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The Impact of ESG performance on the Financial Performance of European Area Companies: An empirical examination†

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Abstract: Achieving climate neutrality dictated by international agreements such as the Paris Agreement, the United Nations Agenda 2030 and the European Green Deal, requires the conscription of all parts of society. The business world and especially large enterprises have a leading role in this effort. One way for businesses to contribute to this effort is by implementing ESG for their operations. The interest of companies in the ESG framework has become more and more intense in recent years, as they recognize that in addition to improving their reputation, ESG criteria add value and make them more effective. Especially for large European companies, there is a legal obligation, by the Non-Financial Reporting Directive (NFRD - Directive 2014/95/EU), to disclose non-financial information on how they deal with social and environmental issues. There is a lot of discussion in the literature about how and to what extent good performance on ESGs affects their profitability, valuation, capital efficiency and risk. The purpose of this paper is to examine empirically whether a relationship between good ESG performance and the good financial condition of companies can be documented. Assuming that the tone is given from the top, we select as a sample the top-50 European companies in terms of ESG performance (STOXX Europe ESG Leaders 50 Index), covering a wide range of sectors, namely Automobile, Consumer Products, Energy, Financial Services, Manufacturing etc. For this sample, first we review their reporting to see which ESG framework they use to monitor their performance. Next, we examine whether there is a pattern of their better financial performance compared to other large European corporations. Our results, show that such a connection seem to exist at least for some specific parameters, while for others such a claim cannot be supported.

Keywords: ESG, STOXX Europe; Financial Performance; Capital Structure; Profitability; Valuation.

1. Introduction

It is becoming increasingly accepted by leading companies worldwide that in addition to the effective management of their financial capital, it is necessary to adopt measures that will make them more transparent in terms of their internal organization (governance) and more responsible and accountable to society. Moreover, the Non-Financial Reporting Directive (Directive 2014/95/EU)[1], modified by the Corporate Sustainability Reporting Directive (CSRD)[2], puts extra pressure on financial data disclosure according to ESG criteria.

[1] Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups Text with EEA relevance, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0095

[2] European Commission, Corporate sustainability reporting, https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en

ESG refers to a broad range of **Environmental**, **Social**, and corporate **Governance** factors that might influence a company's ability to generate value. It refers to the incorporation of non-financial elements into business strategy and decision-making in a corporate context. While environmental, social, and governance (ESG) factors are frequently referred to as non-financial, they are linked to corporate competitiveness, and how a company manages them has financial implications[3]. According to Bloomberg Intelligence, it is estimated that global ESG assets are expected to reach $53 trillion by 2025, accounting for more than 30% of the $140.5 trillion total assets under management. Given the pandemic and the green recovery across the world, ESG criteria may help in analyzing a new set of financial risks and harnessing capital markets[4].

In this paper, the focus will be on the relation between ESG performance and Business Valuation, Business Risk and Capital Structure efficiency. Using financial data of the companies of the STOXX Europe ESG Leaders 50 index we will examine empirically whether companies' adoption of ESG criteria strengthens their valuation, reduces the risk for shareholders and makes them more efficient in the way they manage their funds and we will compare our results to what the literature suggests.

2. Background

A large number of studies has found a correlation between ESG metric performance and financial performance of organizations, meaning that ESG data is financially material and thus valuable to investors (Amel-Zadeh & Serafeim, 2018; Wong et. al. 2021).

(Verheyden et al. 2016) created two different investment universes, one ("Global All") consisting of large and mid-cap stocks in 23 developed and 23 emerging countries and one ("Global Developed Markets (DM)") consisting of large and mid-cap stocks in 23 developed countries, then they defined six portfolios by using the different ESG criteria for each universe and they found that ESG improves risk-adjusted returns.

(Giese et al. 2019) have shown that the risk profile of a company, as a result of lower costs of capital and higher valuations is affected by ESG performance. ESG information affects Business valuation and performance, both through their systematic risk profile (lower costs of capital and higher valuations) and their idiosyncratic risk profile (higher profitability and lower exposures to tail risk). The research suggests that changes in a company's ESG characteristics may be a useful financial indicator. ESG ratings may also be suitable for integration into policy benchmarks and financial analyses.

(Khan, Serafeim, and Yoon 2016) using the Standards of the Sustainability Accounting Standards Board (SASB) classified sustainability topics to material or immaterial for a sample of firm-specific performance data on a variety of sustainability investments found that firms with superior performance on material sustainability issues outperform firms with inferior performance on material sustainability issues in the future. Also, conclude that ESG information is value relevant and predictive of companies' future financial performance.

(De Lucia et al. 2020) employed Machine Learning techniques to explore whether ESG company's practices can lead to better financial performances of public enterprises. One of their key findings suggests the existence of a positive relationship between ESG practices and financial indicators. This relationship appears more clearly when companies invest in environmental innovation, employee productivity and diversity and equal opportunity policies.

