28th EXCELLENCE IN SERVICES INTERNATIONAL CONFERENCE

ESG in fund industry

Milica Latinovic, University of Belgrade – Faculty of Organizational Sciences, Jove Ilica 154, 11000, Belgrade, Republic of Serbia, milica.latinovic@fon.bg.ac.rs

Slađana Benković University of Belgrade – Faculty of Organizational Sciences, Jove Ilica 154, 11000, Belgrade, Republic of Serbia, sladjana.benkovic@fon.bg.ac.rs

Abstract: This paper presents a literature review on fund industry through lance of sustainability. More precisely, we examine how and does sustainability affect portfolio composition of ESG funds, inflow into funds and their financial performance. Modern investors are interested not only in financial returns but also in return that can make a difference in the world. Hence, investors seek sustainability. For a retail investor fund industry might be a right fit. But then would sustainable, ESG, socially responsible fund, really enable investors to achieve dual return? Which type of fund, ESG or conventional one will support investors in earning higher returns? Results show that funds name is not just cosmetics. If there is ESG in the title, investors will find ESG commitment in the fund's portfolio. Fund managers trade based on ESG information and improve portfolio performance. Investors perceive ESG funds as less risky, and they are going to increase the inflow of funds into ESG funds even when their mood is bad. Moreover, by investing in companies' stocks and bonds, ESG funds can improve those firms' ESG performance, and in turn attract other fund investors.

Keywords: ESG, fund, financial performance

1. Introduction

United Nations Principles for Responsible Investing (UN PRI) and several other global sustainability initiatives brought ESG investing in the focus of investment companies. ESG investing became a trend in a fund industry (Helliar et a., 2025). However, existing literature on sustainable investing focuses mainly on corporate social responsibility and risk assessment. There is a little research on the topic of ESG investments value and risk and return of sustainable portfolio strategies (Xu et al., 2024). Hence, we try to determine the state and financial performance of ESG investing in the funds industry. We break down fund industry based on fund type, on mutual funds, exchange-traded funds and hedge funds. Our aim is to determine whether there is a difference in a research type and performance characteristics, depending on a fund type.

Investment companies are financial intermediaries that collect funds from investors and invest them in a wide range of assets or securities, depending on funds investment style. Depending on the country and its legislation, funds industry can be classified and named differently. However, fund portfolios are either managed or unmanaged. Unit investment trusts portfolio is fixed for the lifetime of the fund. Individual investors can choose to invest in mutual funds, closed end funds or exchange traded funds. Wealthy individuals and institutional investors can choose to invest among different hedge funds (Bodie et al., 2018). Total assets of worldwide regulated funds increased substantially and at the year-end 2024. was $73.9 trillion. If we break down regulated funds number by continent, Europe has the highest number of regulated funds, but United States has the largest net assets under management. Funds holdings worldwide more than doubled in last decade. Also, if we look at funds' portfolios, we can see that equity funds are dominant (Figure 1). In the US, which is the leading world market by net assets of funds, mutual funds dominate the market by net assets (29 trillion$), followed by ETF's (10 trillion$), then closed-end funds (249 billion$) and UIT's (90 billion$).

Funds' industry is on the rise and investors seek to achieve superior returns. In recent years, investors are not solely interested in financial returns, they look for "green" or "sustainable" returns as well. Can funds that pursue sustainable investment strategies enable investors to achieve double returns, and is their financial performance superior to conventional funds?

