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COLLECTIVE INVESTMENTS AND FACTOR STRATEGIES AS TOOLS FOR INDIVIDUAL
PORTFOLIOS OF PRIVATE INVESTORS

5.2.4 – Finance

Abstract of the dissertation for the degree of Candidate of Economic Sciences

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Relevance of the research topic. Despite the fact that the main principles of private investors' portfolio formation were formulated by the academic community in the mid-20th century, their application still sparks debates. The issue of enhancing the efficiency of private investing is particularly important for the Russian market, which belongs to the category of developing markets and is characterized by increased risks and limited set of financial instruments for savings across different time horizons.

The stock market plays a crucial role as a link between private investors' savings and the corporate sector. Attracting long-term savings into domestic issuers' stocks and improving the institutional environment contribute to market and corporate sector development, consequently increasing the welfare of individual investors.

Interest in the stock market among Russian private investors has grown in recent years. However, several problems have become more pronounced, increasing the risks of their individual portfolios. First and foremost, there is insufficient portfolio diversification. According to statistical data from the Bank of Russia, in 2022, the average brokerage client held only 10-11 different instruments in their investment account. International studies and the analysis of the Russian market conducted within this dissertation demonstrate that to reduce specific risk and increase the likelihood of including stocks in a portfolio capable of generating returns higher than the market, it is recommended to have 50 stocks from different issuers. This requires a significant cost and is practically unachievable for self-implementation by Russian private investors.

Russian private investors show limited interest in mutual funds, which are one of the main instruments of collective investments, offering a high level of diversification and serving as the primary mechanism for attracting private savings worldwide. The relative size of Russian funds constitutes only 1.18% of GDP, while in the United States, this indicator reached 140.16% by 2020, 80% in the European Union, 79.90% in Brazil, 18.03% in China, and 15.84% in India.

Although the net asset value of open-end and exchange-traded mutual funds available to unqualified investors in Russia increased more than a hundredfold from 1999 to 2007, the 2008-2009 crisis led to a sharp decline in assets and subsequent slower recovery compared to the financial market. Since 2015, the popularity of mutual funds among private investors has been growing again due to the high volatility of the ruble exchange rate and the low returns of less risky instruments. A significant portion of funds specializes in stock investments. In the dissertation research, stock funds are considered one of the main mechanisms for enhancing the efficiency of private investor portfolios. According to the Moscow Exchange data in February 2023, the share of private investors in the total trading volume of stocks rose to 81.1%, highlighting the relevance of developing methods and approaches aimed at

improving the effectiveness of stock mutual funds as instruments that enhance the quality of individual investor portfolios.

The main reasons for the low popularity of mutual funds among private investors in Russia can be attributed to their relatively low effectiveness, high fees, and insufficient transparency of information. For most private investors, Russian mutual funds remain an opaque instrument, making it difficult to assess the performance of such funds and conduct comparative analysis based on commonly used international criteria for selecting financial instruments. Insufficient transparency of information not only limits the circle of potential investors willing to participate in collective investments but also hampers competition between funds based on the comparative analysis of their performance indicators.

The investment strategies of Russian mutual funds are often poorly formulated and overly broad. This hinders the ability to combine funds in a private investor's portfolio and utilize them to develop an individual strategy that aligns with the investor's risk profile, goals, and characteristics. Factor investing represents one way to address this issue. Strategies based on fundamental investment principles are transparent and comprehensible, with their behavior, risks, and returns being largely predictable across different stages of the business cycle. The combination of factor strategies within a portfolio has also been extensively studied. However, the application of these strategies by individual investors is only possible through collective investments, given the high costs and the need for a significant investment volume to maintain the desired level of diversification.

This study proposes a mechanism for increasing the efficiency of private investor strategies through more active use of the benefits of investment diversification, increasing the accessibility and investment attractiveness of collective investments, and more active application of factor strategies in the portfolios of equity mutual funds. It further explores the necessary changes in the collective investment industry, as well as in the regulatory and informational environment, to facilitate the implementation of this mechanism.

The research topic has been extensively studied by prominent economists such as H. Markowitz, W. Sharpe, K. Fischer, M. Statman, E. Dimson, P. Marsh, D. Allen, J. Campbell, F. Fabozzi, H. Bessembinder, K. Litterman, S. Satchell, and others. The goals and motivations of private investors, as well as aspects of behavioral finance, have been examined in the research of D. Kahneman, R. Lucas, T. Sargent, C. Sims, J. von Neumann, O. Morgenstern, A. Barnes, A. Tversky, D. Allen, R. Thaler, and M. Pompian. Factors influencing private investors' risk propensity have been described in the works of J. Campbell, J. Cochrane, J. Danthine, J. Donaldson, R. Barsky, and others.