3. Methodology

For our analysis, we worked with the Companies of the STOXX Europe ESG Leaders 50 index[5]. The STOXX Europe ESG Leaders 50 index provides access to companies that are global leaders in terms of environmental, social and governance criteria, based on ESG indicators pro-

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[3] Athens Stock Exchange, 2019, ESG Reporting Guide 2019, https://www.athexgroup.gr/documents/10180/5665122/ENG-ESG+REPORTING+GUIDE/28a9a0e5-f72c-4084-9047-503717f2f3ff

[4] Bloomberg Intelligence February 23, 2021, ESG assets may hit $53 trillion by 2025, a third of global AUM, https://www.bloomberg.com/professional/blog/esg-assets-may-hit-53-trillion-by-2025-a-third-of-global-aum/

[5] https://www.boerse-frankfurt.de/sustainabilities/indices

vided by Sustainalytics[6]. The STOXX Europe ESG Leader 50 index covers the 50 largest stocks from 17 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The EURO STOXX 50 Index, is Europe's leading blue-chip index for the Eurozone and provides a blue-chip representation of supersector leaders in the region. The index contains 50 stocks from 8 Eurozone countries: Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands and Spain. Most of the companies of the EURO STOXX 50 Index happens also to be components of the STOXX Europe ESG Leaders 50 as well. So, to avoid double counting we exclude them and we kept only the 19 that are solely included in the EURO STOXX 50 Index.

So, the list of Companies in our sample is as follows (**Table 1**):

Table 1 List of Companies in our sample

#	Name	Supersector2	Country	INDEX
1	ABB	Industrial Goods and Services	CH	STOXX Europe ESG Leaders 50
2	ADIDAS	Consumer Products and Services	DE	STOXX Europe ESG Leaders 50
3	ADYEN	Industrial Goods and Services	NL	EURO STOXX 50
4	AHOLD DELHAIZE	Personal Care, Drug and Grocery Stores	NL	STOXX Europe ESG Leaders 50
5	AIR LIQUIDE	Chemicals	FR	STOXX Europe ESG Leaders 50
6	AIRBUS	Industrial Goods and Services	FR	EURO STOXX 50
7	ALLIANZ	Financial Services	DE	STOXX Europe ESG Leaders 50
8	AMADEUS IT GROUP	Technology	ES	EURO STOXX 50
9	ANHEUSER-BUSCH INBEV	Food, Beverage and Tobacco	BE	EURO STOXX 50
10	ASML HLDG	Technology	NL	STOXX Europe ESG Leaders 50
11	AXA	Financial Services	FR	STOXX Europe ESG Leaders 50
12	BASF	Chemicals	DE	STOXX Europe ESG Leaders 50
13	BAYER	Health Care	DE	EURO STOXX 50
14	BCO SANTANDER	Financial Services	ES	EURO STOXX 50
15	BMW	Automobiles and Parts	DE	EURO STOXX 50
16	BNP PARIBAS	Financial Services	FR	STOXX Europe ESG Leaders 50
17	BP	Energy	GB	STOXX Europe ESG Leaders 50
18	CIE FINANCIERE RICHEMONT	Consumer Products and Services	CH	STOXX Europe ESG Leaders 50
19	CRH	Construction and Materials	IE	EURO STOXX 50
20	DAIMLER	Automobiles and Parts	DE	STOXX Europe ESG Leaders 50
21	DANONE	Food, Beverage and Tobacco	FR	STOXX Europe ESG Leaders 50
22	DEUTSCHE BOERSE	Financial Services	DE	STOXX Europe ESG Leaders 50
23	DEUTSCHE POST	Industrial Goods and Services	DE	STOXX Europe ESG Leaders 50
24	DEUTSCHE TELEKOM	Telecommunications	DE	STOXX Europe ESG Leaders 50
25	DIAGEO	Food, Beverage and Tobacco	GB	STOXX Europe ESG Leaders 50
26	ENEL	Utilities	IT	STOXX Europe ESG Leaders 50
27	ENGIE	Utilities	FR	EURO STOXX 50
28	ENI	Energy	IT	EURO STOXX 50

6 Sustainalytics is a company that provides high-quality, analytical environmental, social and governance (ESG) research, ratings and data to institutional investors and companies.

