Title of Dissertation:

ESG (Environmental, Social, Governance) performance and its impact – which role will financial institutions play in order to build a more sustainable access to financial loans and other forms of credit in the future?

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Abstract

In the context of a more responsible, sustainable economy, the concept of Sustainable Finance is gaining more and more of attention. Despite the increasing research, the concept lacks clarity regarding its implementation. The present research aims to analyse the implications of ESG metrics and its performance on the refinancing situation of companies additionally to questions on which role financial institutions will play hereby. Data has been collected through a comprehensive review of the literature, complemented by interviews with senior experts of more sustainable-driven financial institutions (Banks, the largest stock exchange, ESG data consultancy). The analysis reveals the necessity of clear, practical guidelines for a transformation of impact measurements into a combination of revenue, value, and impact metrics. Additionally, refinancing requires a long-term focus, customer centricity and a high degree of transparency.

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Keywords: ESG Metrics & performance, Responsible Business, Sustainable Finance, Purpose, Financial Access, credit, refinancing

Resumo

No contexto de uma economia mais responsável e sustentável, o conceito de Finanças Sustentáveis está a ganhar cada vez mais atenção. Apesar da crescente investigação, o conceito carece de clareza no que diz respeito à sua implementação. A presente investigação visa analisar as implicações das métricas do ESG e o seu desempenho na situação de refinanciamento das empresas, para além das questões que as Instituições Financeiras desempenharão neste sentido. Os dados foram recolhidos através de uma análise exaustiva da literatura, complementada por entrevistas com peritos seniores de instituições financeiras cada vez mais sustentáveis (Bancos e CR). A análise revela a necessidade de orientações claras e práticas para uma transformação das medições de impacto que combine receitas, valor e métricas. Além disso, o refinanciamento requer um enfoque a longo prazo, centralidade do cliente e um elevado grau de transparência.

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Título: Desempenho dos ESG (Environmental, Social, Governance) e seu impacto - que papel irão as instituições financeiras desempenhar para alcançar um acesso mais sustentável a empréstimos financeiros e outras formas de crédito no futuro?

Palavras-chave: ESG Metrics & performance, Negócios Responsáveis, Finanças Sustentáveis, Finalidade, Acesso Financeiro, crédito, refinanciamento

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1. Introduction

1.1 Brief Topic Presentation

"But the story goes deeper. It's not just that broad-market ESG indexes are outperforming counterparts. It's that within industries – from automobiles to banks to oil and gas companies – we are seeing another divergence: companies with better ESG profiles are performing better than their peers, enjoying a "sustainability premium." (Larry Fink, 2021)

Investments in Environment, Social and Governance (ESG) have long been seen by companies as a non-core activity. Since climate change has become a present issue in society and the evidence suggests that humans are causing much of it, environmental issues have become significant. Because of climate change and environmental disasters, society is paying more attention to corporate social responsibility and the role of government in regulating corporate actions.

The importance of corporate social responsibility additionally developed with the growing attention by companies has also come to the fore. Furthermore, the world economic crisis led society to place more emphasis on the long-term economic goals of companies. Consequently, the concepts of social responsibility and sustainable action gained importance. In this context, a company acts sustainably when not only economic goals are pursued but also ecological and social goals are considered. In addition, the long-term achievement of goals is to be preferred over the short-term. Sustainability reporting has been mandatory within the European Union (EU) since 2014. Companies of public interest that employ more than 500 employees on average during the fiscal year are obliged to report (EU-Supplemental Directive 2014/95). It is the consequence of the further logical development from the shareholder to a stakeholder approach, which is more and more common (Freeman, 1994).

On the equity side, an influence of corporate social responsibility can be shown. Studies show that there is a positive correlation between ESG and financial performance. Good social responsibility performance leads to a lower cost of capital and better financial performance of the company. When companies invest in ESG and investors focus on these socially responsible companies, stock prices will increase due to investors. Share prices rise faster than for companies that neglect ESG. As a result, the cost of equity will decrease and increase for the less responsible companies (McKinsey, 2020).

In contrast to the equity side, there has been little analysis on the debt side of the impact of social responsibility on credit risk assessment and related credit ratings. Most of the research has focused on examining the relationship between ESG, corporate performance, and credit ratings, rather than incorporating social responsibility into credit risk. Since the cost of debt is comprised of the cost of capital, which includes the cost of equity and the cost of debt, it is useful to examine the impact on the cost of debt. Understanding the relationship between these costs and ESG would lead to a better understanding of ESG on the cost of capital in general.

Banks, insurance companies, and pension funds are the most important external providers of debt capital for companies in Europe, making the credit market very important for financing (European Commission, 2018). Compared to the stock market, the potential impact on companies in the credit market is much higher. One reason for this is that the debt of European companies is much higher than their equity. Furthermore, the maturities of loans and bonds are limited, which means that borrowers must resort to the credit market several times for external financing. Bonds will not be considered in further detail in this work due to content limitation constraints.

The traditional bank loan still plays a major role in the external financing of companies. When granting loans to companies, the evaluation of business development and the analysis of credit risks are central issues. The increasing importance of ESG in banking is reflected, for example, in the fact that in September 2019, banks with total assets of more than $47 trillion, equivalent to one-third of the global industry, committed to principles from the United Nations (UN) for responsible banking. "The UN Principles for Responsible Banking are a guide for the global banking industry to respond to, drive and benefit from a sustainable development economy." (United Nations, 2019). Banks are committed to strategically aligning their operations with the goals of the Paris Climate Agreement and the UN Sustainable Development Goals. In the lending process, when assessing credit risk from a lender's perspective, the question is to what extent does the sustainability of the company affect credit risk and how it should be considered. To date, there are no standards for taking this into account, but some credit institutions are already integrating ESG into their lending processes, which raises the question of whether this fact can also lead not only to a better performance but also to a "sustainability premium", as initially quoted by Larry Fink in his letter to the CEOs this year.

1.2 Objective of this thesis & Research Question

The goal of this thesis is to find an answer whether the "sustainability premium" in Larry Fink's initial statement (out of his letter to the CEO´s 2021) could also be applied to corporate refinancing. Therefore, the aim of this work is to show the importance of Environment, Social and Governance on the credit rating in order to find out whether a better refinancing of the companies would be guaranteed. The question is whether these positive effects on the equity side can be equally demonstrated on the debt side. Can ESG performance make a measurable contribution to lowering credit risk and consequently to obtain better terms for the company from debt capital providers? On the side of traditional bank loans, this influence has hardly been analysed in the relevant literature. Based on this, the following research questions will be elaborated on and answered in this thesis:

- ***Which role will financial institutions play in order to build a more sustainable access to financial loans and other forms of credit in the future?***

- ***Does ESG performance impacts (positively or negatively) on companies' credit ratings?***

1.3 Thesis structure

After the introductory part and the research intention, the theoretical frame of reference will be presented. The theoretical background is explained and the reason why it was chosen for this work. In the following part, the conceptual foundations are defined and embedded in the literature review. The terms ESG and credit rating are explained in more detail. The term ESG, which has evolved from Corporate Social Responsibility (CSR), is first defined and then the individual criteria are formulated. Risk aspects, which cannot be avoided in this context will be also discussed.

