

# Quantifying Sustainability: An Empirical Analysis of ESG Integration in CEE Pension Funds

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**Abstract:** *This study explores the integration of environmental, social, and governance (ESG) factors into investment decisions by pension funds in Romania, within the broader context of Central and Eastern Europe (CEE). The research emphasizes the increasing global recognition of sustainable and responsible investing, underscored by significant regulatory frameworks such as the European Union's Sustainable Finance Disclosure Regulation (SFDR), EU Taxonomy, and the Corporate Sustainability Reporting Directive (CSRD). These regulations mandate transparency and accountability, aiming to mitigate greenwashing and foster sustainable business practices.*

*The study particularly examines Romania's unique regulatory and economic environment, which presents both challenges and opportunities for ESG integration.*

*Using a dataset comprising the equity holdings of Romanian pension funds and ESG ratings from Sustainalytics, the research employs statistical analyses, including correlation coefficients and regression models, to investigate the relationship between ESG performance and investment decisions. The findings reveal that while there is a moderate correlation between ESG scores and portfolio performance, the explanatory power of these scores is limited, indicating that other factors significantly influence financial performance. The analysis highlights that ESG integration in Romania's pension funds is still evolving, with data quality, measurement challenges, market maturity, and regulatory complexities impacting the observed outcomes.*

*The study underscores the importance of long-term value creation through ESG integration, despite the short-term statistical insignificance observed. It suggests that ongoing improvements in data quality, longer-term analyses, and a comprehensive understanding of regulatory frameworks are essential for advancing ESG practices in emerging markets like the CEE region. The research calls for future studies to explore the long-term impacts of ESG integration, the role of varying ESG rating methodologies, and comparative analyses across different regulatory environments to identify best practices and policy implications. This study contributes to the growing body of literature on ESG investing in emerging markets, providing insights into the current state and future directions of sustainable investment practices in the region.*

**Keywords:** Sustainability, ESG, Performance, Pension Funds, Regression Analysis.

## Introduction

### *Background and Importance of ESG Integration*

The integration of environmental, social, and governance (ESG) factors into investment decisions has gained significant traction globally. This trend reflects growing recognition among stakeholders of the importance of sustainable and responsible investing. ESG factors encompass a broad range of considerations that go beyond traditional financial metrics, including environmental impact, social responsibility, and governance practices. By incorporating these factors, investors can better manage risks and identify opportunities associated with sustainability.

Universal asset owners, such as pension funds, play a critical role in this paradigm shift. Due to their substantial influence over capital markets and investee companies, these institutions are uniquely positioned to drive the adoption of ESG practices. Pension funds have long-term investment horizons that align well with the goals of sustainable investing. As they integrate ESG factors into their investment processes, they can promote more sustainable business practices across the economy.

European Investors are also under the EU regulation that impact their disclosure and investment mandates. The Sustainable Finance Disclosure Regulation (SFDR), instituted by the European Union, represents a pivotal regulatory mechanism designed to augment transparency and accountability within the financial services sector vis-à-vis sustainability practices. This regulation necessitates that financial market participants and financial advisors disclose the extent to which sustainability risks are incorporated and adverse sustainability impacts are considered within their investment processes.

The SFDR stratifies financial products into three taxonomic classifications: Article 6 products, which eschew the integration of sustainability considerations; Article 8 products, which are characterized by the promotion of specific environmental or social attributes; and Article 9 products, which are fundamentally oriented towards sustainable investment objectives. By mandating these comprehensive disclosure requirements, the SFDR endeavors to curtail greenwashing practices, enhance the granularity of information available to investors, and incentivize a systemic transition towards more sustainable and responsible financial market paradigms.

The EU Taxonomy, a cornerstone of the European Union's sustainable finance agenda, was officially adopted in June 2020, establishing a classification system to identify environmentally sustainable economic activities. This regulatory framework, designed to guide investment decisions towards sustainability, commenced with the publication of the Taxonomy Regulation (Regulation (EU) 2020/852). The taxonomy is structured around six environmental objectives: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems. The initial set of technical screening criteria, covering climate change mitigation and adaptation, was adopted in April 2021 and applied from January 2022. Subsequent criteria for the remaining environmental objectives are being developed and are expected to be implemented progressively.