29	ERICSSON LM B	Telecommunications	SE	STOXX Europe ESG Leaders 50
30	ESSILORLUXOTTICA	Health Care	FR	EURO STOXX 50
31	FLUTTER ENTERTAINMENT	Travel and Leisure	IE	EURO STOXX 50
32	GIVAUDAN	Chemicals	CH	STOXX Europe ESG Leaders 50
33	GLAXOSMITHKLINE	Health Care	GB	STOXX Europe ESG Leaders 50
34	HSBC	Financial Services	GB	STOXX Europe ESG Leaders 50
35	IBERDROLA	Utilities	ES	STOXX Europe ESG Leaders 50
36	Industria de Diseno Textil SA	Retail	ES	STOXX Europe ESG Leaders 50
37	INFINEON TECHNOLOGIES	Technology	DE	STOXX Europe ESG Leaders 50
38	ING GRP	Financial Services	NL	STOXX Europe ESG Leaders 50
39	INTESA SANPAOLO	Financial Services	IT	STOXX Europe ESG Leaders 50
40	Kering	Retail	FR	STOXX Europe ESG Leaders 50
41	KONE B	Industrial Goods and Services	FI	STOXX Europe ESG Leaders 50
42	LINDE	Chemicals	DE	EURO STOXX 50
43	L'OREAL	Consumer Products and Services	FR	STOXX Europe ESG Leaders 50
44	LVMH MOET HENNESSY	Consumer Products and Services	FR	EURO STOXX 50
45	MUENCHENER RUECK	Financial Services	DE	STOXX Europe ESG Leaders 50
46	NESTLE	Food, Beverage and Tobacco	CH	STOXX Europe ESG Leaders 50
47	NOVARTIS	Health Care	CH	STOXX Europe ESG Leaders 50
48	NOVO NORDISK B	Health Care	DK	STOXX Europe ESG Leaders 50
49	PERNOD RICARD	Food, Beverage and Tobacco	FR	STOXX Europe ESG Leaders 50
50	PHILIPS	Health Care	NL	STOXX Europe ESG Leaders 50
51	Prosus	Technology	NL	EURO STOXX 50
52	RECKITT BENCKISER GRP	Personal Care, Drug and Grocery Stores	GB	STOXX Europe ESG Leaders 50
53	RELX PLC	Media	GB	STOXX Europe ESG Leaders 50
54	ROCHE HLDG P	Health Care	CH	STOXX Europe ESG Leaders 50
55	SAFRAN	Industrial Goods and Services	FR	EURO STOXX 50
56	SANOFI	Health Care	FR	STOXX Europe ESG Leaders 50
57	SAP	Technology	DE	STOXX Europe ESG Leaders 50
58	SCHNEIDER ELECTRIC	Industrial Goods and Services	FR	STOXX Europe ESG Leaders 50
59	SIEMENS	Industrial Goods and Services	DE	STOXX Europe ESG Leaders 50
60	SIKA	Construction and Materials	CH	STOXX Europe ESG Leaders 50
61	TOTALENERGIES	Energy	FR	STOXX Europe ESG Leaders 50
62	UBS GROUP	Financial Services	CH	STOXX Europe ESG Leaders 50
63	UNILEVER PLC	Personal Care, Drug and Grocery Stores	GB	STOXX Europe ESG Leaders 50
64	VINCI	Construction and Materials	FR	EURO STOXX 50
65	VIVENDI	Media	FR	EURO STOXX 50
66	VODAFONE GRP	Telecommunications	GB	STOXX Europe ESG Leaders 50
67	VOLKSWAGEN PREF	Automobiles and Parts	DE	EURO STOXX 50
68	Vonovia SE	Real Estate	DE	STOXX Europe ESG Leaders 50
69	ZURICH INSURANCE GROUP	Financial Services	CH	STOXX Europe ESG Leaders 50

First of all, if we look at the behaviour of the STOXX Europe ESG Leaders 50 during the last three years, we notice that COVID-19 brought a big blow to this index, as expected. Its price fell by almost 42% in just one month (from + 20.67% on 18/2/2020 to -21.89% on 16/3/2020). However, the fall of the EURO STOXX 50 Index was slightly sharper, recording a fall of almost 45% (from + 16.08% to -29.09% in the same period). This, considering the course of the index as a whole, which seems to be recovering faster (**Figure 1**), may indicate a greater resilience of the companies of STOXX Europe ESG Leaders 50 in crises compared to EURO STOXX 50 companies.

Figure 1 STOXX Europe ESG Leaders 50 (Blue) and EURO STOXX 50 (Orange) development the last 3 years. Source: Boerse Frankfurt.

Next, using the latest available financial data from Yahoo Finance[7] for each company in our sample, we calculate five indicators, namely the **Beta**, **Total Debt/Equity**, **Profit Margin**, **Return on Assets** and **Return on Equity** on average per sector.

We selected those indicators to assess the shareholder's **risk**, the **capital structure efficiency**, the **profitability** and the **efficiency** of the **Assets** and the **Equity** for each company. We consider that this set of indicators provide us with a good overview of their performance profile.

Four sectors, namely **Personal Care, Drug and Grocery Stores**, **Real Estate**, **Retail** and **Telecommunications**, have no representatives in the EURO STOXX 50 Index, whereas the **Travel andLeisure** sector has no representative in the STOXX Europe ESG Leaders 50 index. So, we exclude them for our results to be comparable. We consider that this intervention does not harm our conclusion, given that those firms are only 10 in total out of a sample of 69.

Also, for simplification purposes, we grouped Banking, Insurance and Financial Services organizations under the title "**Financial Services**".