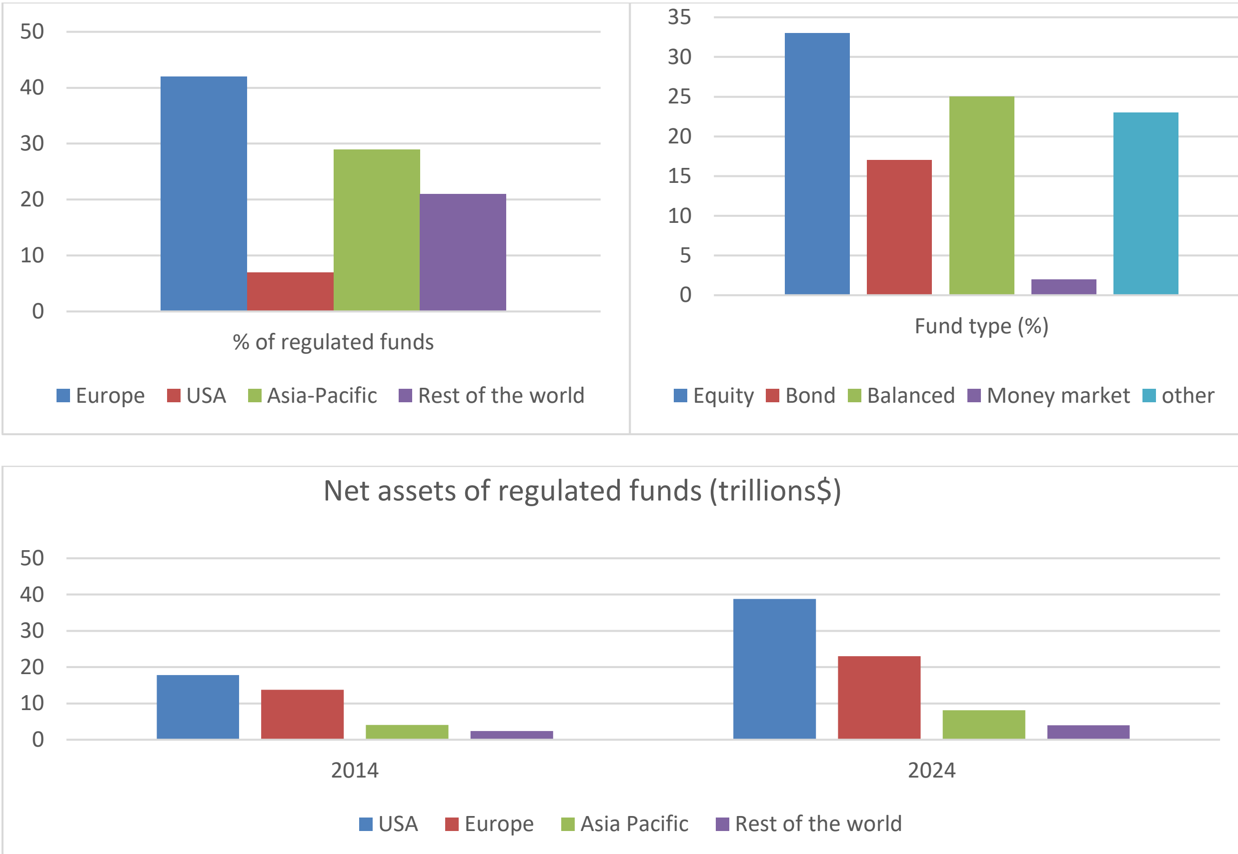

Figure 1. Percentage of the regulated funds by region, by funds style and net assets

Adapted from: Investment Company factbook (https://www.icifactbook.org/pdf/2025-factbook-ch1.pdf)

Funds with a label "sustainable" show better results than conventional funds. They exhibit better ESG performance and lower risk scores compared to conventional funds. The difference in the funds' performance also stems from the geographical location of their investments. Portfolios invested in Europe present better ESG performance than portfolios invested in other parts of the world. Portfolios invested in Asia have the lowest ESG performance and highest risk compared to portfolios invested in other continents (Meyers et al., 2024).

Many argue that ESG fascination is just cosmetical change with no real shift in investment policy and accompanying ESG score and fund's performance. Wood et al. (2025) find using Large Language Models that funds that changed their name to be more in alignment with ESG issues, really do increase their ESG related holdings and discussions regarding sustainability. However, marginal benefits of additional ESG content disappear after the name change.

Investors perceive ESG funds as less risky comparing to conventional funds. When investors mood is bad, their risk aversion is going to foster investments toward ESG funds (Fernandez-Perez et al., 2022).

