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The performance of Hungarian sustainability and ESG mutual funds

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Sustainable and ESG (environmental, social, and governance) investments are gaining prominence worldwide. The question from a financial viewpoint is whether investors need to sacrifice financial return when making their investment decisions to purchase sustainable or ESG mutual funds. In other words, does investing in socially better or greener mutual funds offer a relatively lower return than traditional investment strategies?
This paper identifies the Hungarian sustainability and ESG mutual funds and analyses the risk-adjusted performance of these mutual funds to answer the question. The results indicate that ESG funds perform better on average only in the bond type category, while funds investing traditionally have better risk-adjusted performance in the mixed and absolute return fund type categories. For equity type funds, the results are ambiguous.

Keywords: mutual funds, risk-adjusted performance, sustainability, ESG

1. Introduction

The aspect of sustainability and the ESG (environmental, social, and governance) framework have substantially altered the investing landscape. Institutional investors have embraced the idea of sustainable and ESG investing, and offer mutual funds that follow such principles. The question from a financial viewpoint is whether investors need to sacrifice financial return when making their investment decisions to purchase sustainable or ESG mutual funds. In other words, does investing in socially better or greener mutual funds offer a relatively lower return than traditional investment strategies?

This paper identifies the Hungarian sustainability and ESG mutual funds and analyses the performance of these funds to answer this question. Four types of funds will be assessed: bond, mixed, equity, and absolute return funds. Not only the returns but also the riskiness and the risk-adjusted performance of the funds will be compared for funds investing traditionally and funds considering ESG aspects to reveal which group performs better from a financial point of view.

The paper is structured as follows: the second section summarises the theoretical background from the literature review about sustainable and ESG funds, as well as the assessment of mutual fund performance. The third section introduces the data collection process and the methodology of the analysis. The fourth section presents the results and discusses the implications. Finally, the fifth section concludes and identifies further research avenues.

2. Literature review

First of all, it is important to understand what is sustainable and ESG investing. According to the European Securities and Markets Authority, ESMA, sustainable investing involves

"an investment in one or several economic activities that qualify as environmentally sustainable" (ESMA 2023, pp. 1–2). These environmentally sustainable activities are defined in the Taxonomy Regulation (EU 2020/852): climate change mitigation, climate change adaptation, the sustainable use and protection of water and marine resources, the transition to a circular economy, pollution prevention and control, and the protection and restoration of biodiversity and ecosystems. It is apparent that sustainable investing focuses on environmental issues.

The framework of ESG, that is environmental (E), social (S), and governance (G) aspects of corporate finance and investing, however, deals with a broader set of issues. Naturally, the environmental pillar is also important in this framework, as resource use, emissions, and environmental innovations are considered when calculating the E pillar score. But there are social impact metrics as well, such as workforce, human rights, community, and product responsibility factors. Finally, the governance of the firms is evaluated with the assessment of the management, shareholders, and CSR strategy to come up with the G score. The three pillars combined give the comprehensive ESG score.

There are three strategies for mutual funds to implement ESG aspects in their investing processes (Hauff–Nilsson 2022). The first one is exclusion, alternatively called "negative screening". In this strategy, firms or entire industries are excluded from the pool of potential investments which are involved in activities deemed harmful to the environment or society, e.g. CO2 emissions, tobacco, and weapons. Negative screening may not necessarily mean total exclusion from investment, e.g. a firm with emissions under a pre-determined limit may get investments. The second strategy is inclusion, or "positive screening", which is a bottom-up portfolio-building procedure which looks for firms achieving or exceeding a certain ESG score. During positive screening, a firm operating in a harmful activity may be included for investment, if the firm stands out from the sector based on its ESG score. The last strategy is called engagement, which means that the mutual fund managers keep a close relationship with the firms in their portfolio to reach the ESG score targets. It is also called shareholder activism, as the funds do not passively invest in the firms, but rather try to actively influence the management of the firms (Hauff–Nilsson 2022).

Capelle-Blancard and Monjon (2014) examine whether there is a relationship between the screening methodology and the performance of SRI funds. Their results show that increasing the intensity of screening (i.e., the degree to which firms are excluded from the investment universe based on strict criteria) reduces risk-adjusted returns, but only for sector-specific screening criteria; tightening more general screening criteria does not worsen financial performance. They also find that positive screening to select the best companies seems to be the most financially efficient method, but this may have the drawback that it does not differentiate SRI funds much from traditional funds (Capelle-Blancard–Monjon 2014).