After the conceptual basis has been explained, the fourth chapter of this work presents the methodology. The methodology used to answer the research questions is a literature review combined with expert interviews. For this, high-profile interviewees from leading global financial institutions and partner companies were interviewed, all of which are available in more detail in the Appendix and on request. The literature review is used to identify the current state of research on ESG and credit risk. In this part, a descriptive analysis of the literature is conducted. In the fifth chapter, the two areas of ESG and credit risk are linked, and the results of the literature review are presented. This part will present the findings and how ESG can influence credit risk, and how ESG factors can be integrated. In the penultimate content chapter, the results are explained and analysed in the Findings & discussions section. The chapter will cover the impact of ESG on lending, partly on the capital market, and will also address rating. In the last part, this thesis finishes with a conclusion. The findings identified will be summarized in Key Take Away's and the limitations of this work. Thus, implications for future research opportunities will furthermore be illustrated.

2. Research Intention

2.1 Academic and Managerial Relevance

At both levels, the research questions have a significant academic and managerial relevance for the future. Sustainability is becoming an increasingly important part of core businesses, and not just in the world's largest investment companies (e.g., BlackRock). From an academic perspective, of course, the issue is not unaddressed; see among others already attached Reference list. However, the whole topic of sustainable finance is not that ancient, and various interesting questions are still partly unanswered, which are worth taking a deep dive into, specifically the future change in line with a classic financing assessment.

Especially the managerial relevance will increase. In the past, sustainability issues were the last thing on the agenda at shareholders' meetings; today they were mostly mentioned as prioritized. The topic has an incredibly high impact on the entire refinancing of the financial and economic world and will affect every existing and future corporates and business. In April 2021, the European Commission published its proposal for a Corporate Sustainability Reporting Directive (CSRD) to replace the existing Nonfinancial Reporting Directive (NFRD). It provides for extensive new reporting requirements. To ensure that information is presented in a comparable manner, EU reporting standards are to be drawn up for sustainability reporting. International frameworks such as the Global Reporting Initiative or the UN Global Compact are to be considered. The aim is to adopt the directive by June 2022. Member states are then to implement the requirements in national law by the end of 2022. The obligation for sustainability reporting is then to be applied to reports published from January 1, 2024, after which the reporting period for the fiscal year would be covered from 2023. Sustainability reporting must be placed in the management report. A separate CSR report apart from the management report is no longer to be possible. The option of separate reporting has been deleted.

3. Literature review

3.1 Theoretical and regulatory background & ESG

As mentioned in chapter two under Managerial Relevance, there are currently a few significant initiatives in the topic of sustainability reporting and accounting to set certain standards specific to the industry. In particular, the CSRD replacing the NFRD with the recently announced EU-taxonomy regulation. A brief overview of the history of relevant sustainability reporting follows, in which not every single of the following listed frameworks/requirements can be analysed in detail:

Reporting standards and frameworks (Year of first publication)	**Reporting requirements** (Year of adoption)
Requirements for environmental statements in the EC Eco-Audit Regulation (1995)	EU Modernization Directive with provisions on the publication of relevant indicators on environmental and employee issues in the management report (2003)
GRI Guidelines (1999) Today: GRI Standards	EU Directive on non-financial reporting (so-called EU CSR Directive) (2014) (Related: CSR Directive Implementation Act, 2018)
Carbon Disclosure Project (2000) In the meantime, expanded to include platforms for water and forestry. Today: CDP	EU Taxonomy Regulation (2020)
Integrated Reporting Framework (2013)	White Paper of the International Business Council (IBC) of the World Economic Forum (WEF) (2020)
TCFD recommendations (2017)	
SASB Standards (2018)	EU sustainability reporting standards (Commission proposal 2021)

Table 1: Overview of sustainability reporting frameworks (Source: German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety)

The first Global Reporting Initiative (GRI) guidelines were produced in the late 1990s. As the only international framework at the time, they quickly gained international recognition and established themselves as an international quasi-standard. In 2016, the GRI took this into account by renaming the guidelines and transferring them into 36 standards without any changes to their content. Among other things, the GRI standards require precisely defined key figures on economic, environmental, and social aspects of the reporting company's business activities, products, and services. To date, they are the most widely used set of standards for corporate sustainability reports worldwide.

The Sustainability Accounting Standards Board (SASB) standards were originally intended for companies listed on a U.S. stock exchange that are required to submit their annual financial statements and management reports to the U.S. Securities and Exchange Commission in the form of standardized documents (Form 10-K and 20-F, respectively). Meanwhile, SASB standards are international in scope and are increasingly being used by large companies. SASB's initial consideration was the assessment that the existing requirements for sustainability reports provide for too wide a range of information and key figures, and that the reports are therefore not well suited to the financial world. Investors need consistent metrics and standardized disclosures that enable comparisons within an industry. This requires a common understanding of which environmental and social aspects are relevant to competitiveness in each industry. SASB has therefore created a "materiality map" for each of 77 industries, in which the key sustainability issues are presented in weighted form. The weighting is based on the factors of public interest, economic relevance, and future significance. For each material sustainability issue, the indicators to be reported are indicated. At SASB, the capital market perspective is in the foreground, which is why only those ecological and social aspects are considered material that can have an economic impact on the company in the short or long term (SASB).

There have been growing concerns among G20 finance ministers and central banks since the mid-2010s that both severe climate change and effective climate change policies have the potential to trigger financial market crises. This eventually led to the formation of the Task Force on Climate-related Financial Disclosures (TCFD). In 2017, this task force of experts from the real and financial sectors presented eleven recommendations on climate-related reporting. As part of the EU Accounts Modernization Directive (Directive 2003/51/EC), a sustainability-related reporting obligation was introduced across the EU for the first time. In 2014, an extension of the reporting obligations in the management report was adopted at EU level with the so-called CSR Directive (Directive 2014/95/EU on the disclosure of non-financial and diversity information). The implementation had to be transposed into national law in the EU countries in 2017. Most recently, the EU Commission evaluated the suitability of the CSR Directive and the resulting reporting (European Commission, 2020). This reconfirmed the deficits identified in earlier investigations. The Commission therefore recommends much stricter requirements for mandatory reporting in the future. These are to be implemented via European reporting standards.