But how sustainability really affects portfolio composition and strategy? Can funds' performance satisfy investor's dual needs?

Rest of the paper is structured as follows: second section presents a detailed literature review of ESG investing characteristics in mutual funds, ETFs and hedge funds; third section offers discussion of findings and concluding remarks.

2. ESG in funds industry

Funds can be classified based on different aspects. In the US there can be Unit investment trusts, open-ended funds and closed end funds. Mutual funds are usually considered open-ended funds, but ETFs are legally classified in this group as well. In Europe we can find Undertakings for collective investment in transferable securities (UCITS), money market funds, alternative investment funds or similarly regulated funds (Investment Company Factbook, 2025). All fund types are pooled investment vehicles, that offer their investors access to well diversified portfolios. Retail, individual investors usually do not possess enough capital or investment knowledge to create their own portfolio. Instead, they can buy share in mutual fund, ETF, UIT or closed end fund and achieve hopefully excess risk-adjusted return. Funds can invest in various types of securities or instruments, and they can be of different style. Funds can be passive and follow a certain index. Funds can be actively managed, and their portfolio managers are trying to create a portfolio strategy that will generate positive alpha (Bodie et al., 2018). Wealthy individuals and institutional investors have access to a different type of pooled investment vehicle – hedge funds. Hedge funds are organized as partnerships and are created in such a way that they are much less regulated and transparent compared to other types of funds. Therefore, hedge funds can use many more financial instruments and create portfolios in a riskier way than other fund types (Bodie et al., 2018).

If a fund investment policy is directed toward ESG investing, portfolio manager can use several strategies: integration strategy, exclusion strategy, impact investing or engagement-based investing. Negative screening or exclusion ESG investing is a strategy that assumes excluding "sin" stocks from their potential investment universe. "Sin" stock are the stocks of companies that generate at least part of their revenue from weapons, alcohol, child labor, gambling, fur, fossil or nuclear energy, adult entertainment. ESG integration is a portfolio strategy that includes securities based on factors of ESG risk and opportunities. ESG factors that portfolio managers consider when creating a portfolio are various, like waste management, carbon emissions, water pollution… ESG integration can be implemented as fundamental ESG integration, systematic ESG integration or positive screening. With impact-based ESG investing portfolio manager examines corporate business processes and activities to assess the impact that owning security of that company would have on certain issue. Impact investing is mission or cause based. Asset managers that implement this strategy will create portfolio that will demonstrate an impact on environment or certain social cause for example, while generating attractive returns. Engagement based ESG investment strategy represents a strategy where investors engage with companies to achieve change in corporate policies regarding some ESG issues. Engagement can be collaborative, yet sometimes hostile. For example, hedge fund can send private letter to the company explaining why it would be beneficial to them to change certain policy and offer their help in doing so (Sherwood and Pollard, 2019).

2.1. ESG in mutual fund industry

Mutual funds are open-ended funds, and they are the dominant type of investment companies today. Therefore, most research regarding ESG in the funds industry is based on mutual funds portfolios.

Lin et al. (2025) research ESG style drift in connection with the fund performance. Style refers to stock style, and drift represents a certain shift toward active or passive portfolio management. On a sample of Chinese open-end equity and hybrid mutual funds, Lin et al. (2025) find that there is a significant positive correlation between funds ESG investment style and funds' performance. Improvement in ESG style will increase fund performance. These results persist for all three dimensions of ESG, environmental, social and governance. Increase in environmental score will yield better funds' performance, increase in social and governance score will also yield better funds' performance.

Luo et al. (2024) test balancing strategy of Chinese mutual funds. Following Principles of Responsible Investment (PRI) requirements, Chinese mutual funds tend to implement strategy where they balance traditional financial objectives of superior performance with ESG excellent performance. Since mutual funds balance, rather than adopt pure ESG, results show their underperformance. They do not adapt to PRI; they cope with it. Mutual funds do not learn, and investors are not ESG driven as in developed markets such as the US.