The Corporate Sustainability Reporting Directive (CSRD) is a key regulatory initiative by the European Union aimed at enhancing and standardizing sustainability reporting among companies. Replacing the Non-Financial Reporting Directive (NFRD), the CSRD significantly expands the scope of reporting requirements to include a broader range of companies, including large corporations, listed small and medium-sized enterprises (SMEs), and non-EU companies with substantial business activities in the EU. It mandates detailed disclosures on a wide array of ESG

(Environmental, Social, and Governance) factors, ensuring that stakeholders have access to consistent, comparable, and reliable sustainability information. The CSRD also introduces stricter assurance requirements for reported data and aligns with the EU's broader sustainable finance agenda, aiming to drive transparency, accountability, and long-term sustainability in corporate behavior across Europe.

The Corporate Sustainability Due Diligence Directive (CSDDD) is a legislative proposal by the European Commission aimed at fostering sustainable and responsible business conduct across the European Union. The directive mandates that large companies, including non-EU companies operating within the EU, conduct due diligence on their supply chains to identify, prevent, mitigate, and account for adverse human rights and environmental impacts. This includes ensuring that companies address issues such as child labor, worker exploitation, environmental degradation, and climate change within their operations and supply chains. The CSDDD requires companies to implement due diligence policies, engage with stakeholders, provide remediation for adverse impacts, and report on their due diligence efforts. By enforcing these standards, the directive seeks to promote corporate accountability and transparency, encouraging businesses to contribute positively to sustainable development goals and uphold high ethical standards globally.

The Central and Eastern European (CEE) region, and particularly Romania, represents a unique context for examining ESG integration. This uniqueness arises from the region's economic conditions and developmental stages. While ESG investing has become more established in Western Europe and other developed markets, it is still an emerging practice in many parts of the CEE region. This creates both challenges and opportunities for investors.

Romania has enacted the CSRD through Ministry of Finance Order No. 85/2024 on sustainability reporting aspects, effective from January 26, 2024. This order modifies and enhances Romania's accounting regulations (the Accounting Regulations on Individual Annual Financial Statements and Consolidated Annual Financial Statements, as well as the Accounting Regulations in accordance with IFRS). The new legislation establishes key reporting guidelines for all affected entities, regardless of the phased implementation of sustainability reporting requirements. It introduces provisions concerning the content of sustainability reports, exemptions from reporting, mandatory use of the single electronic reporting format, reporting by third-country entities, and accountability for sustainability reporting.

Romania, as a focal point of this study, provides a particularly interesting case. As a member of the European Union, Romania is subject to EU regulations and initiatives related to ESG investing. However, the country also faces unique challenges related to its economic development and regulatory environment. By focusing on Romania, this research aims to shed light on how ESG integration is progressing in a key CEE market and what implications this has for broader regional trends.

While the transposition legislation in Romania aligns with the Corporate Sustainability Reporting Directive (CSRD) in general, several important differences emerge. Romanian accounting regulations use identical thresholds to define large and medium-sized undertakings, unlike the CSRD, which results in medium-sized companies being required to comply with reporting standards typically applicable to large companies. Additionally, listed subsidiaries in Romania are subject to stricter reporting obligations, as they cannot claim exemption even when included in a parent company's consolidated report. This differs from the CSRD, which limits reporting requirements to large listed entities. Another distinction involves the size of listed companies permitted to exclude sustainability reporting in their management reports for financial years starting before January 1, 2028. Romanian regulations allow this exclusion only if the

omission is justified within the management report, creating a divergence from the CSRD's provisions.

Regulatory frameworks in the CEE region vary significantly from country to country. However they are under the EU jurisdiction which makes their regulation frameworks converge. In some cases, regulations are still evolving to support sustainable investment practices. Economic conditions also differ, with some CEE countries experiencing rapid growth and others facing economic challenges. These factors influence the extent to which ESG considerations are incorporated into investment decisions.

## **Objectives and Scope of the Study**

The fundamental challenge for pension funds in general and by the Romanian pension fund industry is to maintain an adequate social license, which involves being perceived by stakeholders—such as society, regulators, and politicians—as fair, appropriate, and trustworthy. While their primary mandate is to create long-term value, sustaining this value requires managing and addressing significant, paradigm-shifting externalities. This entails ensuring that the retirement savings of individuals are preserved in a manner that gathers societal support and is sustainable and environmentally viable.