In late September 2020, the World Economic Forum's (WEF) International Business Council (IBC), in collaboration with Deloitte, EY, KPMG, and PwC, published a further white paper, Measuring Stakeholder Capitalism: Toward Common Metrics and Consistent Reporting of Sustainable Value Creation (the Report), with the goal of establishing consistency and comparability for corporate reporting on their environmental, social, and governance (ESG) performance. The Report is the culmination of a process that began with WEF's release of a consultation draft, Toward Common Metrics and Consistent Reporting of Sustainable Value Creation, in January 2020. The report reflects a joint effort by the four largest accounting firms to address the need for harmonized reporting standards and counter the "mess" of ESG metrics that currently exists. This issue of convergence of standards is at the forefront of the ESG reporting world. Using existing ESG standards, the report establishes 21 core and 34 expanded metrics and disclosures that align with the UN Sustainable Development Goals. The report organizes these metrics into four pillars, including: (World Economic Forum, 2020)

1) Principles of governance: governing purpose; governance body composition; material issues to stakeholders; anti-corruption; ethics and reporting mechanisms; risk and opportunity oversight.
2) Planet: Greenhouse gas (GHG) emissions from Scopes 1, 2, and 3; Task Force on Climate-related Financial Disclosures (TCFD) implementation; land use and ecological sensitivity; water consumption; and withdrawal
3) People: diversity and inclusion; pay equality; wage levels; executive compensation; supplier and employee health and well-being; employee training
4) Prosperity: employment and wealth generation; investment in innovation; tax strategy

To give this thesis a precise and up to date regulatory framework, the most recent development must not be ignored. The latest announcement in the context of the 2021 United

Nations Climate Change Conference (COP26), the International Sustainability Standards Board (IFRS) set another standard: "On 3 November 2021, the IFRS Foundation Trustees announced the creation of a new standard-setting board - the International Sustainability Standards Board (ISSB) - to help meet this demand" (IFRS, 2021). In the future, the ISSB will set global baseline standards in sustainability reporting. As part of its establishment, important voluntary standard-setting initiatives - specifically the Value Reporting Foundation and the Climate Disclosure Standards Board (CDSB) - will join the ISSB and be merged into it. The new institution is planned to be headquartered in Frankfurt, Germany.

3.2 ESG Criteria Definition

The term ESG stands for Environment, Social and Governance, and is closely related to Corporate Social Responsibility (CSR). CSR is multiple times defined and mostly described as a concept in which companies integrate economic and social aspects into their business activities on a voluntary basis. ESG includes concrete criteria against which companies can measure themselves and against which capital market-oriented companies are measured by third parties. As a result of capital market orientation, ESG is used primarily in sustainable investment approaches in the investment industry. ESG describes the extent to which companies consider and integrate environmental, social and governance aspects. Companies must fulfil their economic responsibility in line with the dimensions. The assessment of ESG criteria forms the basis for whether the requirements for investments are met, and the company receives capital from investors. In contrast to CSR, ESG is a more direct measure, as CSR covers many dimensions of a company's social responsibility. ESG shows environmental, social, and governance-related activities that relate to the company's environmental and sustainable development. Furthermore, ESG performance can be more easily observed and evaluated by external stakeholders. ESG criteria, like CSR issues, are non-financial in nature, whereby performance is measured through evaluations of key indicators or metrics. Since the ESG term has evolved from the definitions of CSR and the two terms are often used similar, ESG as its interpretation of standardised, benchmarkable metrics for investors to have transparency on their investments is defined in the Following.

3.2.1 Environment

In the Environment dimension, the areas of resource use, emissions, and innovation are significantly relevant. The resource use assessment evaluates the company's performance in reducing the consumption of energy, water or materials and improving the supply chain through more environmentally friendly solutions. For emissions, a reduction is considered. This area measures the company's commitment and effectiveness to reduce in the processes of production and operation. Innovation describes the ability to reduce environmental costs through new technologies or processes or green products for a company's customers and create new market opportunities (ESG Scores, 2021).

3.2.2 Social

The Social dimension deals with topics such as employees, human rights, community, and also product responsibility. In the employee dimension, the employer's effectiveness for employees is assessed. Here, measures for job satisfaction, a safe and healthy workplace, the preservation of equal opportunities and diversity, and employee development opportunities are assessed. In the context of employees, additional checks are made to ensure that the company complies with basic human rights conventions. In the case of the community, the company is assessed on the extent to which the company acts as a good citizen and engages in protecting public health and adhering to business ethics. Product responsibility relates to customers. Here, the aim is to ensure that the company sells high-quality goods and services to ensure the health, safety, integrity, and privacy of customers.

3.2.3 Governance

The governance dimension relates to management, shareholders, and CSR strategy. Management is measured based on its commitment and effectiveness, whether it manages the company in accordance with best practice principles. Furthermore, the equal treatment of shareholders is assessed and whether measures have been taken to protect against a hostile takeover. The CSR strategy assessment describes what practices are in place to communicate that the company is integrating financial, social and environmental issues into daily decision-making.

3.3 Credit Pricing (Risk & Rating)

To complete the theoretical framework around the research questions and to put them into context later, the words credit and rating must also be discussed in the Following. The term credit is derived from "creditum" in Latin, which means "entrusted in good faith." A credit is understood as an exchange of present goods, such as money, or things for future goods. A loan is the provision of capital for a specified period of time, with the borrower committing to repay the loan amount and accrued interest to the lender during the loan term. In a broader sense, a loan denotes confidence in the willingness and ability to meet debt obligations, which is also referred to as creditworthiness (Bundeszentrale, politische Bildung 2021).