Qian et al. (2025) find that pro-environmental investor behavior positively influences ESG score of their mutual fund positions. They divide investors as altruistic or egoistic. Egoistic investors with pro-environmental preferences have primary aim to make their life more convenient and more cost effective by taking everyday life activities that also decrease carbon emissions. Contrary to egoistic investors behavior, investors that behave altruistically prioritize ecological benefits to convenience. When looking at overall pro-environmental behavior, results show that such behavior leads to investments in ESG mutual funds following month. Also, when looking separately at egoistic and altruistic behavior of investors, it is found that increasing investments persist for both types of behavior. Furthermore, egoistic investors will increase their investments into ESG funds when faced with extreme weather events or poor air quality. Altruism plays a crucial role in sustainable investing, but self-interest motivations stemming from risk hedging and reputation building play a complementary role.

On a sample of equity mutual funds established in Australia and New Zealand, Ali et al. (2024) find that sustainability ratings complement fund performance and make asset allocation more efficient. Such results are more pronounced when climate risk is high. When we look at how investors react to the performance of ESG mutual funds, we can see that past performance is important to them. Investors use past performance as a predictive tool of managerial skills, and an increase in past performance leads to an increase in the fund's inflows. When looking at funds size, such an effect is less visible. The longer the funds exist, the more trust investors will have in funds results and that will increase future funds inflows. When looking at transitional and physical climate risk on the fund flows, results are asymmetrical. Transitional climate risk is seen as positive and increases flows in funds. On the other hand, physical climate risk is perceived as negative, and investors decrease inflows in funds and move their capital into safe heaven (Ali et al., 2024).

On a sample of European equity mutual funds, Papathanasiou and Koutsokostas (2024) test how sustainability ratings affect performance, performance persistence and new investments into mutual funds. Low rated ESG mutual funds display better performance and longer persistence in positive performance than high rated ESG mutual funds. Investors perceive ESG as a necessity but withdraw from that principle during the COVID crisis. Both types of ESG mutual funds, low and high-rated, underperform passive benchmark during crisis.

Dunbar et al. (2023) examine mutual funds that drifted their strategy toward ESG investments and tested their performance. Results show that ESG funds outperformed non-ESG funds and that ESG risk should be included in overall portfolio risk considerations.

Becker et al. (2022) tested Sustainable Finance Disclosure Regulation on mutual funds and investors in the EU. Their results show that regulation has an increasing effect on ESG scores and an increasing effect on new inflows of funds from investors.

Huhtilainen et al. (2023) summarize research findings on the importance of ESG in the mutual funds industry. Funds with high ESG ratings attract more investments, but the relationship between rating and mutual fund performance is mixed.

Joliet & Titova (2024) investigate financial and ESG characteristics of companies that US Socially Responsible mutual funds invest in. SRI funds are divided into three groups: equity only investment, debt only investment, and equity and debt investment together. Companies that issue debt and equity securities which represent holdings of mutual funds are larger, have higher profitability, higher financial safety and superior ESG performance than companies that only issue one type of security. Companies that issue debt securities that represent SRI mutual funds holding have low financial safety.

Vilas et al. (2024) on a sample of US mutual funds study the importance of ESG in investor decision making. They find that investors take ESG into consideration when investing into mutual funds, however, the weight that they put into that factor is very low. Investors value more funds fees, past growth and returns. The important result is that funds past ESG performance is relevant for future funds ESG performance.

On a sample of US mutual funds that declare themselves to be socially responsible, Kammoun et al. (2024) find that economic policy uncertainty and investors sentiment toward ESG increase funds sustainable practices in the year following those aspects. This pattern remains stable even in the period of crisis. However, when alphas increase, next year fund decreases its commitment to ESG (Kammoun et al., 2024).

On a sample of a US equity mutual funds, El Ghoul et al. (2023) show that socially responsible components of their portfolios underperform non-SRI components when looking at returns and Sharpe ratio. However, the underperformance of SRI is low. Hence, there is a benefit of SRI component and that benefit is increased diversification of funds portfolio.