One of the biggest questions about sustainable and ESG investing is whether there is an opportunity cost, i.e. the investor has to sacrifice financial return for supporting environmental and social goals. The alternative cost of negative screening is examined by Trinks and Scholtens (2017). The impacts of fourteen problem areas are considered: abortion, adult entertainment, alcohol, animal experimentation, contraception, guns, animal fur, gambling, genetic modification, the meat industry, nuclear energy, the pig industry, stem cells, and tobacco. More than 1,600 individual stocks are analysed.

Negative screening reduces the size of the investment universe significantly and the risk-adjusted return is lower compared to not screening out companies in these problem areas, i.e. there is indeed an opportunity cost (return sacrifice) of negative screening (Trinks–Scholtens 2017).

In the next few paragraphs, I will overview the results of some papers about green or ESG mutual fund performance. Climent and Soriano (2011) analyzes the performance of green mutual funds in the United States from 1987 to 2009. Their results indicate that green mutual funds performed worse than traditional funds with similar risk characteristics. However, they also note that in the most recent period from 2001 to 2009, green funds did not have lower returns than traditional ones, thus it seems that the opportunity cost of investing in green funds is waning (Climent–Soriano 2011).

Hartzmark and Sussmann (2019) ask whether investors have a positive view of sustainability in the field of investments. Looking at the capital flows of funds, it appears that they do, as funds with the highest sustainability ratings receive significantly positive capital inflows, while funds with the lowest ratings experience outward capital flows. Based on the survey of investors, the researchers found that investors expect higher financial returns for funds with high sustainability ratings, but the data suggest that this is not the case, i.e. Hartzmark and Sussmann (2019) also find that an investment strategy that prioritises sustainability has a return sacrifice.

In Europe, Abate et al. (2021) assess the performance of sustainable mutual funds in a period between 2014 and 2019. More precisely, they ask whether mutual funds with higher ESG scores perform better financially than funds with worse ESG scores. They find that mutual funds with higher ESG scores generate significantly higher returns than funds with low ESG scores. Their research implies that it is possible to invest in Europe considering ESG aspects without sacrificing financial return (Abate et al. 2021).

In a sample of emerging market countries, Naqvi et al. (2021) compare the performance of green mutual funds and traditional funds investing primarily in the energy sector. They show that renewable energy funds significantly underperform traditional energy funds on a risk-adjusted return basis. Their analysis also reveals that renewable funds performed especially badly during the Covid-19 pandemic. All in all, Naqvi et al. (2021) find that in emerging market countries green energy investments require financial sacrifice.

In Hungary, Németh-Durkó and Hegedűs (2021) evaluate the performance of green bond funds from 2017 to 2020. They contrast the risk-adjusted returns of Hungarian green bond funds with the performance of their traditional benchmark indices. Their results show that there is a green premium (return sacrifice), thus the Hungarian green bond funds underperform their benchmark indices. However, they find that the performance of the green bond funds is gradually improving through the assessed years (Németh-Durkó–Hegedűs 2021).

All in all, it seems that generally there exists an opportunity cost for investing in sustainable or ESG funds. However, some encouraging results are showing that green or ESG fund performance is improving and in Europe could even exceed the risk-adjusted return of funds with a traditional investment policy.

3. Data and methodology

This section introduces the data-gathering process and presents the methodology used to analyze the performance of Hungarian sustainable and ESG mutual funds.

The main source of data was the website of BAMOSZ,[1] the Association of Hungarian Investment Fund and Asset Management Companies. The BAMOSZ website reports extensive data about Hungarian mutual funds. The dataset is accessible through the main page by selecting Investment Funds and clicking on Download. Here, the filters can be applied and the required variables can be selected for download.

The sample was constructed applying the following principles. The period under assessment goes from December 1, 2018, to November 30, 2023. This period spans five years and includes challenging times for the capital markets, e.g. the Covid-19 pandemic, international conflicts like the Russia–Ukraine war, and elevated inflation in the developed world, especially in Hungary. Only mutual funds with at least one full year of history were included in the sample.

Four types of mutual funds were collected: bond, mixed, equity, and absolute return funds. Bond and equity funds, as their names suggest, mainly invest in bonds and stocks, respectively. Mixed funds offer a mixture of bonds and stocks. Absolute return funds do not invest based on asset classes but strive to earn positive returns every year. Another filter applied is that only mutual funds denominated in Hungarian forint (HUF) were selected.

