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CENTRO UNIVERSITÁRIO CURITIBA - UNICURITIBA - VOLUME 3 - NÚMERO 36/2022 CURITIBA/PARANÁ/BRASIL - PÁGINAS 403 A 424 - ISSN: 2316-2880

THE DEVELOPMENT OF ESG REQUIREMENTS TO PENSION ASSETS INVESTMENTS

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ABSTRACT

Objective: The article is devoted to the topical issue of the development of investment in ESG assets of financial institutions in emerging markets on the example of the Russian pension market. The purpose of the study is to identify investment opportunities in sustainable assets of Russian pension assets formed within the framework of the voluntary pension system. Specific research objective is to investigate the performance of pension reserves' investment portfolio after the expected liberalization of the investment policy of Russian non-state pension funds after the upcoming decision on the transfer of pension savings to a voluntary system. **Methods:** Methodologies employed included the investment performance investigation on the basis of created pension reserves' index, that, on the one hand, would assume all the Russian market restrictions on the maximum investments' shares, and on the other hand, would include expanded investment opportunities through the integration of ESG assets. **Results:** The long-term trend of lowering rates has long been putting pressure on pension systems around the world and this forces the regulator to expand the list of debt instruments at the expense of riskier and more profitable ones. The rationale of sustainable assets' inclusion in the portfolio of pension assets concerns the opportunity to increase the attractiveness of non-state pension provision for millennials and become competitive when sold through financial marketplaces. **Conclusion:** The contribution of the paper is to develop the socially important topic devoted to the increase the performance efficiency of non-state pension provision in the emerging markets. Personal contribution of the authors was that, considering the existing legislative restrictions, on the basis of the developed index of pension reserves, there were formulated the proposals on the pension investments structure.

Keywords: Sustainable investments of pension assets; Investment index of pension reserves; Pension funds' investments in ESG assets.

[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]

O DESENVOLVIMENTO DE REQUISITOS ESG PARA INVESTIMENTOS EM ATIVOS DE PENSÃO

RESUMO

Objetivo: O artigo é dedicado à questão atual do desenvolvimento do investimento em ativos ESG de instituições financeiras em mercados emergentes a exemplo do mercado de pensões russo. O objetivo do estudo é identificar oportunidades de investimento em ativos sustentáveis de ativos de pensão russos formados no âmbito do sistema voluntário de pensões. O objetivo específico da pesquisa é investigar o desempenho da carteira de investimentos das reservas previdenciárias após a esperada liberalização da política de investimento dos fundos de pensão não estatais russos após a próxima decisão sobre a transferência da poupança previdenciária para um sistema voluntário. **Métodos:** As metodologias empregadas incluíram a investigação do desempenho do investimento com base no índice de reservas previdenciárias criadas, que, por um lado, assumiria todas as restrições do mercado russo sobre as ações máximas dos investimentos e, por outro, incluiria investimento expandido oportunidades por meio da integração de ativos ESG. **Resultados:** A tendência de longo prazo de redução das taxas há muito pressiona os sistemas previdenciários em todo o mundo e isso obriga o regulador a expandir a lista de instrumentos de dívida em detrimento dos mais arriscados e rentáveis. A lógica da inclusão de ativos sustentáveis no portfólio de ativos previdenciários diz respeito à oportunidade de aumentar a atratividade da provisão de pensão não estatal para a geração do milênio e tornar-se competitiva quando vendida por meio de mercados financeiros. **Conclusão:** A contribuição do artigo é desenvolver o tema socialmente importante dedicado ao aumento da eficiência do desempenho da provisão de pensões não-estatais nos mercados emergentes. A contribuição pessoal dos autores foi que, considerando as restrições legislativas existentes, com base no índice de reservas previdenciário desenvolvido, foram formuladas as propostas sobre a estrutura de investimentos previdenciários.

Palavras-chave: investimentos sustentáveis de ativos de pensão, índice de investimento de reservas de pensão, investimentos de fundos de pensão em ativos ESG.

1. INTRODUCTION

The allocation of pension fund assets must balance risk, return and costs. Many motivations can stimulate a market shift in the allocation of pension assets and should not be viewed independently, but rather as an environmental system in which they affect each other. Key drivers include diversification, risk management hedge against inflation, asset and liability management, and return on investments.

Returns and diversification are the most distinguished factors taken into account when determining on asset allocation.

In our post global financial crisis environment, we are seeing a strong shift towards alternatives. Many alternatives are less volatile than the stock market. Their ability to adopt a variety of strategies and asset classes allows alternatives to achieve returns that have low correlations with traditional stocks and bonds. By adding alternatives to

[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]

a portfolio of traditional stocks and bonds, an investment manager could actually lower its portfolio volatility.

As long-term investors with significant and stable net cash inflows, pension funds have an advantage over other investors that may have shorter time horizons or lower levels of net cash flows.

Their ability to adopt a variety of strategies and asset classes allows alternatives to achieve returns that have low correlations with traditional stocks and bonds. Hence, by adding alternatives to a portfolio of traditional stocks and bonds, an investment manager could actually lower its portfolio volatility the increase of alternative assets stems mainly from diversification efforts (Amafore-PwC, 2016; BlackRock, n.d.; Expert, 2020).

In fairness, by the end of the whole 2020, sustainable equity ETFs were also able to outperform their traditional competitors on average (Hale, 2021), which further spurred investor interest in the topic of sustainability at the beginning of this year.

In emerging markets, the ESG agenda has not yet clearly come to the fore for issuers. So far, the opportunities for retail investors in emerging markets who want to invest for a reason, but with good intentions, alas, are very limited.

Another option to join foreign ESG investments (which is also objectively not suitable for everyone) is to open an account with a foreign broker. But the opportunities for investors in ESG are still extremely scarce. Some assets management companies are trying to launch separate thematic products, for example in the form of mutual funds (it is important to remember about the costs incurred by investors).