3.3.1 Credit Risk

The most important component for credit pricing is credit risk, which is the specific risk in lending and the highest risk for banks. Credit risk is defined as "the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms." (Basel, 2000). Credit risk describes the risk on the part of the borrower that the borrower will not or insufficiently fulfill the payment obligations arising from the loan agreement. The published financial information of companies reflects this risk. Credit risk can be divided into active and passive credit risks. Only active credit risk is discussed below, as it cannot be influenced by a company itself. Active credit risks are default risk, liquidity risk, and collateral risk. A quick overview is as the Following:

Active credit risk	Passive credit risk
Default risk	Interest risk
Liquidity risk	Monetary value risk
Collateral risk	Currency risk
= Sum equals Creditworthiness	

Table 2: Composition of credit risk (Source: own illustration)

Default risk is the risk to the borrower that the agreed interest and principal payments will not be made in part or in full due to an inability or unwillingness to pay. A deterioration in the borrower's creditworthiness may increase the default risk. Liquidity risk describes the borrower's failure to meet payments on time. The default may be caused by over-indebtedness or illiquidity. The default risk and the liquidity risk together form the credit risk. In the case of a loan agreement with collateral, there is a risk that the collateral will yield lower expected proceeds when realized by the lender. This risk is referred to as collateral risk. The cost of a company's debt financing is based on an assessment of the risk of default. The risk is given by the capital market, including banks, bond markets, and rating agencies. Default risk describes the uncertainty of a company, which is associated with the future activities of the company. The greater the uncertainty of future activities, the higher the default risk. As a result, the firm's credit quality is lower, and the cost of debt financing is higher. The firm must pay higher interest rates to compensate for the higher risk of default (Cheng, B., Ioannis I., G. Serafeim (2012).

3.3.2 Credit Rating

The criteria relevant for assessing the borrower are collected and processed from various data and form the basis for the credit decision. Financial institutions should have up-to-date, accurate, and sufficient information, which is supported by adequate and necessary evidence, to properly assess the risk profile and creditworthiness of the borrower. The outcome of the assessment and the credit application may be mutually exclusive decision alternatives (in the approval or rejection). A rating is a creditworthiness classification system of countries, banks, or companies (Khan, Serafeim, Yoon, 2016). Credit ratings by credit rating agencies are an important element for a well-functioning financial market and influence the cost of borrowing. They are an important barometer for businesses, as every loan involves a potential loss. Credit ratings are a quantified assessment of creditworthiness and indicate the financial health of firms and public entities, as they provide information on the probability of default and the ability to repay debt. Credit rating agencies produce credit ratings in a highly concentrated market and use available pertinent information in their assessment. The rating score is determined by aggregating a wide range of information into an overall assessment. (OECD, 2018). Credit ratings are usually attached to debt instruments such as bonds. Rating agencies aggregate complex information into one rating and simplify the comparison of companies' creditworthiness. Ratings are assessments at the time they are made and are not absolute and final judgments, which means they have no legal right to verify accuracy (Vuković, 2020). Credit rating agencies use a scale of letters when assigning ratings. Ratings with the letter A are higher grades and indicate a lower probability of default, and ratings with the letter C are lower grades. To compensate for a potential loss in the event of default, interest rates must increase significantly for firms with weak ratings and be adjusted to reflect the increased risk. Credit ratings are an important tool in measuring and mitigating risk and provide additional informational value to lenders (Zochowski, 2021). Credit ratings are published and recognized by investors worldwide because the ratings preserve information with less uncertainty about solvency. Credit rating agencies are largely concerned with the effects of bond downgrades and upgrades. Rating downgrades affect performance, while upgrades do not (Montvale, 2021).

4. Methodology

4.1 Research method

In the following chapter, the methodology of the conducted study is presented. In this context, the chosen research method, the sample, the data collection method, and the study procedure are illustrated. The chapter concludes with the method of data analysis, which forms the transition to the results presented in the last two chapters of findings/discussions and the conclusion. Since the role of financial institutions in ESG related to refinancing is still a very unexplored topic, qualitative research allows for a deeper understanding of the concept. The practical insights of individually selected experts in their field strengthen and complement this literature review, and practitioners serve as a source of grounded theory (Patton, 2015). Following Cuevas (2018), middle and senior management employees were selected as a source of valuable ideas and practices. The selection of the sample for the study is detailed below. The combination of the comprehensive academic literature review with insights from the field is intended to provide practical insights. Interviews were chosen as a common and accepted data collection technique for qualitative research to gain insights from practice (Patton, 2015). For this purpose, a semi-structured interview guide was created. A semi-structured interview approach has the advantage of serving as a guide during the interview. At the same time, it allows for adaptation to individual circumstances and additional questions to be asked if needed (Kvale, 1996). The developed interview protocol facilitated consistency across all interviews.

4.2 Interview sample & protocol

The research questions are added additionally to the literature review answered through one on one interviews with experts in their specific sector. Managers from BlackRock, BNP Paribas & UniCredit Bank, have been interviewed as representatives for the financial institution industry. Furthermore, employees of Euronext and Arabesque were interviewed, which resulted in revealing information that will be explained, analyzed, and discussed in the following two chapters. The main core of the analysis and subsequent findings are based, among other things, on these interviews, which can also be reviewed in the appendix or be requested. Below are the individually listed interview companies and the semi-structured interview guide, as indicated, for guidance.

Company	Founded	Industry	Headquarter	Employees	Interview Date
BlackRock	1988	Asset Management	New York City, Unites States	16,500	10th of November 2021, 11:00 GMT
BNP Paribas	2000	Banking	Paris, France	193,000	15th of November 2021, 14:00 GMT
UniCredit	1998	Banking	Milan, Italy	97,750	16th of November 2021, 17:00 GMT
Euronext	2000	Stock Exchange	Amsterdam, Netherlands	<5,000	(1) 10th of November 2021, 15:30 GMT (2) 27th of December 2021, 16:00 GMT
Arabesque	2013	ESG Data Provider	Frankfurt, Germany	<500	22nd of November 2021, 10:00 GMT

Table 3: Interviewed Companies (own illustration)

Interview questions	
1	Which were the key milestones in your company to introduce sustainability in your strategy?
2	Would you describe your financing process as sustainable in the sense that they include ESG considerations?
3	What is the biggest barrier to the implementation of sustainable finance and ESG driven financing mechanisms?
4	What will you finance in the future / is it important that your client is sustainable?
5	What will change in the future for your clients under consideration of sustainability assessment?
6	Are you ready to segment customers according to their ESG track record?
7	How are you changing customers behavior?
8	What should companies focus on that you would like to refinance them?
9	Do you think sustainable accounting standards e.g., SASB are sufficient today?
10	Which area or what measurement standard must change in order to improve valuation and thus make the refinancing situation fairer?
11	What must happen that the difference between financial and non-financial metrics will disappear, and all metrics will become financial?
12	Do you think ESG performance impacts on companies' credit ratings?