The BAMOSZ dataset indicates whether a mutual fund is classified as an ESG fund or not. Additionally, fund names were checked to include funds whose names contain the words "sustainable" or "responsible". In such cases, the investment policy of the funds was also checked to make sure that they follow sustainable or ESG investment policies. Table 1 presents the number of mutual funds included in the sample categorized by their type and traditional or ESG investment policies.

Table 1. Number of mutual funds in the sample categorized by type and investment policy

Type	Traditional	ESG or sustainable	ESG or sustainable %
Bond	63	4	5.97%
Mixed	82	10	10.87%
Equity	98	18	15.52%
Absolute return	134	6	4.29%
Total	377	38	10.08%

Source: own construction based on BAMOSZ data

Altogether 415 mutual funds are included in the sample, of which 377 follow traditional investment policies, and 38 consider ESG aspects, thus approximately 10 percent of the analyzed funds are ESG or sustainable funds. The biggest ratio of ESG

[1] https://www.bamosz.hu/en

funds is found in the equity category, where a little more than 15% of funds invest with ESG or sustainability in mind.

To compare the performance of ESG and traditional mutual funds, several metrics were collected. First, the returns of the mutual funds were downloaded from the BAMOSZ website. The 1-year, the 3-year annualized, and the 5-year annualized returns were gathered from the BAMOSZ database. Second, it is important to factor in the riskiness of the investments of the mutual funds. A classic risk measure, the standard deviation of the returns is available in the database for the 1-year and the 5-year time horizon. The returns divided by their standard deviation is a method to take the riskiness of the portfolio into account, e.g. dividing the 5-year annualized returns with the 5-year standard deviation of the returns.

Finally, another risk-adjusted return metric is calculated. The Sharpe ratio is one of the most commonly used metrics when comparing investment performance. It is calculated by the following formula (Sharpe 1966):

$$Sharpe\ ratio = \frac{r_i - r_f}{\sigma_i}$$

In the formula, r_i denotes the annualized return of the fund i, r_f means the risk-free rate, σ_i is the standard deviation of the returns of the fund i. Since only the mutual funds denominated in HUF were analyzed, the risk-free rate is proxied by yields of the Hungarian government bonds, also denominated in HUF. The annual yields of the 1-year, 5-year, and 10-year HUF government bonds were collected from the ÁKK website,[2] which is the Government Debt Management Agency of Hungary. For all three maturities, 1-year and 5-year averages were calculated resulting in an average of 9.22% yield in the last year, and 5.07% average annual yield for the last 5 years. These will be subtracted from the 1-year and 5-year annualized returns, respectively, and then divided by the 1-year and 5-year standard deviation of returns, respectively, to get the Sharpe ratio.

4. Results and discussion

This section presents a comparison of the performance of ESG and traditional Hungarian mutual funds. For a start, Table 2 shows the 1-year, 3-year annualized, and 5-year annualized returns of the funds categorized by type and investment policy.

The first column of Table 2 shows the fund type, and the second column indicates the investment policy within the type category. Columns 3 to 5 list the 1-year, the 3-year annualized, and the 5-year annualized returns. Every cell contains three numbers: the minimum, the maximum, and the average value for the respective return metric for the fund type and investment policy category. Funds with traditional and ESG investment policies are compared directly within fund types, and the higher return values are shown in bold. The small number of funds, especially with ESG investment policies, does not make it possible to conduct statistical tests, thus at the

[2] https://akk.hu/

moment, we are left with the direct comparison of the minimum, maximum, and average values.

Table 2. Fund returns categorized by type and investment policy

Type	Investment policy	1Y (%)	3Y (%)	5Y (%)
Bond	Traditional	-9.34; **20.53** 13.42	-8.92; **7.83** 1.81	-2.12; **6.19** 2.38
	ESG	**14.74**; 19.23 **16.97**	**3.88;** 7.63 **5.82**	**4.17**; 5.10 **4.64**
Mixed	Traditional	-8.88; **26.07** **9.77**	-3.01; **16.96** **5.59**	1.50; **10.74** **5.07**
	ESG	**-6.59**; 12.57 5.81	**-0.93**; 5.50 3.26	**2.59**; 4.33 3.46
Equity	Traditional	-82.20; **36.89** **6.91**	-74.32; **27.97** **6.66**	-53.73; **16.28** 5.14
	ESG	**-11.83**; 22.20 -2.95	**-2.60**; 15.73 4.10	**-1.15**; 14.34 **7.17**
Absolute return	Traditional	-13.21; **58.87** 14.79	-6.90; **33.06** **8.54**	-13.73; **16.56** **6.00**
	ESG	**6.32**; 19.76 **14.96**	**4.62**; 5.72 5.21	**3.17**; 4.46 3.94

