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a Magyar Tudomány Ünnepe alkalmából
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Sopron, 2025. november 6.
6 November 2025, Sopron

FEJLŐDÉSI PÁLYÁK ÉS ÚJ TÖRÉSVONALAK A FENNTARTHATÓSÁGI ÁTMENET IDŐSZAKÁBAN

DEVELOPMENT TRAJECTORIES AND NEW DIVIDES IN TIMES OF SUSTAINABILITY TRANSITIONS

Szerkesztők / Editors:
RESPERGER Richárd, SZÉLES Zsuzsanna, TÓTH Balázs István

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How Do ESG Factors Influence Financial Performance in Leading Sustainable Companies?

Dr. László Zoltán KUCSÉBER PhD[1]
Associate Professor
Budapest University of Business and Economics, Faculty of Finance and Accountancy

Abstract:
A key research question concerning the relationship between ESG (Environmental, Social Governance) factors and corporate performance is whether the implementation of environmentally conscious technologies and the transition to cleaner production processes represent merely a corporate response to social pressure, or rather a rational investment that generates measurable and positive effects on firms' financial performance. In this study, I examine the Top 100 companies included in the publicly available sustainability ranking, the Corporate Knights' Global 100, using statistical methods and drawing on approximately 35 financial and non-financial variables across the three ESG dimensions. The sources used in the compilation of the list include annual financial statements as well as sustainability and CSR reports. The purpose of this research is to provide a comprehensive overview of companies that operate at the highest level of sustainability. The empirical analysis of the international sustainability institute's TOP 100 list provides several reasons for optimism: traditionally polluting industries such as chemicals are represented in similar proportions to service sectors, geographical diversity is increasing with the rise of Chinese firms, and the significant number of new entrants reflects a growing corporate commitment to sustainability.

Keywords: ESG, sustainability, Corporate Social Responsibility
JEL Codes: Q010, Q56

1. Introduction

A robust ESG profile (Environment, Social, Governance) encompasses more than merely the utilisation of renewable resources by a company (Szeberényi et al., 2024). Furthermore, it has been demonstrated that this can enhance the company's resilience and its capacity to adapt to the contemporary business environment, which is frequently characterised by abrupt and substantial economic fluctuations (Töre, 2022). Research by Baranyi et al. (2023) also supports the growing recognition among companies of the benefits of sustainable operations, as 60% of surveyed firms consider environmental issues a top priority—not solely because of legal obligations. As demonstrated in the research by Kazak et al. (2024), sustainable companies have been shown to exhibit superior operational efficiency and reduced risk exposure, which can result in enhanced long-term profitability. If a favourable ESG rating is attractive enough to investors and financial markets, it could open doors to more capital for socially responsible companies, while banks might offer them better loan terms. Research on corporate behaviour in the context of sustainability is typically concerned with two overarching concepts: CSR (Corporate Social Responsibility) and ESG. While there are clear points of overlap between the two, this brief study does not attempt to fully distinguish between them. It has been suggested by certain research that the E, S, and G components can be regarded as the three "legs" of CSR.
The present study focuses on corporate objectives that extend beyond conventional business goals, examining their significance. The present study specifically explores the impact of these non-traditional objectives on companies' financial performance.

[1] kucseber.laszlo@uni-bge.hu

2. Literature Review

In this section of the article, I reference studies that examine the relationship between companies' ESG performance categories and their financial data and metrics. In order to present a more objective picture, research has been gathered from the United States of America, Europe, and Asia. Friede et al. (2015) conducted a comprehensive review of prior studies on the topic,

analysing findings from approximately 2,200 studies. The majority of these studies indicated a positive correlation between pursuing ESG goals and corporate financial performance, with this relationship showing stability over time. As Hamdi et al. (2022) also demonstrated, a positive correlation was identified between Environmental, Social and Governance (ESG) metrics and financial performance. This analysis was conducted using data from 504 US companies over the period from 2000 to 2020. Improved financial performance may encourage shareholders and management to invest more in sustainability efforts, which, in turn, could enhance the company's reputation.

