a more accurate reflection of the real preferences of investors who often have multiple, sometimes conflicting, investment goals. The SP/A theory developed by (Lopes, 1987) takes an important step in understanding the emotional factors that influence investment decisions. This model is particularly useful for explaining investor behavior under conditions of high uncertainty and risk. The model of cumulative prospect theory proposed by (Tversky & Kahneman, 1992) is revolutionary in that it proposes an alternative utility function that takes into account the asymmetric attitude of investors to gains and losses. This model helps to explain such phenomena as the disposition effect and loss avoidance. The portfolio optimization model developed by (Das, Markowitz, Scheid, & Statman, 2010), is an attempt to integrate classical financial theories with behavioral aspects. Such a model is particularly interesting because it offers a practical approach to creating optimal portfolios taking into account the individual behavioral characteristics of investors.

Table 2: Comparative analysis of theoretical models of portfolio optimization taking into account behavioral factors.

No. z/p	Theory/model	Features	Advantages and limitations
1	Behavioral theory of the portfolio	The model takes into account the desire of investors to avoid losses and their inclination to mental accounting. Suggests forming a portfolio as a pyramid of several layers, each of which corresponds to a specific purpose	Allows you to create more personalized portfolios that meet the real goals and preferences of investors. Difficulty of implementation in practice
2	SP/A theory (Security, Potential/Aspiration)	Considers emotional factors such as fear and hope when building a portfolio. Suggests a balance between security (S), potential (P) and aspirations (A) of the investor	Allows you to better understand the motivations of investors and create portfolios that meet their emotional needs. Can lead to excessive focus on emotional factors at the expense of financial indicators
3	Model of the cumulative theory of perspectives	Offers an alternative utility function that takes into account the asymmetric	More accurately reflects the process of decision-making by investors in conditions of uncertainty.

		attitude of investors to gains and losses, as well as the subjective perception of probabilities	Difficulty calibrating the model for individual investors
4	Portfolio optimization model taking into account behavioral factors	Integrates elements of behavioral portfolio theory and classical Markowitz theory. It allows taking into account the individual behavioral characteristics of investors when forming an optimal portfolio	Offers a more balanced approach that takes into account both financial and behavioral factors. It requires complex mathematical calculations and a large volume of data for effective application

Source: Generalized and adapted from (Shefrin & Statman, 2000), (Lopes, 1987), (Tversky & Kahneman, 1992), (Das et al., 2010), Proceedings of Hochschule Mittweida.

Practical application of these models can significantly improve the investment portfolio management process. For example, using BPT can help financial advisors create portfolios that are more understandable and psychologically comfortable for clients. SP/A theory can be useful in designing investment products that balance safety and growth potential, meeting the different emotional needs of investors. However, it is important to note that applying these models in practice can be a difficult task. They require a more detailed analysis of individual characteristics of investors and may be less universal than classical approaches. In addition, these models often require more complex mathematical calculations, which can complicate their widespread adoption in the asset management industry.

It is important to note that the implementation of behavioral models of portfolio optimization in the practice of investment management faces a number of challenges. One of them is the difficulty of calibrating models for specific investors. Determining individual parameters, such as the level of loss avoidance or subjective perception of probabilities, requires the development of complex evaluation and data collection methodologies. In addition, the dynamic nature of behavioral factors means that these parameters can change over time, requiring constant monitoring and adjustment of models. Another important aspect is the need for a balance between taking into account behavioral factors and ensuring long-term portfolio performance. Excessive focus on the short-term behavioral responses of investors can lead to suboptimal decisions in terms of long-term financial goals. Therefore, the development of models that effectively combine behavioral insights with the principles of long-term investing remains an important area of research in the field of behavioral finance.

The theory of behavioral finance not only changed our understanding of the process of making investment decisions, but also offered new approaches to the role of financial consultants in the process of managing an investment portfolio (Table 3). Such approaches are aimed at helping clients overcome their cognitive biases and make more rational investment decisions. The integration of the principles of behavioral finance into the practice of financial consulting represents a paradigm shift in the approach to working with clients. Traditionally, financial consultants focused mainly on the technical aspects of portfolio management - market analysis, asset selection, optimization of the ratio of risk and profitability. However, behavioral finance emphasizes the importance of understanding the psychological factors that influence clients' investment decisions, which requires advisors to develop new competencies that go beyond traditional financial expertise.

