Deloitte.

Quantifying ESG
How ESG implementation impacts
key valuation metrics

January 2023

MAKING AN
IMPACT THAT
MATTERS
since 1845

Table of contents

"Data shows how ESG
is not just a buzzword.
There is a real financial
benefit to having a
good ESG rating."

Quantifying ESG

Whether or not ESG is something stakeholders care about is no longer debated. Yet is there a way that the benefits of ESG can be quantified? This paper aims to quantify how an improved ESG rating does not just benefit the company's reputation, but can also translate into a significant positive impact on value.

Introduction

Over the last decade, environmental, social and governance (ESG) has evolved considerably. Originally used by a small number of investors, it has become a hot topic in boardrooms, among top management and investors, and with the wider stakeholder community as well.

A range of research has been conducted regarding its benefits. For instance, it is known that shareholders are becoming increasingly wary of companies that do not act ethically or show a commitment to increasing environmental and social value (Bell, 2021). Firms dedicated to ESG tend to use resources more efficiently, which in turn results in higher revenues, higher dividends and lower reputational risks (Pedersen, et al., 2019). McKinsey & Company (2019) also showed the essential ways a strong ESG proposition creates value through:

1. top-line growth
2. cost reductions
3. productivity increases
4. investment and asset optimisation

However, although many surveys have examined stakeholder opinion, research into quantifying the impact of ESG on value creation is recent.

Past research done by Deloitte Switzerland found a positive relationship between ESG rating and the EV/EBITDA multiple. Building on this, the following study focuses on cost of equity and cost of debt and applies its findings to a hypothetical DCF scenario.

Our key hypothesis is that high ESG performance reduces risk (especially but not limited to reputational risk), and that this is reflected in the cost of financing of a company.

There are two main aims of the study:

1. Posit and test a mechanism through which ESG can impact value.
2. Assess this value impact.

To verify this, a regression analysis was run, checking whether a firm's ESG rating exhibits a negative relationship with the cost of debt or 5-year raw beta. Along with the more general ESG rating, the individual E, S & G pillars have also been analysed. This was done to see which aspect of ESG is most influential on financial metrics, and hence in which area should investments be focused.

After this, we practicalise the statistical output by applying it to a hypothetical valuation scenario.

Methodology

A large sample of companies was used across several sectors. Hypotheses were tested using a multifactor regression analysis.

Data clarification

The dataset used was based on the previous research by Deloitte Switzerland and consisted of the same 306 firms. It was designed to represent a random sample of the global market, including various industries in key sectors:

- Services
- Consumer goods
- Basic material & energy
- Industrials

The subcategories of these sectors are shown in the table below. Once the sample was selected, it was corrected for 'NULL' values and outliers to ensure that extreme values would not affect results. The regression puts equal weight on all observations and does not control for firm-specific characteristics.

All data used in this paper, including both ESG ratings and financial metrics, are based on the Refinitiv database, one of the seven major providers of ESG ratings.

Hypotheses

Risk plays an important role in business and business valuation. With the vast information available on the internet, scandals and controversies can detrimentally affect a brand's image, making strategic risk increasingly important. A global survey of over 300 executives at major companies conducted by Deloitte and Forbes (2013) found that 81% of the firms were increasing their focus on managing strategic risk. Reputational risk, a subcategory of strategic risk, was their biggest concern.

Current examples of reputational risk include scandals regarding data security, misuse of managerial power, and environmentally damaging behaviour. For instance, the discovery that a company caused environmental damage through incorrect waste management could have disastrous effects on its business operations. Such incidents often lead to lawsuits and demands for compensation, which can quickly drain resources (Ternent, 2021). This can irreparably

damage brand reputation, resulting in a further decrease of revenues.

Therefore, we wanted to validate whether actual financial metrics, such as the beta (a key measure of the riskiness of a financial investment), would be reflected in decreased risk caused by ESG implementation. This resulted in the following hypothesis:

H1: There is a negative relationship between the ESG rating of a firm and the five-year raw beta.