Dorfleitner et al. (2021) test the persistence of ESG scores and controversies scores on a sample of US socially responsible mutual funds. Both types of scores persist in a short and long time-period. Higher paid managers perform better with controversies score than lower paid managers, and they perform worse when it comes to ESG scores.

Chen et al. (2024) tests how active mutual fund managers integrate ESG information into their portfolio decision making. Their results show that fund managers actively implement ESG integration strategies by purchasing stocks with positive ESG information and selling stocks that are associated with negative information. Fund managers are skilful at integrating ESG information into valuation process, and they generate superior risk-adjusted returns. This performance results attract new investors inflows into fund.

Wang (2024) test fuds vulnerability dependent on their ESG investments. Funds vulnerability reflects their risk level when they are exposed to external shocks. Sample consists of actively managed Chinese open-ended funds. If we look at their holdings, sample includes equity funds, bond funds and hybrid funds. Their results show that by increasing ESG performance, funds vulnerability can be reduced.

2.2. ESG and ETF's

ETFs are second largest fund type by asset under management. ETFs' have characteristics of open and closed end funds, based on their creation and investors trading. Firstly, ETFs were created as passive investment vehicles that follow certain market index. Nowadays we see transformation of ETFs strategies and there are more and more ETFs that are being actively managed. Also, ETFs can be leveraged, inverse or non-transparent.

Dumitrescu et al. (2023) test whether passive socially responsible equity ETFs can beat non-socially responsible benchmarks composed of S&P500 ETFs. During the period 2010-2020., SRI

ETFs performed worse than non-SRI benchmarks. However, in the last two years of their sample SRI ETFs outperform benchmark. Looking at SRI investment strategies, positive screening, especially positive environmental screening can beat the benchmark. Negative screening of stocks does not exhibit the same behaviour.

Pavlova and de Boyrie (2022) further expand research on performance of ESG ETFs. They asses risk-adjusted returns before and after COVID market crush. Before the COVID crises, regardless of ESG ETFs rating, ESG ETFs outperformed the market. However, during the market crisis ESG focus did not make these funds to outperform the market, but they did not perform worse than market.

Catello Landi et al. (2024) assess the influence on ESG risk on the performance of the ETFs. Sample is comprised of actively managed ETFs that have tri stars of higher Morningstar ESG rating, and this study have a focus on US and European markets. High ESG scores can reduce companies' cost of capital and improve its financial performance. On the other hand, materialization of ESG risks can adversely affect companies' financial performance. Therefore, companies with lower ESG risks can face decreased financial risk and volatility, but also lower risk-adjusted performance. When exposed to risk, investors preference goes to bonds. Funds with greater ESG risk variability will more likely allocate its funds to bonds.

Spillovers between different kinds of energy ETFs were investigated, namely, sustainable, green and brown ETFs. Results show that green ETFs are transmitters of shocks, whereas brown energy ETFs are net receivers of shocks (Banerjee, 2024). Spillover of risk is tested among European sustainable food ETFs. Sample tested spans from year 2021 till the year 2023, which enabled Shah et al. (IN PRESS) to examine interconnectedness during the period of geopolitical instability. There is a heightened connectedness during the crisis. Some ETFs are solely net transmitters of shocks, while others are solely net receivers of shocks.

On a sample of worldwide ETFs, Xu et al. (2024) test return connectedness and their return performance. European ETFs are the dominant ESG market due to their market capitalization and maturity, and they can reduce the portfolio's volatility. Minimum variance and risk-parity are portfolio strategies that will do well in the time of geopolitical turmoil.

2.3. ESG and hedge fund industry

Hedge funds are pooled investment vehicles, typically organized as partnerships. They are different than mutual funds and ETFs with respect to transparency requirements and the type of investors that are eligible to invest in their portfolios. Mutual funds and ETFs are reserved for retail investors and hedge funds are investment vehicles for wealthy individuals and institutions. Therefore, data surrounding hedge funds are different and research topic that ties ESG to this type of fund is somewhat different. Most frequently researched is the notion of hedge fund activism in relation to ESG. A hedge fund activism arises when hedge fund acquires a minority block of shares in a target company and then pressures management to adopt new corporate policies. Such hedge fund intervention is done to improve corporate performance. Previous research findings state that hedge fund activism improves corporate financial performance, increases stock price and returns, but there is no conclusive conclusion about how their activism influences corporate social performance (Wei and Zhao, 2025).