The research examines the correlation between ESG performance and fund allocation decisions by pension funds in Romania and employs statistical analysis to determine the predictive power of ESG metrics on investment decisions.

## **Literature Review**

### *Evolution of ESG Investing*

ESG (Environmental, Social, and Governance) investing has undergone a remarkable transformation from a niche practice to a mainstream strategy over the past few decades. This evolution has been significantly influenced by the United Nations' promotion of the Sustainable Development Goals (SDGs), which represent a universal call to action to end poverty, protect the planet, and ensure peace and prosperity for all by 2030. The investment risks posed by climate change and poor corporate governance have played a crucial role in catalyzing the growth of ESG investing (Townsend, 2020).

Research indicates that investors react strongly negatively to negative CSR (Corporate Social Responsibility) news. Krüger (2015) found that the negative reaction is particularly pronounced for information regarding communities and the environment. Initially driven by ethical considerations, ESG investing is now recognized for its potential to enhance long-term financial performance and mitigate risks. Recent findings suggest a somewhat positive relationship between ESG integration and portfolio performance, highlighting improved risk-adjusted returns and lower volatility. While further confirmation over a longer timeline is necessary, there are clear beneficiaries from a strategic tilt of general shareholders towards more ESG mandates. Companies that have historically been at the forefront of generating environmental issues tend to benefit the most. La Torre, Mango, Cafaro, and Leo (2020) pointed out that ESG strategies positively impacted returns only for a few firms, primarily operating in specific sectors such as energy and utilities. The advent of ESG ratings has brought clarity to the relationship between ESG performance and investment returns, transitioning from a static to a dynamic approach to ESG investing (Drei, Angelo, and Le Guenedal, 2019)

The European Union's regulations have also been a significant catalyst for ESG investment. Initially, the investment community's enthusiasm was tempered by uncertainty among asset managers over which funds could be classified under the greenest category, known as Article 9. This uncertainty led to nearly \$200 billion worth of funds being downgraded from Article 9 in 2022 (Impact Investor, 2023). However, research has shown that taxonomy criteria are compatible with a path to climate neutrality in certain economic sectors, such as the automotive sector. Conversely, in other sectors, such as the emission-intensive basic materials sector, the criteria are insufficient. Low thresholds carry the risk of a carbon lock-in, leading to the entrenchment of emission-intensive technologies and structures (Schütze, 2020)

There is also evidence suggesting that firms with better environmental performance face a lower cost of equity. Conversely, investors demand a premium for investments in firms with environmental concerns (El Ghouli, 2018). However, different types of financing instruments have produced a broad range of results. Findings for equity do not necessarily translate to the debt market, including bank loans and corporate bonds, where results have been more mixed (Zerbib, 2019)

Lately, investors have increasingly expected companies to present ESG reports, and ESG-reporting companies tend to be valued higher by the market. However, there remains a question of whether institutional investors are themselves the agents of change or if they are susceptible to agency problems. This issue is as pertinent in developed markets as it is in emerging ones, such as Romania. However, there also issues that need to be addressed as Gilson and Gordon (2013) point out, as even with institutional investors there is potential for agency problems.

One of the most cited articles on this topic is by Friede, Busch, and Bassen (2015), which states that 90% of academic studies found a nonnegative relationship between ESG and financial performance. Of these studies, 48% of vote-count studies and 63% of meta-analyses showed a positive correlation. This highlights the growing recognition of ESG investing's potential benefits.

However, a significant constraint in ESG investing is the minimal correlation between ESG ratings from different agencies (Dimson, 2020). This disparity means that a comprehensive overview of a company's ESG performance requires multiple sources of research, significantly restricting the number of companies that investors can target. Improving coherence in ESG ratings and research methodologies is essential for advancing ESG investing and ensuring that investors can make well-informed decision.