This risk reduction due to ESG implementation has implications for various other financial metrics, too. Borrowers, for example, tend to ask for a premium if there is a chance the repayment may not be made in full or on time (Magnelli & Izzo, 2017). Therefore, riskier investments for a borrower result in higher cost of debt. In line with our previous hypothesis, this leads to the following relationship to be examined:

H2: There is a negative relationship between the ESG rating of a firm and the cost of debt.

Sub-hypotheses

Based on evidence gathered in previous research, this study was conducted with the expectation that both hypotheses would hold and that a statistically significant, negative relationship between variables would be observed.

To provide more granularity in our research, more specific hypotheses were created, based on the individual E, S and G pillar scores available on Refinitiv Eikon. This was aimed at assessing whether a specific pillar is more influential than others. The hypotheses that follow are:

H1$_{A,B \text{ or } C}$: There is a negative relationship between the individual E, S or G pillar score, and the five-year raw beta.

H2$_{A, B \text{ or } C}$: There is a negative relationship between the individual E, S or G pillar score, and the cost of debt.

Regression model

We ran a regression model on H1, H2 and their sub-hypotheses. The regression was corrected for heteroskedasticity to account for the variance of the residuals.[1]

Variables selected

The regression model of both hypotheses followed a similar formula, with the same independent variables. Formulas consisting of different variables would not allow correct comparisons to be made.

As can be seen from the formulas, besides the obvious ESG score and ESG score change, other financial metrics were included as well. These were profitability (net margin), growth (revenue growth), leverage (net debt to total capital), size (revenue) and investment (capital expenditure change). The dependent variable differed for both hypotheses with the five-year raw beta for H1 and the cost of debt for H2.

For the sub-hypotheses, H1$_{A, B \& C}$ and H2$_{A, B \& C}$, the independent ESG score was substituted by the three individual pillar scores. All other variables remained.

These were also derived from the Refinitiv database.

Formulas

Hypothesis 1
Beta$=\propto+\beta 1*$ESG score$+\beta 2*$ESG score change$+\beta 3*$Net margin$+$ $+\beta 4*($Net Debt$)/$TC$+\beta 5*$Revenue$+\beta 6*$Revenue growth$+\beta 7*$CAPEX change$+\varepsilon$

Hypothesis 2
Cost of debt$=\propto+\beta 1*$ESG score$+\beta 2*$ESG score change$+\beta 3*$Net margin $+\beta 4*($Net Debt$)/$TC$+\beta 5*$Revenue$+\beta 6*$Revenue growth$+\beta 7*$CAPEX change$+\varepsilon$

Hypothesis 1A, B & C
Beta$=\propto+\beta 1*$Net margin$+\beta 2*($Net Debt$)/$TC$+\beta 3*$Revenue$+\beta 4*$Revenue growth$+\beta 5*$CAPEX change$+\beta 6$Environement pillar score$+\beta 6$Social pillar score$+\beta 7$Governance pillar score$+\varepsilon$

Hypothesis 2A, B & C
Cost of debt$=\propto+\beta 1*$Net margin$+\beta 2*($Net Debt$)/$TC$+\beta 3*$Revenue$+\beta 4*$Revenue growth$+\beta 5*$CAPEX change$+\beta 6$Environement pillar score$+\beta 6$Social pillar score$+\beta 7$Governance pillar score$+\varepsilon$