Wei and Zhao (2025) test hedge fund activism on corporate social performance. They use ESG rating as a measure for corporate social performance. Their results show that hedge fund activism is not significant for corporate ESG. Also, there is no evidence that investors react to the announcement of the activism more strongly with companies that have higher ESG rating.

Kaufmann et al. (2023) examine hedge fund activism, based on activities that small hedge fund takes to elect directors of ExxonMobil's Board. Their efforts are directed to affect the financial and environmental performance of ExxonMobil. Their results show that efforts affect the stock returns of ExxonMobil stock, but only for a short period of time. Changing the Board of directors has no permanent effect on stock returns. However, the sample period is too short and there is still time to see a more permanent effect on stock returns. The short sample period did not allow Kaufmann et al. (2023) to draw conclusion about environmental management of new directors.

3. Conclusion

Funds industry has exploded in the last decade. Moreover, sustainability initiatives around the world increase investors' interest in ESG investing. Therefore, investment companies follow that trend. Depending on the fund type, we can see implementation of different ESG investing strategies. Increase in ESG performance will lead to an increase in financial performance. However, there are opposing results when we look at the outperformance of ESG funds compared to non-ESG funds.

ESG mutual funds achieve superior risk-adjusted performance (Chen et al. (2024). Also, there is evidence that ESG mutual funds outperform non-ESG funds (Dunbar et al., 2023). However, there are contrasting results, since El Ghoul et al. (2023) report that socially responsible portfolio component of mutual funds underperforms, non-socially responsible part of their portfolio. Also, responsible ETFs underperform non-responsible ETFs (Dumitrescu et al., 2023).

Increase in funds ESG performance will yield better financial performance of funds (Lin et al. (2025), and it will reduce funds vulnerability (Wang, 2024). However, in Europe low rated ESG funds will yield higher return (Papathanasiou and Koutsokostas, 2024). Results persist for mutual equity funds (Lin et al., 2025). When we look at hybrid (balancing) funds we can find opposing results. Increase in ESG performance will increase funds' financial performance (Lin et al. (2025), but ESG funds will underperform. Results do not persist when looking at Chinese market (Lin et al. (2025); Luo et al. (2024)), since investors are not that ESG driven as investors in Europe or US, and funds adapt and not truly embrace ESG investing strategies.

If we look at funds' inflows, we can see that investors' preferences and their psychological characteristics play an important role (Qian et al., 2025). In Australia and New Zealand, past funds' ESG performance is important determinant of investors inflows in equity mutual funds (Ali et al., 2024). Moreover, regulation in the mutual funds industry has an increasing effect on funds inflow (Becker et al., 2022). Also, funds with high ESG ratings attract more inflows (Huhtilainen et al., 2023). However, when investors make investment decision, they do not put a lot of weight on ESG (Vilas et al., 2024).

If we look at ESG investing strategies, we can see that implementation of ESG integration strategy will yield good results with mutual funds. Furthermore, positive screening in ETFs can beat the benchmark (Dumitrescu et al., 2023). Hedge funds implement engagement strategy, and results show that their activism do not affect corporate social performance or have lasting effect on stock price.

When we look at previous research, we can see that market turmoil plays an important role in ESG funds as well. Although ESG funds can be perceived as less risky, they do not have superior performance in a period of market crisis. During crises European equity mutual ESG funds underperform (Papathanasiou and Koutsokostas, 2024). Iinvestors' sentiment toward ESG intensifies funds ESG practices, and such funds behaviour is the same even in the period of crisis (Kammoun et al., 2024). Before COVID crises ESG ETFs outperformed the market, but not after the crises (Pavlova and de Boyrie, 2022). There is a heightened connection and spillover of risk among European sustainable food ETFs during the crisis. Some ETFs are solely net transmitters of shocks, while others are solely net receivers of shocks (Shah et al., IN PRESS).