Fain's (2020) findings are consistent with this perspective: a sample of 1,099 companies from the Morgan Stanley Capital International All Country World Index (MSCI ACWI) demonstrated that a higher G-score significantly improved ROS (Return on Sales). Ahmad et al. (2021) explored the impact of ESG on the financial performance of United Kingdom based companies, using a sample of 351 firms from the Financial Times Stock Exchange (FTSE) index between 2002 and 2018. The findings of the study indicated that a superior ESG rating exerted a positive influence on financial performance, although the relationship between ESG performance and financial outcomes was moderated by company size. Nevertheless, an analysis of data from China by Kim and Li (2021) concluded that, while ESG factors have a positive impact on corporate profits, this effect is more pronounced for larger firms. Liu et al. (2022) reported that the E (environmental) factor had a significantly negative effect on the financial performance of 191 companies listed in the Yangtze River Delta between 2015 and 2020. Conversely, the G (governance) factor had a positive effect, whereas the S (social) factor had no significant effect. The researchers also established that ESG performance was associated with financial performance as measured by accounting metrics. However, no correlation was found between ESG performance and market-based financial metrics.

In their 2023 study, Cao and Wirjanto examined a range of methodologies for integrating Environmental, Social and Governance (ESG) factors into the portfolio optimisation process for companies listed on the Dow Jones Index. The authors concluded that thematic investing was the most effective approach, with ESG portfolios performing as well as or better than the overall market. Weston and Nadi (2023) examined the association between CSR and CFP (Corporate Financial Performance) from 2009 to 2019, utilising the iShares MSCI KLD 400 Social Index (developed by KLD Research & Analytics), the iShares Core S&P 500, and the stocks of companies adhering to the Principles for Responsible Investment (PRI). In their regression analysis, the dependent variable defined as returns, with the independent variables comprising the Price-Earnings (P/E) ratio, Return on Equity (ROE), market value and the Beta coefficient. The study's findings indicated that companies adhering to the PRI guidelines exhibited superior performance in comparison to those that did not adhere to these guidelines. Tóth et al. (2021) utilised panel regression methodologies to investigate the correlation between financial stability and ESG performance. Their analysis of 243 stock-listed credit institutions in the EU (European Union) and EFTA (European Free Trade Association) countries found that ESG performance significantly reduced the proportion of non-performing loans, and their model also confirmed the positive effect of regulatory capital.

In the following section, an analysis will be conducted on the role of sustainability lists, with a particular focus on the Corporate Knights list in the context of sustainability research. The Corporate Knights Global 100 is a sustainability ranking that has become a key reference point for evaluating corporate performance. Among neighbouring non-EU countries, it is

noteworthy that, since 2021, the Republic of Serbia has required large companies to produce sustainability reports (Šmitran et al., 2025). It is evident that even within individual economies, there is a discrepancy in the quality of these reports. This assertion is corroborated by Kulcsár (2023), whose research on the ESG reports of 20 companies listed on the Bucharest Stock Exchange lends further support to this hypothesis. The author identified a lack of consistency in ESG metrics and noted the absence of a comparable ESG reporting system, which makes evaluation and comparison difficult.

3. The Database

The database employed in the present research is Corporate Knights TOP 100 Sustainable Companies, a publication issued on an annual basis by the Toronto-based Corporate Knights. It is evident that Corporate Knights also publishes a magazine, entitled Corporate Knights, which is read by hundreds of thousands of business leaders and policymakers. The list has been published for almost twenty years. In the course of the investigation, the following indicators from the database were utilised:

Sustainable revenue derived from products and services that are categorized as "sustainable" according to the Corporate Knights open-source Sustainable Economy Taxonomy, which is informed by a synthesis of, among others, the following sources and best practices:

- Climate Bonds Taxonomy (Climate Bonds Initiative)
- EU Taxonomy for Sustainable Activities
- Sustainability Accounting Standards Board (SASB) reporting standards
- Environmental Goods and Services Sector (Eurostat)
- China Green Bond Endorsed Project Catalogue
- Green Bond Principles
- TCFD recommended climate opportunity metrics
- Other private sector rating agencies with green or sustainability taxonomy
- Industry expert consultation covering all relevant CKPG subsectors with solicited feedback on industry definition of sustainable from leading industry experts and government agencies

Sustainable investment: Percentage of a company's total investment (Research and Development, Capital expenditures, Acquisitions & Other) directed towards projects/research/companies categorized as "sustainable" according to the Corporate Knights open-source Sustainable Economy Taxonomy.