Services	consumer goods	Basic Materials & Energy	industrials
Pharmaceuticals	Apparel & Accessories	Electric utilities	Aerospace & Defense
Medical Equipment, Supplies & Distribution	Footwear	Specialty Chemicals	Electrical Components & Equipment
Semiconductors	Personal Products	Renewable Energy Equipment & Services	Industrial Machinery & Equipment
Multiline Insurance & Brokers	Non-Alcoholic Beverages	Commodity Chemicals	Heavy Machinery & Vehicles
Investment Management & Fund Operators	Food Processing	Non-Paper Containers & Packaging	Heavy Electrical Equipment
Property & Casualty Insurance	Distillers & wineries	Independent Power Producers	Highways & Rail tracks
IT Services & Consulting	Consumer Publishing	Natural Gas Utilities	Ground Freight & Logistics
Investment Holding Companies	Brewers	Paper Products	Business Support Services
Software	Construction Supplies & Fixtures	Gold	Courier, Postal, Air Freight & Land-Based logistics
Computer Hardware	Miscelaneous Speciality Retailes	Diversified Chemicals	Construction & Engineering
Wireless Telecommunications Services	Casinos & Gaming	Paper Packaging	Marine Port Services
Diversified Investment Services	Auto, Truck & Motorcycle Parts	Iron & Steel	Marine Freight & Logistics
Office Equipment	Apparel & Accesories Retailers	Oil Related Services and Equipment	Environmental Services & Equipment
Integrated Telecommunications Services	Consumer Goods Conglomerates	Construction Materials	Business Support Supplies
Consumer Lending	Food Retail & Distribution	Multiline Utilities	Employment Services
Banks	Fishing & Faming	Oil & Gas Transportation Services	
	Tires & Rubber Products	Coal	
	Recreational Products		
	Drug Retailers		
	Broadcasting		
	Advertising & Marketing		
	Home Furnishings		

---

1 Heteroskedasticity is a situation where the variance of the residuals fluctuates over a range of measured values. This is important to account for in regression, as linear regression analyses assume that these variances are constant. If this had not been corrected, the regression would not have been reliable. The reason heteroskedasticity occurred was most likely due to the wide range of values from which we drew the data (CFI, 2022).

Variables explained

Five-year raw beta

The most common financial metric that looks at investment risk is the beta. The beta of a stock shows how volatile it is in comparison to the market. A beta of 1 suggests alignment (on average) between the investment and the market, while a beta of 2 means that it is twice as volatile. If the markets were to increase by 5%, a stock with a beta of 2 would on average be expected to see an increase of 10%. Because the beta is the key component of the capital asset pricing model (CAPM), it is used for the calculation of a firm's cost of equity. It is similarly used in other valuation models and thus presented as the best metric to analyse fluctuations in value (Finbox, 2022).

The term "five-year raw beta" refers to the way in which data is collected. It means that the fluctuations of a company in comparison to the market have been observed over five years (in this case on a monthly basis).

Cost of debt

Because H1 focuses on cost of equity, it was important to include H2, which refers to cost of debt, to ensure the research was more comprehensive. Cost of debt is effectively the interest rate paid on debt. This is also affected by risk and was therefore assumed to be affected by ESG ratings.

ESG rating

The ESG score from Refinitiv Eikon is a number between 0 and 100 that indicates the implementation of ESG-related matters within a company. The score is meant to objectively portray ESG implementation based on company-reported data. The ESG score accounts for most material industry metrics and minimises company size and transparency biases (Refinitiv, 2022).

The overall score is calculated through a five-step process flow, starting with over 630 ESG measures which are processed manually. Based on these, 186 data points, ratios and analytics are used to standardise the information and ensure comparability across companies and industries. Each category also has various subcategories, which are identified in the pie charts below. Depending on the company's industry, a different weight is put on the environment, social and governance pillars. This is mainly due to different ESG factors having a different importance depending on the industry. For instance, oil conglomerates will see more significant changes in rating when environment-related investments increase, in comparison to governance.

Within the score, transparency is also positively rewarded. If a company fails to report 'highly material' information, this will weigh the overall score down