Table 4: List of Interview questions half structured (own illustration)

4.3 Data evaluation

To structure and analyze the data, the interview recordings first had to be transcribed. The use of the software application Otter.ai facilitated the transcription but had to be post-processed. Subsequent coding of the transcripts was done using two software systems; Trint & MAXQDA, which allowed the data to be structured into categories. Key dimensions were defined corresponding to the research questions and the structure of the interview questions. Following an inductive approach, categories were not predetermined but evolved through coding of the transcripts (Patton, 2015). Each theme was assigned to the most appropriate top-level category. Table 5 illustrates the themes that emerged and how they fit into each key dimension. The most important outcome was filtered out by keyword analysis from MAXQDA and is presented in the following table:

Relation to the financial institution itself	Relation to a customer of the financial institutional	Relation to the regulator
• Strategic decisions • Investors, product portfolio • Altruismus • Self-commitment • Reputation • Implementation of a climate strategy • Legal requirements • Increase of the financial institutions own rating	• Rating • Incentives • Customer behaviour • Green washing	• Regulatory framework • Impact Accounting • Reporting Standards • Key Performance Indicators (KPI´s)

Table 5: Interview categorization: Research questions in relation to stakeholders (own illustration)

5. Findings & Discussion

5.1 Interview Analysis

In the following, the most significant extracts and quotes from the expert interviews are listed, taking into account their relevance to the respective research question. In the further, the corresponding analyses and conclusions are deducted, which will be mainly responsible for the ongoing conclusion.

RQ1: Which role will financial institutions play in order to build a more sustainable access to financial loans and other forms of credit in the future?

BlackRock:

"We have a team called BlackRock Stewardship, let's say which is the team of 50 people that communicates with companies and try to guide those companies or better ask the right questions to the boards of those companies. On what are the plans towards sustainable sustainability… So, what is the action plan for the next 10 years? We are having this, so it is a team of 50 people spread out geographically throughout the world communicatively the boards of companies that we participate in."

BNP Paribas:

"I think what is happening today is that we move on. Like everybody in banking, it's not only BNP, but I also think it is a transgender rally in banking. We need to keep in mind that in banking, you're not doing whatever you want. You are regulated. And because you have regulation, you have also to follow the regulation and you have compliance and legal obligations. So that is very important to keep that in the statement, because people believe that we can do what we want. First, this is not our money. This is client money. Secondly, we are regulated and recently also regulation has been to protect the short-term stability and short-term banking."

UniCredit:

"…If so to speak the coal industry logically poorly performs ratings or in these ratings of "this ESG box" then we will have higher financing costs because we also have to deposit more equity capital. So, we should ask ourselves if we want to continue financing these industries."

Arabesque:

“It's hard to say that you only get this data in the case of a credit decision, for example. You need a certain bottom line; you can't do it without a certain bottom line. But in the end, a bank thinks still too short-term in my opinion, in any case it is important and relevant to include non-financial data especially if you are in certain sectors where traditionally climate risks prevail.

Euronext:

“We are great at ESG bonds. So, in terms of products, we are - you know - top notch. But also, we have created services for issuers, such as ESG advisory to help them navigate all the new regulation and because the history criteria and metrics and reporting can be very complex, we try to give them tools, so they can really comply with this regulation exactly like reporting.”

RQ2: Does ESG performance impacts (positively or negatively) on companies' credit ratings?

BlackRock:

“We are now launching a lot of ETFs that are ESG. They follow an ESG benchmark. MSCI Europe ESG, for example. The companies that are included in their index will be the ones with better ESG ratings or best ratings on ESG by definition. Blackrock or any ETF provider - and the ETF industry is an industry that nowadays is more than 10 trillion, so it's growing a lot - We'll have mandatory to buy those companies in order to reflect the same performance of the back. So, by definition, by design - companies that are included in those indexes will gain a lot of interest and will have huge participants or participation of index providers like Blackrock like State Street, like laggard, like leaks or whatever. So, I think it's, it will be definitely a way to grab more cheap financing, I'm sure, actually.

BNP Paribas:

“ESG performance will be the condition to be rated. And for me what will give you an additional value where you will because for me ESG doesn't create a salary value. That's it. It's just to say, in order to continue if you're not ESG, that means you disappear. You're not allowed to continue your business. So that's it. No point is not just a degradation of your rating. Okay, it's for me the rating is about risk.”

UniCredit:

"… as a base a 2 basis points is the material. Well, if you ask the trader, here he will be told, yes - that is a basis point. The whole lot but well, and a basis point is also measurable. I mean what fail or despair but that the difficult is to measure and base points can be measured relatively clearly. And as I understand it, I mean somehow it also goes to the customer's rating and the difficulty is to somehow make something difficult to measure again and that would be too low then about one possibility for the time being."

Arabesque:

"Definitely, but you can't compare a software company to a mining company. Accordingly, the topics are broken down quite clearly and you can get from the top-level scope 0 to a hundred then on the Pillars for SMEs and down the 22 features you have a full overview if you want to consider certain things higher. So, in the end you get a meaningful ESG rating."

Euronext:

"Like 100%. I mean, it's a proven fact that companies that deliver on ESG are more lucrative if you want, especially in terms of medium to long term. There's a McKinsey report I remember at the time. So, it's factual. Follow the money. And the money is what money like, you know, these investment funds are not doing it from the goodness of their hearts. They're doing it, they're investing in these companies, because they've figured out that companies that follow ESG criteria tend to be more lucrative."

5.2 Impact of ESG on corporate credit rating

ESG factors are a non-trivial factor in determining corporate credit risk. The impact of ESG strengths shows a positive effect on credit ratings because strengths are proactive, including more efficient use of resources, and reflects better quality of management. ESG concerns have a negative impact on firms' credit ratings because they reflect compliance with minimum performance levels or industry standards and cannot lead to a competitive advantage. Strengths are more expensive to implement but more beneficial than avoiding concerns (Attig, et al., 2013). To what quantitative extent these influences play a role is still questionable in its significance due to difficult measurability. However, what can and must be noted, is that the impact will be different for rated and non-rated companies.

5.2.1 Rated & Non-rated Companies

The effects of ESG strengths and ESG weaknesses show up differently for rated and unrated companies. In general, investors expect higher returns from companies that exhibit more concerns than strengths, demonstrating the importance of social responsibility. The expectation can be calculated with about 1.38% more than the risk-free rate per year, which corresponds to a 0.7% higher return per year compared to companies with strengths. The higher a firm's ESG strength, the lower the premiums payable. These effects on the cost of financing are equally evident for both rated and non-rated companies (Chava, 2014). If a firm's weaknesses outweigh its strength, higher premiums must be paid due to higher corporate risk. These consequences of ESG concerns are different for rated and unrated firms. For unrated firms, the consequences of social responsibility weaknesses are much stronger. Those firms that are not rated by any rating agency appear to be less attractive to investors in their activities, and the pursuit of ESG leads to a lower reduction in financing costs. Those activities that are not rated are classified as increasing corporate risk, resulting in higher spreads to be paid. In addition, the industry is taken into account by rating agencies when determining the credit rating and evaluating the creditworthiness of companies. The mining, transportation, and manufacturing sectors have the highest integration of ESG criteria into the rating, with mining having by far the highest integration. The lowest levels of consideration are in the construction, services, and wholesale sectors. The reason for the extent of integration in the credit rating is the higher risk to regulatory and environmental constraints. Mining or manufacturing, which includes industrial production, chemicals, and tobacco, are more likely to be affected by constraints than, for example, wholesale trade (Kiesel, Lücke, 2019).