The process of promoting ESG to the masses is still going quite slowly in risky environment. The problem is that, unlike Europe and the United States, emerging markets still clearly lack a wide class of "responsible" retail investors who are interested not only in high profits, but also in guarantees of ethical investments. In our research we will focus on Russian pension market and the investment of the largest institutional investors: pension funds.

However, part of this success can be explained by the fact that many ESG indices and index funds contain a larger percentage of technology companies. Such conclusions, in particular, were reached by MSCI Research analysts who studied the 20 largest ETF funds in their global ESG review. They drew attention to the fact that ESG ETFs greatly outweigh the technology sector in their portfolios and underestimate

[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]

the shares of energy companies, which have lagged significantly over the past decade (Morningstar Manager Research, 2021a, 2021b; Sustainalytics, 2021; The Equator Principles, n.d.).

2. LITERATURE REVIEW

In an era of prolonged low interest rates, traditionally safe-haven income- generating assets such as government bonds are no longer attractive. As a result, pension funds seeking higher yielding investments are turning towards asset classes with better prospective returns, such as alternatives. One of the potential benefits of incorporating alternatives in an investment strategy include greater diversification, both geographically and by sector, which helps to mitigate risks caused by market fluctuations in equity and fixed income. The distribution of investment risks across a broad group of assets protects investors against correlated risk and, as a result, can lead to steady long-term returns (Amafore-PwC, 2016).

The concept of sustainable development, widely recognized throughout the world and actively supported by progressive representatives of the scientific and business community, has its origins in the scientific and philosophical heritage of scientists of the XIII-XX centuries, such as Condorcet (1795), Toffler (1987), etc. The importance of sustainable development at the beginning of the XX century was noted by V.I. Vernadsky, who developed the doctrine of the noosphere, which was based on the idea of harmonizing the interaction of nature and society, the primacy of reason as a controlling force. Vernadsky concluded that humanity in the process of its development becomes a powerful force, transforming the planet with thoughts and labor, and, accordingly, in order to preserve itself, it must take responsibility for the development of the biosphere, transforming into the noosphere, which, in turn, will require a certain social organization and a new, ecological and at the same time humanistic ethics.

The current crisis caused by the coronavirus pandemic has clearly demonstrated that neither governments nor organizations have been engaged in forecasting at a sufficient level to take care of the health and financial well-being of their citizens and employees. However, this is an opportunity to focus on its economic, social and environmental efficiency, which will allow it to gain competitive advantages in the future. This is due to the fact that companies whose goal is sustainable development will look more promising for all interested parties in the person of investors, employees

[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]

and suppliers, since they will acquire the ability to cope with systemic shocks even in the long term (Chen et al., 2021; Dyck et al., 2019). And the impact of the pandemic only increases the urgency and importance of implementing such initiatives.

A growing trend of responsible and "green" investment has already been firmly formed in the world and the principles of ESG requirements (environmental (E), social (S) and governance (G) features) are being actively developed by all countries. This is due to the fact that investors are interested in investing in those companies that not only make a profit at any cost, but also take care of their employees, society and the environment, do not support corruption, as well as gender and racial discrimination. According to a PwC study, under an optimistic scenario, it is predicted that by 2025 up to 57% of the total assets of European mutual funds may belong to funds that work with ESG projects (PwC, 2019).

The principles of responsible investment were first formulated by a group of international institutional investors under the auspices of the United Nations. Any organizations can join them, and as of the end of April 2021, the list consists of 3 911 participants (Principles for Responsible Investment [PRI], n.d.-b).

ESG-investing implies that companies are evaluated in three areas: ecology, social development and the level of corporate governance. The result of such an assessment is that investors are less and less interested in investing in companies whose activities, in terms of ecology, cause climate change, deplete resources (Vitousek, 1994); in terms of social development, the company has terrible working conditions, safety requirements are not met; in terms of corporate governance, if the company is corrupt, the rights of shareholders are infringed. These problems were highlighted in their studies by A. Dan and A. Tiron-Tudor (2021), S. Kim and Z.(F.) Li (2021), S. Signori, L. San Jose, J. L. Retolaza, G. Rusconi (2021), etc.

Socially responsible investing (SRI) and doing business in developed countries is developing rapidly, whereas in developing countries at the present stage this concept has not yet become widespread, although there is a great demand in society and business (Flammer, 2015). Scientists from China (Jonsson, 2009; Ruan & Liu, 2021), Malaysia (Kim et al., 2019; Mohammad & Wasiuzzaman, 2021), Russia (Akulov, 2015; Matraeva et al., 2019) are investigating the essence of responsible financing and investment, as well as problems that hinder the active implementation of ESG approaches in national practice. In developing countries, socially responsible

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investment is only at the stage of formation (Rehman et al., 2021). For this reason, it is often difficult for companies in these countries to compete with international companies that have been actively using green technologies for decades. At the start of 2020, global sustainable investment reached USD35.3 trillion in the five major markets (Table 1). Reported sustainable investment assets under management make up a total of 35.9% of total assets under management (The Global Sustainable Investment Alliance [GSIA], 2021).

Table 1. Snapshot of global sustainable investing assets, 2012-2020 (USD billions),

Region	Growth rate, %			
	2014-2012	**2016-2014**	**2018-2016**	**2020-2018**
Europe	123,03	111,74	116,90	85,38
USA	175,72	132,73	137,51	142,40
Canada	123,77	148,97	156,45	142,61
Australia / New Zealand	110,45	348,65	142,25	123,43
Japan	-	6771,43	459,92	131,83
Total	137,89	125,28	134,34	125,13

Source: Composed by the authors on the basis of (Rehman et al., 2021)

The reasons and factors for the creation and development of SRI funds have been investigated by many (Jonsson, 2009; Yan et al., 2019, etc.). In terms of the rise of SRI funds, some aspects of the financial logic related to its profit-maximizing ends may be detrimental, while other aspects related to actors' knowledge, expertise, and practices, which could be redeployed as means for a variety of social ends, may be beneficial (Thornton et al., 2012).

