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ESG Disclosure Quality And Ratings' Divergence: An Empirical Analysis

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Abstract

While the literature is harmonized on documenting the existence of ESG rating divergence both at the aggregate ESG score and at the pillars level, there has been limited discussions on solutions to increase convergence between agency providers. In particular, the relationship between the quality of the sustainability disclosure and ESG rating divergence is not agreed on. Using a sample of companies from the S&P500 Dow Jones Index and from STOXX Europe 600, for a total of 1,305 firm-year observations from 2016 to 2022, this thesis explores the relation between the quality of ESG disclosure and ESG rating disagreement. The findings confirm the existence of a negative relationship between the quality of ESG disclosure and the rating divergence, highlighting that the higher quality of sustainability disclosure results in lower ESG rating disagreement. As a consequence, a more granular approach in the sustainability disclosure could improve the transparency and positively impact ESG rating divergence.

Keywords: ESG; rating; disagreement; quality; sustainability report

Introduction

In the last decade ESG ratings gained popularity due to the worldwide growing consciousness of the importance to integrate environmental, social and governance (ESG) aspects (Billio et al., 2021), as a result of the financial risks and opportunities paired with the imperative of transitioning away from fossil fuels (Cao et al., 2023). Third-party agencies evaluate the ESG performance of companies by collecting public and private data and providing a “*summary measure of nonfinancial performance*” (Christensen et al., 2022), which should be representative of the company’s degree of engagement and compliance on ESG topics. ESG ratings, as credit ratings, should indeed provide users, especially investors, with relevant information to integrate ESG factors into their decision-making process, such as portfolio investment strategies.

In line with the growing demand of ESG ratings, a plethora of ESG rating agencies has entered the market, which through several mergers and acquisition is now constrained to a few big players including Bloomberg, LSEG Data & Analytics (formerly Refinitiv), MSCI (formerly KLD), S&P Global, FTSE Russell and Sustainalytics. These players evaluate different ESG-related criteria and employ different methodologies for their assessment, which result in ESG rating divergence, also known as ESG rating

disagreement, consisting of a company receiving contrasting scores from multiple ESG rating agencies. ESG rating disagreement contributes to the information asymmetry gap, is misleading to market participants and compromises the ratings credibility.

While the literature is harmonized on documenting the existence of ESG rating divergence both at the aggregate ESG score and at the pillars level (e.g., Berg et al., 2022; Billio et al., 2021; Billio et al., 2024; Chatterji et al., 2016; Christensen et al., 2022; Kimbrough et al., 2022), solutions to increase convergence between agency providers have been poorly discussed. In particular, the relationship between the quality of the corporate disclosure and ESG rating divergence is not agreed on. Kimbrough et al. (2022) find that the adherence to higher levels of GRI (Global Reporting Initiative) reporting standards enhances the overall usefulness of the sustainability report. Particularly, companies issuing voluntary ESG reports benefit from lower ESG rating disagreement, indicating the usefulness of corporate disclosure in the narrowing of ESG divergence.

Conversely, Christensen et al. (2022) suggest that the divergence in ESG ratings can be attributed to greater levels of disclosure and to the larger number of factors to be assessed by rating agencies. As rating agencies generally use similar rules of thumbs for the evaluation, when an industry-significant information is not disclosed it is perceived as a bad signal, and the company is heavily penalized. By contrast, when information is thoroughly reported (e.g., number of days lost due to injuries), rating agencies must interpret and evaluate the data in a positive/negative performance, which introduces subjectivity into the evaluation process (Khan et al., 2016). The high amount of qualitative data requiring an interpretation, according to the authors, increases the room for ESG rating divergence.

Given that the literature does not converge on the relationship between the quality of sustainability disclosure and the ESG rating divergence, the aim of this thesis is to contribute to this debate, by exploring how ESG rating divergence is affected by the quality of sustainability reporting. Addressing ESG disagreement is crucial for the efficient functioning of markets, as Mio et al. (2024) suggest, the disagreement causes significant negative repercussions on markets, with findings corroborating the positive relation between disagreement and cost of equity capital. Meanwhile, the consequences of ESG disagreement on stock market returns are mixed, with significant positive relation for developed markets (Christensen et al., 2022), and significant negative relation in developing markets (Wang et al., 2024).

The thesis proceeds as follows. The first chapter presents the literature review of ESG ratings, starting from the definition of ESG ratings, and the distinction between solicited and unsolicited ratings. ESG rating divergence is then examined and confirmed in the reported studies, followed by a section on the methodological causes of ESG rating divergence, which can be summarized as measurement, scope and weight divergence at the pillars level. Among the causes of ESG rating divergence the quality of the sustainability corporate reporting is also documented with no converging results. A section on the consequences of the disagreement follows, both in the stock market returns (with higher returns in developed markets) and in the equity capital granting and the lower cost of capital for companies with lower ESG rating divergence.

The second chapter explored the literature on the credit ratings divergence, starting from the definition of credit ratings and the different models: solicited and unsolicited ratings, and issuer- and investor-paid credit rating compensation structure. The chapter continues with the impact that the quality of the financial report has on lowering the ratings divergence between the various models of credit rating agencies. The conflicts of interest in both issuer-paid and investor paid CRAs are considered in the subsequent section, followed by a segment on the credit ratings conservatism and the related consequences in capital structure decisions. Lastly, the stricter regulations after the 2008 global financial crisis conclude the chapter.

The third chapter presents the empirical analysis with the hypothesis development, the research design, and the sample selection. A section on the case study of the De' Longhi Group ESG rating divergence follows. Relying on the literature, the hypothesis tested states that the quality of the ESG disclosure is related to the ESG rating disagreement. To test this hypothesis, a linear regression model with control variables is employed on a sample of 62 companies in the S&P500 Dow Jones Index and from STOXX Europe 600. The rating agencies included in the analysis are S&P Global, Refinitiv ESG and Bloomberg in the period 2016 - 2022, for a total of 1,305 firm-year observations. The chapter ends with the results and conclusions of the thesis. The results of the empirical analysis suggest the existence of a negative relationship between the quality of ESG disclosure and the ESG rating divergence. This relationship is however not clearly supported in the case study, which highlights the great degree of divergence (especially in the Environmental and Social pillars), for a third quartile-disclosure-score multinational company.

CHAPTER I: ESG RATINGS DIVERGENCE, CAUSES AND CONSEQUENCES

1.1. Introduction

The term ESG is short for Environmental, Social and Governance. Companies are evaluated by third-party intermediaries that collect data and provide a “*summary measure of nonfinancial performance*” (Christensen et al., 2022), which should be representative of the degree of engagement and compliance on “*environmentally sustainable, socially responsible and ethically governed practices*” (Cao et al., 2023). Currently, some of the major ESG rating agencies are MSCI (formerly KLD), LSEG Data and Analytics (formerly Refinitiv), S&P Global and Sustainalytics. MSCI originated in the 1990s in the USA; in 2010 MSCI acquired both KLD (Kinder, Lydenberg, Domini) & Co., Inc. and Innovest Strategic Value Advisors, which both originated in the US and were first acquired by RiskMetrics in 2009. S&P Global started to issue ESG ratings in 1999, by issuing the first Corporate Sustainability Assessment to 2,000 companies.¹ Lastly, Sustainalytics originated in the Netherlands in 1992, overtime it expanded and merged with other agencies until it was acquired by Morningstar in 2020, its score ranges from 0 to 100 (Gibson et al., 2021). As for credit ratings, ESG ratings can be solicited, when a company is requesting the rating and paying for the fee, and unsolicited when the firm is given a rating without asking or paying for it (Zhao et al., 2021). Christensen et al. (2022) point out that in the case of unsolicited ratings investors compensate ESG rating agencies, to prevent any potential conflicts of interest in the companies receiving the rating.

As credit ratings are used for evaluating a company’s creditworthiness, ESG ratings represent a proxy to measure ESG performance. By assessing how well a company is doing in managing the ESG pillars’ risks and opportunities, ESG ratings support investors in portfolio management, to conduct due diligence, and in the investment decision-making process (Christensen et al., 2022). Moreover, ESG ratings are an opportunity for firms to consider the risks related to the operations and the company’s material topics, representing cues in anticipating new regulations, consumer needs and trends (Billio et al., 2021).

¹ We are S&P Global Sustainable, <https://www.spglobal.com/esg/about/index#intro> (Accessed on May 25, 2024)

The Environmental pillar includes issues such as climate change, pollution, and biodiversity, therefore evaluating the efforts of a company on greenhouse gas emissions, water resources management and so on. The Social pillar evaluates a company under working conditions both inside and outside of the workplace, gender equality policies, protection of human rights, labour standards, workplace health and safety and income distribution. The Governance pillar evaluates the company with respect to issues such as the independence of the board of directors, shareholder's rights, managers remuneration linked to sustainable objectives, anti-corruption and bribery, anti-competitive practices, and the respect of the law (Billio et al., 2021).

Ratings on ESG topics first appeared in the 1980s (Berg et al., 2022), however in the financial analysis Environmental, Social and Governance aspects have been considered only for sectors facing increased risks due to the company's exposure, as ESG responsibilities represented an obstacle to profit maximisation since they were only linked to an increase in (short and long-term) costs for the firm (Billio et al., 2021). In the early 1990s less than 20 publicly listed companies reported ESG data; yet this number reached 6,000 in 2014 (Serafeim, 2014; in Serafeim & Yoon, 2022). Eiris (founded in 1983 in France) was the first European-based ESG rating company; while the first USA-based company issuing ESG ratings was KLD (Berg et al., 2022).

In the last decade ESG ratings gained popularity due to the worldwide growing consciousness on environmental, social and governance aspects. Extreme weather events occurring not only in tropical regions but also in continental and dry climates (Billio et al., 2021), shed light on the short and long-term environmental, social, and economic consequences which were not given the appropriate importance until then. Hence, the increasing ESG awareness stemmed from the economic opportunity, paired with the imperative of transitioning away from fossil fuels (Cao et al., 2023). On top of extreme weather events, Billio et al. (2021) highlight how the 2008 financial crisis affected the private and public sector, investors decision, social and governance responsibilities. In addition, the 2015 Paris Agreement marked a first: a shared European target, putting a concrete and quantifiable objective of *“Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change”* (United Nations, 2015).²

² Paris Agreement (2015) – United Nations Framework Convention on Climate Change, Paris,

What was once a niche investment practice, has now become an apprehensive topic which is included in the evaluation process of companies.

Billio et al. (2021) underline how ESG aspects have been increasingly making an impact in investment decisions, both as an investment strategy and as a personal preference and interest in contributing to a better world. In fact, ESG topics are part of a stable market and shareholder value, and this is why ESG attention started as a way to improve market stability for everyone, since a stable economy is maintained by a planet in which catastrophes are not man-made.