Source: own construction based on BAMOSZ data

Focusing on the comparison of the averages, Table 2 shows that in the bond type category, funds with ESG investment policies outperform on average traditional funds for all three time horizons. For mixed funds, the opposite is true: ESG funds underperform on average funds with traditional investment policies for all three time horizons. In the equity and the absolute return fund categories, again, traditional funds perform better for two time horizons. In the equity category, ESG funds have higher returns on average when comparing the 5-year annualized returns; in the absolute return category, ESG funds overperform the traditional ones slightly for the latest year. Based on the 1-year, 3-year annualized, and 5-year annualized returns it is apparent that ESG funds tend to underperform on average the traditional funds, except for the bond type category.

Comparing only the returns may not provide the full picture of performance, as a fund may earn a higher return by taking on higher risk. Thus, it is important to factor in the riskiness of the portfolio and calculate risk-adjusted return metrics. Table

3 below presents the 1-year and 5-year standard deviation of fund returns and the 1-year and 5-year return/risk metrics, categorized by fund type and investment policy.

Table 3. Fund return standard deviation and return/risk metric categorized by type and investment policy

Type	Investment policy	1Y σ (%)	5Y σ (%)	1Y r/σ	5Y r/σ
Bond	Traditional	**0.54**; 11.74 6.24	**0.78**; 14.72 6.07	-0.89; **28.07** 5.06	-0.14; **5.39** 1.07
	ESG	1.63; **4.42 3.03**	1.39; **1.41 1.40**	**4.04**; 9.81 **6.81**	**3.00**; 3.62 **3.31**
Mixed	Traditional	**0.53**; 12.70 **6.87**	**0.82**; 13.54 **7.70**	-0.70; **28.00 2.18**	0.18; **6.40 0.84**
	ESG	5.95; **11.26** 7.46	8.48; **10.72** 9.60	**-0.59**; 1.89 0.94	**0.24**; 0.51 0.38
Equity	Traditional	**0.81**; 78.53 15.35	**14.39**; 65.39 19.23	-1.28; **2.72 0.64**	-1.67; **1.03** 0.36
	ESG	11.63; **17.60 14.71**	14.48; **20.81 16.30**	**-0.74**; 1.91 -0.14	**-0.08**; 0.91 **0.43**
Absolute return	Traditional	**0.96**; 13.98 5.32	**1.06**; 28.12 **8.02**	-1.42; **16.06 3.83**	-0.49; **5.92 0.96**
	ESG	3.17; **5.94 4.93**	6.00; **11.65** 10.23	**1.99**; 3.44 2.98	**0.27**; 0.74 0.43

Source: own construction based on BAMOSZ data

In Table 3, the first two columns list the fund type categories and the investment policy within the category. Columns three and four show the 1-year and the 5-year standard deviation of fund returns. Columns five and six list the 1-year and 5-year return/risk ratio, i.e. the return metric divided by the standard deviation of the returns for the same time horizon. As seen previously, every cell contains three values, they are the minimum, the maximum, and the average values for the given metric.

Looking at the riskiness of fund portfolios, a lower value of the standard deviation of the returns means lower risk, which is preferable, and is highlighted in bold. Comparing the standard deviation values of ESG and traditional funds, we can see that ESG funds perform better, i.e. they have a lower standard deviation of returns on average in the bond and equity type categories, both for the 1-year and the 5-year standard deviation. Traditionally investing funds have lower risk in the mixed category. For absolute return funds, the results are mixed: ESG funds have lower risk

on average, considering the 1-year standard deviation, while traditional absolute return funds have a lower 5-year standard deviation of returns.

The return/risk ratio is a basic risk-adjusted return metric, which shows the unit of generated return per one unit of risk taken. A higher value of return/risk ratio means a higher reward for risk-taking, thus it is preferable and is shown in bold in Table 3. Combining the return values from Table 2 and the standard deviation values from Table 3, the return/risk ratio values tell a familiar story. ESG funds perform better on average only in the bond type category for both time horizons (1-year and 5-year). In the mixed and absolute return categories, traditional funds perform better on average on a return/risk basis. For equity type funds, the results are mixed: traditionally investing funds have on average higher 1-year return/risk values, but ESG funds have a higher average for the 5-year metric. Considering the riskiness of the fund portfolios and the return/risk metrics, it seems that ESG funds outperform traditional ones only in the bond type category.