To be able to compare companies according to these criteria, international agencies compile ratings. Corporate social performance (CSP) and, in particular, ESG ratings became a focal point for scholars, practitioners and policy makers over the last decade. Some of the most famous are the ratings of MSCI, Sustainalytics, FTSE. However, rating compilers evaluate companies differently, and as a result, the rating of the same company may differ significantly from different appraisers. Perhaps this is due to the fact that the rating compilers are under pressure, since companies are interested in the best ratings. It is also possible due to the fact that the environmental, social and governance pillars follow independent patterns (Crespi & Migliavacca, 2020). The results suggest substantial divergence in the ratings awarded to the European companies; therefore, companies should pay attention to the methodologies and

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practices applied by differing agencies to make sure that their efforts are appropriately evaluated (Zumente & Lāce, 2021).

It was examined the relation between ESG ratings and implied volatility, as well as the relation between ESG ratings and financial risk. The researchers investigate the relationship between ESG performance and the probability of corporate credit default and find the probability of corporate credit default to be significantly lower for firms with high ESG performance (Aslan et al., 2021; Zhang et al., 2021). There are also a number of problems for business in such an increase in concern about the environmental and social agenda of companies. Companies are now under active pressure regarding the disclosure of ESG parameters (Flammer, 2015).

Additionally, we collected the SRI, ESG and green finance information from reports and research of rating agencies, financial and analytical companies (Principles for Responsible Investment [PRI], n.d.-a; Refinitiv Deals Intelligence, 2021).

3. METHODOLOGY

Currently, individual pension savings are formed without fail in more than 20 countries around the world. The advantages of individual savings accounts are that they allow participants not only to receive additional investment income and maximize future pensions, but even in a number of countries and obtain ownership of their use.

On the one hand, accumulative pension accounts can reduce the risk of insufficient government funding in the future, but at the same time they are exposed to the risk of serious fluctuations in stock markets. This disadvantage has led to a lot of discussions about how to guarantee future pension savings and whether it is possible at all.

Of the many pension guarantee mechanisms, two large categories can be distinguished: minimum yield guarantees and minimum size guarantees pension payments from a savings account.

Guarantees of minimum profitability. Minimum return guarantees mean that participants in the pension program will be entitled to receive pension payments at least equal to their lifetime contributions to the system plus a pre-agreed capital gain (profit margin).

One of the options for this approach is the introduction of a guarantee of the "principal" (the amount of invested funds), which is equivalent to a zero nominal rate of return. This approach has been recently introduced in Germany and Japan. In these

[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]

countries, participants, by the time they reach retirement age, can receive an amount of savings equal to the contributions paid.

The most ideal option could be one that provided, in addition to adjusting for inflation, also a minimum rate of return (corresponding at least to the rate of return on risk-free securities). Unfortunately due to the increased volatility of pension markets this type of guaranties are impossible to provide in any country.

Minimum pension guarantee. In this case, participants are promised such a pension from individual savings accounts, which will at least correspond to some basic values of pensions from the state pension system. So, in Chile, it is this option that has been adopted, in which pensions from the state pension system correspond to the size of pensions formed at the expense of additional pension savings.

The costs of providing guarantees. An important factor affecting the "cost" of the guarantee is the level of investment risk assumed by the owner of pension savings. Naturally, the costs increase as the risk of the investment portfolio where pension savings are invested increases, as well as the uncertainty of the level of investment income.

To solve this problem, it is possible, for example, to define a "standard" investment portfolio and provide guarantees only to those participants who chose it. Another approach is based on the fact that participants can invest in an investment portfolio with any level of risk, but it is the income from a standard investment portfolio that can be taken as the starting point for the amount of guarantee payments (see Figure 1).

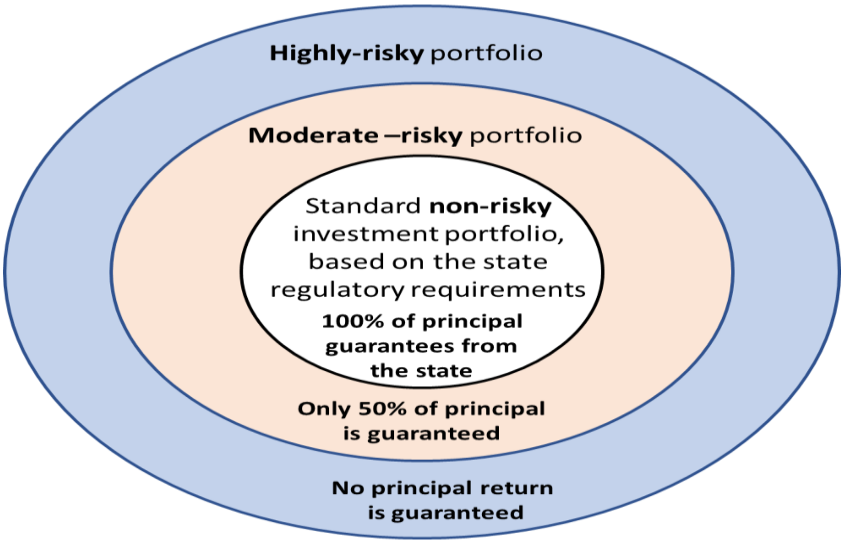

Figure 1. Differentiation of the state guarantees for the safety of invested principal depending on the chosen individual investment strategy
Source: Composed by the authors

Regardless of the specifics of the guaranteed rate of return, the costs of forming a guarantee system will depend in part on how often it is carried out testing of the "guarantee threshold". In many pension systems (for example, in the German and Japanese versions), the amount of the required amount of guarantee funds is estimated only once - before retirement.

In other cases, compliance checks are carried out annually. For example, in South American countries, the minimum rates of return are revalued annually (Uruguay, Chile) or every three years (Colombia).

The opponents of individual pension accounts tend to downplay the problems facing state social protection distribution systems. They do not take into account the fact that in order to meet their obligations in the future, state systems will have to significantly reduce costs or increase the amount of revenue to bridge the funding gap due to demographic and economic problems. Therefore, the inclusion of individual pension accounts in the structure of national pension reforms may contribute to an increase in the size of pensions for future pensioners (at least at the level of the minimum replacement rate required by the International Labor Organization - 60% of the last salary).