In 2004 some of the biggest financial institutions came together “*to develop guidelines and recommendations on how to better integrate environmental, social and corporate governance issues in asset management, securities brokerage services and associated research functions.*” (UN Report, 2004).³ The primary objective of the project was to develop universal principles in business, which could benefit the harmonisation of what constitutes good ESG behaviour. ESG ratings are a component of credit ratings, in that they provide non-financial information which can lower the cost of debt for firms (Billio et al., 2021). The credit rating of a firm represents its probability of default, however, ESG ratings are not that straightforward. ESG ratings are made of different criteria and categories which are evaluated by the single company, based on a unique methodology, scope and weights, in a continually evolving regional or continental regulations setting (Berg et al., 2022). This is the reason why Berg et al. (2022) find that the average correlation in ESG ratings is 0.61 compared to a 0.99 average correlation of credit ratings.

ESG ratings have become increasingly important because transparency, disclosure and compliance with the regulation led to important consequences for businesses, impacting capital allocation and firm’s costs of capital (Gibson et al., 2019; in Dumrose et al., 2022). As a matter of fact, the increased awareness and the new regulations resulted in an increasing number of companies disclosing (mandatory or voluntary) ESG reports (Christensen et al., 2022). Consequently, information on sustainability performance is growing in significance as investors are integrating this

France, Dec. 12, 2015. Available at:

https://unfccc.int/sites/default/files/english_paris_agreement.pdf (Accessed on May 11, 2024)

³ UN Global Compact, (2004) *Who Cares Wins Connecting Financial Markets to a Changing World Connecting Financial Markets to a Changing World*. Available at: <https://www.unepfi.org/industries/investment/global-compact-leaders-summit/> (Accessed on February 9, 2024)

factor in their decision-making process (Shanaev and Ghimire, 2021; Ilhan et al., 2021; Dimson et al., 2020; in Dumrose et al., 2022).

The goal of sustainable finance, i.e., the ESG pillars, is to promote targets for a low-carbon, green and sustainable economy (Ozkan et al., 2023). Nevertheless, the usefulness of ESG ratings is impaired when there is no clear consensus of what constitutes good ESG performance, and this is misleading to market participants (Christensen et al., 2022). As ESG ratings gained popularity, it became clear how the evaluation of a firm's sustainability performance diverged (Dumrose et al., 2022). Considering that there was no common ground for ESG performance evaluation (Dumrose et al., 2022), rating companies approached this new trend by creating their own, personal evaluation method made of different categories and indicators (Berg et al., 2022). In practice, even if ESG ratings providers address similar ESG issues, they often use different labels to categorise them (Christensen et al., 2022).

ESG rating divergence is deep dived in the following section. The second section analyses the factors causing such divergence; and lastly the consequences of ESG rating divergence are considered.

1.2. Divergence in ESG ratings

In the last years, ESG ratings' disagreement has become the topic of an emerging stream of literature, due to companies frequently being given different ESG ratings by the several rating providers (Chatterji et al., 2016; in Berg et al., 2022). The reason behind is that the market is filled with independent rating agencies that are predominant (Zumente & Lace, 2021), and that use methodologies which differ greatly in the evaluation process. The following literature confirms the existence of ESG rating divergence, which is most of the time substantial. Table 1 provides an overview of the literature included in this chapter.

Table 1. Overview of the literature included in Chapter I.

Authors	Year of publication	Title	Area of research	Sample	ESG rating agencies in the sample	Results
Avramov et al.	2022	Sustainable Investing with ESG Rating Uncertainty	Consequences of ESG ratings divergence	2002 - 2019 period NYSE/AMEX/Nasdaq common stocks with share codes 10 or 11.	Asset4 (Refinitiv), MSCI KLD, MSCI IVA, Bloomberg, Sustainalytics and RobecoSAM.	When the market is green, ESG uncertainty is causing the demand for equities to decrease, while in the case of a neutral market, ESG uncertainty leads to higher market premium.
Berg et al.	2022	Aggregate Confusion: the Divergence of ESG Ratings	1. Divergence of ESG ratings; 2. Causes of ESG ratings divergence	Up to 9,662 companies, baseline year 2014.	KLD, Sustainalytics, Moody's ESG, Refinitiv, MSCI, S&P Global.	Measurement divergence is the main driver of ESG ratings divergence.
Billio et al.	2021	Inside the ESG ratings: (Dis)agreement and Performance	1. Divergence of ESG ratings; 2. Causes of ESG ratings divergences; 3. Consequences of ESG ratings divergence	1,049 companies listed in the MSCI World Index.	Bloomberg, ECPI, FTSE Russell, ISS Oekom, MSCI, Refinitiv, RobecoSAM, Sustainalytics, Vigeo-Eiris	ESG ratings' disagreement disperses the effect of preferences of ESG investors on asset prices.

Authors	Year of publication	Title	Area of research	Sample	ESG rating agencies in the sample	Results
Billio et al.	2024	Unpacking the ESG ratings: Does one size fit all?	Causes of ESG ratings divergence	2,648 listed firms (EU and UK)	RobecoSAM, Refinitiv, Sustainalytics and Bloomberg	E pillar is explaining the most in ESG rating, while the G pillar shows the higher disagreement between rating agencies.
Cao et al.	2023	Green investments and their impact on ESG ratings: An evidence from China	Consequences of ESG ratings divergence	551 observations from Chinese listed companies for 2011 to 2020	Bloomberg	Green investments impact ESG ratings mostly through the E and S dimensions.
Capizzi et al.	2021	The Divergence of ESG Ratings: An Analysis of Italian Listed Companies	1. Divergence of ESG ratings; 2. Causes of ESG ratings divergence	370 Italian listed firms between 2019 and 2020	MSCI, Refinitiv, S&P Global, Inrate, Arabesque, Truvalue Labs	The main drivers of ESG ratings divergence are social, governance and weight divergence.
Chatterji et al.	2016	Do Ratings of Firms Converge? Implications for Managers, Investors and Strategy Researchers	1. Divergence of ESG ratings; 2. Causes of ESG ratings divergence	3,134 firms from 2002 to 2010	FTSE4GOOD, Innovest, DJSI, Asset4, KLD, Calvert	ESG rating divergence is caused by measurement divergence.

Authors	Year of publication	Title	Area of research	Sample	ESG rating agencies in the sample	Results
Christensen et al.	2022	Why is Corporate Virtue in the Eye of the Beholder? The Case of ESG Ratings	2. Causes of ESG ratings divergences; 3. Consequences of ESG ratings divergence	5,637 firms from 2004 to 2016	MSCI, Thomson Reuters, and Sustainalytics.	Greater ESG disclosure leads to greater ESG disagreement. As ESG rating disagreement increases, the same happens for absolute market-adjusted returns and the return volatility.
Dumrose et al.	2022	Disaggregating confusion? The EU Taxonomy and its Relation to ESG Ratings	Consequences of ESG ratings divergence	1,813 companies	MSCI, S&P, Refinitiv and Vigeo Eiris.	The EU taxonomy could potentially be leading to lower ESG divergence for firms with highly Taxonomy-exposed revenue.
Gangi et al.	2022	Mainstreaming Socially Responsible Investment: Do environmental, Social and Governance Ratings of Investment Funds Converge?	Divergence of ESG ratings	6,630 monthly funds from February to July 2021	Refinitiv, MSCI, Morningstar	Divergence in ESG ratings exists both in Sustainably Responsible Fund as does in Conventional Funds.

Authors	Year of publication	Title	Area of research	Sample	ESG rating agencies in the sample	Results
Gibson et al.	2021	ESG Rating Disagreement and Stock Returns	2. Causes of ESG ratings divergences; 3. Consequences of ESG ratings divergence	Firms in the S&P500 from 2010 to 2017	Asset4, Sustainalytics, Inrate, Bloomberg, FTSE, KLD, MSCI IVA.	Stock returns are positively related to ESG rating disagreement.
Kimbrough et al.	2022	Does voluntary ESG reporting resolve disagreement among ESG rating agencies?	Causes of ESG ratings divergence	1,161 firms from 2007 to 2016	KLD, ASSET4, Vigeo Eiris	ESG ratings disagreement is lower for firms which voluntarily issue ESG reports.
Mio et al.	2024	Unveiling the consequences of ESG rating disagreement: An empirical analysis of the impact on the cost of equity capital	Consequences of ESG ratings divergence	1,278 European firms, between 2019 to 2021	Sustainalytics, RobecoSAM, Refinitiv and Bloomberg.	Divergence in ESG ratings is causing an increase in the cost of capital for firms.

Authors	Year of publication	Title	Area of research	Sample	ESG rating agencies in the sample	Results
Serafeim & Yoon	2022	Stock price reactions to ESG news: the role of ESG ratings and disagreement	2. Causes of ESG ratings divergences; 3. Consequences of ESG ratings divergence	31,854 firm-day observations	MSCI, Sustainalytics, Thomson Reuters	For firms with large ESG disagreement the market prediction of corporate ESG ratings on future ESG news diminishes.
Zumente & Lace	2021	ESG Rating - Necessity for the Investor or the Company?	Divergence of ESG ratings	6,001 publicly listed firms as of 2021	Sustainalytics, RobecoSAM, MSCI, ISS, Bloomberg	ESG rating divergence exists even in a context under the same European legislation.
Wang et al.	2024	Corporate ESG rating divergence and excess stock returns	Consequences of ESG ratings divergence	4,465 Shanghai and Shenzhen A-share listed companies from 2018 - 2022	SSI, Syn, Wind, FTSE and Bloomberg	Divergence of ESG ratings in developing markets leads to lower excess returns.

Chatterji et al. (2016) collect data from 2002 to 2010, with a total of 3,134 firms from six different rating providers: Kinder, Lydenberg and Domini (KLD), FTSE4Good, Innovest, Dow Jones Sustainability Indices (DJSI), Calvert and Asset4. The results of the analysis show that there is low correlation between the ratings; in fact, an average correlation of 0.30 exists, with a minimum tetrachoric correlation of -0.12 between Calvert and Asset4 in 2005, and a maximum tetrachoric correlation of 0.67 between Innovest and Asset4 in 2005.

Capizzi et al. (2021) analyse divergence in two samples from the following rating agencies: MSCI, Refinitiv, Inrate, Arabesque, Truvalue Labs and S&P Global. The regression is performed using two different samples: a first sample made of 188 companies in 2019 and 182 companies in 2020 listed on the Italian stock market; and a second sample (22 firms) which are given a rating by all the six agencies. Pearson's correlation is low for both samples; specifically, with regards to the whole sample, the mean correlation is 0.32, while for the second sample the mean value is 0.41. This latter result makes it clear that even when the ratings in the analysis concern the same company, divergence is present even if at a lower degree.

In Gibson et al. (2021) the average pairwise ESG correlation is 0.45 for the overall score, while the pairwise analysis highlights how some firms are highly correlated, showing a higher-than-average correlation (Sustainalytics vs. Asset4 and Bloomberg vs. Asset4 with 0.752 and 0.75 respectively).