While ESG investing has made significant strides and shown promise in enhancing financial performance and mitigating risks, it faces challenges that need to be addressed. The evolving regulatory landscape, investor expectations, and the need for more consistent and comprehensive ESG ratings are critical areas that require attention. As the field continues to develop, ongoing research and collaboration among stakeholders will be vital in realizing the full potential of ESG investing

### *ESG evolution in emerging markets*

While extensive research exists on ESG integration in developed markets, the body of literature on emerging markets, particularly the CEE region, is relatively sparse. Emerging markets present unique challenges and opportunities for ESG investing due to their varying regulatory environments, economic structures, and developmental stages. This study contributes to filling this gap by focusing on Romania

There is research looking at the relationship between financial performance and ESG in emerging markets which indicate a positive relationship between the disclosure of ESG activities and the financial performance of companies as measured by ROA. It was also observed that for

companies operating in the financial sector, the correlation is greater, compared to companies operating in other sectors. (Siwiec, 2024)

Emerging market firms demonstrated stronger ESG initiatives related to resource use, workforce management, human rights, and CSR strategies. In contrast, developed market firms scored significantly higher in community-related metrics, which reflect their efforts in maintaining public health and upholding business ethics (Ting, 2020).

ESG initiatives may lead to significant improvements in valuation effects (Tobin Q and ROE). Firms with higher environmental initiatives can improve shareholders' wealth (P/E). Social initiatives lead to value creation (Tobin Q). Governance performance also results in high valuation (Tobin Q and ROE) when comparing between emerging and developed markets, the valuation effects of ESG scores for developed market firms were positive and significant. (...)The emission and innovation initiatives in developed market firms had positive valuation effects. The category work score was positively related to Tobin Q (Ting, 2020).

It is found that 72% of the companies have no external ESG rating imposing a threat of a likely exclusion from the investment universe of those asset managers who shall rely on the third-party sustainability evaluation for their investment policies, while average sustainability ranking of the CEE companies of 27.4, 21 points less than the average European score, it is clear that the still-developing practices and compliance to the ESG metrics is still emerging in this region (Zumente 2021).

In smaller datasets within CEE companies there has been showed that an inverse relationship between ESG score and risk and also that there is a practical absence of a relationship with expected returns (Kaminskyi 2022).

## Methodology

### *Data Collection*

This study focuses on analyzing the equity holdings of Romanian pension funds to examine the correlation between ESG performance and fund allocation decisions.

To conduct this analysis, a comprehensive dataset was compiled. The dataset includes comprehensive information on the equity positions held by Romanian pension funds, detailing each equity position's weight as a percentage of the overall asset allocation and as a percentage of the equity portfolio.

This detailed breakdown allows for an in-depth analysis of how much each equity position contributes to the total assets managed by the pension funds and the proportion it represents within the equity segment of the portfolio.

Such granularity in the dataset is important for evaluating the impact of individual equity holdings on overall fund ESG performance and assessing the extent of diversification within the equity portfolio.

It also provides insights into how pension funds are positioning their investments relative to ESG criteria.

ESG evaluations were sourced from Sustainalytics, the primary rating agency that has issued scores for most Romanian listed companies. To maintain consistency, only Sustainalytics' ratings were used to avoid discrepancies between different rating methodologies.

For companies without available ESG Risk Ratings from Sustainalytics, we derived proxy scores to maintain data consistency and minimize volatility. For Ropharma, we used industry averages to estimate its ESG Risk Score, ensuring it aligns with sector-specific norms. For non-

UCITS listed funds, we applied global averages to provide a broader benchmark. In the case of Hidroelectrica, which does not yet have an ESG rating due to its recent listing in 2023, we used Verbund, a comparable company, as a proxy. To account for potential discrepancies and ensure a conservative approach, we increased Verbund's ESG Risk Score by 20% when applying it to Hidroelectrica. This methodology ensures that the dataset remains coherent and reliable, allowed for a better statistical analysis and meaningful insights into the relationship between ESG performance and investment decisions. By adopting these proxies, we aimed to reflect the most plausible ESG risk levels for companies lacking direct Sustainalytics ratings.

### *Sustainalytics ESG Risk Ratings*

According to the company's public information, the ratings provide a comprehensive measure of a company's exposure to industry-specific ESG risks and its ability to manage them. This methodology includes 20 material ESG issues supported by over 300 indicators and 1,300 data points, assessed through a two-dimensional framework that evaluates both exposure and management quality. Companies are rated across five risk levels: negligible (0-10), low (10-20), medium (20-30), high (30-40), and severe (40+). These ratings cover over 16,000 companies, encompassing public and private firms, fixed-income issuers, and listed companies in emerging markets like China.