It can be demonstrated that there is a positive correlation between the value of the next indicators and the environmental friendliness and sustainability of the company's operations. That is to say, the higher the value of the indicator, the more environmentally friendly and sustainable the company's operations are:

Water Productivity: Revenue (converted to USD using purchasing power parity exchange rate) / Water withdrawn.

Waste Productivity: Revenue (converted to USD using purchasing power parity exchange rate) / Total non-recycled waste generated

Energy Productivity: Revenue (converted to USD using purchasing power parity exchange rate) / (Energy use – renewable energy generated by the company)

For the financial analysis the balance sheet and income statement data were collected from the ORBIS Europe website.

4. Results

In the course of my research, I conducted a comprehensive analysis of the companies that were included in the 2023 TOP 100 list. This analysis encompassed both financial and non-financial data. The objective of this study is to provide a comprehensive overview of the most sustainable

companies. With regard to geographical distribution, European companies dominated the list, with Western European and Scandinavian firms leading the way. As shown in *Figure 1*, the second-largest group was North America, comprising the United States of America and Canada. The third-largest group was China. The list was predominantly comprised of financial, services, and trading companies, as these sectors are generally more conducive to sustainability.

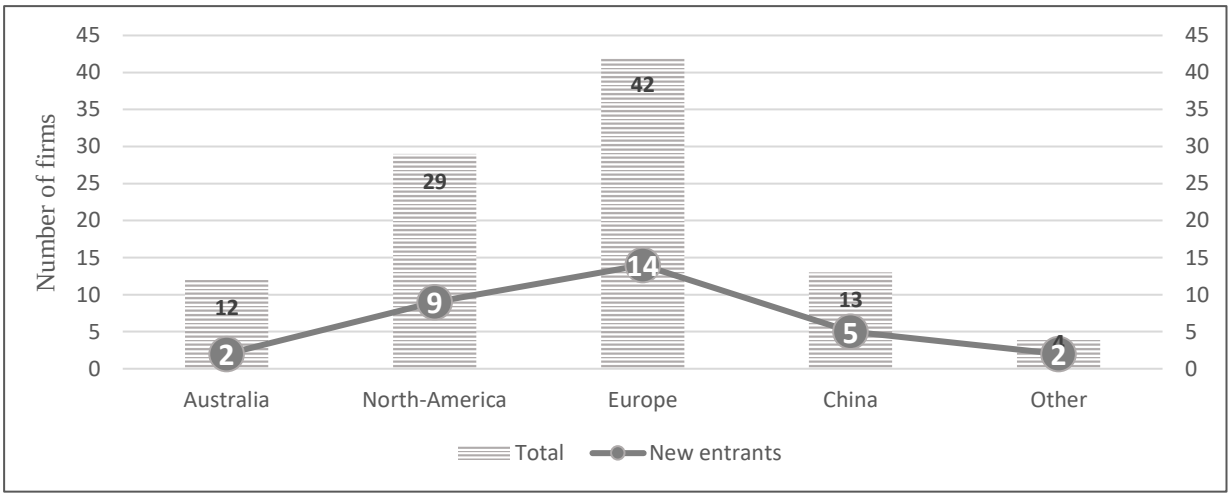

Figure 1: Regional distribution of companies
Source: Own edited based on Corporate Knights

However, it is encouraging to note that industry and chemicals accounted for almost 20% of the total. The overall picture is marred by the absence of any companies engaged in agricultural activities. The methodology employed in compiling the list is complex, with nearly 90 parameters considered. Due to limitations in scope, the focus was directed towards the two indicators with the highest weights (25% each). The former was termed "sustainable turnover," while the latter was referred to as "sustainable investment". *Table 1* shows the companies with a Sustainable Investment Ratio of 100%. The next part of the analysis focuses on these companies with outstanding values.