[7] https://finance.yahoo.com/

4. Results-Discussion

Certain major firms are required by EU legislation to publish information about how they deal with social, environmental, anti-corruption and bribery and human rights matters[8]. This assists investors, civil society organizations, customers, policymakers, and other stakeholders in evaluating major firms' non-financial performance and encourages these companies to establish a responsible business approach. Non-financial reporting regulations in the EU presently apply to big public-interest firms with more than 500 workers. This applies to about 11 700 major firms and organisations across the EU, including listed companies, banks, insurance companies, and other companies recognized as public-interest institutions by national authorities.

The European Commission accepted a proposal for a Corporate Sustainability Reporting Directive (CSRD) in April 2021, which would alter the NFRD's existing reporting obligations. The plan broadens the scope to include all major corporations and corporations listed on regulated exchanges. It imposes more extensive reporting requirements, as well as an obligation to report audited information under EU sustainability reporting standards.

In this sense, we considered it appropriate as a first step to review the ESG reporting frameworks used by the ESG Leaders to see if they are SDG compatible.

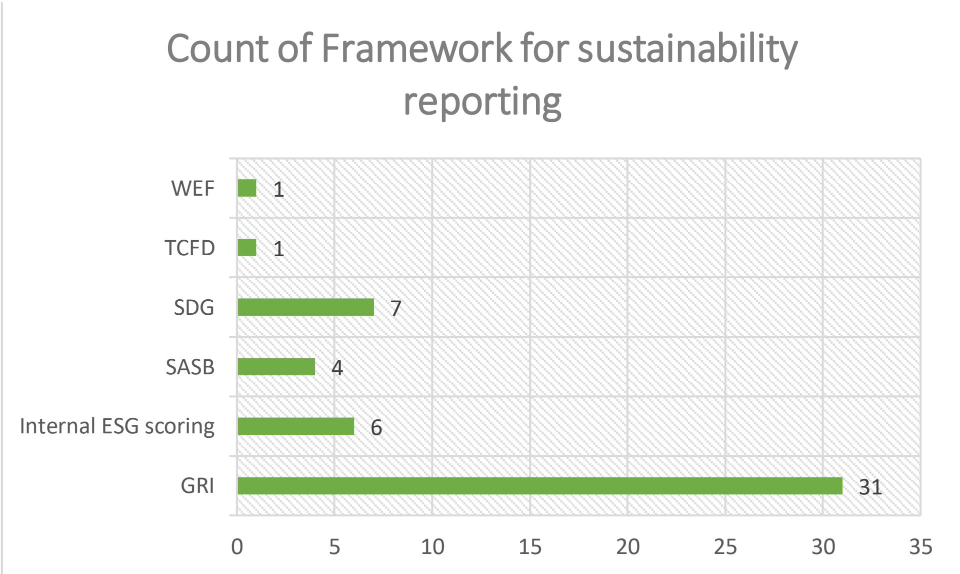

Figure 2ESG framework used by the ESG Leaders. Source: Corporate websites

As shown in **Figure 2** most corporations use well established and known ESG monitoring and reporting frameworks, such as the Global Reporting Initiative (GRI)[9], the Sustainability Accounting Standards Board (SASB)[10], the Task Force on Climate-related Financial Disclosures

[8] Directive 2014/95/EU, commonly known as the Non-Financial Reporting Directive (NFRD), establishes the standards for certain big corporations to disclose non-financial and diversity information.

[9] The Global Reporting Initiative (GRI) is a non-profit worldwide standards group that assists corporations, governments, and other organizations in understanding and communicating their impacts on topics such as climate change, human rights, and corruption. (website: https://www.globalreporting.org/)

[10] The SASB is a non-profit organization dedicated to the creation of sustainable accounting standards. Investors, lenders, insurers, and other financial capital providers are becoming more aware of the influence of environmental, social, and governance (ESG) issues on company financial performance, prompting the demand for standardized reporting of ESG data. (website: https://www.sasb.org/)

(TCFD)[11] and the World Economic Forum's (WEF) indicators[12]. All these frameworks are consistent with the 17 Sustainable Development Goals (SDG). Six out of the 50 organizations under consideration use internal resources to develop a customized framework for ESG reporting, whereas seven of them monitor their non-financial performance using the SDGs as a benchmark.

We proceed with the calculation of the five performance indicators mentioned in the previous section (**Table 2**):