The ratings integrate corporate governance research to ensure a holistic view of governance risks alongside environmental and social factors. Sustainalytics emphasizes a transparent methodology, providing clients with detailed insights and customizable ESG solutions. The methodology is continuously updated to reflect the evolving ESG landscape, with recent enhancements including upgrades to the corporate governance baseline and the introduction of new material ESG issues such as water and cybersecurity. This transparent and extensive approach enables investors to make informed decisions, supports regulatory compliance, and helps companies benchmark their ESG performance against peers.

The study utilized the Overall Exposure Score, which assesses a company's exposure to material ESG issues. This score accounts for sub-industry and company-specific factors, such as business models, with higher scores indicating greater exposure to ESG risks.

### *Performance Data*

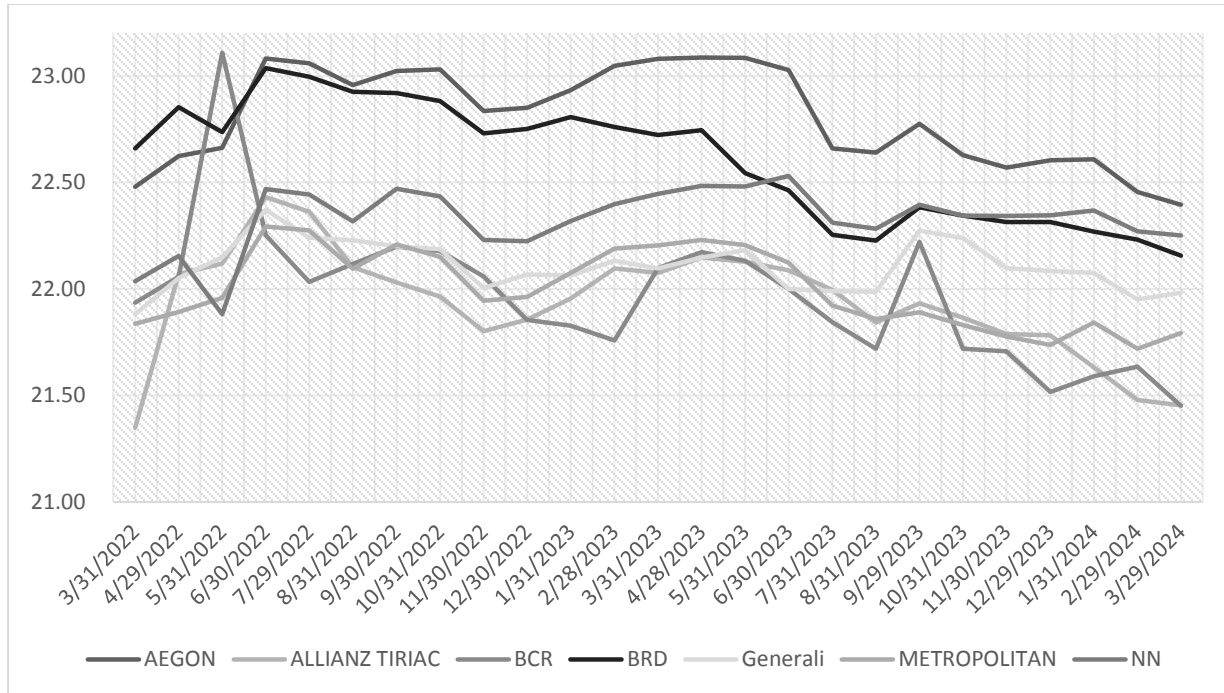
Monthly performance data for all seven Pillar 2 pension funds active in Romania was collected. This data was crucial for analyzing the relationship between ESG scores and investment performance over time.

### *Statistical Analyses*

To assess the correlation between ESG performance and fund allocation decisions, we conducted statistical analyses using correlation coefficients and regression models. These analyses helped us identify the strength and direction of the relationships between ESG scores and investment decisions.

We analyzed all the funds for their average ESG score over time and we concluded that their evolution was highly correlated, which confirms that constituents are very similar to one another, especially in the top holdings.

The funds holdings are very concentrated with a generally small number of constituents: the maximum number of constituents is 46 for BCR while Metropolitan has only 18 issuers in the portfolio.



**Figure 1, Average equity portfolio ESG Risk Score based on Sustainalytics data for Romanian Pillar 2 funds**

Source: Authors' own research.

Also we run a regression analysis between the monthly ESG Risk Scores and the Monthly Performance table of each of the funds. To have a system-wide result we also used average performance of all the pension funds for every month, and average ESG risk score data for the same periods.