Furthermore, ESG strengths and ESG weaknesses of companies have an influence on the determination of the rating agencies. The weighting of strengths and weaknesses differs among the agencies. ESG strengths are considered as non-risk mitigating factors and ESG weaknesses as risk factors. Strengths are considered non-risk mitigants because rating agencies find it more difficult to evaluate strengths due to the soft information nature. In addition, the absence of strengths in ESG does not lead to stakeholder sanctions, and the absence of its benefits has a lower impact than the harm from ESG weaknesses. Thus, ESG concerns are more interesting for rated companies as risk factors for determining credit rating (Bae/Chang/Yi, 2018).

Firms should be encouraged and incentivized to invest in the area of social responsibility, as rating agencies take ESG performance into account when evaluating credit ratings. For example, firms could link executive compensation to social responsibility performance to increase ESG performance and quality (Barth/Hübel/Scholz, 2019). In the case of rated companies, a lot depends on governance, as these are listed the most in the rating reports. However, they have an influence on the rating and thus also on the refinancing conditions of the company.

5.2.2 Preliminary conclusion

Based on the preceding analysis, the following two research questions will be preliminary concluded in the following paragraph:

- ***Which role will financial institutions play in order to build a more sustainable access to financial loans and other forms of credit in the future?***

- ***Does ESG performance impacts (positively or negatively) on companies' credit ratings?***

The study results show that ESG has an impact around financial institutions in the context of lending and therefore to the access of capital. ESG is a matching factor between lenders and borrowers and is considered in the lending process. ESG performance as a whole and those in the individual dimensions influence the likelihood of lending. Financial institutions, and in particular banks, therefore, play a significant role in the process of making the refinancing process more sustainable. Financial institutions have an intrinsic motivation to include ESG criteria into their processes, including the credit process. Strategic decisions, self-commitment/reputation, and the implementation of a legally demanded sustainability strategy are the most important. In addition, their own rating, which can be improved through this, is relevant. However, it is not only the financial institutions themselves that matter, but also at least two further main stakeholders; the customer, and the regulator.

ESG performance has an impact on credit risk and seems negatively correlated to credit risk. Companies with a good ESG performance receive better conditions when borrowing, which can reduce borrowing costs. A high ESG level has a positive effect on the credit spread, causing it to decrease the higher the level. The exact measures of correlation do not seem to be more quantifiable due to difficulty in measurement also due to lack of data up to date. The main task to accurately determine this future seems to be in the framework: To what extent can accounting standards be made comparable and brought to a common denominator, reporting standards must continue to be standardized, and appropriate key performance indicators (KPIs) have to be defined. This remains a difficult task, but one that is not insurmountable. However, the use of ESG activities is positively recognized by banks, investors, and rating agencies.

If the area of social responsibility is broken down into the individual dimensions of community, diversity, employee relations, environment, human rights, and product, it can be seen that almost all sub-areas are considered when determining credit risk. The dimension of human rights has no influence on the rating agencies' assessment, as it does not relate directly to the primary stakeholders and contains general social issues (Attig, et. al., 2013). Furthermore, especially since the Paris Climate Agreement, the carbon footprint and emissions also influence credit ratings. Companies with a larger carbon footprint may be affected by potential regulatory costs, which can lower credit ratings. In the U.S., rating actions such as downgrades and upgrades are valued more highly compared to Europe. The reason for the greater reaction to changes in the U.S. is that companies in Europe are leaders in ESG integration, and several guidelines have been issued by the EU. Additionally, scepticism about the positive correlation of social responsibility and improved performance is prevalent in the US. However, credit ratings also vary in Europe. Firms' attitudes towards social responsibility and ratings depend on the country in which the company is headquartered. Companies receive better ratings if the respective country scores above average on ESG criteria. Furthermore, companies likewise receive better credit ratings if the ESG performance of both the company and the country is low. If firms have a high performance and are located in a sovereign with a below-average level, they receive lower ratings, as ESG investments are considered value-destroying in these countries. Further, LGBT-friendly policies are shown to improve credit ratings. When companies push for LGBT support, rating agencies view this as a favourable factor and a positive signal and give these companies higher credit ratings. This leads to better credit ratings and lower borrowing costs, which can increase competitive advantage (Chintrakarn et al., 2020).

6. Conclusion

6.1 Key Take Aways

The most significant implication for practice is that ESG has an impact on credit risk. The use of ESG activities is positively recognized by banks, investors, and rating agencies. Companies with a good ESG performance receive better terms when borrowing, which can reduce borrowing costs. A high ESG level has a positive effect on the credit spread, causing it to decrease the higher the level. As a result, the usually high ESG investments are rewarded with cheaper capital raising and incidentally contribute to sustainability and climate change, which is desired and demanded by society from companies.

Basically, three main factors determine the discussion - first, the financial institutions themselves, whose main arguments and motivations are listed separately below in the next paragraph. Secondly, the customers - in particular companies - for which a decisive distinction must also be made between the sectors in which they operate. Finally, the regulators already play a decisive role and will do so even more in the future.

Three potential motivations for banks to integrate ESG into their processes are strategic decisions, self-commitment/reputation, and the implementation of a legally demanded sustainability strategy. The strategic decision that good social responsibility performance is associated with higher financial performance - this is related to less non-performing loans - is the main motive for banks. Furthermore, signing up to codes of conduct expands and improves transparency around ESG and the variety of responsible financial products. For this reason, lenders have an incentive to include the ESG performance of the borrower in the assessment of risk and loan pricing. Positive ESG activity also results in a lower credit spread, as future cash flows are deemed less risky.

To speak of greenwashing as a motive would be just too simplistic. In the future, financial institutions will simply no longer be able to afford ignoring ESG performance when granting loans. Regulatory pressure will become too high, and opportunity costs will no longer be a factor but a decisive element in doing good business (Nguyen, 2020).