The geographical proximity may result in stronger alignment in the definition of CSR (Chatterji et al., 2016), Gibson et al. (2021) consider a sample made of Sustainalytics (now Morningstar), Asset4 (now Refinitiv ESG), Inrate, FTSE, KLD (now MSCI), MSCI IVA and Bloomberg, finding that the average correlation is higher when considering separately U.S. (average correlation of 0.45) and European rating agencies (average correlation of 0.53). Geographical differences are present also in the ESG rating availability, as Zumente & Lace (2021) highlight. The authors consider a sample made of Bloomberg's data, which as of March 2021 offered Sustainalytics ESG score, RobecoSAM rating, MSCI ESG rating, ISS Quality Score and Bloomberg ESG score: only 3% (205 companies) have an ESG rating from the five different ESG rating agencies considered, while 72% (4317 companies) have no rating whatsoever. Zumente & Lace (2021) find lower ESG score divergence of European companies: the MAD (mean absolute distance) for the mean and the median is 0.36 and 0.29 respectively, lower than the results in Berg et al. (2019) (0.49 and 0.45). Nonetheless, even if the divergence is

lower, even under the same European legislation divergence continues to exist. The rating availability of less developed countries is explored by selecting 2000 CEE stock-exchange listed companies. For this sample, 97% (1,947 companies) do not have an ESG rating, while only 0.5% (7 companies) are given a rating from the three different ESG rating agencies considered (MSCI, Sustainalytics and RobecoSAM). The sub-sample of 54 companies having a rating from RobecoSAM is then further analysed: the average ESG ranking is 27.4 (much lower than the European average of 48).

Billio et al. (2021) analyse a sample made of 1,049 companies in the MSCI World Index listing, for which the rating existed for Sustainalytics, RobecoSAM and Refinitiv. The results stress an average correlation of 0.58 (the lowest value at 0.43 between MSCI and Refinitiv; the highest value at 0.69 between RobecoSAM and Refinitiv). While in Zumente and Lace (2021) the highest correlation is 0.58 (RobecoSAM vs. Sustainalytics), and the lowest is 0.08 (ISS QS vs. RobecoSAM). The higher disclosure and a more virtuous behaviour due to the listing of a company, could be leading to lower ESG rating divergence. This is seen in Capizzi et al. (2021), where the mean value of ESG ratings from the sample comprising the biggest Italian listed companies (which in some cases are listed even on foreign stock markets) are higher (ranging from 46.30 to 60.11 compared to 49.62 to 74.69).

The average agreement between ESG rating agencies is 24%, and when considering the set of developed markets investments the coefficient of Szymkiewics-Simpson is 35% to 59% which is actually low, however the agreement is 15% when the divergence between the four agencies is considered (Billio et al., 2021).

In Gangi et al. (2022) the focus of the regression is whether convergence exists between ESG ratings from sustainable rating agencies (SRAs) declined under the aspect of investment funds and if the case, whether this convergence could be discerning conventional funds from socially responsible funds (SRF). The ESG rating agencies making the sample are Refinitiv, MSCI and Morningstar. The results highlight how there is low convergence in ESG ratings, which are then analysed separately. The environmental pillar exhibits slightly a better performance compared to the S and G pillar, as it exhibits low correlation for 85% of the results, with the remaining 15% ranging from 0.71 to 0.74 correlation. For the social pillar, 100% of the results are concluding low convergence. The same is concluded for the governance pillar, which even results in negative correlations. The convergence of SRF, as does the one of CF, is low, with no big differences. This is nonetheless important to underline, as even funds which are

specifically required to provide details about ESG topics in the equation are not helping the investor make decisions.

1.3. Causes of divergence in ESG ratings

When diving into the causes of ESG divergence the most agreed cause of divergence in ESG ratings is the different methodologies employed by the rating providers (Capizzi et al., 2021; Berg et al., 2022; Chatterji et al., 2016). The methodologies developed by rating agencies can differ greatly both in the classification of the rating and from the sources analysed in the evaluation (Billio et al., 2021). Some companies use available information from sustainability reports and the company's website, while others integrate the material to be evaluated with a direct contact with the company (Billio et al., 2021). In the same way, the process of elaborating the data and giving it a valuation offers room for divergence. The methodology does have an effect on the "generosity" of the rating as Serafeim and Yoon (2022) find, analysing a sample constructed from Sustainalytics, MSCI and Thomson Reuters data, for a total of 31,854 firm-day observations. The company's individual averages are 48.47 for MSCI, 62.22 for Sustainalytics and 70.70 for Thomson Reuters while the mean average rating is 58.76. Christensen et al. (2022) find ESG mean scores of 48.36 for MSCI, 57.21 for Sustainalytics and 54.13 for Thomson Reuters.

In Chatterji et al. (2016) the two preconditions used to approach convergence of raters are "theorization" (i.e., what is measured by rating agencies) and "commensurability" (i.e., the convergence in how the overlapping sections are measured by the different agencies, both in what is considered to be positive CSR performance and the methods employed to calculate it). The results of the analysis show that environmental and social performance are common to all the rating agencies considered, however some categories are unique to some agencies, such as Financial Metrics and Corporate Governance. Differences on "theorization" of CSR are caused by the rater's geographic origin: for KLD (a U.S. rater) 71% of the subcategories are related to social issues, whereas for a European rater, Asset4, those amount to 47%. By analysing the weight of "common theorization" and "commensurability" the authors conclude that divergence between ESG ratings is caused by different theorizations.

Berg et al. (2022) analyse the causes of divergence through a decomposition into scope, measurement, and weight. The ESG rating agencies included in the research are:

KLD (now MSCI KLD), Moody's ESG (previously Vigeo-Eiris), MSCI, Refinitiv (previously Asset4) S&P Global (previously RobecoSAM) and Sustainalytics. The results of the regression show how measurement divergence, occurring when agencies measure the same attribute by using two different indicators, leads to the highest contribution on divergence with 56%. Scope divergence, happening when ratings are based on different attributes, is the second leading divergence cause, contributing by 38%. Lastly, weight divergence contributes by only 6% and occurs when rating agencies give different importance to the same attribute. Scope and weight divergence are easy to address since similar categories could be used for the cataloguing and the weighting factors could be changed. Contrarily, it is not the same for measurement divergence caused by the "rater effect" or "halo effect". The "rater effect" is explained as the higher probability for a firm receiving a high score in one category, to get high scores in the other categories. It is clear from the analysis that 15% of the variation of category score is explained by the "rater effect". The correlation between category scores is heterogeneous, i.e., 0.55 is the average correlation level for the category "Environmental Policy", translating into an agreement on the existence and quality of the firm's policy. Conversely, the category score "GHG Emissions" exhibits 0.17 average correlation, as does "Product Safety" with an average of 0.14. Low correlation exists even on easily obtained facts from public records, which highlights how measurement divergence is difficult to overcome.

ESG disagreement is also caused by different metrics of evaluation, mainly evaluation on input (the commitment of a company in pursuing a certain target) and output (performance according to the commitment and effort related to the target).⁴ Output evaluation is more difficult to evaluate especially when target results are not subject to common evaluation, or when they are qualitative. The analysis is carried out just for Thomson Reuters and Sustainalytics with the results confirming the expectations that the highest disagreement is recorded when one firm evaluates input and the other outcome (Christensen et al., 2022).

Capizzi et al. (2021) find that when exploring the three pillars separately, the main cause for divergence is represented by the differences in weights mostly in the S and G

⁴ One example of input - output evaluation is targeting diversity, which is the input, while the output is the percentage of women in the company; in this example both the effort and the percentage of women needs to be evaluated based on the metrics set by the agencies which can differ greatly. Christensen, D. M., Serafeim, G., & Sikochi, A. (2022). Why is Corporate Virtue in the Eye of The Beholder? The Case of ESG Ratings. *Accounting Review*, 97(1), 147–175.

pillars between rating agencies; meanwhile the E pillar exhibits lower divergence. The mean values in the common sample are 0.35, 0.43 and 0.06 for E, S and G pillars, respectively. It is worth mentioning that the highest values of all are registered in the E and S pillar, with 0.75 and 0.71 correlation between S&P Global vs. Arabesque and Inrate vs. Arabesque, respectively. When analysing the individual impact of the three ESG pillars the conclusion is that the Governance pillar shows the lowest correlation (Gibson et al., 2021; Billio et al., 2024), hence having the greatest impact on the overall ESG rating divergence. Conversely, the Environmental and Social pillar benefit the disagreement by rendering it lower (Kimbrough et al., 2022).

Gibson et al. (2021) find an average correlation for the three pillars of 0.45 (E), 0.33 (S), and 0.15 (G). This is explained by the difference in correlation among the pillars; the E pillar shows the highest correlation at 0.706 (Sustainalytics vs. Asset4), and the S pillar is 0.685 (Bloomberg vs. Asset4). Contrariwise, the G pillar exhibits cases of negative results: -0.065 and -0.029 (KLD vs. FTSE and FTSE vs. Inrate, respectively). This is justifying why the average correlation for the G pillar is consistently lower than the average overall correlation. The constant difference between E and G pillar is argued to be due to the more systematic approach, with regulations helping to quantify the dimensions. This is not yet the case for the social and governance elements which still suffer (even if in different measures) from the subjectivity required in the evaluation (Gibson et al., 2021). Mio et al. (2024) find the highest average correlation in the combined ESG score, followed by the E, S and lastly the G pillar. Similarly, Billio et al. (2024) find that on average some pillars are contributing more than others to the overall ESG scores. The E pillar shows high convergence (0.76) with the overall ESG rating across all the rating agencies (Bloomberg, RobecoSAM, Refinitiv and Sustainalytics). This is the same for the S pillar in (RobecoSAM, Refinitiv and Sustainalytics), while for Bloomberg the approach is more fragmented with a noticeably lower correlation (0.68). On the contrary, the G pillar does not show a coherent correlation with the ESG rating: Bloomberg and Refinitiv's G pillar exhibit low correlation with the ESG score, with 0.7 and 0.43, respectively, while RobecoSAM's G pillar shows a correlation of 0.95, the highest among all the three pillars. It is important to underline that companies are evaluating data from different sources: RobecoSAM is evaluating survey data from companies, while Bloomberg, Refinitiv and Sustainalytics evaluate the available public information.