Using the example of Russia, we analyzed the profitability of investing pension savings in a voluntary pension system in which the portfolio structure is regulated by the state.

Unfortunately, the profitability of investing pension reserves of NPFs after the payment of remuneration to asset management companies is significantly reduced (Figure 2).

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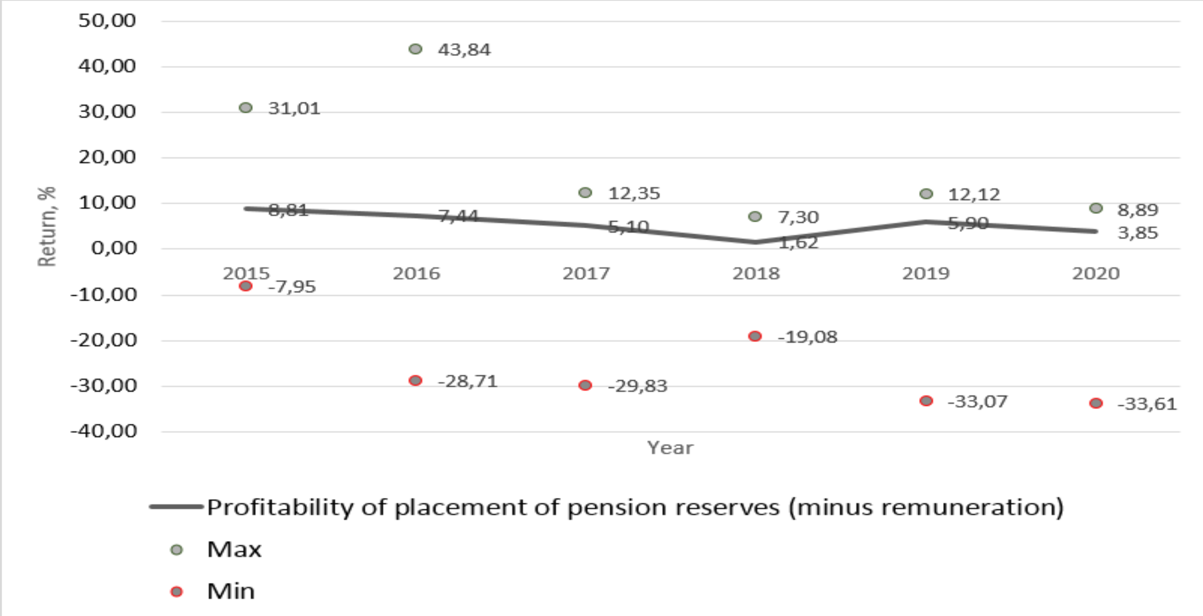
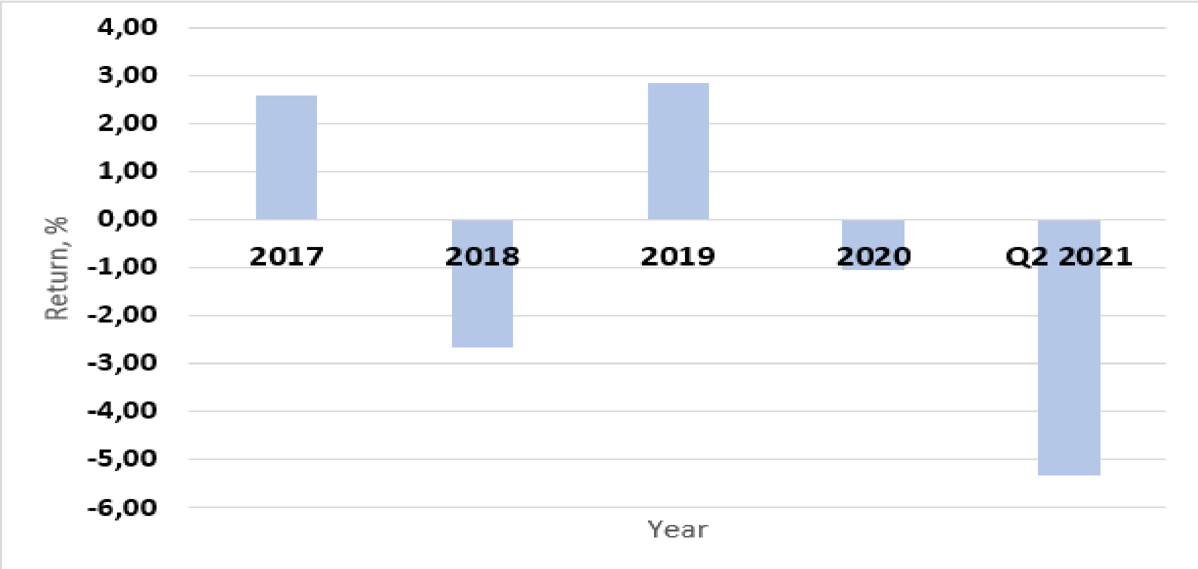
Figure 2. Average yield of NPFs with minimums and maximums, % (Central Bank of Russia, 2021)



Source: Composed by the authors

At the end of the 2nd quarter of 2021 inflation in Russia has reached 6.51%. Consequently, the return on investment of pension reserves of NPFs after payment of assets managers' remuneration, considerably decreased (see Figure 3).

Figure 3. Actual profitability of pension reserves net of expenses and inflation in Russia



Source: Composed by the authors basing on (Central Bank of Russia, 2021)

Thus, we can draw an intermediate conclusion that in order to increase the attractiveness of voluntary pension savings for citizens, it is necessary to liberalize the structure of the investment portfolio so that, depending on the level of risk, citizens

[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]

have the opportunity to increase the return on pension assets at such level of risk that everyone considers acceptable for themselves.