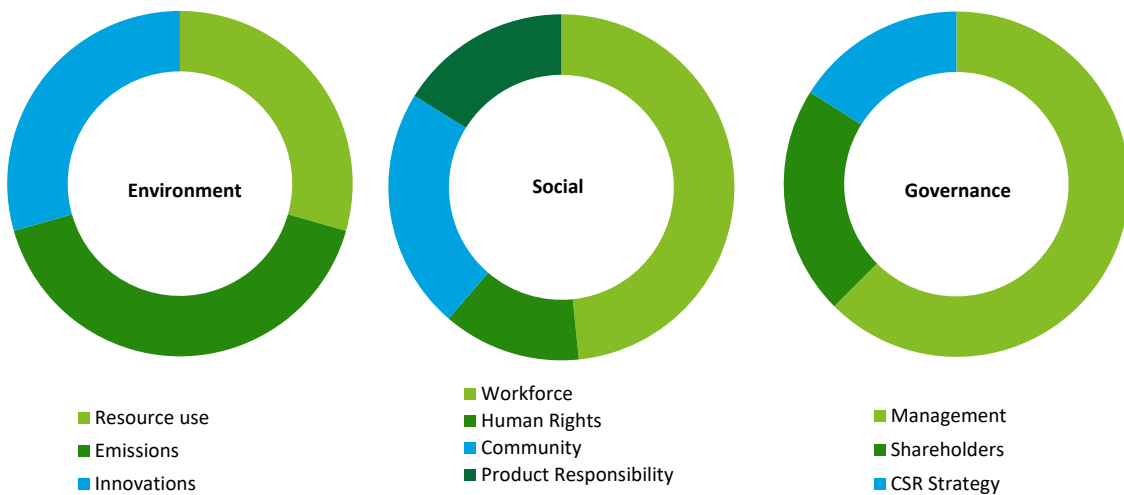(Refinitiv, 2022). Eventually, the final rating is given.

The ESG methodology is sometimes modified, most recently in May 2022. Separately, the inputs used in applying the methodology are updated weekly to ensure that the latest data is reflected in the rating.

E, S & G pillar scores

These are the individual factors that make up the overall ESG rating. Each individual score is the relative sum of the weights of the categories mentioned (Eikon, 2022). There has been criticism in the past regarding the 'vagueness' of ESG ratings, as they broadly comprise three large strategic categories. By analysing each individual score, the intent is to assess whether there is a stronger correlation between one specific pillar and value impact. This would be a starting point for future investment recommendations.

Other variables

These are EV/EBITDA, EBITDA margin, revenue growth, net margin, net debt to total capital, growth of capital expenditures, and revenues. They are key factors often used to look at a firm's performance. We used them to align this research with the previous study conducted by Deloitte Switzerland, which used the same independent variables.[2]

Environment
- Resource use
- Emissions
- Innovations

Social
- Workforce
- Human Rights
- Community
- Product Responsibility

Governance
- Management
- Shareholders
- CSR Strategy

2   In studies such as this, multiple regression is always preferred over single regression. It is a more specific calculation and is required for less straightforward relationships.

Results: How ES(G) matters!

The ESG- core seems to be relevant and is correlated with a decrease in the cost of debt and the beta. However, for the individual pillars, only social and environment seem to affect financial metrics. Governance rules are probably too vague to show relevance.

Hypothesis 1 & 2: significant negative relationship

For the five-year raw beta, the regression run on Gretl statistical software shows that a 10-point increase in ESG rating, would result in a decrease of the firm's beta of 0.05.[3]

For the cost of debt, a 10-point increase in ESG rating results in a decrease of the cost of debt by 0.34.[4]

The E, S & G pillars
Beta
For the sub-hypotheses, the answer is not as evident. For the five-year raw beta, the only significant pillar was environment: an increase in this score results in a 0.034 decrease of the beta. The other two pillars (S & G) are not significant, meaning that no statistically significant relationship can be assumed from our sample.[5]

Cost of debt
The sub-hypotheses also lack evidence for a relationship between the governance pillar and the dependent variable. However, both the environmental and the social pillar scores were found to be statistically significant at the 5% level. H2$_{A \& B}$ thus seem to hold. The regression output showed how a 10-point increase in the E pillar score would result in a 0.1 decrease of cost of debt. A 10-point increase in the S pillar score, would result in a 0.150 decrease of the cost of debt. This shows that although a general focus on ESG is important, making more focused investments on environment or social is most efficient.