On the contrary, in Christensen et al. (2021) the divergence in ratings is not to be traced back to one pillar above all. The E pillar shows the greatest standard deviation in all the three agencies considered in the sample (with 32.04; 21.28; 13.82 for MSCI IVA, Thomson Reuters and Sustainalytics, respectively). The contributions of the single pillars in Capizzi et al. (2021) are also balanced for the most part, while the analysis on KPIs differences in attributed weights leads to different results. A limitation in the analysis of Capizzi et al. (2021) is represented by the fact that only rating agencies for which the KPI methodology employed is available are considered (i.e., MSCI, Arabesque, Refinitiv and Truvalue). In the assessment, the Environmental and Social pillar mean divergence are modest and pronounced, hence the divergence is explained by the different weights attributed to the factors. Similarly, there is even lower divergence in the KPIs scores given by the different agencies, and this is explained by rating agencies having lower room for customization due to the companies' directly shared information. Lastly, the Governance pillar exhibits the severest divergences both with respect to scores and weights. When analysing the weights and ratings, the weight of the different pillars explains 55% of the variance, while ratings explain 45% of the variance. In the same way, the divergences in the weights attributed to the KPIs are mostly due to the heterogeneity of weights, especially for the G pillar. More in depth, Corporate Governance exhibits higher divergence in the scores given with respect to the weight; and this represents an exception to the "rule of thumbs" since for the other pillars and categories, weights usually have a greater impact than scores (Arabesque vs. Truvalue show that the Corporate Governance scores mean divergence is -9.50, compared to its 5.62 mean Δ Weight). The reason for this is believed to be an analyst's judgement since many of the Corporate Governance variables are erroneously valued qualitatively and not quantitatively.

Consistent with the argument that the more granular is the disclosure, the lower the disagreement between ESG rating, is the research performed by Gibson et al. (2021). The determinants of ESG ratings' disagreement are analysed by taking into account observable financial and accounting features such as balance-sheet related data, industry-related data, investor transparency, valuation and price. The results of the regression highlight how gross profitability is negatively related to ESG ratings' disagreement (i.e., the more profitable a firm, the lower the ESG ratings' disagreement); this could be justified by profitable firms having more resources to provide ESG disclosure. In addition, larger firms and firms not having a credit rating result in greater ESG ratings'

disagreement as they are considered to be less transparent, with the evaluation becoming challenging (Gibson et al., 2021).

The transparency of a company on ESG issues is a factor to be considered in addressing ESG rating divergence. In fact, Christensen et al. (2022) underline how the information collected to evaluate the ESG profile of a company normally comes from corporate websites and sustainability reports. On occasions, even surveys completed by the company and information coming from other stakeholders (e.g., industry associations, regulatory agencies, NGOs) are reviewed. For these reasons, the majority of the literature agrees that the higher the ESG disclosure (hence the transparency) of a company, the lower the ESG rating divergence. On the contrary, Christensen et al. (2022) affirm the contrary: divergence is to be traced back to greater disclosure and to the higher number of factors to be evaluated by rating agencies. The high amount of qualitative data calls for a subjective evaluation. In fact, rating agencies use the same rules of thumbs for evaluation, hence, when an industry-significant information is not disclosed it is a very bad signal, and the score given is low. Contrarily, when information is thoroughly disclosed (e.g., number of days lost due to injuries), a rating agency needs to evaluate it in a positive/negative performance (Khan et al., 2016; in Christensen et al., 2022). The rating agencies included in the research are MSCI IVA (Intangible Value Assets), Sustainalytics and Thomson Reuters; moreover, ESG disclosure scores are sourced from Bloomberg, to define the level of disclosure of the company.⁵ The sample is made of 5,637 firms from the years 2004 - 2016. The authors consider the standard deviation in relation to the disclosure of the firm; the mean ESG disclosure is 28.5 out of 100, indicating that disclosure is still low (Christensen et al., 2022). In the last years, thanks to organisations such as GRI and the Sustainability Accounting Standards Board (SASB), there could have been an increased harmonisation on what good ESG performance is. This is confirmed as adhering to higher levels of GRI (Global Reporting Initiative) reporting standards contributes to the usefulness of the report, leading to lower disagreement (Kimbrough et al., 2022). Hence, Christensen et al. (2022) analyse how the divergence of rating is changing over time due to the ever-changing regulations and standards on the environment. In particular, the authors regress ESG disagreement on

⁵ Thomson Reuters acquired ASSET4, and its ESG ratings were incorporated by Thomson Reuters' platforms. Christensen, D. M., Serafeim, G., & Sikochi, A. (2022). Why is Corporate Virtue in the Eye of The Beholder? The Case of ESG Ratings. *Accounting Review*, 97(1), 147–175.

time to check for the lower divergence, and the results show how the disagreement on ESG ratings is increasing over time, with disagreement on the Governance pillar having the greatest impact, as Capizzi et al. (2022) corroborate. As the ESG disclosure coefficient in the testing by Christensen et al. (2022) is statistically significant and positive, there is a positive relationship between disclosure and divergence. Notably, by increasing the disclosure of ESG topics (from the 25th to the 75th percentile), the ESG disagreement increases in the range of 22 - 31%. Moreover, as the average ESG performance gets lower, the disagreement gets higher. Environmental and social disclosure have a constant positive effect on ESG disagreement, nonetheless, the governance pillar contributes to the divergence when the firm's fixed effects are not considered in the regression; this is signifying that governance is causing divergence not overtime but only in the cross-section.

ESG ratings divergence could be theoretically resolved by promoting commensurability and reporting standards, yet Kimbrough et al. (2022) explain how voluntary disclosure could be a way to fill in the uncertainty gap of ESG ratings divergence. The total sample considered is made of 1,161 firms from 2007 to 2016; it is made of two leading data agencies: ASSET4 and KLD (Vigeo Eiris is included as a supplementary measure). The authors find that 32% of the firms issue voluntary ESG reports. The impact of voluntary disclosure could be positive if the quality and credibility of the report are high, in fact, the deregulation on voluntary disclosure grants managers significant room for opportunistic and strategic disclosure (Hobson & Kachelmeier, 2005; Ramanna, 2013; in Kimbrough et al., 2022). The results of the dispersion analysis highlight how ESG voluntary disclosure is linked to lower disagreement about ESG performance. Moreover, firms with poor ESG and financial performance suffer from higher disagreement, as do smaller firms. Similarly in prior studies, authors find that longer reports, a more moderate tone and less sticky words have a positive impact on the perceived usefulness to the audience of ESG reports (e.g., Caglio et al., 2020; Dyer et al., 2017; Li, 2008; Muslu et al., 2019; in Kimbrough et al., 2022).⁶ Kimbrough et al. (2022) conclude that higher quality reports benefit from lower ESG ratings' disagreement, moreover when a report is subject to external assurance (especially when performed by

⁶ “Stickiness captures re-use of the same firm's disclosure from a prior period”. Kimbrough, M. D., Wang, X., Wei, S., & Zhang, J. (2024). Does Voluntary ESG Reporting Resolve Disagreement among ESG Rating Agencies? *European Accounting Review*, 33(1), 15–47.

an accounting firm with respect to engineering or consulting firms), the negative relation between ESG reports and ratings' disagreement is stronger.⁷

Firms which belong to environmentally sensitive industries are under more pressure to publish sustainability reports, as a way to justify their actions and disclose their environmental commitment. In fact, in Kimbrough et al. (2022) 39.6% of the environmentally sensitive firms considered in the sample of the research disclose ESG reports, in comparison to 31.5% of firms in the other industries. ESG rating divergence is less pronounced in environmentally sensitive firms which are subject to more continuous monitoring of the market, society, and regulators due to the environmental risks associated with their operations. Kimbrough et al. (2022) confirm that there is a greater negative association between ESG disclosure and ESG ratings' disagreement for environmentally sensitive industries. Gibson et al. (2021) also show how "the average pairwise correlations between ESG ratings vary at the industry level". This is done using the 12 Fama and French industries of which "*Consumer Durables*" and "*Telecommunications*" exhibit the lowest average correlation, while the highest correlation is in the "*Manufacturing*" and "*Business Equipment*" industries.⁸ Despite this, firms owning more tangible assets also exhibit more disagreement (as more tangible assets could easily mean a greater impact on the environment).

Cao et al. (2023) show that green investments have both theoretically and practically consequences on ESG ratings divergence. Green investments include projects aiming to generate positive environmental outcomes, concerning renewable energy, sustainable infrastructure, and energy-efficient technologies (D'Angelo et al., 2023; Sharif et al., 2023; Sun et al., 2022; in Cao et al., 2023). The sample is created by data for the period 2011 to 2020 from high-pollution-level Chinese listed companies, the ratings' of which are retrieved from Bloomberg, with a total of 551 observations. The positive relation between green investments and ESG ratings is visible for the environmental and social pillars. On the contrary, governance does not seem to interact with green

⁷ The firms considered in the research are based in the U.S., hence external assurance was not mandatory. Kimbrough, M. D., Wang, X., Wei, S., & Zhang, J. (2024). Does Voluntary ESG Reporting Resolve Disagreement among ESG Rating Agencies? *European Accounting Review*, 33(1), 15–47.

⁸ Nondurables, Consumer Durables, Manufacturing, Energy, Chemicals, Business Equipment, Telecommunications, Utilities, Retail/Wholesale, Health Care, Financials, Others. Kenneth R. French - Detail for 12 Industry Portfolios https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library/det_12_ind_port.html (Accessed on April 27, 2024)

investments, as the governance of a company is usually independent of investment decisions.

1.4. Consequences of divergence in ESG ratings

ESG rating divergence causes confusion both to investors due to perceived uncertainty, but also to companies (Billio et al., 2021), as it represents a deterrent for improving their ESG performance due to the contrasting scores (Berg et al., 2022). The consequences of ESG rating divergence are delved into from two different perspectives: stock market dynamics and cost of equity capital.

1.4.1. Stock market consequences

The evidence that shareholder value is influenced by ESG ratings' disagreement is measured in Kimbrough et al. (2022) through capital markets uncertainties, the results suggest that market uncertainty is related to ESG ratings' disagreement, with stock volatility showing the strongest relation, followed by bid-ask spread and lastly by analyst forecast dispersion. There exists a positive relation between ESG ratings' disagreement and market premium as the higher the disagreement, the higher the stock returns (Gibson et al., 2021; Avramov et al., 2022). The reason behind the positive relation is the fact that dispersion is perceived as an additional risk, hence investors demand for a higher return for holding the stock when dispersion is higher (Atmaz and Basak, 2018; in Gibson et al., 2021). The regression evidence in Gibson et al. (2021) shows that higher ESG ratings call for higher stock returns. In particular, the coefficient estimate for the E pillar is 1.22, with the estimated coefficient of S and G pillar respectively at 0.70 and -0.37. This is suggesting that the E pillar is the driver of the positive stock market relationship (Gibson et al., 2021).