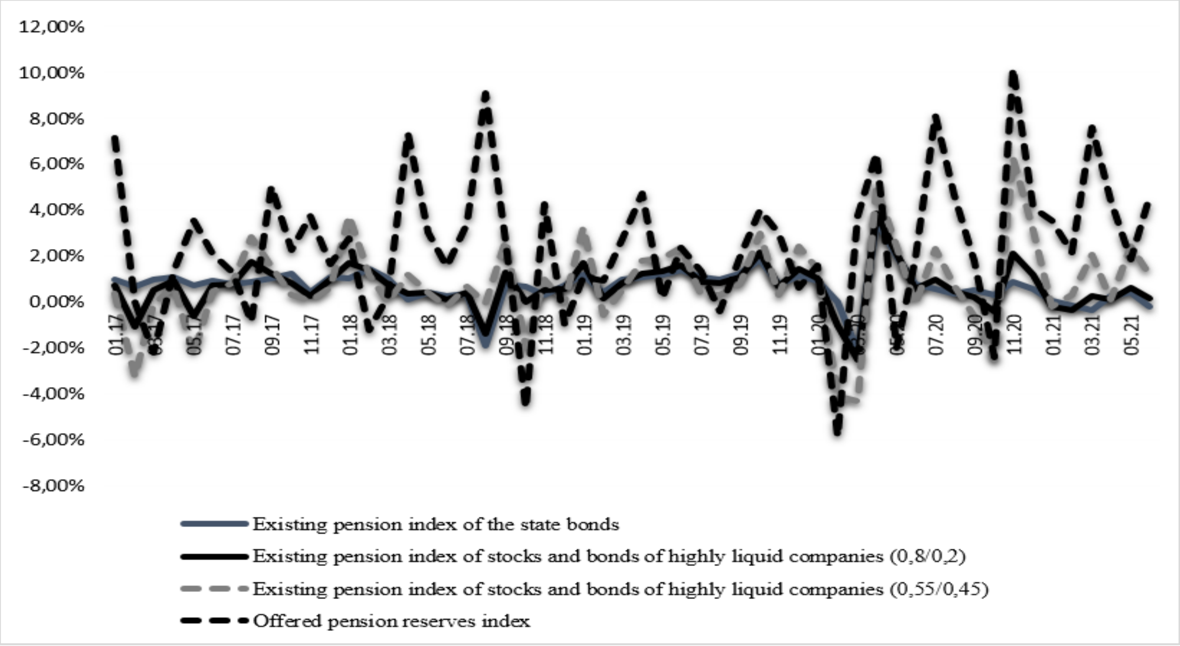
To do this, we have developed an index structure consisting of three types of assets: Russian bonds, Russian stocks and international high-rated ESG ETFs. The index includes assets of highly rated foreign companies that will balance insurance risks and increase the attractiveness of the investment portfolio in the eyes of young millennial investors by investing part of the portfolio in sustainable assets.

The pension reserves index has taken into account the characteristics of assets with different levels of risk. It also included indicators by a set of sub-indices reflecting the conservative, balanced and aggressive component of pension assets. The offered methodology bas based on recommendations of Committee on debt market indicators MOEX. In the developed methodology, the index is calculated once a day based on closed trading session results of the exchange.

4. ANALYSIS AND RESULTS

In the result it was created pension reserves index (see pic.4), which outperformed in the historical horizon the existed the indexes, which consist purely of Russian securities: bonds and stocks in a given proportions).

Figure 4. The comparison analysis of the offered pension index and the existing indexes of pension investments in Russia



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[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]

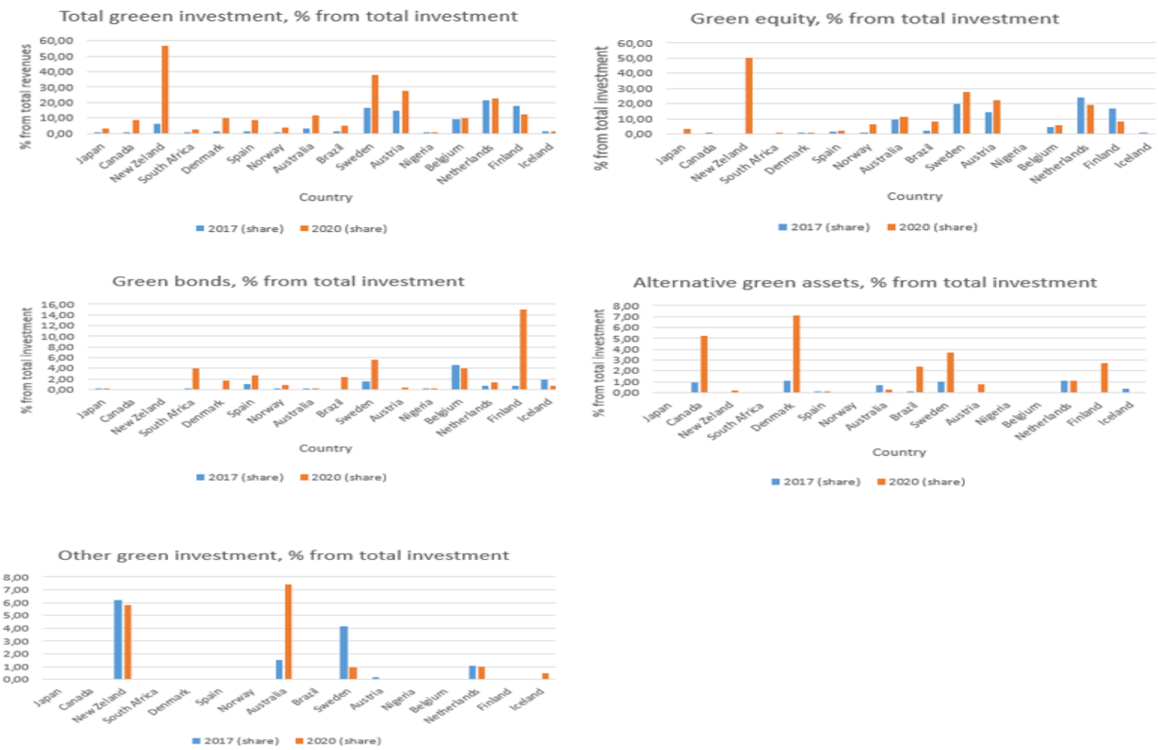
The volatility of the pension index is 3.15% (average rate of return is 2,43%), while the volatility of the conservative and balanced indices does not exceed 1%, and the aggressive index has a volatility level of almost 2% (with average rate of return around 0,7%).