Analysis of approaches presented in Table 3, demonstrates the significant potential of applying the principles of behavioral finance in the work of financial consultants. The educational role of advisors, as stated by (Pompian, 2006), is critical to improving clients' financial literacy and their ability to make more informed investment decisions. However, this requires consultants to have a deep understanding of not only financial markets, but also the psychology of decision-making.

Table 3: Behavioral approaches to consulting in investment portfolio management.

No. z/p	Approach	Features	Potential benefits and challenges
1	Educational role	Helping clients understand their own cognitive biases and their impact on investment decisions	Increasing the financial literacy of clients, improving the quality of their investment decisions.

			Requires a high level of expertise of consultants in the field of behavioral finance
2	Emotional coaching	Helping clients control their emotions, especially during periods of market volatility	Reducing the likelihood of making impulsive decisions, improving long-term investment results. Requires advanced skills of emotional intelligence and psychological training of consultants
3	Adaptive portfolio management	Development of individual portfolio management strategies taking into account the client's behavioral characteristics	Creating more sustainable portfolios that meet clients' real goals and preferences. It requires sophisticated analytical tools and constant monitoring of the client's behavioral profile
4	Application of behavioral tools	Using framing techniques and choice architecture to improve the investment decision-making process	Helps clients make more rational decisions, avoiding typical behavioral traps. Requires careful ethical scrutiny to avoid manipulation

Source: Summarized and adapted from (Pompian, 2006), (Statman, 2019), (Hens & Bachmann, 2009), (Thaler & Sunstein, 2008).

Emotional coaching, a concept developed by (Statman, 2019), is an innovative approach that recognizes the importance of the emotional factor in the investment process. By helping clients manage their emotions, especially during periods of market turbulence, advisors can significantly improve long-term investment results. However, this approach requires consultants to have advanced emotional intelligence skills and psychological training.

Adaptive portfolio management, proposed by (Hens & Bachmann, 2009), is a promising direction that allows creating individualized investment strategies that take into account the unique behavioral characteristics of each client, which can lead to the formation of more sustainable portfolios that better meet the real goals and preferences of investors. However, the implementation of this approach requires sophisticated analytical tools and constant monitoring of the client's behavioral profile.

The application of behavioral tools such as framing and choice architecture developed by (Thaler & Sunstein, 2008) opens up new possibilities for improving the investment decision-making process. These tools can help clients avoid typical behavioral traps and make more rational decisions. However, the use of the mentioned techniques requires careful ethical control to avoid manipulation and to ensure that the client's interests always come first.

The theoretical model proposed by (Grinblatt, Keloharju, & Linnainmaa, 2011), demonstrates how financial advisors can use knowledge of cognitive biases to improve portfolio management outcomes for their clients. This model emphasizes the importance of an individual approach to each client and the need for constant learning and adaptation of portfolio management strategies.

The implementation of behavioral approaches in the practice of financial counseling also raises important ethical questions. On the one hand, understanding clients' cognitive biases allows counselors to provide more personalized and effective recommendations. On the other hand, it creates the potential for manipulation, especially if the consultant's economic incentives are not fully aligned with the client's interests. Therefore, the development of ethical standards and practices for behaviorally oriented financial counseling is becoming an increasingly relevant topic in the professional community. In addition, it is important to note that the effectiveness of behavioral approaches in financial counseling can vary depending on the type of client and market conditions. For example, institutional investors may be less prone to certain cognitive biases compared to individual investors, requiring adaptation of advisory approaches. Also, in periods of high market volatility, the role of emotional coaching can become especially important to prevent impulsive decisions by clients.

Understanding the behavioral characteristics of investors has a significant impact on theoretical models for the development of new financial products and services for portfolio management. Such models seek to create tools that not only meet the financial goals of investors, but also take into account their psychological characteristics and cognitive biases. (Table 4).