Aspects of regulation, fund classification, and stages of their development are covered in the materials of regulators such as the U.S. Securities and Exchange Commission, the Bank of Russia, as well as the Investment Company Institute (ICI), and in the publications of Morningstar experts. The

analysis of fund efficiency, determining factors, and ways to enhance it has been conducted in the works of S. Anderson, A. Parvez, K. Cuthbertson, M. Cremers, A. Timmermann, B. Lehmann, A. Frazzini, A. Petajisto, L. Pastor, Y. Amihud, R. Goyenko, L. Zhang, R. Wermers, S. Grossman, J. Stiglitz, J. Berk, R. Green, W. Sharpe, M. Carhart, Y. Fama, K. French, M. Jensen, M. Huang, D. Blake. A narrower circle of researchers is focused on analyzing Russian mutual investment funds, including T. Teplova, T. Sokolova, E. Inozemtsev, A. Radygin, A. Abramov, and M. Kapitan, who attempt to evaluate the effectiveness of funds and their attractiveness to private investors in their studies.

The rationale and analysis of factor strategies have been conducted in the works of W. Sharpe, J. Lintner, Y. Fama, K. French, M. Carhart, R. Merton, S. Basu, Y. Amihud, N. Jegadeesh, S. Titman, L. Pastor, R. Stambaugh. The influence of risk factors has been examined in developed and developing markets by S. Dash, J. Mahakud, K. Narayan, K. Zheng, J. Griffin, K. Lam, L. Tam, J. Lischewski, S. Voronkova, S. Sehgal, S. Jain, among others. The analysis of factor investing strategies in the Russian market has been carried out by E. Mikova, T. Teplova, A. Radygin, A. Abramov, and M. Chernova. The foundations of factor portfolio construction underpin the methodology for analyzing collective investment portfolios in this dissertation.

The analysis of the level of development of the problem revealed that diversification and the implementation of factor investing are particularly important for private investors in the developing Russian market, with mutual funds potentially becoming the main mechanism for its practical implementation. There is a lack of research that jointly analyzes the expansion of investor opportunities, mutual fund efficiency, and the consequences of increasing transparency in their operations for the Russian market, which highlights the relevance of this dissertation research.

The aim of this research is to develop new scientifically based recommendations for improving the effectiveness of managing individual portfolios of private investors in the Russian stock market through the implementation of the principles of broad diversification, the advantages of collective investment, and the use of factor investing strategies. To achieve this goal, the following objectives were achieved:

1. Identify problems of private investing in the Russian financial market and to justify the concept of individualizing portfolios based on the investor's risk profile, goals, and preferences;
2. Justify the need for using and identify problems of applying diversification and collective investment principles in the formation of individual portfolios of private investors in the Russian stock market;

3. Develop a methodology for constructing factor investing strategies and justify their application by equity mutual funds to improve risk and return indicators of individual portfolios for private investors in the Russian market.
4. Develop an algorithm for assessing investment styles and monitoring the strategies of equity mutual funds to enhance transparency of information for investors.
5. Provide comprehensive recommendations for improving the functioning of equity mutual funds as instruments for forming individual portfolios for private investors, as well as necessary changes in the informational and regulatory environment.

The object of the study are equity mutual funds and their role in forming individual portfolios of private investors.

The subject of this research is the ways for improving the efficiency of individual investors' portfolios through broader diversification, the use of collective investment instruments, and factor investing strategies.

The research area of the dissertation aligns with the following categories of the scientific specialization of 5.2.4 "Finance": (1) Theory and Methodology of Financial Research, (6) Non-Bank Financial Institutions, (7) Valuation of Financial Assets, Management of Financial Asset Portfolios, and Investment Decision Making in the Financial Sector, (20) Household Finance, Personal Finance, and (22) Financial Instruments and Operations.

The research employed various analytical approaches, including systemic analysis, comparative analysis, and causal analysis. Generalization and classification methods were also utilized. On an empirical level, statistical and econometric methods such as correlation analysis, regression analysis, optimization methods from portfolio theory, and market index calculation methodology were applied.

The dissertation relied on a comprehensive information base consisting of scientific studies by both Russian and international scholars in the fields of portfolio theory, behavioral finance, financial market theory, collective investments, risk profiling practices, as well as research and statistical data from international organizations, including Schrodgers, Investment Company Institute, FINRA, Bank of Russia, Moscow Exchange MICEX-RTS, and data from Bloomberg, Investfunds, Cbonds, and materials from international and Russian scientific conferences.