So good governance is useless… or is it?
There is not enough evidence to conclude on a relationship between the governance pillar and the beta or cost of debt. This should, however, not been seen as evidence that firms should not focus on bettering their governance policy, but as an incentive for rating agencies to streamline the attributes used in their ratings (Berg, et al., (2020).

Ideas relating to environment are mostly ethically unambiguous and agreed-upon, something which explains the high correlation this pillar has between rating providers. But because the mere concept of 'good' governance is difficult to identify, this scoring heavily diverges between rating agencies. A quote often used seems to apply here: If you can't measure it, you can't manage it. The vague understanding of governance creates difficulties for statistical tests and analyses.

Interpretation
In essence, this study exhibits evidence of a positive impact on key factors driving enterprise value due to ESG implementation. This is a result of the beta heavily influencing the cost of equity in the CAPM and the cost of debt impacting the weighted average cost of capital (WACC). These factors therefore affect enterprise and equity value. This data shows how ESG is not simply a buzzword - there is a real financial benefit to having a good ESG rating.

Cost of ESG
It should, however, be mentioned that these findings are presented without the consideration of the cost of investments required to achieve an improved ESG rating. The reason cost was not included is twofold.

Diverse types of costs
Costs of ESG implementation are extremely diverse and heavily depend on the situation. The Economist found that it would cost a firm 0.4% of total revenues to offset its entire carbon footprint (Zingales, 2021). But this is only a small aspect of a total ESG score and is a drastic action. Measures such as increasing diversity and inclusivity in the workforce on the other hand, are costless and can even bring direct positive benefits separately from the risk/cost of finance reductions measured in this study.

The cost impact diverges from the aim of study
The goal of the study was to see if there is a relationship between key financial metrics and ESG ratings, and to what extent. The actual implementation is not part of this research.

Of course, with any investment (except for those required by law, etc.), the implementation decision relies on the benefits being higher than its costs. This is an invitation for further research to be performed, focusing on the net present value of ESG investments.

---

3 This was found to be significant at the 5% significance level with a p-value of 0.0018. This essentially means that there is less than a 5% probability the observed differences were the result of a sampling error or chance. In statistics, 5% is used as the general threshold for significance.

4 This was found statistically significant at the 0.1% significance level with a p-value smaller than 0.0001. While this is smaller than the 5% of the other formula, it did does not change the interpretation of the data much. It only indicates lower probability that the output was caused by chance.

5 Before making such a final statement, it should first be mentioned that the social pillar just failed to reach the 10% significance threshold. Because this study focused on the 5% threshold, the hypothesis was rejected, but other research could analyse this further.

Translated into real values

A hypothetical scenario is used to show how our findings increase firm value.

Once upon a time, there was a company…
This section uses a hypothetical scenario, using discounted cash flows (DCF) to show how an increase in ESG implementation can directly translate to higher enterprise and equity value.

If a firm were to originally have a beta of 1.38 and cost of debt of 3.82%, a 10-point ESG increase would have changed these inputs to 1.33 and 3.48% respectively. Because of this, the WACC) decreases from 12.6% to 12.3%, driving an increase in enterprise and equity value.

A 10-point ESG rating increase causes equity and enterprise value to increase by 5% and 4% respectively.

Also, because the study shows how the main pillars of interest are social and environment, investments can be done more efficiently. This is beneficial for smaller businesses, which do not necessarily have enough capital to put aside for ESG-related strategies.

Based only on these statistical tests, focusing on governance would not seem to have a large, if any, effect on enterprise value. However, it should not be forgotten that public opinion is still of great importance and scandals related to governance should be avoided. Also, if governance implementation does improve, it will still translate itself through the overall ESG rating and still bring about an increase in valuation.

Implications
Firm value plays a key role at key points in the lifetime of a company, e.g. during mergers and acquisitions or when creating joint ventures with other enterprises. Based on our findings, firms that have achieved a strong ESG implementation may ask for or expect an ESG premium when planning to sell, merge or create a joint venture, as opposed to pre-implementation.

Limitations
As much as this is promising research that can incentivise corporations to increase ESG implementation, the following limitation needs to be taken into account.