Table 2 Calculation of performance indicators

	Average of Beta (5Y Monthly)	Average of Total Debt/Equity (mrq)	Average of Profit Margin	Average of Return on Assets (ttm)	Average of Return on Equity (ttm)
Automobiles and Parts					
EURO STOXX 50	1,37	158,74	5%	2%	9%
STOXX Europe ESG Leaders 50	1,64	216,08	5%	2%	13%
Chemicals					
EURO STOXX 50	0,79	33,06	10%	3%	6%
STOXX Europe ESG Leaders 50	0,77	83,50	8%	5%	11%
Construction and Materials					
EURO STOXX 50	0,99	106,28	3%	3%	5%
STOXX Europe ESG Leaders 50	0,64	127,05	10%	7%	26%
Consumer Products and Services					
EURO STOXX 50	0,96	96,71	11%	5%	13%
STOXX Europe ESG Leaders 50	0,89	54,01	9%	5%	11%
Energy					
EURO STOXX 50	1,26	80,82	-11%	0%	-11%
STOXX Europe ESG Leaders 50	1,00	74,29	-5%	-1%	-8%
Financial Services					
EURO STOXX 50	1,75	2,63	-23%	0%	-6%
STOXX Europe ESG Leaders 50	1,28	26,59	14%	1%	8%
Food, Beverage and Tobacco					
EURO STOXX 50	1,40	125,80	9%	1%	4%
STOXX Europe ESG Leaders 50	0,48	110,70	9%	6%	13%
Health Care					
EURO STOXX 50	1,12	79,77	-12%	2%	-18%
STOXX Europe ESG Leaders 50	0,42	58,43	21%	11%	32%
Industrial Goods and Services					

[11] The Task Force on Climate-related Financial Disclosures (TCFD) was established by the Financial Stability Board to enhance and expand reporting of climate-related financial information. (website: https://www.fsb-tcfd.org/)

[12] 'Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation.' (Available at: http://www3.weforum.org/docs/WEF_IBC_ESG_Metrics_Discussion_Paper.pdf)

EURO STOXX 50	1,44	102,09	3%	3%	7%
STOXX Europe ESG Leaders 50	0,91	70,89	11%	5%	18%
Media					
EURO STOXX 50	0,68	46,81	9%	3%	10%
STOXX Europe ESG Leaders 50	0,51	339,17	17%	8%	56%
Technology					
EURO STOXX 50	1,52	90,12	47%	-3%	-1%
STOXX Europe ESG Leaders 50	1,14	50,30	17%	7%	19%
Utilities					
EURO STOXX 50	1,25	113,10	-3%	2%	-2%
STOXX Europe ESG Leaders 50	0,64	104,44	7%	3%	8%

The volatility of a stock concerning the entire market is measured by a **beta** indicator. A stock with a beta greater than 1.0 fluctuates more than the market over time. The beta of a stock is less than 1.0 if it moves less than the market. High-beta stocks are thought to be riskier but have a larger potential return; low-beta stocks are less risky but have lower returns. In our analysis, we see that, except for automotive companies, companies with good ESG performance tend to have lower beta and therefore lower risk (**Figure 2**).

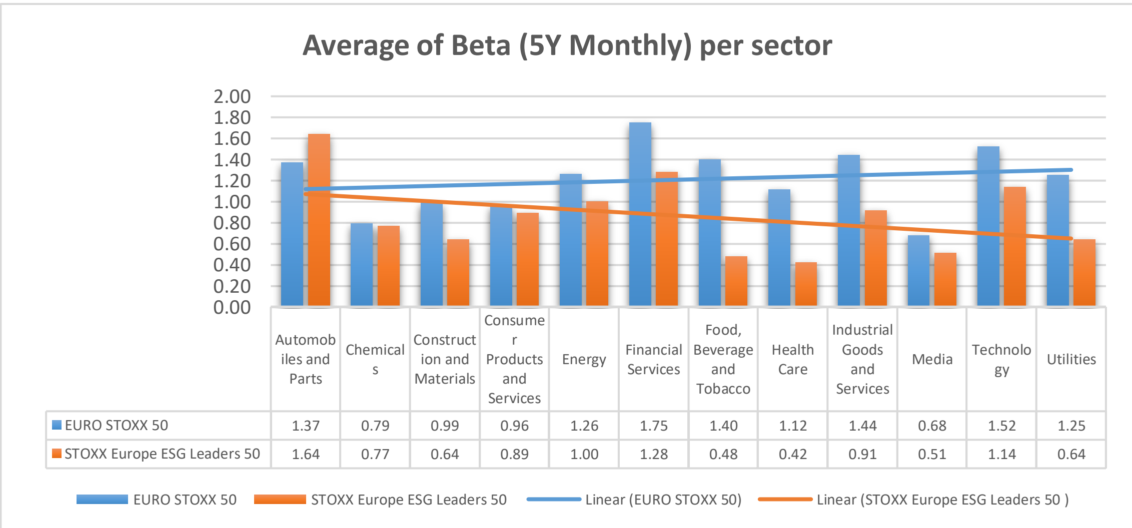

Figure 3 Average of Beta (5Y Monthly) per sector

The **debt-to-equity (D/E)** ratio, which is determined by dividing a company's total liabilities by its shareholder equity, is used to assess financial leverage. The D/E ratio is a critical statistic in corporate finance. It is a measure of how much of a company's activities are funded by debt as opposed to entirely owned money. It expresses the ability of shareholder equity to satisfy all existing obligations in the case of a business downturn. A debt-to-equity ratio is one form of gearing ratio. Comparing the D/E ratio across industrial groupings is problematic since optimal levels of debt differ, but in general, higher leverage ratios often imply a firm or stock that poses a greater risk to shareholders.