Previous research regarding the state of ESG investing in the funds industry does not display unanimous results. Funds regulation should be more focused on implementation of sustainable initiatives, since it will have an increasing effect on funds inflows. That in turn will intensify investing in companies with high ESG score, whose activities promote environmental, social and governance practices. That in turn will have beneficial effects on society. The limitation of this study is that majority of findings are based on European and US funds, and we need evidence from other geographical locations. This review of contemporary research can direct investors, which funds to choose if they wish to achieve superior dual return.

REFERENCE:

Ali, S., Badshah, I., Demirer, R., Hedge, P., Rognone, L. (2024). Climate risk, ESG ratings, and the flow-performance relationship in mutual funds, Global Finance Journal, 63, 101041. https://doi.org/10.1016/j.gfj.2024.101041

Banerjee, A. K. (2023). Environmental sustainability and the time-varying changing dynamics of green and brown energy ETFs, Finance Research Letters, 62, 105148. https://doi.org/10.1016/j.frl.2024.105148

Becker, M. G., Martin, F., Walter, A. (2022). The power of ESG transparency: The effect of the new SFDR sustainability labels on mutual funds and individual investors, Finance Research Letters, 47, Part B, 102708. https://doi.org/10.1016/j.frl.2022.102708

Bodie, Z., Kane, A., Marcus, A. J., (2018). *Investments* (11th edition), McGraw-Hill Education: New York, NY.

Catello Landi, G., Turriziani, L., Muto, V., Ricciardi, I. (2024). Exploring the nexus between ESG risk variations and investment preferences: Insights from sustainable ETFs during the COVID-19 era, Socio-Economic Planning Sciences, 95, 102039. https://doi.org/10.1016/j.seps.2024.102039

Chen, L., Chen, Y., Kumar, A., Sau Leung, W. (2024). Firm-level ESG information and active fund management, Journal of Financial Intermediation, 60, 101122. https://doi.org/10.1016/j.jfi.2024.101122

Dorfleitner, G., Kreuzer, C., Laschinger, R. (2021). How socially irresponsible are socially responsible mutual funds? A persistence analysis, Finance Research Letters, 43, 101990. https://doi.org/10.1016/j.frl.2021.101990

Dumitrescu, A., Järvinen, J., Zakriya, M. (2023). Hidden Gem or Fool's Gold: Can passive ESG ETFs outperform the benchmarks?, International Review of Financial Analysis, 86, 102540. https://doi.org/10.1016/j.irfa.2023.102540

Dunbar, K., Treku, D., Sarnie, R., Hoover, J. (2023). What does ESG risk premia tell us about mutual fund sustainability levels: A difference-in-differences analysis, Finance Research Letters, 57, 104262. https://doi.org/10.1016/j.frl.2023.104262

El Ghoul, S., Karoui, A., Patel, S., Ramani, S. (2023). The green and Brown performances of mutual fund portfolios, Journal of Cleaner Production, 384, 15, 135267. https://doi.org/10.1016/j.jclepro.2022.135267

Fernandez-Perez, A., Garel, A., Indriawan, I. (2022). In the mood for sustainable funds?, Economics Letters, 217, 110691. https://doi.org/10.1016/j.econlet.2022.110691

Helliar, C., Petracci, B., Tantisantiwong, N. (2025). Environmental, social and governance risk exposures of mutual funds, J Asset Manag 26, 316–332. https://doi.org/10.1057/s41260-025-00401-7

Huhtilainen, M., Saastamoinen, J., Turtiainen, M. (2023). ESG ratings in the mutual fund market, Reference Module in Social Sciences. Accessed on 25th of June 2025. https://ezproxy.nb.rs:2055/science/article/abs/pii/B9780443137761001483