Low correlation between ESG rating providers
The main concern is the low correlation between different ESG ratings. The three biggest providers are MSCI, Bloomberg and Refinitiv. Each has its own way of calculating each pillar, with different data sets and different weights for each category. The average correlation between the seven most used ESG rating providers is a meagre 0.55, in comparison to the 0.99 correlation between different credit rating providers (Deloitte Australia, 2022). A solution for this issue would be increased communication between rating providers and a willingness to change current systems. Although there currently is a weak correlation, Berg et al. (2020) found a way to increase correlation between agencies up to 79 to 99%, without changing their original taxonomies. Current structures might be incompatible, but there is opportunity to fit them into a unified framework.
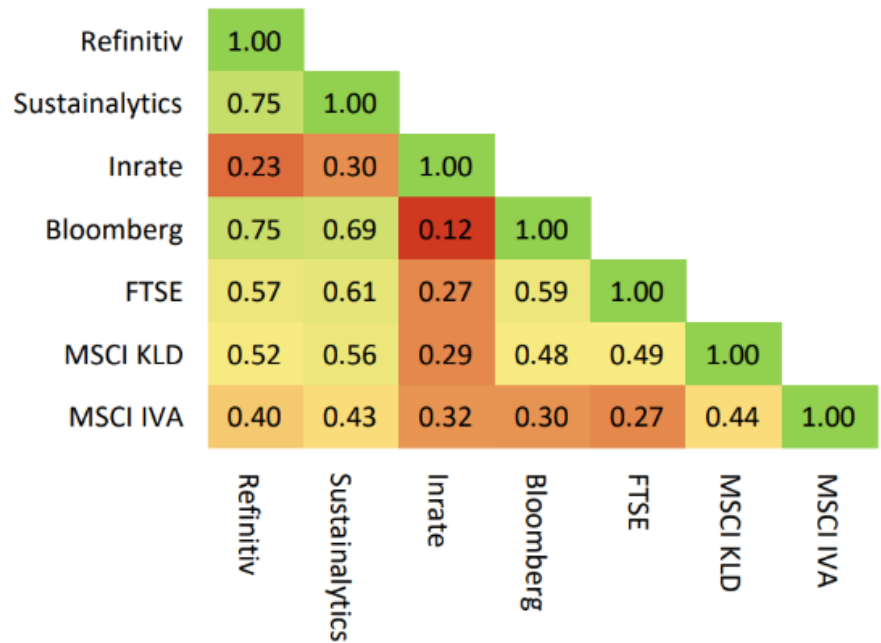

Legend: ■ Before ESG   ■ Increase after ESG
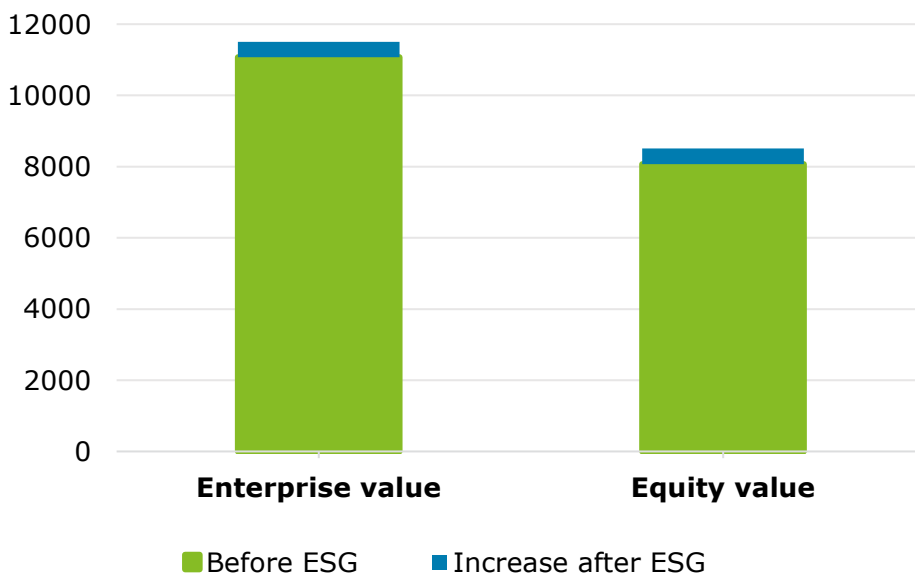
Possible future research