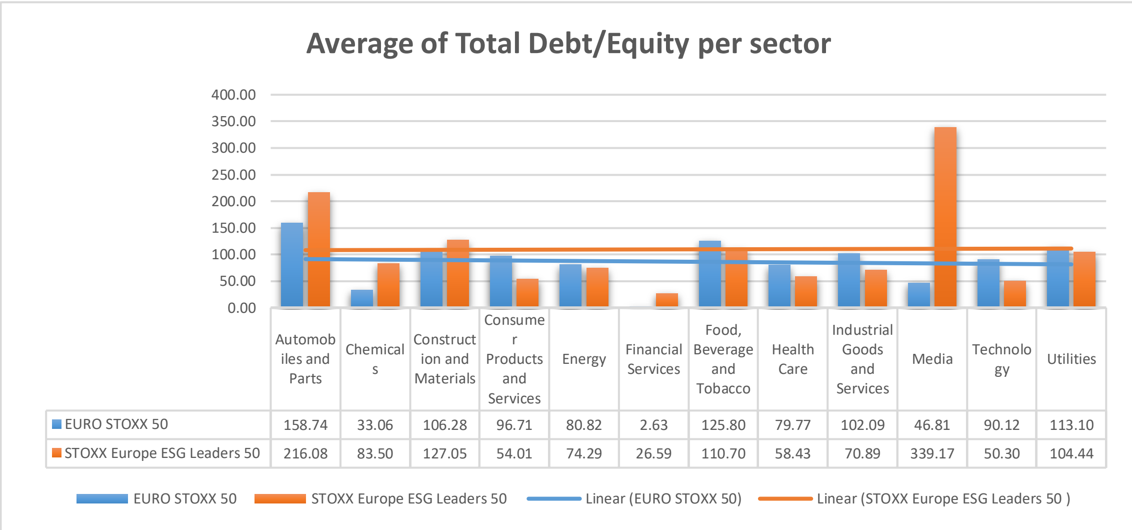

Figure 4 Average of Total Debt/Equity per sector

Our analysis shows that, except for media companies where ESG leaders have more leverage than the rest, otherwise the D / E ratio is at similar levels, in all sectors of the companies we examined, regardless of if companies have good ESG performance (**Figure 3**). This result agrees with (Lindkvist, L., &Saric, O., 2020) who suggest that when it comes to a company's ability to raise cash or its capital structure, ESG performance is not critical. According to them, there is still a long way before sustainability is regarded as an important and well-integrated component in investment decisions. At least, they do not see an obvious association between the ESG performance and fund-raising ability, leading to the conclusion that sustainability measures have no impact on the optimal capital structure. However, they found that sustainability ratings can be used by a corporation to change its optimal debt levels, run more efficiently with cheaper capital, and assist the manager in maximizing firm value. Having a better knowledge of how the ESG rating influences the capital structure could aid a business in its decision-making processes as regards the funding of its organization. This knowledge would enable management to better understand how the investments required to obtain the ESG grade affect the firm's value as well as the financing dynamics (Lindkvist, L., &Saric, O., 2020).

Return on assets (ROA) measures a company's profitability to its total assets. ROA provides information about how effective a company's management is in generating earnings from its assets. It is expressed as a percentage and the greater the ROA, the better.From our analysis, there is a clear superiority in the profitability of companies that have good ESG performance compared to the rest, in all sectors (**Figure 4**). This result agrees with the finding of (Velte, 2017) who suggest that ESG performance has a positive impact on ROA.