In the Russian Federation, the process of forming an ESG ETF is at an initial stage, however, you can refer to the experience of OECD and the number of non-OECD countries, where investments of pension assets in ESG directions are quite demanded (see Figure 5).

The total share of investments in green financial instruments has increased in almost all OECD countries. The largest increase is the increase in investments in shares of green companies. Compared to 2017, in 2021, many countries had investments in green assets. Japan, Canada, and New Zealand were in the top three for the largest increase by 2020. New Zealand (56.5%), Sweden (38.18%), Austria (27.45%) have the largest shares of total green investments from total investments.

Most of the analyzed countries increased investments in ESG assets, except the Finland and Iceland. These countries increased the investments in other assets to a greater extent, rater then in “green” assets.

Figure 5. Dynamics of changes in the structure of stable assets in the portfolios of world large pension funds



Source: Composed by the authors basing at OECD (2021)

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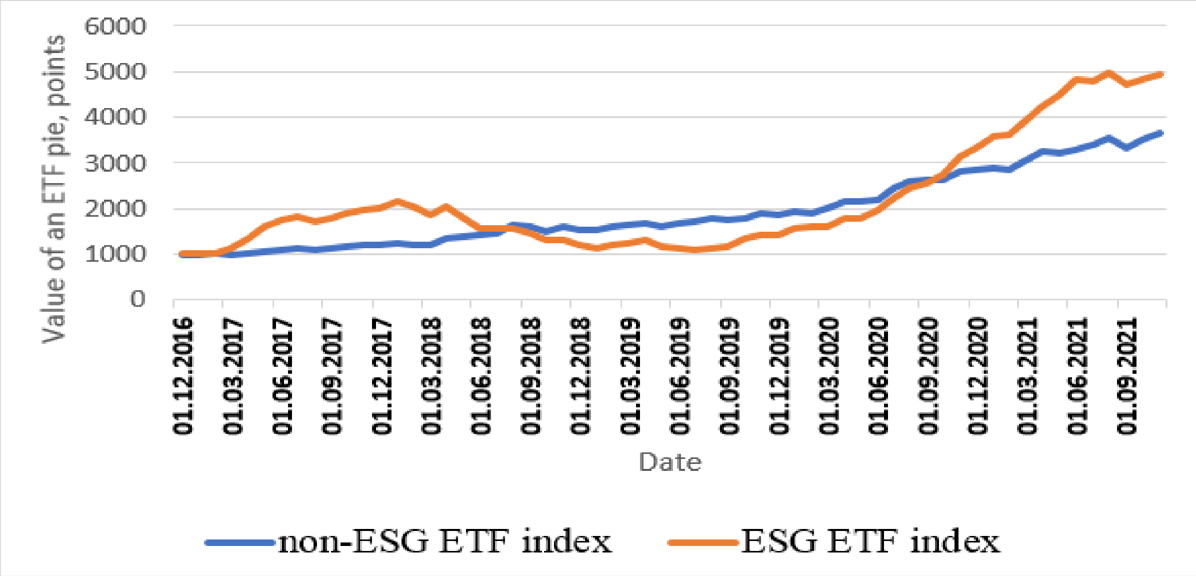
The popularity of ESG investments of pension assets is associated with positive expectations of investors regarding the long-term profitability of such investments. This idea is also confirmed by the comparison of historical yields of ESG[1] and non-ESG[2] indices given at Figure 6.

These ESG and non-ESG indexes were selected based on the level of ETF's funds capitalization included in them. The list of ETFs was taken and then it was ranked by capitalization size. In our analysis we used top 10% of the largest.

Figure 6. Comparison of ESG and non-ESG ETF indices dynamics



Source: Composed by the authors

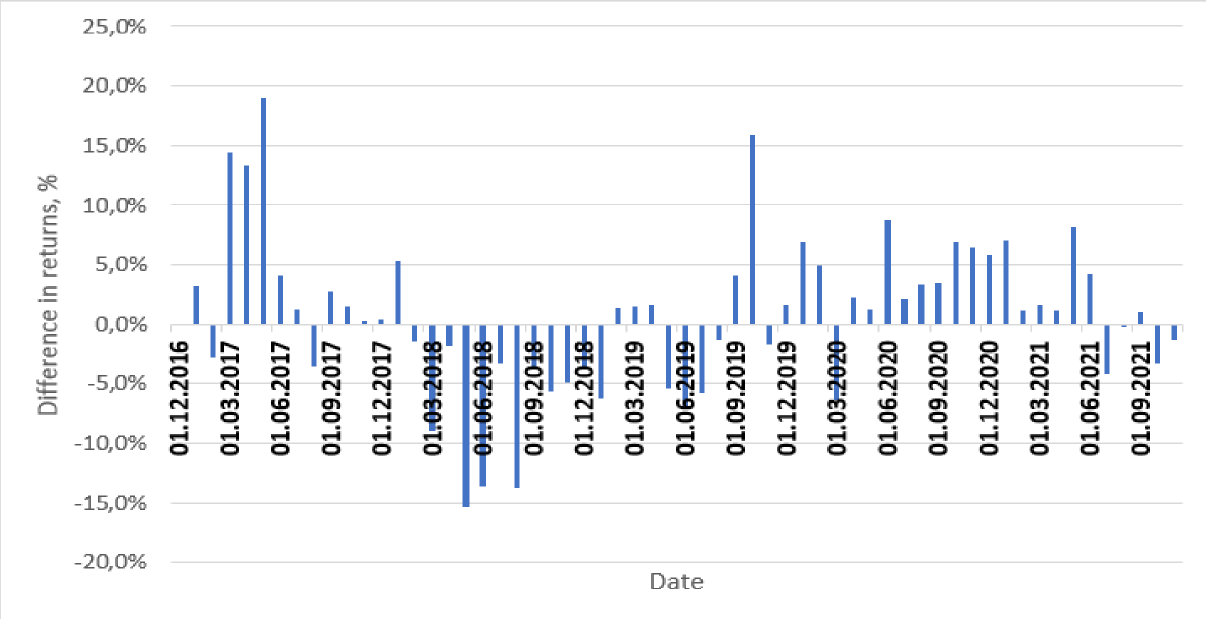
The Figure 6 shows that starting from the second half of 2020, the ESG ETF index has a stronger bullish trend and, as a result, by October 2021, it is almost 5 000 points (which is an increase of almost 5 times), while the index of ordinary ETFs has grown only to 3 600 points over the same period.