ESG rating divergence behaves differently in developing markets, in fact, Wang et al. (2024) find that ESG ratings divergence leads to lower trust from investors. In fact, the heterogeneity of beliefs is shifting the demand and supply of stocks, resulting in lower excess stock returns from the market. Wang et al. (2024) analyse a sample made of 4465 Shanghai and Shenzhen A-share listed companies from the period 2018 - 2022, obtaining ESG ratings from Financial Times Stock Exchange (FTSE), Bloomberg, Wind Information Co., Ltd., Sino-Securities Index (SSI) and Syn (supposedly SynTao Green Finance). The authors conclude that divergence of ESG ratings in developing markets leads to lower excess returns: for each 1% increase in ESG rating divergence, a decrease

of 0.027% on excess stock return is registered. For high-carbon intensity companies the ESG divergence results in an even smaller stock-excess return, due to the higher scrutiny by the public. The greater the transparency of a company, the lower the effect of ESG rating divergence on excess stock returns, since markets can more easily operate efficiently through increased transparency (Wang et al., 2024). Developed countries' capital markets are more transparent and mature, therefore ESG divergence is considered a positive factor as it highlights the different perspectives of investment institutions. Accordingly, ESG uncertainty would generally lead to higher market premium (Amramov et al., 2022), as is confirmed by Gibson et al. (2021). However, this is not true in a green market when investors gain nonpecuniary benefits from green stocks. Avramov et al. (2022) analyse a sample of data from the period 2002 - 2019, made of U.S. common stocks (the rating agencies included are Bloomberg, Sustainalytics, MSCI KLD, MSCI IVA, RobecoSAM and Asset4 (Refinitiv)). The authors find that when the market is green, ESG uncertainty is causing the demand for equities to decrease, while in the case of a neutral market, ESG uncertainty leads to higher market premium. As the ESG rating of a firm increases, the demand for risky assets increases. However, as the rating uncertainty increases, the demand for green stocks decreases, even for norm-constrained institutions, with a decline in 21% of green stock holding.⁹ This suggests that rating uncertainty matters the most for ESG sensitive investors investing in green stocks. In the absence of ESG uncertainty, green stocks are outperformed by brown stocks, and in the case of low rating uncertainty “the ESG rating is negatively associated with future performance”, with a negative CAPM alpha of -0.16 per month.

Billio et al. (2021) find that investors' ESG preferences are weakened by ESG rating divergence. The sample is made of Bloomberg, ECPI, FTSE Russell, ISS Oekom, MSCI, Refinitiv, RobecoSAM, Sustainalytics and Vigeo-Eiris. Two different portfolios are constructed accordingly: the ESG agreement portfolio considers the companies which are rated (adding up to 48); while the non-ESG portfolio (199 companies) is built according to a negative screening approach, and to do so the authors consider firms not

⁹ Norm-constrained institutions (pensions funds, universities, foundations) are considered by Avramov et al. (2022), to capture in a more precise way the demand from EGS-sensitive investors, in fact, non-constrained institutions are potentially making more socially responsible investments with respect to other categories. Avramov, D., Cheng, S., Lioui, A., & Tarelli, A. (2022). Sustainable investing with ESG rating uncertainty. *Journal of Financial Economics*, 145(2), 642–664. <https://doi.org/10.1016/j.jfineco.2021.09.009>

complying with the UNGC (United Nations Global Compact).¹⁰ Two different periods of time are considered due to the fact that the term ESG originated in 2005; hence, the first period goes from December 1999 to December 2004, and the second one from January 2005 to January 2020. In the first period the Sharpe and Sortino ratios are higher (hence higher returns) for the non-ESG portfolio (1.22 and 1.53), compared to the ESG portfolio (0.25 and 0.38).^{11,12} In the second period the results are closer (1.04 non-ESG Sharpe and 1.29 non-ESG Sortino; 0.87 ESG Sharpe and 1.15 ESG Sortino), still the non-ESG portfolio performs better than the ESG portfolio. Nevertheless, in the last decade the unexpected spread of environmental concerns has led green stocks to outperform brown stock (Pástor et al., 2021; in Avramov et al., 2022). The effect of ESG disagreement weakening the ESG effect is proven by controlling for market risk. In the first period (1999 - 2004), the alphas are not significant for both the portfolios, indicating that there is no difference between the two. In the second period the portfolios result in a significant alpha of 0.59% (ESG portfolio) and 0.53% (non-ESG portfolio); however there are no significant portfolio performance differences in the long-short portfolio and this is due to the effect of the disagreement between rating agencies (Billio et al., 2021).

Serafeim and Yoon (2022) analyse the forecasting ability of ESG ratings. The sample is constructed from Sustainalytics, MSCI and Thomson Reuters data, for a total of 31,854 firm-day observations. There is a positive relation between ESG news and ESG ratings, the correlation is 0.30 for MSCI, 0.25 for Sustainalytics and 0.06 for Thomson Reuters. Hence, there is a predictive ability of ESG ratings to ESG news. Moreover, ESG disagreement is moderating the predictive ability of ESG rating by a factor of 0.8338 with high disagreement, with measurement being the only factor that diminishes the predictive ability of the consensus ESG rating. Positive (negative) ESG news are associated with positive (negative) stock price reactions. The market already incorporates news into the

¹⁰ Negative screening consists in the exclusion of sectors which may harm the environment or society (e.g. tobacco industry, arms (defence) industry, etc...). Billio, M., Costola, M., Hristova, I., Latino, C., & Pelizzon, L. (2021). Inside the ESG ratings: (Dis)agreement and performance. *Corporate Social Responsibility and Environmental Management*, 28(5), 1426–1445.

¹¹ The Sharpe ratio is a measure for the return of an investment compared to its risk. Sharpe Ratio Demystified: Balancing Risk & Reward | SimFin Glossary <https://www.simfin.com/en/glossary/s/sharpe-ratio/> (Accessed on April 27, 2024)

¹² The Sortino ratio measures the risk-adjusted return of an investment asset, portfolio or strategies, by differentiating harmful volatility from total overall volatility by using the standard deviation of negative asset returns, which separate downside risk from total risk. Understanding the Sortino Ratio: Detailed Guide to Downside Risk Measurement | SimFin <https://www.simfin.com/en/glossary/s/sortino-ratio/> (Accessed on April 27, 2024)

prices (especially for high Average ESG ratings), while for negative news there is no big difference, as the average industry-adjusted return is 0.074% for positive news and -0.189% for negative news.¹³ For low Average ESG rating, the average industry-adjusted return is 0.416% for positive news and -0.218% for negative news. For positive ESG news, there is a negative relationship between ESG news and stock price reactions, when the consensus is low the market reacts more strongly.¹⁴ This is in fact confirmed as the reaction of stock prices is higher for positive news compared to negative ones. However, this is weaker in the presence of ESG disagreement causing confusion and is true for material news.

Christensen et al. (2022) examine stock market consequences around the date when a new ESG rating is made public. The authors investigate whether the issuance of a new ESG rating, which is not aligned with the already public ESG rating from another firm, has any effects on the market. The results highlight how as ESG ratings' disagreement is increasing, so does the absolute market-adjusted returns and the return volatility.

ESG reporting and accounting methods require a standardisation to allow investors, policy makers and scientists to objectively evaluate ESG performance (Billio et al., 2021). A clear and harmonised definition of sustainability and its measurement as set in the EU Taxonomy could have an impact in reducing the divergence of ESG ratings. Dumrose et al. (2022) analyse 1,813 companies with Taxonomy-exposed revenue with ratings from MSCI, S&P, Refinitiv and Vigeo Eiris.¹⁵ The aggregate confusion between the E ratings and the four rating agencies is consistent with previous studies, with correlation between the E pillar spanning from 0.29 (S&P vs. MSCI and Refinitiv vs. MSCI) to 0.65 (Refinitiv vs. S&P). Furthermore, there is correlation between the relative Significant Contribution alignment in the environmental rating of the rating agencies. The extent of correlation differs between the four companies, due to the fact that the

¹³ High Average ESG ratings stands for companies which have an above-average ESG consensus rating. Serafeim, G., & Yoon, A. (2023). Stock price reactions to ESG news: the role of ESG ratings and disagreement. *Review of Accounting Studies*, 28(3), 1500–1530.

¹⁴ Consensus refers to analysts' forecasts, which have the ability to shape the market's expectations. Serafeim, G., & Yoon, A. (2023). Stock price reactions to ESG news: the role of ESG ratings and disagreement. *Review of Accounting Studies*, 28(3), 1500–1530.

¹⁵ In the research by Dumrose et al. (2022) the relation between EU Taxonomy and ESG ratings is analysed only from the perspective of the environmental pillar. Dumrose, M., Rink, S., & Eckert, J. (2022). Disaggregating confusion? The EU Taxonomy and its relation to ESG rating. *Finance Research Letters*, 48.

Taxonomy considered covered emission-intensive industries, hence a higher share of Taxonomy-exposed revenue is indicating higher revenue generation, following in larger firms being less exposed to the taxonomy.¹⁶

1.4.2. Equity capital granting and cost consequences

A positive relation exists between the ESG performance of a company and the capacity to get granted credit (Chang et al., 2014; in Christensen et al., 2022), however ESG ratings' disagreement represents an obstacle as it is perceived to be an uncertainty factor, having an impact on financing outcomes which is increasing over time (Christensen et al., 2022). Additionally, ESG ratings' disagreement impacts the cost of equity capital, as Mio et al. (2024) conclude. The authors find that even in the presence of multiple ESG ratings, firms with higher ESG scores benefit from a lower cost of equity capital, more specifically: a one unit increase in the average ESG rating is associated with a 0.0524 to 0.0541 percentage decrease in the cost of equity capital. Voluntary disclosure is also a factor benefiting the cost of capital, by contributing to making it lower (Dhaliwal et al., 2011; in Kimbrough et al., 2022), as does the size of a firm (Mio et al., 2024). Mio et al. (2024) also find that ESG ratings' disagreement has a positive moderating impact on the negative relation between ESG rating and cost of equity capital. By increasing the ESG disagreement from the 25th to the 75th percentile, there is a reduction (16% to 19%) in the impact of a one-unit increase in the average ESG score on the cost of equity. Avramov et al. (2022) conclude that by harmonising what constitutes a green investment, the cost of capital for green firms could be lower, hence resulting in higher social impact.

1.5. Conclusions

ESG ratings and the preference of green stock is increasing due to the attention and preferences of investors (Avramov et al., 2022). Despite this, as of today less than 25% of exchanges (only 27) around the world require listed companies to disclose ESG information (Wang et al., 2024), with companies without an ESG rating having lower trading volume compared to the counterpart (Zumente & Lace, 2021). The literature confirms the existence of ESG rating divergence, which is caused by several factors: spanning from the sources of information collected to the different methodologies

¹⁶ “The firm’s share of Taxonomy-exposed revenue determined the maximum Substantial Contribution Alignment.” Dumrose, M., Rink, S., & Eckert, J. (2022). Disaggregating confusion? The EU Taxonomy and its relation to ESG rating. *Finance Research Letters*, 48.

employed by rating agencies in the evaluation process. The lack of standardisation and transparency is a clear obstacle to ESG rating convergence, for a market which could be able to identify responsible firms in the panorama of ever-changing perceptions. Due to this, the consequences of ESG rating divergence include market's reaction to ESG news, with higher market returns in developed markets, price volatility and higher ESG scores benefitting a lower cost of equity capital.