Based on the limitations mentioned, future research should check similar hypotheses via MSCI or Bloomberg's database. Due to the weak correlation between rating providers, our findings are dependent on the specific Refinitiv scores and cannot be extended to the other ESG providers. Further analysis on their main differences could be a useful way to further understand ESG ratings and their implications for firm value. It could also elucidate information: if research shows how exactly the ratings differ, it would be easier to cross check in the future and increase stakeholder's trust.

Secondly, conducting additional research into the costs of ESG implementation would give firms further insight into the potential value increase.

Another interesting possibility for future research would be to analyse the effect ESG has in different economies. For example, whether ESG implementation has the same effect for companies working in emerging markets, versus fully developed economies. Expectations regarding ESG have a lot to do with public opinion and cultural norms, meaning that in some countries companies might be 'punished' less by the public for certain scandals deemed unimportant.

	Refinitiv	Sustainalytics	Inrate	Bloomberg	FTSE	MSCI KLD	MSCI IVA
Refinitiv	1.00						
Sustainalytics	0.75	1.00					
Inrate	0.23	0.30	1.00				
Bloomberg	0.75	0.69	0.12	1.00			
FTSE	0.57	0.61	0.27	0.59	1.00		
MSCI KLD	0.52	0.56	0.29	0.48	0.49	1.00	
MSCI IVA	0.40	0.43	0.32	0.30	0.27	0.44	1.00

Source: Gibson, Krueger, & Schmidt (2021), Deloitte analysis

Final recommendations

The main takeaways of this research, with recommendations for companies and ESG rating providers.

Final recommendations

Based on the findings we recommend the following:

- Invest in increasing ESG implementation that can increase enterprise value.
- While the data collected appears to indicate that investments in the environmental and social pillars have a more direct (or significant) impact on value, maintaining strong governance cannot be ignored in the overall value-based framework as it may have an impact in the longer term and may reduce the likelihood of significant one-off risks.
- Communication between rating agencies should improve in order to align ESG scores.

It is of our opinion that these four suggestions would increase firm value, as well as create a positive environmental and social impact.

Conclusion

Overall, this study sought to quantify the effects ESG can have on valuation. It did so by focusing on the five-year raw beta and the cost of capital. Based on the regression analyses performed in Gretl, a significant negative relationship was observed between a firm's ESG rating and the cost of debt and five-year raw beta. The environment, social and governance scores were then also analysed individually.

References

Ternent, B. (2021). How Does ESF Investing Mitigate Risk? *Bloomsbury Global Markets*. https://bloomsburyglobalmarkets.com/how-does-esg-investing-mitigate-risk/

CFI. (2022). Heteroskedasticity. *Corporate Finance Institute*. Heteroskedasticity - Overview, Causes and Real-World Example (corporatefinanceinstitute.com)

Finbox. (2022). Beta (5) Year for Raiffeisen Bank International AG. Beta (5 Year) For Raiffeisen Bank International AG (RAW) | finbox.com

Berg, F., J.F. Koelbel, and R. Rigobon. (2020). Aggregate confusion: the divergence of ESG ratings. *MIT* Bell, M. (2021). The post-pandemic investment landscape is set to place greater value on environment, social and governance (ESG) disclosures. *EY.* https://www.ey.com/en_us/assurance/why-esg-performance-is-growing-in-importance-for-investors

Pedersen, L., Fitzgibbons, S., & Pomorsku, L. (2019). Responsible Investing: The ESG-Efficient Frontier. *Alpha Architect.* https://alphaarchitect.com/2020/01/how-esg-affects-valuation-risk-and-performance/#:~:text=Firms%20with%20ESG%20scores%20have%20better%20risk%20management,impact%20on%20the%20firm%20value%20or%20tail%20risk.