Table 1: Sustainable Investment ratio in the TOP 100

2024 Rank	2023 Rank	Company	Sector	Region	Sustainable Revenue Ratio (%)	Sustainable Investment Ratio (%)	CEO to average worker pay ratio	Employee Turnover Ratio	Overall Score
43	-	Li Auto Inc	Consumer Discretionary	China	100.0	100.0	95:1	32.0%	B-
5	-	Nordex SE	Manufacturing	Europe	100.0	100.0	82:1	30.0%	A
24	-	United Utilities Group PLC	Public service	Europe	41.6	100.0	71:1	6.0%	B+
3	2	Vestas Wind Systems A/S	Manufacturing	Europe	100.0	100.0	70:1	15.2%	A
39	-	EDP Renováveis SA	Public service	Europe	100.0	100.0	7:1	13.0%	B
42	64	Yadea Group Holdings Ltd	Consumer Discretionary	China	100.0	100.0	7:1	6.1%	B
2	3	Brambles Ltd	Manufacturing	Australia and North-Asia	100.0	100.0	61:1	30.0%	A
56	-	Rivian Automotive, Inc	Consumer Discretionary	North-America	100.0	100.0	55:1		B-
1	14	Sims Ltd	Chemical industry	Australia and North-Asia	100.0	100.0	36:1	19.0%	A+

2024 Rank	2023 Rank	Company	Sector	Region	Sustainable Revenue Ratio (%)	Sustainable Investment Ratio (%)	CEO to average worker pay ratio	Employee Turnover Ratio	Overall Score
21	51	Giant Manufacturing Co Ltd	Consumer Discretionary	China	100.0	100.0	227:1		B+
28	54	ERG SpA	Public service	Europe	52.2	100.0	22:1	9.0%	B
63	12	Xinyi Solar Holdings Ltd	Information Technology	China	100.0	100.0	213:1	30.0%	C+
30	-	Risen Energy Co Ltd	Information Technology	China	100.0	100.0	21:1		B
10	-	SMA Solar Technology AG	Information Technology	Europe	100.0	100.0	15:1		A-
4	9	Taiwan High Speed Rail Corp	Manufacturing	Asia	100.0	100.0	11:1	4.0%	A
36	1	Radius Recycling	Chemical industry	North-America	95.0	100.0	103:1		B
13	-	Clean Harbors Inc	Manufacturing	North-America	100.0	100.0		32.0%	B+
14	-	Enphase Energy Inc	Information Technology	North-America	100.0	100.0			B+
16	35	SunPower Corp	Manufacturing	North-America	100.0	100.0			B+
25	-	XPeng Inc	Consumer Discretionary	China	100.0	100.0		28.0%	B
33	-	Zhuzhou CRRC Times Electric Co Ltd	Manufacturing	China	100.0	100.0		4.2%	B
40	32	Beijing Enterprises Water Group Ltd	Public service	China	93.8	100.0		13.1%	B
44	69	Maxeon Solar Technologies Ltd	Information Technology	Australia and North-Asia	100.0	100.0			B-
46	86	Tesla Inc	Consumer Discretionary	North-America	100.0	100.0			B-
50	79	NIO Inc	Consumer Discretionary	China	100.0	100.0			B-
34	46	First Solar Inc	Information Technology	North-America	100.0	100.0			B

Source: Own edited based on Corporate Knights

The majority of companies with a turnover deemed to be 90% sustainable were not based in Europe, but in North America and China. This suggests that high sustainable turnover is not a prerequisite for inclusion on the list, given that approximately 40% of the companies on the list had a sustainable turnover of less than 30%. However, it is important to note that the remaining 80 indicators also had to demonstrate satisfactory performance.

From a sectoral perspective, the industry sector demonstrated positive indications, given that attaining sustainability in this domain necessitates considerably greater investments in comparison to, for instance, a communications company. The positive trends observed in the European heavy industry, paper, and chemicals (i.e., energy-intensive) sectors have been corroborated by the research undertaken by Horváth et al. (2023). In addition, an examination was conducted into the proportion of sustainable investments. A total of 26 companies were identified as being in the top 100 for sustainable investment. A more detailed analysis of these companies revealed similar geographic and sectoral distributions to those with sustainable turnover ratios above 90%, as previously discussed.