Factors that could positively impact ESG divergence by rendering it lower are transparency and the quality of the disclosure. These two aspects are key in the ESG divergence landscape, and they are addressed by the new Corporate Sustainability Reporting Directive (CSRD), following the formation of the International Sustainability Standards Board (ISSB), announced at COP26 in Glasgow in 2021. The main objective of the International Financial Reporting Standards (IFRS) through the CSRD is to fulfil the needs of investors and financial markets to be able to discern companies really taking action to improve their ESG performance, in line with the Paris Agreement. High quality ESG reports which could be easily compared between companies and which delve into the risks and opportunities of sustainability are essential to support investors and more generally all the actors involved in the (ESG) decision-making process.¹⁷

Another important gap in the decrease of ESG rating divergence is represented by the different methodologies and different sources of information employed in the ESG rating calculation. As a consequence, a provisional agreement of the Council of the European Union states that ESG rating agencies will need an authorization and will be subject to the supervision by the European Securities and Markets Authority (ESMA). This could be an extremely important contributor in the improvement of the divergence, as was made clear by the literature analysed, the comparability and the reliability of information could be much easier. In particular, the rating could be provided separately through the three pillars, and when provided as a single rating the weighting of each pillar should be explicit, once again contributing to transparency. Moreover, the provisional agreement is going to be applied to all the rating providers in the European Union and also those that are established outside the EU and operating/wishing to operate in the

¹⁷ International Sustainability Standards Board <https://www.ifrs.org/groups/international-sustainability-standards-board/> (Accessed on May 25, 2024)

EU.¹⁸ The direction taken by the European Union is promoting transparency and the quality of the reporting, in a coherent and uniform way, to address ESG rating divergence.

How the quality of the reporting is contributing to reducing ESG rating divergence is going to be the topic of the empirical analysis in the third chapter.

¹⁸ European Council. "Environmental, Social and Governance (ESG) Ratings: Council and Parliament Reach Agreement." Press Release, February 5, 2024. <https://www.consilium.europa.eu/en/press/press-releases/2024/02/05/environmental-social-and-governance-esg-ratings-council-and-parliament-reach-agreement/> (Accessed on May 25, 2024)

CHAPTER II: CREDIT RATINGS

2.1. Introduction: Credit ratings

This chapter delves into the topic of credit ratings, with the aim of understanding whether divergence exists, and which are the factors impacting the quality of credit ratings.

Credit ratings assess the quality of the creditworthiness of an entity and its financial obligations (Bannier et al., 2010) in alpha-numeric form, expressing the capacity and the ability of the borrower to repay the debt obligation (Kaur et al., 2023). Credit ratings originated with the objective of filling the information asymmetry gap between market participants (Langohr and Langohr, 2010; in Kaur et al., 2023; Krystyniak et al., 2024), with credit rating agencies (CRAs) having the responsibility to summarise a multitude of aspects into one single rating on a credit quality scale (Duff & Einig, 2009). The demand for rating services comes from investors, issuers of debt, investment banks, debt securities, trade and commodities financiers and lastly also from regulators (Boot et al., 2006; in Duff & Einig, 2009).

The use of credit ratings has broadened over time, driven by the globalisation of financial markets, paired with the complexity of financial products and the increased incorporation of credit ratings in contracting and financial regulations (Frost et al., 2007; in Bannier et al., 2010). In fact, modern capital markets are strongly influenced by information intermediaries, which play a key role in capital allocation (Bonsall et al., 2024), since credit ratings impact institutions' (and financial intermediaries') decisions on investments and capital requirements (Krystyniak et al., 2024; Duff & Einig, 2009).

There are two types of credit rating compensation structures: issuer-paid and investor-paid (also known as subscription-paid) models. In issuer-paid models, firms are the ones to directly pay CRAs for the rating (Attig et al., 2021), while investor-paid models consist of investors demanding for ratings of interest and compensating the CRA for the access to credit ratings (Bonsall et al., 2024). The popularity of investor-paid rating agencies grew after the bankruptcies of Enron and WorldCom in the early 2000s, which were perceived to be unforeseen by issuer-paid CRAs, and later magnified after the subprime mortgage crisis beginning in 2007 (Bonsall et al., 2024).

Issuer-paid CRAs (like S&P, Moody's and Fitch) employ both qualitative and quantitative information to assess the credit rating of a company. The quantitative

information is taken -for the most part- from the financial report, while the qualitative information generally includes the management's competence, trustworthiness and integrity, corporate culture, governance, suppliers and customers' relationships (Moody's Investors Service 2006; S&P, 2008; in Bonsall et al., 2017). On the contrary, investor-paid CRAs usually employ quantitative models, thereby solely relying on companies' financial reports (Egan Jones Ratings, 2015; in Bonsall et al., 2017).¹⁹

Ratings can be solicited or unsolicited: when a company is requesting the rating and paying for the fee it is a solicited rating (Zhao et al., 2021); while in the case of unsolicited ratings, CRAs do not get compensated by the company being rated and do not have access to the company's private information (Behr & Güttler, 2008; in Zhao et al., 2021).

The big three issuer-paid CRAs are Fitch, Moody's and Standard & Poor's, being Nationally Recognized Statistical Rating Organisations (NRSRO):²⁰

- Fitch Publishing Company Inc. was launched in 1913 in New York by three investors: John Knowles Fitch, Henry P. Clancy, and Fabian Levy. The Fitch Bond Book was a collection of easily readable bond data, and it was their most successful product. In 1924 they elaborated and introduced the letter-grade scoring system (AAA to DDD) for rating the creditworthiness of corporations. In the following years, the company continued expanding, achieving the NRSRO status in 1982.²¹ Fitch employs the scale AAA – D (with an additional +/- for AA to CCC, to indicate the difference in probability of default or recovery for issues). The ratings AAA through BBB are investment grade, while BB to D are speculative grade.²²
- Moody's was founded in 1900, in the same year John Moody & Company published Moody's "*Manual of Industrial and Miscellaneous Securities*". In 1913,

¹⁹ E.g., With ROA one can assess the borrower's managerial talent and the firm competitiveness. Egan Jones Ratings. 2015. Form NRSRO. Available at: <http://www.egan-jones.com/nrsro>; in Bonsall, S. B., Koharki, K., & Neamtiu, M. (2017). When Do Differences in Credit Rating Methodologies Matter? Evidence from High Information Uncertainty Borrowers. *Source: The Accounting Review*, 92(4), 53–79. <https://doi.org/10.2307/26550674>

²⁰ Because rating agencies need to obtain financially relevant corporate information that is not public, CRAs need to receive the authorization as a NRSRO by the SEC to operate. Bongaerts, D., Cremers, K. J. M., & Goetzmann, W. N. (2012). Tiebreaker: Certification and multiple credit ratings. *Journal of Finance*, 67(1), 113–152. <https://doi.org/10.1111/j.1540-6261.2011.01709.x>

²¹ FitchGroup, <https://www.fitch.group/history> (Accessed on July 27, 2024)

²² Fitchratings, <https://www.fitchratings.com/products/rating-definitions#about-rating-definitions> (Accessed on August 14, 2024)

John Moody launched his evaluation of industrial companies and utilities and one year later Moody's Investors Service was incorporated.²³ The rating scale employed by Moody's Investors Service ranges from Aaa to C (with Aaa to Baa3 being investment grade, and Ba1 to C being non-investment grade).²⁴

- In 1860 H.V. and H.W. Poor Co. was founded with the first edition of "*History of Railroads and Canals in the United States*", published by Henry Varnum Poor. This was a comprehensive financial review of the U.S. railway industry. In 1906 Luther Lee Blake founded Standard Statistics, focusing on supplying financial information on companies. In 1941 H.V. and H.W. Poor Co. merged with Standard Statistics, forming Standard & Poor's Corporation (S&P).²⁵ The rating scale employed by S&P ranges from AAA to D (with AAA to BBB being investment grade, and BB to D being speculative grade).²⁶

Among the biggest investor-paid CRAs there are:

- Egan Jones Ratings (EJR), founded in 1995 by Sean Egan and Bruce Jones, issuing credit ratings both to banks and regulated and non-regulated institutional investors, excluding retail investors (Bruno et al., 2016, p. 1579; in Bonsall et al., 2024). Its business expanded continuously in the years and in 2007 it was granted the NRSRO title by the SEC (Xia, 2014), it is also "*certified by both the European Securities and Markets Authority and UK Financial Conduct Authority*". EJR's internal policy for issuing ratings involves investors requests. EJR employs the scale AAA – D, (with plus (+) and minus (-)). The ratings AAA through BBB are investment grade, while BB to C are considered speculative grade ratings, D is not included in the latter as it is considered "*to have the no determinable level of creditworthiness*".²⁷

²³ Moody's,

<https://www.moody.com/sites/products/ProductAttachments/Moody%27s%20Investors%20Service%20Descriptor.pdf> (Accessed on July 27, 2024)

²⁴ Moody's,

https://www.moody.com/sites/products/productattachments/ap075378_1_1408_ki.pdf (Accessed on August 14, 2024)

²⁵ S&P Global, <https://www.spglobal.com/en/our-history#zero> (Accessed on July 27, 2024)

²⁶ S&P Global, <https://www.spglobal.com/ratings/en/about/intro-to-credit-ratings> (Accessed on August 14, 2024)

²⁷ Egan Jones rating company, <https://www.egan-jones.com/about-us/company-overview/> (Accessed on July 13, 2024)

- RapidRatings was founded by Dr. Patrick Caragata in New Zealand in 1997; however, the company was given the name RapidRatings and incorporated in 2001 in Australia, after Dr. Caragata found risk capital from an Australian company. In 2007 Dr. Caragata partnered with James Gellert and Douglas Cameron to purchase the company's assets and relocate the business to New York. It is now the world's premier software-based provider of corporate ratings.²⁸ RapidRatings employs the scale 0 – 100.

2.2. Financial reporting quality and credit ratings

Credit rating's quality is measured by Attig et al. (2021) considering ratings' standards stability and ratings' informativeness; on the other hand, Zhou et al. (2021) define it by timeliness, information content and prediction of default.²⁹ The low rating quality has been linked (since 2000) to the monopolistic landscape of CRAs (Association for Financial Professionals, 2002; in Xia, 2014), representing an obstacle in filling the information asymmetry gap between companies and investors (Krystyniak et al., 2024). Nonetheless, Baghai et al. (2014) find a ratings' correlation of 0.94 over the period 1995 – 2009, analysing corporate debt ratings, with monthly data of Standard & Poor's debt ratings, Moody's and Fitch's senior unsecured bond ratings. This is confirming that the agencies are agreeing on the ratings given to companies, however it is necessary to underline the limited period and that the three above-mentioned-CRAs are all issuer-paid, having access to (the same set of) qualitative information.