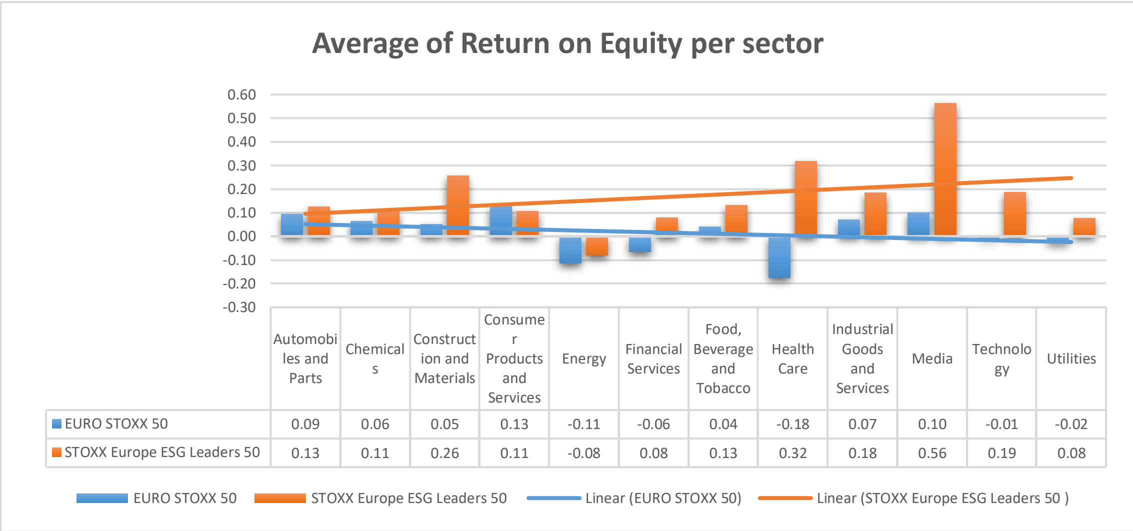

Figure 5 Average of Return on Assets per sector

Return on equity (ROE), likewise ROA, is a financial performance metric that is derived by dividing net income by shareholders' equity. ROE is defined as the return on net assets since shareholders' equity equals a company's assets less its debt. ROE is a measure of a company's profitability to its stockholders' equity.

Our analysis shows, as with ROA, that companies with good ESG performance have a better return on equity than the rest (**Figure 5**). Even in cases of negative returns such as in the energy sector, the return on equity of the former companies is less negative than that of the latter. Our findings on

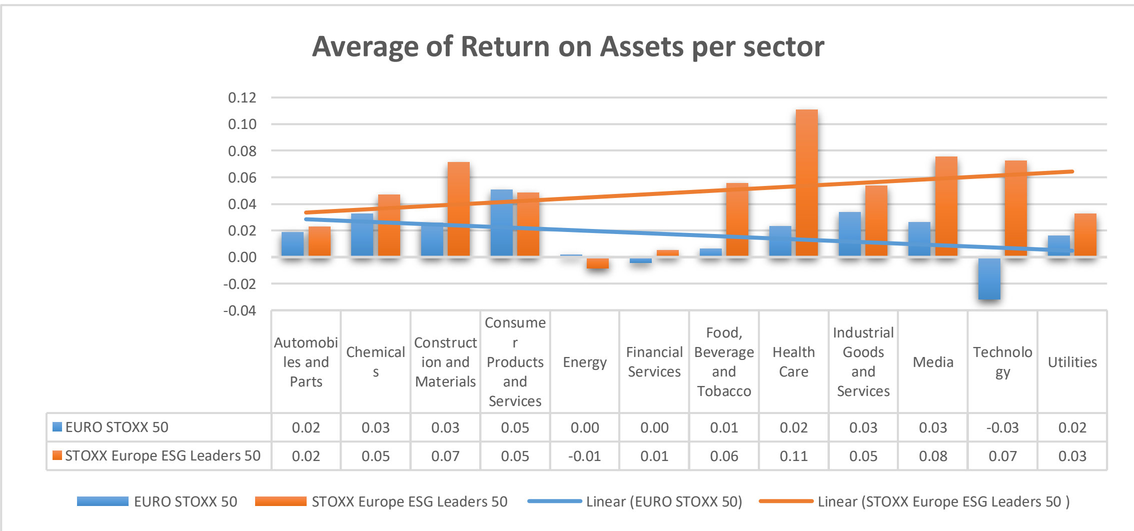

Figure 6 Average of Return on Equity per sector

the relationship between both ROA and ROE are in line with (De Lucia 2020) work, which concludes using machine learning techniques that Firms' financial performance improves as a result of good ESG.

Profit margins are one of the most basic and commonly utilized financial measurements in business. On an income statement, a company's profit is measured at three levels, beginning with the most basic—gross profit—and progressing to the most thorough, net profit. Operating profit is the difference between these two. The simplest profitability indicator is gross profit, which defines profit as all money remaining after deducting the cost of items sold. The cost of items sold covers expenditures directly related to the manufacturing or manufacture of things for sale, such as raw materials and labour pay necessary to create or assemble goods.

Regarding the relationship between profit margin and ESG performance, we cannot claim based on our examination that there is a clear picture. We observe from **Figure 6** that in other sectors the companies that are ESG leaders have a higher profit margin while in others the companies of the other category have. This may be due to the specifics of the industry or business and the way it makes a profit. Both a company's turnover and sales costs are determined by a variety of factors, such as area of activity, competition, international financial conditions and other parameters that are not affected either positively or negatively by its ESG performance.