It is noteworthy that all but four firms with 100% sustainable investment also had 100% sustainable revenue, and all but one were ranked in the top half of the list. Furthermore, the present study concentrated on new entrants to the list. With regard to the sectoral distribution of new entrants, it was noted that there was a high representation of industrial, real estate, and utilities sectors. These sectors are considered to be "inherently disadvantaged" with respect to

sustainability. However, their significant presence is a positive indication, demonstrating that even traditionally challenging sectors can successfully transition to "green" operations. Whilst the number of new companies is indeed impressive, with 11 companies in the top 30 in 2024, it is important to consider the quality criteria that these companies met.

In the final part of my study, I focused on 38 European companies, because this was the largest group on the list. Firstly, I summarized the non-financial characteristics of these companiesbased on the published data of Corporate Knight's in *Table 2*.

Table 2: Non-financial characteristics of EU companies

Group	Energy Productivity, $	Water Productivity, $	Waste Productivity, $	Sustainable Revenue Ratio, %	Sustainable Investment Ratio, %	CEO to average worker pay ratio, 1:1	Employee Turnover Ratio, %
Listed both year - Average	45 102	28 881	9 892 661	32.31	39.85	62	14
Listed both year - Median	23 469	11 827	2 656 907	26.82	10.04	55	14
New EU - Average	45 295	35 356	10 600 204	47.55	60.74	49	16
New EU - Median	15 043	7 601	1 312 103	39.78	77.53	31	13

Source: Own edited based on Corporate Knights

Based on the average and median values of the Listed both years and new EU company groups, the following key differences can be observed:

- Energy Productivity:The two groups have nearly identical average energy productivity (around 45 000 USD), but the median is significantly lower for the New EU group (15 043 USD). This indicates greater variability and the presence of several high outliers.
- Water Productivity: The New EU companies show a higher average water productivity (35 356 USD vs. 28 881 USD). However, their median is much lower (7 601 USD), suggesting that a few exceptionally high values drive the average upward.
- Waste Productivity:Both average and median waste productivity are higher in the Listed both year group, although both groups show very high average values (9.9M vs. 10.6M USD), again indicating strong outliers.
- Sustainable Revenue Ratio:The New EU companies perform clearly better: an average of 47.55% and a median of 39.78%, compared to 32.31% (average) and 26.82% (median) for the Listed both year groups. This suggests that New EU companies generate a larger share of revenue from sustainable sources.
- Sustainable Investment Ratio: The difference is even more pronounced here: the New EU companies invest far more heavily in sustainability, with an average of 60.74% and a remarkably high median of 77.53%. In contrast, the Listed both year group reaches only 39.85% on average and a 10.04% median.
- Chief Executive Officer to Average Worker Pay Ratio:The New EU companies exhibit a more favorable pay structure: lower CEO-to-worker pay ratios both in average (49 vs. 62) and median terms (31 vs. 55).
- Employee Turnover Ratio: Based on averages, turnover is slightly higher in the New EU group (16% vs. 14%), while the median suggests a slightly lower rate (13% vs. 14%).

My second aim was to analyse the financial performance from 2020 to 2023 and compare the results. For ease of analysis, the European companies were divided into two subgroups: those ranked in both 2023 and 2024, and those appearing for the first time in 2024. The results demonstrate that, in addition to favourable sustainability outcomes, traditional financial indicators also reflect the economic health of these companies. To assess profitability, I used ratios

such as ROE (Return on Equity), ROA (Return on Assets), EBIT (Earnings before Interest and Taxes) margin, and profit margin, while other ratios measured indebtedness and liquidity. In terms of sales, both groups showed potential for growth, but the average and median relative changes in the 2023-2024 group were more pronounced, with the exception of 2023. The average and median EBIT margins grew consistently between 2020 and 2022, but companies that were re-ranked experienced a slight 2-3 percentage point decline in EBIT margin, resulting in smaller values compared to the new entrants. This indicates that newly ranked firms showed superior operational efficiency.