Bonsall et al. (2017) analyse the different rating methodologies to assess the divergence of credit ratings and deep dive in how the reporting quality affects the accuracy of the credit rating, as investor-paid and issuer-paid agencies employ different sets of information, leading to quality differences. Issuer-paid rating agencies meet at least annually with the firm management; with the meetings called for usually in case the firm would like to issue new debt, in important corporate transactions, in the review of the rating (called for by the company) and lastly in case of industry's difficulty. The qualitative meetings are necessary to assess if the company is maintaining the pathway

²⁸ RapidRatings International Inc., <https://www.rapidratings.com/news-items/founder-and-first-ceo-of-rapidratings-dr-patrick-caragata-announces-retirement> (Accessed on August 14, 2024)

²⁹ Rating informativeness is defined as delivering credit-relevant information to investors. Attig, N., Driss, H., & el Ghoul, S. (2021). Credit ratings quality in uncertain times. *Journal of International Financial Markets, Institutions and Money*, 75. <https://doi.org/10.1016/j.intfin.2021.101449>

of the agreed objectives, and in case the industry dynamics change. These are in fact key aspects to take in consideration, as credit ratings typically include also a forward-looking dimension of the company (Bonsall et al., 2017). Akins et al. (2018) state that financial reporting quality is negatively associated with credit risk uncertainty, as an agency which has no access to private information benefits from higher reporting quality. In practice, the quality of investor-paid credit ratings could suffer when companies are less transparent. This is in fact proven by Bonsall et al. (2017) as the predictive ability (of future defaults) for EJR (an investor-paid CRA) decreases with respect to S&P (an issuer-paid CRA), when the financial reporting uncertainty increases.

For less transparent companies, the more stringent the rating's methodology is, the lower the advantage of rating's accuracy of an investor-paid CRA compared to an issuer-paid credit rating agency. Contrariwise, in a low-uncertainty environment, EJR's credit ratings are considered more accurate and informative by market participants than issuer-paid ratings (Beaver et al., 2016; Bhattacharya et al., 2016; in Bonsall et al., 2017). EJR's ratings, at the uncertainty median level, have a more robust association to expected default probabilities compared to S&P's ratings, indeed EJR responds more rapidly to news about the issuer's risk of default (Beaver et al., 2006; Bruno et al., 2013; in Bonsall et al., 2017). The reason behind this is explained by the different users of ratings: investors are interested in short-term credit risk information, thereafter EJR includes this kind of information in the rating; while S&P focuses more on the long-term credit risk relevant information, so it is slower to respond to news on credit risk related to the short-term (Ganguin & Bilardello, 2005; in Bonsall et al., 2017).

Bonsall et al. (2017), find that as the level of uncertainty information increases, there is a weakening in the relation between expected default probability and EJR's ratings. For S&P, the higher the credit rating, the lower the probability of future default; however, for EJR there is no clear evidence that the ratings are more accurate (at information uncertainty median levels). In addition, as the information uncertainty increases, the accuracy of EJR decreases (by 13% over the one-year period and by 25% over the three-year period) with respect to S&P in recognizing future defaults.³⁰ Indeed, in the case of less transparent companies, the broader rating methodology comprising

³⁰ The results are based on a sample median rating accuracy of 0.0030. Bonsall, S. B., Koharki, K., & Neamtiu, M. (2017). When Do Differences in Credit Rating Methodologies Matter? Evidence from High Information Uncertainty Borrowers. Source: *The Accounting Review*, 92(4), 53–79. <https://doi.org/10.2307/26550674>

qualitative evaluation (and direct management approach) is proven to be more accurate than a stricter methodology based exclusively on quantitative information (i.e., constraints on information processing).

Akins (2018) also finds that the divergence of credit ratings could be caused by uncertainty as the financial reporting quality is determined by the reliability of the data reported. The reporting quality is a key player in reducing uncertainty even for those intermediaries which have access to private information. Disclosing public financial information reduces the information asymmetry and increases corporate financial transparency, reducing the room for a company to manipulate relevant financial information (Vanhaverbeke et al., 2024), especially when financial reporting is accurate and timely (Kaur et al., 2023).³¹

Krystyniak et al. (2024) observe that in the Corporate Methodology of S&P, it is clear how CRAs assess the firms' features in comparison to peers in the industry and in the economy. The deterioration observed by the authors in ratings between 1985 and 2002 could be owed to a decrease in the accounting quality (and not in the tightening of the standards) (Jorion et al., 2009; in Krystyniak et al., 2024). However, corroborating the findings of Alp (2013), the authors find that rating standards in the period 1986 to 2002 are steady, while between 2002 and 2006 they experience a weakening. More specifically, a company with the same risk features would have been rated 2.6 notches lower in 2016 compared to 1985. The authors find that the average rated firm after 2002 experiences a rise in the equity market value and, contemporarily a decline in the idiosyncratic return volatility (except for 2008). This would signify a decline in the average default probability, and consequently a rise in the average credit rating. As this is not the case, the authors claim that this is because companies are evaluated with respect to their peers and with respect to the economic situation, hence decreasing over time the average credit rating. In fact, over time, rated firms are smaller and have a higher idiosyncratic risk.

Lastly, Zhou et al. (2021) dive into the biases of solicited and unsolicited ratings of Moody's. Moody's has been issuing credit ratings since the 1900s, and from 1999 onwards, it started to report publicly the identification of unsolicited firms. The reason

³¹ "Timeliness is measured by market-adjusted return following Gu (2002) and the number of days a firm takes to release its financial statements after the closure of the fiscal year". Kaur, J., Vij, M., & Chauhan, A. K. (2023). Signals influencing corporate credit ratings—a systematic literature review. *DECISION*, 50(1), 91–114. <https://doi.org/10.1007/s40622-023-00341-4>

behind unsolicited ratings, claims Moody's (2018), is to increase transparency for market participants.

Recently, the SEC has been supporting unsolicited ratings as it claims that it is an instrument to increase competition and urge CRAs to be more qualified and competent. Several studies find that solicited ratings are overall higher (Byoun & Shin, 2002; Poon, 2003; Poon et al., 2009; in Zhao et al., 2021); nevertheless, only ratings from different CRAs were compared, hence the ratings divergence is traced back to the company's fundamentals and not to the conservatism related to credit ratings.

Zhou et al. (2021) compare the same company's ratings, analysing a sample between 2010 to 2017, with 2,315 unsolicited ratings' observations and 7,830 solicited ratings' observations. The authors find that when comparing Moody's ratings with S&P's and Fitch's, the unsolicited ratings issued by Moody's are more conservative. Moreover, if the firm requests the rating, on average Moody's solicited ratings are higher, while if they are unsolicited, they are on average lower. The quality of the rating is not poorer if it is unsolicited, with both ratings offering additional information to investors, and predicting the risk of default in the same way. In some cases, there is even low evidence that Moody's over-estimates the risk of future default for firms, indicating that unsolicited ratings are issued for firms that Moody's believes could have harder future performances and has a conservative approach on the ratings, controlling for other variables and fundamental factors. The authors conclude that firms do not demand credit ratings due to the lower predicted rating, and this is confirming the self-selection hypothesis. This evidence represents an advantage for CRAs reputation since it proves Moody's contribution to increasing the market's transparency.

From the literature analysed it follows that companies' financial reporting quality should improve to decrease the information asymmetry gap and the rating's divergence for firms, with high-quality-financial-report firms being favoured with a higher rating and consequently a lower cost of capital (Ashbaugh-Skaife et al., 2006; in Kaur et al., 2023).

2.3. Conflicts of interest

A conflict of interest is defined as "*a situation in which someone cannot make a fair decision because they will be affected by the result*".³²

³² Cambridge dictionary, <https://dictionary.cambridge.org/dictionary/english/conflict-of-interest> (Accessed on July 13, 2024)

When the company requesting the credit rating is the source of income of CRAs, it is believed that conflicts of interest arise. Alternatively, this should not be the case when investors ask for accurate ratings and CRAs are not relying on the issuing firm for compensation. However, in investor-paid models, CRAs may be faced with the pressure to issue ratings benefitting and pleasing clients (especially larger ones as those are paying higher fees) (Bonsall et al., 2024; Tang et al., 2020). It follows that conflicts of interest take place likewise in issuer-paid and investor-paid models, shifting from company to CRA, to bond investor and fund managers to CRA (Bonsall et al., 2024).

When comparing Moody's ratings (issuer-paid CRA) with RapidRatings (subscription-paid CRA), the findings corroborate the lower quality of Moody's ratings, as they are higher and slower to include negative news (Cornaggia et al., 2013; in Tang et al., 2020). The rating's quality of an issuer-paid CRA is positively influenced by the competition from an investor-paid CRA; in fact, the rating's quality of S&P (issuer-paid model) becomes more receptive after EJR (investor-paid model) initiates coverage of the same issuer (Xia, 2014; in Tang et al., 2020).

The literature agrees that on average, investor-paid CRAs (such as EJR and RapidRatings) issue more meticulous and timely ratings than issuer-paid CRAs (Cornaggia et al., 2013; Beaver et al., 2006; Xia et al., 2012; Bhattacharya et al., 2016; in Bonsall et al., 2017). In particular, the integration of credit ratings in several regulations, represents an obstacle to timeliness (for issuer-paid CRAs) as they take more time for the rating's assessment to avoid unnecessary changes with the aim of maintaining some sort of rating's stability for the company (Beaver et al., 2006; Bruno et al., 2013; S&P, 2008; in Bonsall et al., 2017).

2.3.1. Conflicts of interest in issuer-paid credit rating agencies

In uncertain times, whether it be related to economic, fiscal, monetary, or regulatory policy, bond investors have a harder time in assessing a firm's credit quality (Attig et al., 2021). In such circumstances, the conflicts of interest encountered by CRAs are greater, as the information environment is distorted and can lead to consequences on economic incentives and the quality of credit ratings, by giving CRAs an incentive for positive evaluation (Attig et al., 2021). Baghai et al. (2014) state that issuer-paid models' conflicts of interest led rating agencies to loosen their standards, with ratings not fully representing the actual default risk of securities. Rating-based contracts and regulations

are less effective when in uncertain times credit ratings are inflated (upwards or downwards) and their quality is hence spoilt (Bonsall et al., 2024). In policy uncertainty times, the financial obligations of a company could suffer as investments are reduced (Julio and Yook, 2012; Gulen and Ion, 2016; Jens, 2017; in Attig et al., 2021), and sensitivity to the cost of capital increases (Drobetz et al., 2018; in Attig et al., 2021). Consequently, issuer-paid CRAs could provide more favourable ratings to mitigate the negative effect of policy uncertainty and support the company paying the fees, leading to a decrease in ratings' quality (Attig et al., 2021).

Beatty et al. (2019) analyse a sample of 5,930 bond ratings from the period 2008 – 2012 (except for 2010) and find that the ratings increase of 0.78 notches for Fitch, Moody's and S&P, but they do not have higher yields, in fact the average bond yields for Fitch and Moody's decrease by seven basis points with respect to S&P's. Moreover, the rating fees after 2010 are overall higher, especially after the recalibration Fitch's and Moody's fees are higher than S&P's (bond issues rated by S&P are generally smaller and receive moderately lower ratings than Fitch and Moody's).³³ Fitch and Moody's rated bonds (also rated by S&P) are charged 11% more after the recalibration, and this is the result of the issuer's willingness to pay for higher ratings.