The integration of behavioral factors into the process of developing financial products and services reflects the growing understanding that the effectiveness of investment decisions depends not only on financial parameters, but also on the psychological characteristics of investors. This approach makes it possible to create products that better meet the real needs and preferences of customers, potentially increasing their satisfaction and

long-term investment performance. It is important to note that the development of behaviorally oriented financial products requires an interdisciplinary approach that combines expertise in finance, psychology, behavioral economics and technology, which creates new challenges for financial institutions that must develop new competencies and adapt their product development processes.

Table 4: Theoretical models of development of new financial products and services for portfolio management.

No. z/p	Model	Features	Potential benefits and challenges of implementation
1	Structured products with a propensity to avoid losses	Theoretical models that take into account the propensity of investors to avoid losses in the development of products with capital protection	Increasing the attractiveness of products for risk-averse investors. Complexity of pricing and hedging, potential decrease in expected profitability
2	Behaviorally oriented robotic consultants	Development of algorithms that take into account behavioral factors when providing recommendations on portfolio formation	Personalization of investment recommendations, reducing the impact of emotional factors on decision-making. The complexity of developing algorithms that accurately take into account individual behavioral characteristics
3	Dynamic portfolio management strategies taking into account changes in the behavioral profile	Theoretical models that adapt the structure of the portfolio in accordance with changes in the behavioral characteristics of the investor and market conditions	Improving long-term investment results, increasing customer satisfaction. Technical complexity of implementation, need for constant monitoring and data analysis
4	Behaviorally optimized interfaces of investment platforms	Theoretical Approaches to the Design of User Interfaces that Minimize the Impact of Behavioral Biases on Portfolio Management Decision Making	Improving the quality of investment decisions, increasing the financial literacy of users. The need for a balance between ease of use and informativeness, ethical issues regarding the influence on user behavior

Source: summarized and adapted from (Hens & Rieger, 2014), (D'Acunto, Prabhala, & Rossi, 2019), (Berkelaar, Kouwenberg, & Post, 2004), (Benartzi & Lehrer, 2015).

Analysis of innovative approaches presented in the Table 4, demonstrates the significant potential of integrating behavioral factors into the process of developing investment products and services. Structured loss aversion products, as described by (Hens & Rieger, 2014), are an attempt to create investment instruments that meet the psychological needs of investors. These products may be particularly attractive to clients who tend to be overly risk-averse, offering them the opportunity to participate in potential market growth with limited risk of loss. However, the development of such products involves complex issues of pricing and hedging.

The behaviorally oriented robotic advisors studied by (D'Acunto et al., 2019), represent an attempt to automate the process of providing personalized investment recommendations taking into account the individual behavioral characteristics of clients, which can significantly increase the availability of quality financial advice for a wide range of investors. However, developing algorithms that accurately account for complex behavioral patterns remains a major technical challenge.

Dynamic portfolio management strategies theoretically grounded by (Berkelaar et al., 2004), propose an innovative approach to adapt portfolio structure to changes in investor behavioral characteristics and market conditions, which can lead to improved long-term investment results and increased client satisfaction. However, the implementation of such strategies requires complex technical solutions and constant monitoring of large volumes of data.

Behaviorally optimized interfaces of investment platforms, the concept of which was developed by (Benartzi & Lehrer, 2015), are an attempt to use the principles of behavioral economics to improve the investment decision-making process at the level of user interface design. This approach can help investors avoid typical behavioral traps and make more rational decisions. However, the development of such interfaces requires a careful

balance between ease of use and informativeness, and raises important ethical questions regarding the impact on user behavior.

The theoretical model developed by (Hens & Bachmann, 2009) offers a comprehensive approach to the creation of investment products that take into account the individual behavioral profile of the investor. This model emphasizes the importance of integrating behavioral factors at all stages of development and management of investment products. The development of this model may include the integration of dynamic elements that allow the product to be adapted to changes in the investor's behavioral profile over time. For example, the system can automatically adjust the level of risk of the portfolio or the style of communication with the investor based on the analysis of his reactions to market events and investment results.