The scientific novelty and key scientific results of the research are as follows:

1. The principle of individualizing private investors' portfolios has been substantiated. It involves the process of portfolio formation that considers the individual risk profile, goals, and preferences of each investor through a deliberate selection of financial instruments from different providers on a competitive basis. The formation of a private

investor's portfolio based on individualization entails leveraging the benefits of diversification, collective investment in mutual funds, and the application of factor-based investment strategies.

2. The advantages of extremely diversified individual portfolios of private investors have been justified, considering the complexity of investment decision-making, limited financial instruments, and differences in investment time horizons. It has been shown that the benefits of widely diversified portfolios are evident not only in developed stock markets but also in Russia. The portfolio returns modeling conducted in the dissertation demonstrated that most private investors in the Russian market lack the ability to achieve sufficient diversification of their equity portfolios, resulting in lower returns compared to the Moscow Exchange Index.
3. It has been substantiated that mutual funds hold the greatest potential in forming diversified individual portfolios for private investors. However, for these funds to serve as instruments for portfolio formation, they must employ simple investment strategies from a predetermined and disclosed pool of strategies, be evaluated using a standard set of publicly disclosed indicators and have low management costs.
4. A methodology for the application and evaluation of factor-based strategies in the Russian market has been developed, including the formation and analysis of stock portfolios selected based on various fundamental characteristics. The methodology considers specific features of the Russian market, such as the limited set of financial instruments in the stock market, incomplete information about issuers and trading outcomes, and the significance of risk associated with company ownership structure. It is demonstrated that factor-based strategies can be used as defensive instruments at different stages of the business cycle and across various investment horizons.
5. Based on a unique database collected with the author's participation and registered officially, an analysis of the development of the collective investment industry in Russia has been conducted. This analysis has revealed the main obstacles to the use of equity mutual funds in forming individual portfolios for private investors. These obstacles include limited access to information about funds and the low level of competition among asset management companies, high portfolio concentration, low performance of funds, and high costs. It is shown that the use of factor-based investment strategies allows for portfolio diversification of equity mutual funds and enhances risk-adjusted returns.
6. A methodology for assessing the investment styles of equity mutual funds has been developed and validated. The advantages of using this methodology lie in providing unique information about the susceptibility to various risk factors and the dynamics of

investment strategies employed by equity mutual funds. This information can be utilized in the formation of individual portfolios for private investors.

7. Comprehensive recommendations have been developed for the development of the collective investment industry with the aim of increasing its role in forming individual portfolios for private investors. The most important recommendations focus on creating funds that use factor strategies with greater diversification and lower costs; increasing the transparency and accessibility of information on funds and financial instruments for private investors; improving the standards of brokers and financial platforms; attracting long-term domestic investments to the market; and regulating the activities of funds.

Main conclusions are:

1. Individualizing private investor portfolios involves combining portfolio formation based on each investor's risk profile with diversified investments, selecting top-performing collective investment funds, and employing factor strategies. Its application aims to attract long-term domestic savings from a wide range of investors to the market. Current asset holdings in private investor portfolios are insufficient for diversification, while increasing the number of stocks enables achieving comparable or higher risk-adjusted returns in the long run.
2. On the Russian market, the use of factor strategies, based on fundamental characteristics of stocks or their issuers, allows investors to generate significant excess returns compared to the benchmark portfolio. This relationship is most evident over long-term time horizons and different stages of the business cycle, indicating the effectiveness of employing factor strategies in portfolio management.
3. The development of factor-based mutual funds, oriented towards transparent asset selection algorithms and relatively low costs via passive management and partially automated portfolio adjustment algorithms, enhances the efficiency of managing individual portfolios and reduces risks for private investors. Specialized factor funds, along with sector-specific and international equity funds, provide a set of financial instruments that allows investors to independently construct their portfolios using simple and transparent building blocks, guided by their own risk profiles and investment objectives. Implementing factor-based strategies improves performance, increases portfolio diversification, and reduces costs for existing Russian funds, thereby enhancing their attractiveness to private investors.
4. The application of factor strategies by collective investors and analyzing their investment styles using the algorithm developed in the dissertation contributes to the development of

the financial services market, improving the transparency of current investment strategies of mutual funds for combining them within private investor portfolios. The algorithm can be used for supervision by regulators to monitor the adherence of mutual funds' investment strategies to their stated objectives. The results from applying the algorithm identified issues with mixed and concentrated current investment strategies of funds, while establishing simpler and cost-effective funds with greater portfolio diversification would enhance opportunities for private investors in the domestic Russian market.