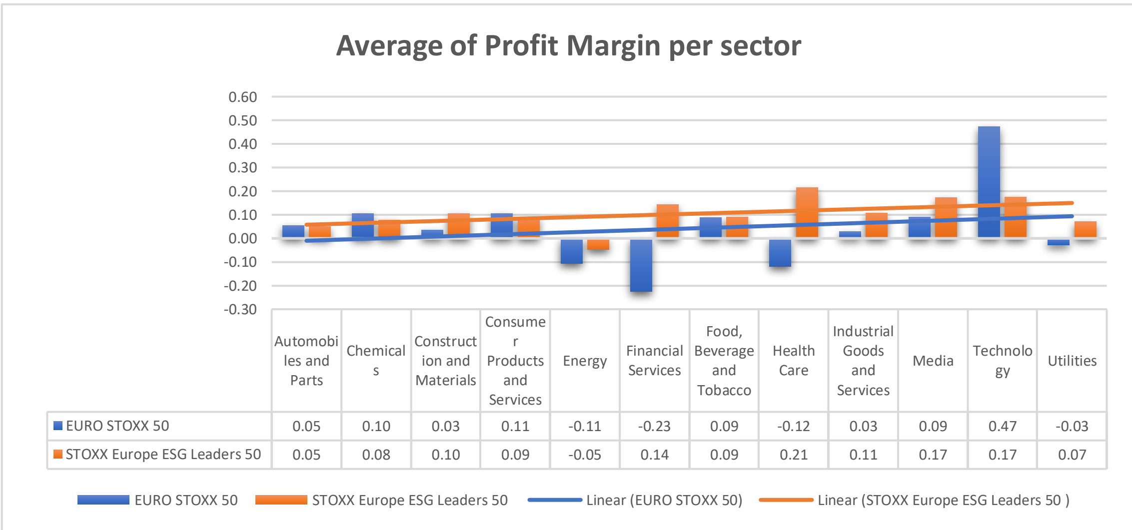

Figure 7 Average of Profit Margin per sector

Conclusions

In this work, we examined whether there is an indication of differentiation in the performance of leading European companies depending on whether they perform well in the implementation of ESG or not. The companies in our sample cover a wide range of sectors of the economy and assuming that the tone is given from the top, we believe that our conclusions are representative of the whole sector.

Certainly, running a business, and especially a listed one, according to the ESG principles benefits not only society and the environment but also the business itself in a variety of ways. Our review showed that 44 out of the total number of corporations in the STOXX Europe ESG Leaders 50 index use well-known ESG reporting frameworks that are compliant with the 17 UN SDGs. The remaining 6 devote resources for developing internal systems to monitor their performance according to ESG criteria.

As far as the results on the correlation between ESG performance and financial results, our study showed that the beta coefficient, namely the measure commonly used for shareholders' risk, tends to be lower beta, hence implying reduced risk, for companies with strong ESG performance. At least this seems to happen except for firms in the automotive sector.

With regards to the D / E ratio, our study revealed that, except for media firms whose ESG leaders have better D/E than the rest, it is equal in all sectors of the companies we investigated, regardless of whether companies have strong ESG performance. This result is in line with other studies suggesting that ESG performance is not critical when it comes to a company's capacity to raise funds or its capital structure.

For the relationship between profit margin and ESG performance, we could not have a clue either. Our study showed that firms who are ESG leaders have a greater profit margin in some sectors, but this is not the case for all sectors.

Last, our analysis disclosed, clear dominance in the profitability of companies that have good ESG performance compared to the rest, in all sectors. This is the case for both the ROA and the ROE and agrees also with results from other studies in the literature.

References

1. Amel-Zadeh, Amir, and George Serafeim. 2018. "Why and How Investors Use ESG Information: Evidence from a Global Survey." Financial Analysts Journal 74 (3): 87–103. https://doi.org/10.2469/faj.v74.n3.2.
2. Giese, Guido, Linda-Eling Lee, Dimitris Melas, Zoltán Nagy, and Laura Nishikawa. 2019. "Foundations of ESG Investing: How ESG Affects Equity Valuation, Risk, and Performance." The Journal of Portfolio Management 45 (5): 69–83. https://doi.org/10.3905/jpm.2019.45.5.069.
3. Khan, Mozaffar, George Serafeim, and Aaron Yoon. 2016. "Corporate Sustainability: First Evidence on Materiality." The Accounting Review 91 (6): 1697–1724. https://doi.org/10.2308/accr-51383.
4. Lindkvist, Lovisa, and OlleSaric. 2020. "Sustainability Performance and Capital Structure An Analysis of the Relationship."
5. Lucia, Caterina De, Pasquale Pazienza, and Mark Bartlett. 2020. "Does Good ESG Lead to Better Financial Performances by Firms? Machine Learning and Logistic Regression Models of Public Enterprises in Europe." Sustainability 12 (13): 5317. https://doi.org/10.3390/su12135317.
6. Velte, Patrick. 2017. "Does ESG Performance Have an Impact on Financial Performance? Evidence from Germany." Journal of Global Responsibility 8 (2): 169–78. https://doi.org/10.1108/jgr-11-2016-0029.
7. Verheyden, Tim, Robert G. Eccles, and Andreas Feiner. 2016. "ESG for All? The Impact of ESG Screening on Return, Risk, and Diversification." Journal of Applied Corporate Finance 28 (2): 29. https://doi.org/doi.org/10.1111/jacf.12174.
8. Wong, WoeiChyuan, Jonathan A. Batten, Abd Halim Ahmad, Shamsul Bahrain Mohamed-Arshad, SabariahNordin, and Azira Abdul Adzis. 2021. "Does ESG Certification Add Firm Value?" Finance Research Letters 39: 101593. https://doi.org/10.1016/j.frl.2020.101593.