## Results and discussions

### *ESG and Investment performance*

The regression analysis reveals that the model has a moderate correlation between the predictor and the dependent variable. However, the low R Square and Adjusted R Square values indicate that the model explains only a small portion of the variance.

The ANOVA table shows that the model is not statistically significant overall, and the coefficients table confirms that while the intercept is highly significant, the predictor variable (X Variable 1) is not. This suggests that the model may need additional predictors or refinements to better explain the variability in the dependent variable.

SUMMARY OUTPUT						
<i>Regression Statistics</i>						
Multiple R	0.308664144					
R Square	0.095273554					
Adjusted R Square	0.055937622					
Standard Error	0.169480895					
Observations	25					
<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	0.069570386	0.069570386	2.422048953	0.133292558	
Residual	23	0.660646799	0.028723774			
Total	24	0.730217185				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	22.27127141	0.03663415	607.9374442	7.03354E-50	22.19548789	22.34705492
X Variable 1	-2.778764898	1.78550202	-1.556293338	0.133292558	-6.472357239	0.914827444

**Figure 2 Regression analysis of ESG performance and fund allocation decisions**

Source: Authors' own research.

The regression analysis conducted on the data demonstrates that ESG (Environmental, Social, and Governance) scores have a minimal and statistically insignificant impact on portfolio performance. The R Square value of 0.0953 indicates that ESG scores explain only 9.53% of the variation in portfolio performance, leaving a significant 90.47% of the variability unexplained by the model. This low explanatory power suggests that other factors not included in the model play a much larger role in determining portfolio performance. The Adjusted R Square value of 0.0559, which accounts for the number of predictors, further confirms the limited effectiveness of ESG scores in explaining performance, indicating that adding more variables might be necessary to improve the model's explanatory power.

The ANOVA table provides further evidence of the insignificance of ESG scores in predicting portfolio performance. The regression sum of squares (SS) of 0.06957 and the residual SS of 0.66065 show that the majority of the variance remains unexplained. The F-statistic of 2.422 and the corresponding p-value of 0.1333 signify that the model is not statistically significant at the conventional 5% significance level. This high p-value indicates that there is a considerable probability that the observed relationship between ESG scores and portfolio performance could be due to random chance rather than a true underlying effect. Examining the coefficients table, the coefficient for ESG scores is -2.7788 with a standard error of 1.7855, resulting in a t-statistic of -1.5563 and a p-value of 0.1333. The p-value exceeding 0.05 underscores that the ESG scores are not statistically significant predictors of portfolio performance. Additionally, the 95% confidence interval for the ESG coefficient ranges from -6.4724 to 0.9148, which includes zero, further emphasizing the lack of a reliable impact. The highly significant intercept (p-value ≈ 0) suggests a strong baseline performance, but this does not translate into significance for ESG scores. Thus, the data indicates that ESG scores alone are insufficient for explaining portfolio performance, highlighting the necessity of incorporating additional variables and factors to develop a more comprehensive and accurate predictive model.

### *Discussion*

The relationship between ESG performance and financial returns is complex and influenced by numerous factors, including the time horizon of the investment, the specific ESG criteria used, and the context within which the investments are made. In the context of Romanian Pillar 2 pension funds, these complexities are further compounded by market-specific dynamics and regulatory environments.

Empirical analyses of ESG integration within Pillar 2 pension funds in Romania have not consistently demonstrated a clear-cut correlation with financial performance. Several potential reasons can be posited for these inconclusive results.

### *Data quality and availability*

Data quality is often incomplete or unavailable. As such, there have been several instances where we had to extrapolate data to assess the overall portfolio performance. Also, we have seen volatility between years of reporting for Romanian companies (2023 data vs 2022) data in some companies that cannot be explained by organic evolution alone. Also, for some companies within the portfolios data was just not available. This, however does not critically impact the outcome of the study as their position are rather marginal in the overall portfolio structure.

### *Measurement challenges*

ESG is a multifaceted construct, and its measurement is inherently challenging. Different rating agencies and analysts might use varying criteria and weightings, resulting in divergent assessments of ESG performance. The fact that we only use one provider (in our case Sustainalytics) and from that particular provider we only use the aggregate score (ESG Risk Score), might induce some bias towards one form of evaluation. It would've been more comprehensive to have multiple providers of data that could offer us different perspectives on the ESG quality of a company's operations.