6.2 Limitations

In general, there is still a lack of sufficient quantitative data, which also affects this work. The qualitative approach is good for observing and initiating course-setting, but the quantitative evidence is not yet feasible. Measuring corporate ESG performance is problematic and not straightforward. The first problem area is evident in the definition of social responsibility in general. In the absence of a uniform definition of the term, ESG can be defined more narrowly or more broadly. The second problem arises with ESG criteria. As a consequence of the lack of uniform criteria, the ESG level can be assessed more strictly or less strictly since the criteria can be formulated differently (Urdan, Luoma, 2020). Furthermore, measurement is generally difficult, as the result of the assessment is mostly expressed in qualitative indicators, which are not comparable when different yardsticks are used. In addition, different data sources are used in the assessment, which means that they are not identical in terms of their comparability and relevance. Consequently, there is a lack of suitable and uniform catalogues for criteria and information sources. In addition, uniformity is a crucial part of the assessment, as in different industries, the relevance of aspects of ESG is different. For example, environmental issues are more relevant in the energy or chemical industry and social aspects in the textile industry. If uniform criteria are missing, it will hardly be possible to compare ESG ratings of different companies (HBS, 2019). Furthermore, another breakdown into the credit categories should be analysed as well as the capital market situation. As described further below in Future research opportunities, there is still further research on ESG impacts in the capital market and the area of bonds and Credit Default Swaps needed. As a result of the problems mentioned, it is significant for practice to implement suitable catalogues of criteria for the uniform integration and evaluation of social responsibility in order to be able to precisely compare ESG performances of companies and to be oriented to them (O'Dwyer, Unerman, 2020).

6.3 Future research opportunities

Overall, it can be stated that there is not enough quantitative data historically been accumulated to be able to make more precise and profound statements up to date. Companies like Arabesque have the dramatically important task of collecting these data broadly and across industries over the next few years in order to enter into more detailed sustainable statements and provisions. Research has been done sufficiently to be able to state that ESG performance correlates clearly with company performance but not distinct to what quantitative extent ESG performance and credit risk mean the inclusion in credit ratings. The main challenge to be able to make a really meaningful statement on the extent to which ESG and credit risk are directly and measurable included in credit ratings is the still missing data basis. That's why it is so important that emerging companies like Arabesque will take care of this issue and that there is a business model for it regardless of the size of the company. To link company data with, for example, direct connection points into the credit decision process at banks or other financial institutions will be decisive. Hence, the question of the extent to which this can be traced back to refinancing needs to be addressed, and this can only be done with data sets collected over a period of at least ten years (Arabesque, 2021). In terms of research designs, there is a need for further research in the area of the classification of the topic; the regions studied, and the observation periods. As stated, there is still the need to do further research on ESG impacts in the capital market, in particular the area of bonds and CDS. Due to the greater importance of bonds, focus on this form of financing should be concentrated, as CDS are only a hedge against the risk of default of a financial instrument. In this context, how ESG is considered and measured would need to be analyzed in more detail in the area of lending and the capital market in general; How is ESG priced into credit spreads by capital providers, how are spreads composed exactly, and what share does ESG take in premiums – so called “greeniums”.

Almost all studies examine the impact of ESG in the US. In the area of the capital market, this fact can be justified by the fact that it is significant in the U.S., as most companies finance themselves through the market. For the implications, it would be relevant if the impact of social responsibility was studied in other regions. Some papers analyze regions outside the U.S., but these take up a small portion of the literature. By focusing on the U.S., ESG could have a different impact in other regions. The diversity of regions would allow for a general statement of how ESG affects credit risk. Especially since the observation periods are often outdated there as well, and it would be interesting to analyze data from the 2020s ongoing.

Furthermore, it would be interesting for research and practice to examine the effects of ESG on credit risk in crises in more detail. In particular, the current and ongoing situation of the COVID 19 pandemic would lend itself as a research period to analyze the impact of ESG in crisis years in more detail. Practitioners would benefit from this research as many companies are not generating profits in the current crisis and need to raise debt capital. If ESG does not show a positive impact in crises, it is not a way for firms to raise capital more cheaply. If the previous results cannot be confirmed, ESG could potentially be a crisis factor. Consequently, it would be beneficial for companies to invest in ESG in order to generally obtain better conditions when raising capital in crises.

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8. Appendix

The most important excerpts from the expert interviews conducted are listed below. Due to the limited number of pages for the appendix and a preserved overview, not all interviews could be reproduced word for word. However, these are of course available and can be retrieved on request.

Interview extracts Blackrock: 10th of November 2021, 11:00 GMT:

“We only will look to companies that properly report sustainable standards in reporting and accounting. So that's something powerful and basically Blackrock is using our voice with almost $10 trillion of assets under management, which is a very powerful way to try to influence the market and try to bring everyone together in a common playing field of reporting.”

“But I think the demand comes from us and not from the clients right now. And I mean the clients, it is the opposite when we're talking about institutional clients like insurance companies, or like pension funds, that you have a huge boost there, which is regulation. So, in certain countries, you are obliged to invest in certain criteria’s of ESG.”

“We have a team called BlackRock Stewardship, let's say which is the team of 40 people that communicates with companies and try to guide those companies or better ask the right question to the boards of those companies. On what are the plans towards sustainable sustainability. So, what is the action plan for the next 10 years? We are having this, so it is a team of 50 people spread out through geographically throughout the world communicatively the boards of companies that we participate in.”

“We are now launching a lot of ETFs that are ESG. They follow an ESG benchmark. MSCI Europe ESG, for example. The companies that are included in their index will be the ones with better ESG ratings or best ratings on ESG by definition. Blackrock or any ETF provider - and the ETF industry is an industry that nowadays is more than 10 trillion, so it's growing a lot - We'll have mandatory to buy those companies in order to reflect the same performance of the back. So, by definition, by design - companies that are included in those indexes will gain a lot of interest and will have huge participants or participation of index providers like Blackrock like State Street, like laggard, like leaks or whatever. So, I think it's, it will be definitely a way to grab more cheap financing, I'm sure, actually.

Interview extracts Euronext: 10th of November & 27th of December 2021, 15:30 GMT:

"I think that in a way, Euronext is kind of a mimic, or maybe the best example of what the original spirit of the European Union was, in the sense that really it's a European project. Culturally, that's something that binds us together as a community. And really, by providing the single platform, you allow countries to leverage because, you know, nowadays the exchange isn't just Portuguese. But once you go in, you have access to a pool of investments and a pool of liquidity, which really is European, especially since like I said, we are like, at this moment, the largest market infrastructure. So that's a good standpoint to be. It's also a standpoint for great responsibility because we are the largest market infrastructure. We realised that we have a really important role to play as market leaders as both people as you know, in terms of advocacy, but in terms of providing the tools to our community, so that they can really go towards sustainable finance, and in what we can say and you know, the role that we can play. This is very apropos this the interview because we literally just presented a strategy for the next three years."