The introduction of behavioral financial products and services also raises important regulatory issues. Financial market regulators must adapt their approaches to the assessment and supervision of such products, ensuring a balance between innovation and the protection of investors' interests. This may include developing new disclosure standards that take behavioral aspects into account and assessing the potential risks associated with exploiting the cognitive biases of investors. In general, the integration of behavioral factors into the process of developing investment products and services opens up new opportunities for creating more efficient and client-oriented financial solutions. However, it also creates new challenges for the financial industry, requiring an interdisciplinary approach that combines financial theory, behavioral economics and modern technology. In addition, it is important to consider the long-term implications of the widespread adoption of behavioral financial products. On the one hand, such products can help investors better achieve their financial goals by reducing the influence of emotional factors on decision-making. On the other hand, excessive adaptation of products to behavioral characteristics can potentially lead to the formation of new types of market inefficiencies or the strengthening of certain cognitive biases.

One of the promising directions for the development of behaviorally oriented financial products is the integration of elements of gamification and social learning. For example, investment platforms can use game mechanics to encourage long-term investing and portfolio diversification. Social elements, such as the ability to compare your investment strategies with other users or receive advice from more experienced investors, can facilitate learning and knowledge sharing. It is also important to note the role of technology in the development and implementation of behaviorally oriented financial products. The use of big data and machine learning allows creating more accurate models of investor behavior and personalizing financial products at an unprecedented level. However, it also raises the issue of privacy and the ethical use of personal data.

It is important to emphasize the need for continuous learning and adaptation in the field of behavioral finance. Behavioral patterns of investors can change over time, especially under the influence of technological and social changes. Therefore, theoretical models and practical approaches to the development of financial products must be flexible enough to take these changes into account. In general, the integration of behavioral factors into the process of developing investment products and services opens up new opportunities for creating more efficient and client-oriented financial solutions. However, it also creates new challenges for the financial industry, requiring an interdisciplinary approach that combines financial theory, behavioral economics and modern technology.

Conclusions

Approaches to the application of behavioral finance in the management of an investment portfolio offer new perspectives for improving the efficiency of investment decisions and optimizing the structure of the portfolio. The concepts and models considered in the work demonstrate significant potential for the transformation of traditional approaches to investment management. Investigating the cognitive biases of investors, such as overconfidence, the anchor effect, the disposition effect, the herd instinct, and mental accounting, allows us to better understand the factors that influence investment decisions. This understanding is key to developing strategies that can help investors avoid common behavioral traps and improve the quality of their investment decisions. Theoretical models of portfolio optimization that take behavioral factors into account, such as behavioral portfolio theory, SP/A theory, the cumulative prospect theory model, and the behavioral portfolio optimization model, offer alternative approaches to the formation of investment strategies. The models also try to more accurately reflect the real behavior of investors and their preferences, which can lead to the creation of more efficient and sustainable portfolios.

The application of the principles of behavioral finance in the work of financial consultants opens up new opportunities for improving the quality of financial advice and increasing the financial literacy of clients. Approaches such as the educational role of consultants, emotional coaching, adaptive portfolio management and the use of behavioral tools can significantly improve the effectiveness of the interaction between consultants and

clients. The integration of behavioral factors into the process of developing investment products and services is a promising direction for creating more client-oriented financial solutions. Structured loss aversion products, behaviorally driven robo-advisors, dynamic portfolio management strategies, and behaviorally optimized investment platform interfaces represent innovative approaches that could significantly impact the future of the investment management industry.

However, it is important to note that the application of behavioral finance in the management of an investment portfolio also creates new challenges, including the need to develop sophisticated analytical tools, ethical issues regarding the influence on investor behavior, as well as the need for an interdisciplinary approach that combines financial theory, psychology and modern technology. Further research should focus on developing comprehensive theoretical models that integrate classical financial theories with behavioral aspects. An important direction is also the creation of methodological foundations for empirical verification of the effectiveness of behavioral portfolio management strategies in various market conditions. In addition, it is necessary to pay attention to the development of an ethical framework for the application of behavioral techniques in investment management in order to ensure the protection of investors' interests and avoid potential manipulations.

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