5. The realization of the demonstrated diversification effects, benefits of collective investment, and factor strategies requires comprehensive measures to develop the collective investment industry, including changes in the information and regulatory environment. This will increase trust in the institution of collective investments and stimulate the development of investment funds in the domestic market as a form of medium- and long-term savings for private investors.

Theoretical significance of the study lies in the development of a methodology for assessing the effectiveness of factor-based strategies, considering the limited set of financial instruments in the domestic stock market, information incompleteness, and the significance of risk associated with corporate ownership structure. Additionally, the study contributes to the methodology for assessing investment styles of equity mutual funds based on identifying their susceptibility to various risk factors and the dynamics of investment strategies. Furthermore, it justifies the application of the methodology for evaluating factor-based strategies in collective investment, which can influence the emergence of a new principle for forming equity mutual funds.

The practical significance of the research lies in developing measures for developing the use of portfolio diversification mechanisms, collective investments, and factor investment strategies in the formation of individual portfolios for private investors. These measures can contribute to more effectively establishing long-term domestic savings, enhancing returns, and reducing risks for private investors' assets. The proposed unique approaches to the formation and evaluation of the effectiveness of factor strategies have been implemented practically through publicly registered databases and disclosed on the official website pages of the Russian Academy of National Economy and Public Administration (RANEPA). The documented empirical benefits of factor strategies will facilitate the creation of new funds based on these strategies, as well as open broad prospects for developing new fundamental indices for stock exchanges and other stock index providers.

The proposed measures for the application of factor strategies in equity mutual funds, enhancing transparency in fund investment strategies for private investors, and implementing the principle of open architecture for investment unit sales can qualitatively improve the performance of their portfolios.

These measures will also strengthen competition among asset management companies and significantly enhance the attractiveness of fund units as instruments for forming individual portfolios for private investors. The registered and publicly accessible resource "Mutual Fund Constructor," created with active involvement of the author, can contribute to the popularization of factor investment strategies in mutual funds from the perspective of asset management companies and promote new approaches in the field of investment consulting.

The main ideas of the dissertation research, along with the registered databases "CAPM-ru Stocks Constructor" and "Mutual Fund Constructor," have the potential to contribute to professional research, be utilized in teaching various finance disciplines, and enable students, researchers, and other scholars to independently analyze the benefits of factor investment strategies and the effectiveness of mutual funds.

Recommendations for improving collective investments in the domestic financial market and more active utilization of the benefits of factor investing by private investors can be used for developing the long-term private savings in the strategy for the development of the Russian financial market.

The reliable nature of the findings presented in this dissertation is supported by the proper utilization of qualitative and quantitative methods in the process of analysis and modeling, a substantial volume of the research's information base, and the consistency of the propositions with the trends of general economic theory, financial market theory, and the findings described in the works of prominent Russian and international authors.


The main propositions of the dissertation have undergone scientific and practical validation and received positive evaluations at several international and Russian conferences. Many of the findings obtained in the dissertation were formulated by the author in analytical materials submitted by experts from the Russian Presidential Academy of National Economy and Public Administration (RANEPA) to government authorities, as well as in comments and suggestions regarding financial market development strategies addressed to the State Duma. Based on the research conducted by the author, two public databases, namely "CAPM-ru Stocks Constructor" and "Mutual Funds Constructor," have been created and registered. The dissertation materials have been incorporated into research projects, carried out in accordance with the research agenda of RANEPA since 2016 under the scientific direction of "Financial System, Financial Markets, and Stimulating Investment Activity."

The research findings are utilized by A. Abramov and M. Chernova in teaching the courses "Financial Theory", "Financial Markets Theory", and "Financial Risks" for students enrolled in the Master's program in Economics (specializations: Economics and Finance, Digital Economy) at the RANEPA.

The validation and implementation of the research results are supported by relevant documents, including conference programs, official registration numbers of analytical materials submitted to government authorities, course syllabi at RANEPA, certificates of registration of intellectual property.

The main provisions and conclusions of the dissertation research have been reflected in 20 publications with co-authors. Among them, 13 works have been published in peer-reviewed scientific journals listed by the Higher Attestation Commission under the Ministry of Education and Science of Russia.

The structure and scope of the dissertation are determined by the research objective, objectives, and logic. The dissertation consists of an introduction, three chapters, a conclusion, and a list of references comprising 129 sources. The text of the dissertation spans 175 pages and includes 36 figures and 26 tables.

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