"So, in terms of like ESG strategy I mean, this started in October 2019. Your next presented in its strategy plan so it's last one, a pillar which was an ESG pillar, and that's when we really started building so it was incorporated into our strategy and leveraging upon this, this mission. And our ESG model is empowering. Sustainable growth. And so, what we started doing is really directing our creativity and our drive towards creating products and services that would give a push towards the finance, sustainable finance and so for instance, right now, we are number one in terms of ESG indexes."

"We are great at ESG bonds. So, in terms of products, we are - you know - top notch. But also, we have created services for issuers, such as ESG advisory to help them navigate all the new regulation and because the history criteria and metrics and reporting can be very complex, we try to give them tools, so they can really comply with this regulation exactly like reporting."

"Like 100%. I mean, it's a proven fact that companies that deliver on ESG are more lucrative if you want, especially in terms of medium to long term. There's a McKinsey report I remember at the time. So, it's factual. Follow the money. And the money is what money like, you know, these investment funds are not doing it from the goodness of their hearts. You know, they're doing it, they're investing in these companies, because they've figured out that companies that follow ESG criteria tend to be more lucrative."

Interview extracts BNP Paribas: 15th of November 2021, 14:00 GMT:

"I think what is happening today is that we move on. Like everybody in banking, it's not only BNP, but I also think it is a transgender rally in banking. We need to keep in mind that in banking, you're not doing whatever you want. You are regulated. And because you have regulation, you have also to follow the regulation and you have compliance and legal obligations. So that is very important to keep that in the statement, because people believe that we can do what we want. First of all, this is not our money. This is client money. Secondly, we are regulated and recently also regulation has been to protect the short-term stability and short-term banking."

"There are four pillars to do business. In sustainability. The first one is to set up a vision and policies. The second pillar is our risk management, we used to assess our risk that also it does evolve internally tremendously, because we did assess our risk in terms of financial risk and reputational risk operational risk. Now we must do it also in terms of climate risk, but also in terms of nature, and even in terms of inclusion. So, a way to measure the risk and probably the most advanced is what we do in terms of decarbonisation of a portfolio and to assessment of the decarbonisation of our portfolio. The third big pillar is about the ESG. So ESG means it is a CSR to base on everything. What I do in regards of in regards which is not necessarily your legal point of view, but the civil society."

"My main concern is that I strongly believe that the European will not manage to impose their European taxonomy to the Anglo Saxon UK and the Chinese."

"When you have to allocate capital, you have to make sure that you allocate the capital to the right purpose. But on the other side, if you if your client is not, you will reduce your exposure, because it will become a strategic asset for you and adapt in the danger that the civil society will reject it. And I don't know if you have a consumer company who doesn't want to tackle the plastic issue, for instance, you will start to have some concern though, isn't it?"

"But this (Accounting standards) is very important because it will create standards. And this is this is driven by the UK and I think it's a very important decision. So that's number one, number two. It's, it's very important that we start to value the externalities so I but not necessarily to monetize them. You can monetize what is monetized and what makes sense to be monetized like that, but for instance, but you cannot necessarily to monetize everything. So, we need to be very careful about creating system which are too simplistic or too complex, where we try to monetize every single thing like biodiversity like we need to keep some of the things are things which are common sense"

"ESG performance will be the condition to be rated. And for me what will give you an additional value where you will because for me ESG doesn't create a salary value. That's it. It's just to say, in order to continue if you're not ESG, that means you disappear. You're not allowed to continue your business. So that's it. No point is not just a degradation of your rating. Okay, it's for me the rating is about risk."

Interview extracts UniCredit Bank: 16th of November 2021, 17:00 GMT:

"… as a base a 2 basis points is the material. Well, if you ask the trader, here he will be told, yes - that is a basis point. The whole lot but well, and a basis point is also measurable. I mean what fail or despair but that the difficult is to measure and base points can be measured relatively clearly. And as I understand it, I mean somehow it also goes to the customer's rating and the difficulty is to somehow make something difficult to measure again and that would be too low then about one possibility for the time being."

"Example par excellence for something like that that is called Apple and Samsung has significantly higher emissions than Apple. But not because Apple is so cool and has revolutionized the world with their methods of promoting production but because Samsung supplies the components for Apple. Well and because it is through all the time because they can be shipped all over the world. That also worse when Apple or the components and they get from Samsung and that has to be sent over from Asia That is so to speak then that is missing again at Apple but you see to say I just wanted to bring the example I can bring you other examples where it is really in text part you have to be very careful whether you really compare apples with apples what should I do there Can that is actually a core problem with at least CO2 reporting."

"Core problem at all we have so to speak an accounting problem currently in particular we will also drag along with us for a few more years you would also say that the sustainable account accounting methods I say now SSB or so what already exists are not sufficiently used or are also not sufficient. Well, it becomes a problem when our investors start complaining and saying you must green up. Shareholder's start stressing out at an annual general meeting and say that's not okay and then it turns out a competitor is just not better at all they have just more clever and creative calculations."

"…If so to speak the coal industry logically poorly performs ratings or in these ratings of "this ESG box" then we will have higher financing costs because we also have to deposit more equity capital. So, we should ask ourselves if we want to continue financing these industries."

Interview extracts Arabesque: 22nd of Novemer 2021, 10:00 GMT:

"Definetly, but you can't compare a software company to a mining company. Accordingly, the topics are broken down quite clearly and you can get from the top-level scope 0 to a hundred then on the Pillars for SMEs and down the 22 features you have a full overview actually if you want to consider certain things higher. So, in the end you get a meaningful ESG rating."

"Listed companies are of course easier to evaluate, because e.g., when these make data freely available and also really report on a yearly basis, these reported data we combine with Artificial intelligence, and we have a process where we go out 13.000 news sources daily and look up if the company is mentioned."

"We create an interface as a cockpit that makes a request and is in direct exchange with the company. It should not take place in the sustainability report by long report with laughing children and green meadows but clearly: Please report on the following indicators and upload it to the platform!"

"It's one of the biggest challenges then to eventually convert that to non-listed companies. It's one of the biggest challenges but it's also a big opportunity. If you look at the credit rating, which is very standardized, there is nothing at all like it in sustainability reporting."

"Yes, sustainability reporting is becoming standardized and quantified, but I don't think that comes through the market, that comes from the regulatory perspective. It's hard to say that you only get this data in the case of a credit decision, for example. You need a certain bottom line; you can't do it without a certain bottom line. But in the end, a bank thinks still too short-term in my opinion, in any case it is important and relevant to include non-financial data especially if you are in certain sectors where traditionally climate risks prevail."