The index calculated on the basis of ETFs that include only ESG assets over the past five years has shown greater profitability compared to ordinary ETFs that are invested in stock indices (Figure 7).

[1] ESG index consist of the number of ETFs such as ISS SUS US SRI/D, ISH MSCI EZN E/d, ISHR AWR EAF E/D
[2] Non-ESG index consist of such ETFs as: VNG VALUE INDE/d, VNG GROWTH IND/d, ISH RSL 1000 GR/d

[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]

Figure 7. The difference in the returns of ESG and non-ESG indices



Source: Composed by the authors

However, the risks of investing in the ESG ETF index should not be ignored. In addition to currency risks that depend on the dollar-ruble exchange rate (since this index includes US ETFs), there is also a standard volatility risk. According to our calculations over the past 5 years, the ESG ETF index has a risk of 7.39%, which is significantly higher than the risk of the ordinary ETF index (3.89%). Nevertheless, considering the risk in dynamics, it can be seen that every month the value of this indicator for the ESG ETF index decreased. If we calculate the risk over the past year, then for the ESG ETF it is slightly more than 4%, which is a positive sign for using this tool as an alternative to investing pension reserves.

As far as many emerging financial markets do not have comparable ESG ETFs with US ones, using the example of the Russian market, we have replaced the ETFs and bonds with shares of Russian issuers with a certain ESG rating according to Refinitiv. The bonds were excluded, because of the lack of proven “green bonds” in the Russian market.

The calculation of the ESG stock index includes shares of Russian companies included in the top ESG rating. Five companies were taken, based on considerations of restrictions on the requirements for investments of pension reserves (<=20% in the company).

The Figure 8 shows that for almost the entire period starting in 2018, the profitability of the ESG stock index exceeds the profitability of all pension savings indices.

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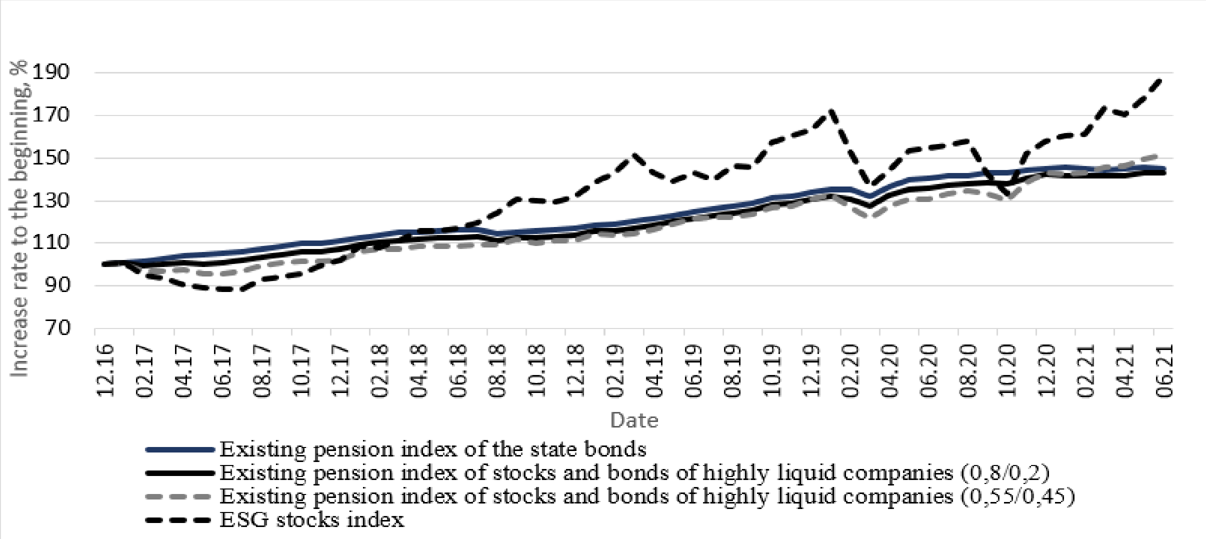
Figure 8. Comparison of the profitability of the ESG stock index and traditional indexed of Russian pension assets investments



Source: Composed by the authors

Based on calculations, in comparison with existing pension indexes, the index of Russian ESG stocks turned out to be more profitable over the past 5 years by almost 42% (comparing with the average value of the total profitability of all three pension savings indices). At the same time, it should be noted the risk of the index we have derived. It is 4,69%, which is higher than existing pension savings indices.

5. DISCUSSION

To increase the attractiveness of investing voluntary pension savings through non-state pension funds, it is necessary to take into account the interests of millennials (citizens aged 18-35 years). To do this, in addition to the conservative portfolio in which pension assets of Russian non-state pension funds are currently allowed to be invested, it is also necessary to offer more risk-liberal options for investment portfolios. At the same time, government guarantees should decrease as the risk of the selected portfolio increases. Investing in sustainable assets has its pros and cons. At the same time, a further increase in interest in them is predicted from young investors, who are the target group for most non-state pension funds.