### *Market maturity*

The Romanian market is relatively incipient in terms of experience with ESG data and also in terms of ESG data integration in investment mandates. As we mentioned above there are no mandatory requirements to reach certain thresholds so the overall market is still experimenting with the implementation of consistent data reporting and monitoring. This stage of ESG adoption means that the full impact of ESG practices on financial performance might not yet be observable.

### *Regulatory framework*

The rapid pace of regulatory changes poses compliance challenges for companies and investors, particularly in aligning their strategies with the evolving requirements. This keeps companies constrained on embarking in aggressive ESG strategies as this could backfire with reputational consequences. Furthermore, the diverse interpretations and implementations of ESG criteria across different asset classes add complexity, making it difficult to achieve a harmonized approach to ESG integration

### *Time horizon*

The dataset suffers from being short when dealing with such long term consequences, The two year timeline, given the need for business model adaptation for a lot of companies might not capture the full extent of companies evolution. ESG benefits often accrue over a longer time horizon, whereas performance analyses may be constrained to shorter periods due to data availability. Short-term performance metrics might not capture the long-term value creation potential of ESG integration

### *Implications for Investee Companies*

The integration of ESG factors by pension funds in the CEE region, particularly in Romania, has significant implications for investee companies. As these funds will increasingly prioritize

sustainability in their investment decisions, companies are incentivized to improve their ESG performance to attract and retain institutional investors. This shift encourages companies to adopt more sustainable business practices, enhance transparency in their operations, and actively manage their environmental and social impacts. In turn, companies that fail to align with these expectations may find themselves at a disadvantage, facing reduced access to capital and potential exclusion from investment portfolios.

Moreover, the evolving regulatory landscape within the EU, including the Sustainable Finance Disclosure Regulation (SFDR) and the Corporate Sustainability Reporting Directive (CSRD), places additional pressure on companies to meet stringent ESG criteria. Compliance with these regulations requires companies to implement robust sustainability strategies, conduct thorough due diligence on their supply chains, and provide comprehensive ESG reporting. As a result, investee companies must allocate resources towards improving their ESG metrics, which can lead to enhanced operational efficiencies, better risk management, and long-term value creation. This alignment with investor expectations and regulatory requirements not only enhances the company's reputation and stakeholder trust but also positions them favorably in a market increasingly driven by sustainability considerations.

## Conclusions

The research developed so far underscores the evolution of ESG investing from a niche practice to a mainstream strategy, driven by both ethical considerations and its potential to enhance long-term financial performance. Studies have highlighted a generally positive relationship between ESG integration and portfolio performance, noting improved risk-adjusted returns and lower volatility. However, the literature also acknowledges the complexities involved in measuring ESG performance and its impact, with different rating agencies employing varying criteria and weightings. Particularly in emerging markets, such as those in the CEE region, the body of research is relatively sparse, highlighting the need for more empirical studies to understand the unique challenges and opportunities these markets present.

Our empirical analysis of ESG integration within Romanian pension funds reveals a nuanced picture. The regression analysis indicates that ESG scores have a minimal and statistically insignificant impact on portfolio performance, with an R Square value of 0.0953, explaining only a small portion of the variance. This suggests that while there is some correlation between ESG performance and investment decisions, other factors play a more substantial role in determining portfolio performance. These findings align with the literature that points out the complex relationship between ESG factors and financial returns, influenced by market-specific dynamics, regulatory environments, and the time horizon of investments.

In conclusion, the study highlights the current state of ESG integration in CEE pension funds, emphasizing the need for improved data quality, longer-term analyses, and a comprehensive understanding of regulatory frameworks. The findings indicate that while ESG factors are considered in investment decisions, their direct impact on financial performance is limited in the short term. This underscores the importance of ongoing research and the development of more sophisticated models that incorporate a wider range of variables. Future studies should aim to provide a deeper understanding of how ESG integration can drive sustainable value creation, particularly in emerging markets where regulatory and market conditions are still evolving.

Future research should explore the long-term impact of ESG integration on financial performance across different markets, particularly in emerging economies like the CEE region. Additionally, examining the role of varying ESG rating methodologies and their influence on investment decisions could provide deeper insights. Comparative studies between different

regulatory environments and their effects on ESG adoption and performance would also be valuable, helping to identify best practices and policy implications.

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