Looking at the Sharpe (1966) ratios, similar results emerge. Table 4 presents the 1-year and 5-year Sharpe ratios categorized by fund type and investment policy:

Table 4. Sharpe ratios categorized by type and investment policy

Type	Investment policy	1Y Sharpe	5Y Sharpe
Bond	Traditional	-1.78; **11.31** 1.86	-1.23; **0.20** -0.50
	ESG	**1.95**; 4.19 **2.95**	**-0.64**; 0.02 **-0.31**
Mixed	Traditional	-1.43; **10.61** **0.44**	-0.82; **0.51** **-0.04**
	ESG	**-1.40**; 0.50 -0.34	**-0.23**; -0.09 -0.16
Equity	Traditional	-11.38; **1.87** **-0.20**	-1.88; **0.71** 0.08
	ESG	**-1.31**; 1.12 -0.77	**-0.43**; 0.59 **0.11**
Absolute return	Traditional	-2.78; **7.53** **1.39**	-1.38; **1.18** **0.09**
	ESG	**-0.91**; 1.77 0.96	**-0.16**; -0.07 -0.11

Source: own construction based on BAMOSZ and ÁKK data

The Sharpe ratio is an advanced risk-adjusted return metric, where surplus return over the risk-free rate is divided by the standard deviation of returns. A higher value is preferable, as it means a higher surplus return for one unit of risk taken, they are shown in bold in Table 4. The results indicate again that funds with an ESG

investment policy only perform better on average in the bond type category. For the mixed and absolute return categories, traditional funds perform better on average. In the equity type category, the outperformance of traditional funds is apparent only for the 1-year Sharpe ratio, i.e. for the last year.

Summarizing the above results, Table 5 demonstrates whether ESG or traditional funds performed better by type categories for all the metrics evaluated.

Table 5. Summary of results

Metric	Bond	Mixed	Equity	Absolute return
1Y r	ESG	Traditional	Traditional	ESG
3Y r	ESG	Traditional	Traditional	Traditional
5Y r	ESG	Traditional	ESG	Traditional
1Y σ	ESG	Traditional	ESG	ESG
5Y σ	ESG	Traditional	ESG	Traditional
1Y r/σ	ESG	Traditional	Traditional	Traditional
5Y r/σ	ESG	Traditional	ESG	Traditional
1Y Sharpe	ESG	Traditional	Traditional	Traditional
5Y Sharpe	ESG	Traditional	ESG	Traditional

Source: own construction based on BAMOSZ and ÁKK data

Table 5 indicates that ESG funds dominate their traditional competitors in the bond type category, overperforming in all the metrics evaluated. For the mixed type of funds, traditional funds perform better in all metrics. In the absolute return category, ESG funds perform better only in the 1-year return and the 1-year standard deviation metrics. In the equity category, the results are mixed, as ESG funds seem to be performing better on the longer-term metrics.

5. Conclusion

As sustainable and ESG investing is getting more popular, researchers and professionals are interested in determining whether this novel approach to investments has an opportunity cost, i.e. whether the investor has to accept a financial sacrifice by investing in such assets, e.g. ESG mutual funds. This paper has analyzed the performance of Hungarian mutual funds to shed light on the topic in this particular market.

Four types of funds were analyzed: bond, mixed, equity, and absolute return. The return, riskiness, and risk-adjusted return of the funds were collected and calculated with data from BAMOSZ and ÁKK. The results indicate that ESG mutual funds perform better on average only in the bond type category, while funds investing traditionally have better risk-adjusted performance in the mixed and absolute return fund type categories. For equity type funds, the results are ambiguous.

Naturally, the analysis has some limitations. First, a relatively small number of ESG or sustainable funds in the Hungarian market does not allow more advanced statistical techniques of comparison with traditional funds. Second, only Hungarian

funds, denominated in HUF were used in the sample, but the sample size could be increased by expanding geographically, e.g. to the CEE region, and by including funds denominated in other currencies as well. Finally, other risk-adjusted performance measures, e.g. Jensen's alpha (Jensen 1968) or max drawdown could be calculated and compared for ESG and traditional mutual funds.

Another avenue of further research could be the detailed evaluation of the investment policies of the ESG and sustainable mutual funds via monthly and annual reports, to uncover why they may overperform in the bond type category, and why they may underperform the traditional funds in the other categories. One thing is certain: sustainability and the ESG framework in finance and the world of investments is a topic that is worth further analysis.

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