Deloitte. (2013). Exploring Strategic Risk. *Deloitte Risk.* dttl-grc-exploring-strategic-risk.pdf

Galbreath, J. (2013). ESG in Focus: The Australian Evidence. Journal of Business Ethics, 118(3), 529–541. http://www.jstor.org/stable/42921246

Magnanelli, B.S. and Izzo, M.F. (2017), Corporate social performance and cost of debt: the relationship, Social Responsibility Journal, Vol. 13 No. 2, pp. 250-265. https://doi.org/10.1108/SRJ-06-2016-0103

Refinitiv. (2022). Environment, Social and Governance Scores From Refinitiv. https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/refinitiv-esg-scores-methodology.pdf

Stryjakiewicz, T.; Męczyński, M.; Stachowiak, K. (2014). Role of creative industries in the post-socialist urban transformation. *Quaest. Geogr. 33*, 19–35.

Berg, F., J.F. Koelbel, and R. Rigobon. (2020). Aggregate confusion: the divergence of ESG ratings. *MIT working papers*.

Bell, M. (2021). The post-pandemic investment landscape is set to place greater value on environment, social and governance (ESG) disclosures. *EY.* https://www.ey.com/en_us/assurance/why-esg-performance-is-growing-in-importance-for-investors

Pedersen, L., Fitzgibbons, S., & Pomorsku, L. (2019). Responsible Investing: The ESG-Efficient Frontier. *Alpha Architect.* https://alphaarchitect.com/2020/01/how-esg-affects-valuation-risk-and-performance/#:~:text=Firms%20with%20ESG%20scores%20have%20better%20risk%20management,impact%20on%20the%20firm%20value%20or%20tail%20risk.

Deloitte. (2013). Exploring Strategic Risk. *Deloitte Risk.* file:///C:/Users/adebruycker/Downloads/dttl-grc-exploring-strategic-risk.pdf

Galbreath, J. (2013). ESG in Focus: The Australian Evidence. Journal of Business Ethics, 118(3), 529–541. http://www.jstor.org/stable/42921246

Magnanelli, B.S. and Izzo, M.F. (2017), Corporate social performance and cost of debt: the relationship, Social Responsibility Journal, Vol. 13 No. 2, pp. 250-265. https://doi.org/10.1108/SRJ-06-2016-0103

Refinitiv. (2022). Environment, Social and Governance Scores From Refinitiv. https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/refinitiv-esg-scores-methodology.pdf

Stryjakiewicz, T.; Męczyński, M.; Stachowiak, K. (2014). Role of creative industries in the post-socialist urban transformation. *Quaest. Geogr. 33*, 19–35.

Henisz, W., Koller, T. Nutthall, R. (2019). Five ways that ESG creates value. *McKinsey Quarterly.* https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Strategy%20and%20Corporate%20Finance/Our%20Insights/Five%20ways%20that%20ESG%20creates%20value/Five-ways-that-ESG-creates-value.ashx#:~:text=From%20our%20experience%20and%20research,capital%20expenditures%20(Exhibit%202).

Prall, K. (2022). ESG and Business Valuation. *International Valuation Standards Council.* https://www.ivsc.org/perspectives-paper-esg-and-business-valuation/

Joly, c. & Zeller, V. (2005). A legal framework for the integration of environment, social and governance issues into institutional investment. *UNEP Finance Initiative*. https://www.unepfi.org/fileadmin/documents/freshfields_legal_resp_20051123.pdf

Zingales, L. (2021). How should companies decide on their ESG goals? *Financial Times*. https://www.ft.com/content/2a7c06a9-a5bc-479e-9426-8098a383555a

Contact Details

Peter Van Assche
Director Valuations and Business Modelling
+32 488 471 690
pvanassche@deloitte.com

With thanks to An-Sofie De Bruycker
for the collaboration on this report.

Deloitte.