There are a number of risks inherent to ESG investments: lack of universal ESG standards in many emerging markets; lack of data on the financial performance of ESG companies in the long term; ESG investments are subject to a moderate return generating potential.

[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]

Despite the fact that there are ratings and indexes for evaluating ESG criteria in doing business, no uniform standards have been developed yet to assess compliance with ESG factors.

If it turns out that the business of companies adhering to ESG standards is not as stable as previously thought, then investors who are focused on making high profits are likely to leave this sector.

Experts note that the desire of businesses to meet ESG criteria has its drawbacks. Firstly, for large companies, this may be just a ploy to whitewash their reputation and conceal the real harm from their activities.

The environmental rhetoric is beneficial to companies, but real actions in this direction do not bring them the same tangible return. And investment managers are legally obliged not to do anything that could jeopardize profit. As a result, they pay lip service to the ESG investment criteria, but in practice they are looking for companies that will bring higher profits.

ESG investments are only gaining popularity in emerging markets. For Russian retail investors, the main criterion remains the asset price and its potential profitability. At the same time, professional fund managers, especially those who want to work with foreign investments, are beginning to introduce eco—friendly novelties into the product line, "refine" the composition of portfolios, as well as refer in marketing materials and investment declarations to the compliance of investments with ESG parameters.

The emerging markets' issuers who are interested in attracting foreign investors have begun to actively engage in the disclosure of this topic. In developed countries, the situation is different: investors, both institutional and retail, have long been able and voting with their dollar in the capital markets, and issuers have long begun to adapt their business so as not to remain on the margins of the exchange.

The investors in Russia currently lack awareness of the possibilities of ESG investment. The emergence of demand for such instruments from investors, in turn, will arouse the interest of companies to comply with ESG requirements. But it is also necessary to pay attention to the compilation and improvement of ESG ratings and indices. Among investors in Russia, investments in bonds of companies and institutions that declare raising funds in ESG projects as the purpose of the issue placement are the most popular. At the same time, the issue of benefits for investors is ambiguous. The yield of green bonds can be both higher and lower than the market.

[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]

For example, on the May, 2021, the first issue of Moscow green bonds with a volume of 70 billion rubles with a term period of seven years was placed on the Moscow Stock Exchange. As of mid-July, this paper has a weighted average yield of 7.54%. It cannot be called high, but it is better than that of Treasury bonds. The energy efficiency and water treatment projects could be interesting as potential bond issues in Russia. But most of these projects are implemented by large companies in the energy and utilities sectors, and they do not label their bonds as green because of the wide range of tasks for which they attract financing.

Russian companies have begun to pay more attention to the principles of ESG, because the introduction of corporate pension programs carries a social function, increasing the ESG rating of the company and positively transforming the economy.

6. CONCLUSION

Making a comparisons to earlier study results we found, that at the moment, the attractiveness of non-state pension provision among the population in Russia is quite low. Only 18% of people, involved in the accumulative pension system make voluntary contributions (Central Bank of Russia, 2020). The reason for that is not only due to the low purchasing power of Russian population, but also due to the fact that investment strategies in relation to pension reserves are quite conservative and often suggest a yield below the deposit. In the context of the development of financial marketplaces, as well as government discussions about the upcoming transfer of pension savings formed in the mandatory pension system to voluntary, the strategies for investing pension reserves, in our opinion, should be radically revised. Non-state pension provision should provide its clients with a choice of investment strategies, depending on the individual risk perception. Since active users of ecosystems and financial marketplaces are young people aged 18-35, it is necessary to form investment strategies for this target group that would meet their needs. First of all, we mean the interest in the topic of sustainable development. Currently, the topic of investing pension assets is being actively raised in developed countries, but is at the initial stage of discussion in emerging markets. The OECD review (2021) showed that in the advanced economies, such as New Zealand, Sweden, Switzerland, the Netherlands and Austria, the share of "green" assets in the structure of the investment portfolio varies on average from 30-50% (OECD, 2021).

[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]

In order to measure the performance the suggested investment portfolio we created new index of pension reserves performance. Index partially consisted of liquid bonds, stocks and highly rated international ESG funds. Then we tested the new index performance over a historical period of five years and found that in spite of the higher average volatility, it has good upside potential, especially in times of financial instability in the financial markets.

The key limitations of the study was regulator's restriction for international assets investments. Now pension funds is not allowed to invest more then 20% of the portfolio. In the proposed index we suggested to extend this share to 40%. To our mind country diversification of pension assets investment direction is extremely important in view of high domestic political risk.

Assuming the fact of restrictions it was offered alternative way to increase performance efficiency: substitute ESG ETFs by the stocks of Russian sustainable companies based on Refinitiv ESG rating.

As in case of pension reserve index, as in case of using Russian ESG stock index, the performance appeared higher, than existing market benchmarks (pension savings indices).

Future research directions can be devoted to the development of the optional investment strategies for individuals with different risk perception levels, making focus on sustainability of the investment portfolios.

Another limitation concerns the defining the factor of sustainability. Sustainability can be an important factor when choosing an investment, but not the only one. Despite the fact that ESG investing is aimed at supporting a healthier society and the planet, it is vital to put investor's personal financial goals at the forefront. If we are talking about individual stocks and bonds, it is important to remember, that the ESG ratings of the same issuer may vary markedly depending on the supplier.

The fact that ESG funds are showing promising results now does not mean that they will pay the same return in the future. There is always a chance that stocks or bonds that have passed the ESG criteria test will begin to lag behind the broader market, which usually offers more stable returns.

The results of this research can be used by assets management companies in developing the structure of variable investment portfolios under trust management agreements with non-state pension funds.

[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]

7. ACKNOWLEDGEMENT

This article was prepared with the support of the grant on the topic "Formation of private pensions in the context of the development of financial ecosystems in Russia" funded by Plekhanov Russian University of Economics (Moscow, Russia), order #860 from July 28, 2021.

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[Received/Recebido: Abril 10, 2022; Accepted/Aceito Maio 20, 2022]