Profit margins for both groups improved annually, with the gap between them narrowing relative to EBIT. Enhanced profitability in the "re-ranked" category is due to high debt levels in 2022 and 2023, caused by the pandemic. Liquidity levels stayed the same over the period, with no significant differences between the two groups. The ROE and ROA provide a comprehensive overview of the performance of these companies. The results can be viewed graphically in *Figure 2*, which shows the findings in a visual format. Recent studies show that the Return on Equity (ROE) and the Return on Assets (ROA) have increased for newly ranked firms recently. However, their average and median values are still much lower than those in the re-ranked group are. The findings show that re-ranked companies are financially viable and able to expand in the post-pandemic era. Nevertheless, these companies have a higher reliance on financial instruments like loans and debt, which may limit their growth in the future.

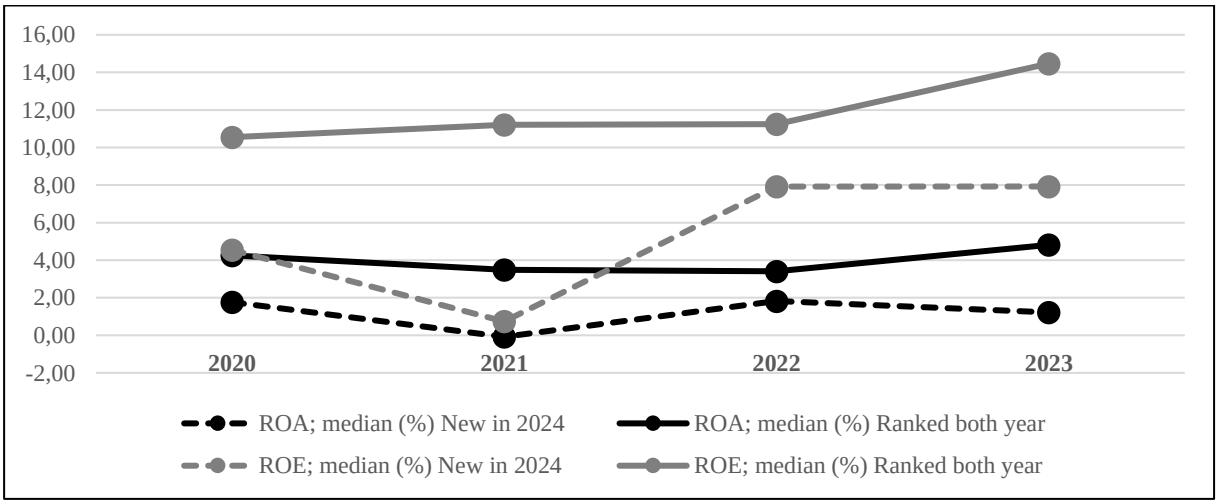

Figure 2: Financial results of investigated European companies
Source: Own edited based on own calculation

5. Conclusions

The majority of empirical studies demonstrate a direct correlation between Environmental, Social and Governance (ESG) factors and accounting-based corporate financial performance indicators. Nevertheless, the relationship between ESG and market price-based indicators, as well as investor decisions, remains ambiguous in several studies. Whilst the present study is unable to refer to additional research, the findings previously cited are consistent with those of Whelan et al. (2021), who analysed over 1,000 studies conducted since 2015. There is a consensus among researchers that strong corporate ESG management generally improves financial performance. This is encouraging, as it suggests that a transition to clean technologies does not result in poorer financial outcomes.

Nevertheless, the sluggish rate of transition to green technologies remains a matter of concern, as results to date have been inadequate in halting environmental degradation. In the empirical part of my work, I examined the TOP 100 list from an international sustainability research institute. The results of the study offer several reasons for optimism. Firstly, the list includes traditionally polluting industries, such as chemicals in proportions comparable to those of the service sectors. Secondly, there is growing geographical diversity with the rise of Chinese firms. The substantial presence of new entrants also signifies a growing commitment to sustainability among companies, thereby expanding the pool of key players in the sustainable economy.

While financial indicators suggest that sustainability is not incompatible with profitability and efficiency, it may negatively affect indebtedness, an area that requires further research.

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