Investment Company Factbook (2025). Last accessed on 30th of June, 2025: https://www.icifactbook.org/pdf/2025-factbook-ch1.pdf

Joliet, R., Titova, Y. (2024). Who is greener, more social and better-governed? Dual ownership by SRI mutual funds stands out, Economics Letters, 243, 111934. https://doi.org/10.1016/j.econlet.2024.111934

Kammoun, M., Tandja, D. C. M., Essaddam, N. (2024). Do policy uncertainty and ESG sentiment drive ESG commitment of green funds?, Journal of Climate Finance, 8, 100044. https://doi.org/10.1016/j.jclimf.2024.100044

Kaufmann, R. K., Kulatilaka, N., Mittelman, M. Evaluating hedge fund activism: Engine Number 1 and ExxonMobil, Journal of Climate Finance, 5, 100018. https://doi.org/10.1016/j.jclimf.2023.100018

Lin, M., Pan, D., Sha, Y. (2025). The impact of ESG investment on fund performance: Evidence from mutual fund style drift, Pacific-Basin Finance Journal, 91, 102707. https://doi.org/10.1016/j.pacfin.2025.102707

Luo, Q., Xue, M., Xiong, Y., Ge, X. (2024). The backfire of mutual funds balancing financial objectives in ESG investments: Evidence from China, International Review of Financial Analysis, 96, Part B, 103686. https://doi.org/10.1016/j.irfa.2024.103686

Meyers, S. M., Ferrero-Ferrero, I., Munoz-Torres, M. J. (2024). ARE sustainable funds doing the talk and the walk? An ESG score analysis of fund portfolio holdings, International Review of Economics and Finance, 93, 1526–1541. https://doi.org/10.1016/j.iref.2024.04.023

Papathanasiou, S., Koutsokostas, D. (2024). Sustainability ratings and fund performance: New evidence from European ESG equity mutual funds, Finance Research Letters, 62, Part A, 105095. https://doi.org/10.1016/j.frl.2024.105095

Pavlova, I., de Boyrie, M. E. (2022). ESG ETFs and the COVID-19 stock market crash of 2020: Did clean funds fare better?, Finance Research Letters, 44, 102051. https://doi.org/10.1016/j.frl.2021.102051

Shah, W. U., Younis, I., Missaoui, I., Ullah, A. (IN PRESS). Spillover Dynamics in Sustainable Food ETF Markets: Financialization and Sustainable Investment Trends, *Finance Research Open*, doi: https://doi.org/10.1016/j.finr.2025.100021

Sherwood, M. W., Pollard, J. (2019). *Responsible investing: an introduction to environmental, social, and governance investments*, New York: Routledge.

Qian, S., You, H., Wan, D. (2025). From pro-environmental behavior to ESG fund investing: Evidence from account-level data in China, Energy Economics, 143, 108271. https://doi.org/10.1016/j.eneco.2025.108271

Xu, D., Corbet, S., Lang, C., Hu, Y. (2024). Understanding dynamic return connectedness and portfolio strategies among international sustainable exchange-trade.d funds, Economic Modelling, 141, 106864. https://doi.org/10.1016/j.econmod.2024.106864

Vilas, P., Andreu, L., Serrano-Cinca, C. (2024). The limited role of sustainability in mutual fund investor decisions: A machine learning approach, Expert Systems with Applications, 247, 123288. https://doi.org/10.1016/j.eswa.2024.123288

Wang, H. (2024). ESG investment preference and fund vulnerability, International Review of Financial Analysis, 91, 103002. https://doi.org/10.1016/j.irfa.2023.103002

Wei, J., Zhao, S. (2025). Does hedge fund activism harm corporate social performance? Evidence from ESG ratings, Journal of Corporate Finance, 94, 102801. https://doi.org/10.1016/j.jcorpfin.2025.102801

Wood, K., Pyun, C., Pham, H. (2025). Beyond Green Labels: Assessing Mutual Funds' ESG Commitments through Large Language Models, Finance Research Letters, 74, 106713. https://doi.org/10.1016/j.frl.2024.106713