On the other hand, uncertainty could even be causing positive effects; as uncertainty causes the cost of debt to increase, companies may issue less debt and CRAs are not faced with the incentive to inflate ratings due to the decrease in income fees. Uncertainty is countercyclical (Baker et al., 2016; Bloom et al., 2018; in Attig et al., 2021), as politicians are urged to discuss and introduce policies in poor economic conditions (Attig et al., 2021), while ratings are usually procyclical (Bolton et al., 2012; Dilly et al., 2016; in Attig et al., 2021), hence, when ratings are inflated the economy is in a good state (and policy uncertainty is lower). When policy uncertainty increases, the standards of CRAs get looser, and this happens for firms for which the CRA is more prone to conflicts of interest. CRAs use less stringent standards for larger firms (Attig et al., 2021) with performance and size being negatively associated with uncertainty (Akins, 2018),

³³ In the early 1970s, Moody's and S&P changed their investor-paid model to issuer-paid model and to improve comparability in 2010 they adjusted their ratings to the Global Rating Scale, combining default risk and expected loss given default, used for corporate, sovereign and structured finance debt. With the recalibration, credit ratings experienced increases not related to a reduction in the risk of default, but due to the changing in the unit of measurement. Beatty, A., Gillette, J., Petacchi, R., & Weber, J. (2019). Do Rating Agencies Benefit from Providing Higher Ratings? Evidence from the Consequences of Municipal Bond Ratings Recalibration. *Journal of Accounting Research*, 57(2), 323–354. <https://doi.org/10.1111/1475-679X.12263>

contrarily leverage is positively associated with uncertainty.³⁴ Moreover, the longer the relationship between the company and the CRA, the larger the inflation in ratings (Attig et al., 2021); and the same happens for complex and structured securities and products (Opp et al., 2013; Mathis et al., 2009; in Krystyniak et al., 2024).

Bongaerts et al. (2012) analyse the divergence of ratings and whether a third rating results in adverse selection caused by information asymmetry. The sample analysed is made of large, liquid U.S. companies, whose bonds are rated by Moody's and S&P. When just two ratings are available, the principle to rank a rated bond is to employ the lowest rating, however when a third one is available, the mid one would be used. The authors develop and analyse three different hypotheses to justify a company requesting multiple ratings:

1) *information production hypothesis* depicts the lowering of the uncertainty of investors by including an extra rating (e.g., Güntay and Hackbarth, 2010; in Bongaerts et al., 2012). In fact, as CRAs apply different methodologies, having more perspectives helps in decreasing uncertainty; hence a company subject to higher uncertainty would be expected to ask for the issuance of several ratings.

2) *shopping hypothesis* stands for the behaviour of companies asking for an additional rating in the hope of getting a higher one (e.g., Poon & Firth, 2005; Sangiorgi et al., 2009; in Bongaerts et al., 2012). This could happen when the company asking for another rating has better knowledge on its credit quality.

3) *regulatory certification hypothesis* delineates the need (fulfilled by the market and by regulators) to separate bond issues into non-informationally sensitive (investment grade) and informationally sensitive (high yield or speculative grade) (Gorton and Pennacchi, 1990; Boot & Thakor, 1993; in Bongaerts et al., 2012). In the regulatory landscape credit ratings are crucial in many investments, as mutual funds often cannot invest in speculative grade bonds (Bongaerts et al., 2012; Huang et al., 2021), and this could be the reason why a company asks for a third rating.³⁵

³⁴ The size of a company is an important determinant of credit ratings due to the lower risk justified by markets' and products' diversification. Kaur, J., Vij, M., & Chauhan, A. K. (2023). Signals influencing corporate credit ratings—a systematic literature review. *DECISION*, 50(1), 91–114. <https://doi.org/10.1007/s40622-023-00341-4>

³⁵ The convention of the expressions *investment grade* and *speculative grade* define in the first case low to moderate credit risk, and in the latter define either high credit risk or that a default has already befallen. Fitch ratings, <https://www.fitchratings.com/products/rating-definitions#about-rating-definitions> (Accessed on August 14, 2024)

In the same issue in the same quarter, ratings issued by Fitch (third rating) are generally higher than Moody's and S&P's, and when analysing the informativeness of credit ratings, Bongaerts et al. (2014) find that when taken separately all CRAs are informative. However, when taken jointly, only the ratings from S&P and Moody's include relevant information with the credit spread changes. Rating changes related to Fitch at the boundary between Investment Grade (IG) and High Yield (HY) are important contributors, as when Moody's and S&P issue ratings that do not converge, Fitch affects the rating of the bond. The credit spread change related to Fitch in the case of issuing a classification to IG (hence, changing it from HY) is economically speaking circa 41 basis points in the full sample, controlling for Moody's and S&P's rating updates. The adverse effects related to information asymmetry are not supported by the results of the regression, the credit spread does not change after the issuance of the credit rating by Fitch, as it would if exclusively companies with a poor rating requested an additional rating, which would be expected to be more positive. The authors confirm that bonds that are classified HY (by Moody's and S&P) reveal much lower turnover than IG ratings. Nevertheless, when Fitch does not agree, and releases an IG rating, the effect is counterbalanced. As expected, if Fitch agrees with the HY rating, the liquidity suffers drastically. On the contrary, if Fitch does not agree with an IG rating, and issues a HY rating, the liquidity drops continuously.³⁶ Finally, with the aim of decreasing the uncertainty and increasing the rating, firms that receive diverging ratings are more likely to incur the cost of obtaining a third one (Beattie and Searle 1992; Jewell and Livingston 2000; in Akins, 2018).

A deterrent of conflicts of interest (for issuer-paid CRAs) is represented by reputational concerns. This is confirmed by Xia (2014), who analyses a database including ratings from July 1999 to December 2011, both from EJR (investor-paid) and S&P, for a total of 11,934 firm-quarter observations. The author finds that on average EJR's ratings are more than 0.3 notches lower than S&P's, and this is corroborating the hypothesis that issuer-paid CRAs release higher (more inflated) ratings compared to investor-paid CRAs. The author concludes that S&P responsiveness and information content of ratings improves because of EJR's rating coverage, as the exhaustive and

³⁶ The liquidity continues to drop even after corrections (issue, time fixed effects and on-the-run effects). Bongaerts, D., Cremers, K. J. M., & Goetzmann, W. N. (2012). Tiebreaker: Certification and multiple credit ratings. *Journal of Finance*, 67(1), 113–152. <https://doi.org/10.1111/j.1540-6261.2011.01709.x>

informative rating is a threat to reputation for the issuer-paid agency. In particular, what is more damaging to the reputation is overrating, as market participants tend to be more preoccupied with it (compared to underrating). It follows that S&P started adopting stricter standards and becoming more conservative in the issuance of credit ratings, for those ratings which EJR evaluates lower, and correspondingly a marginal improvement takes place in the case when EJR issues higher ratings.

2.3.2. Conflicts of interest in investor-paid credit rating agencies

Bonsall et al. (2024) underline how it is challenging to assess whether subscriber-paid agencies suffer from conflicts of interest, as they do not publish the list of their clients (subscribers). The sample of the author's analysis is made of 15,986 firm-quarters from 1999 to 2010, for EJR earning the greatest part of its revenues from institutional investors. The authors find, by comparing EJR ratings to Moody's, that there is a greater likelihood of EJR issuing a higher rating, when more EJR clients invest in the same firm. Moreover, EJR is more likely to issue an investment-grade rating to companies with more ESG clients, thus inflating the ratings. In the case of larger clients, there is a greater probability that EJR inflates the ratings optimistically; the optimism is in fact connected to the scale of the economic benefit for the CRA, hence the higher the fees paid by the investor, the higher the rating issued. Moreover, as regulated investors (such as banks, insurance companies and pension funds) need to satisfy regulatory requirements thresholds, there is greater optimism on the credit ratings bought by those investors, favouring highly rated securities. In fact, inflated ratings benefit bond investors and fund managers to invest in riskier and higher yielding assets, due to the inflated optimistic ratings. EJR is slower to downgrade bonds with greater EJR client ownership, and when EJR provides higher ratings for firms with greater EJR client ownership, these ratings are less accurate. For the lower EJR client ownership firms, EJR ratings are negatively associated with future bankruptcy risk, but this association is weaker for higher EJR client ownership firms (Bonsall et al., 2024). Bonsall et al. (2024) hence confirm the conflicts of interest of investor-paid CRAs.

Tang et al. (2020) provide evidence on the biases of investor-paid CRAs, supporting the findings of Bonsall et al. (2024). EJR was in fact sanctioned by the SEC in 2013, as the agency did not admit to knowing the long and short positions of its clients' securities. As individuals make decisions which are consistent with their aim (Kunda

1990, 1999; in Tang et al., 2020), analysts' ratings could be subject to biases in case of investor-paid models and with the knowledge of an important client's investment positions. However, when it comes to experienced and sophisticated investors, higher scrutiny is going to be applied to analysts' opinions (Tang et al., 2020). In fact, in 2000 when Moody's became a publicly listed firm, the ratings' quality declined due to the market pressure (Kedia et al., 2014; in Tang et al., 2020) and the ratings were influenced by large shareholders (Kedia, 2017; in Tang et al., 2020). Tang et al. (2020) find that analysts' credit ratings are biased (in the case of IG and HY companies) in that they are higher for long positions (with mean 13.78 for IG companies and mean 11.56 for HY ones) with respect to when a client holds a short position in the rated company (mean 10.84 for IG companies and mean 8.75 for HY ones). In investment grade companies in which less sophisticated investors are present, ratings are considerably higher when the client's position is long (with mean 14.91) compared to the short position (mean 9.61).

On the contrary, when the investor base in IG companies is made of sophisticated investors, the ratings are moderately higher (mean of 12.59 when the position held by the client is long and mean of 12.19 when the position held is short). Furthermore, in non-investment grade companies in which less-sophisticated investors are present, Tang et al. (2020) find meaningfully higher credit ratings for the long position (mean of 12.65) than for the short one (mean of 7.26). Contrarily, in the case of non-IG companies with a more sophisticated investor base, there is no significant difference in the long (mean of 10.41) and short (mean of 10.38) positions. The authors conclude that ratings are higher when clients hold a long position compared to a short one. The effect of a client's position is moderated when the company has a sophisticated investor base, as those are likely to scrutinise more the issued ratings.

There are predictable biases depending on the different ownerships of subscribers, with subscriber-paid rating agencies catering to their institutional clients to maximise subscriber revenues. The results suggest that a lack of transparency surrounding investment funds' reliance on subscriber-paid ratings may place less sophisticated investors at a disadvantage by obscuring the risk-return profile of investment funds. Such investors may benefit from enhanced disclosure about the corresponding reliance of subscriber-paid ratings (in subscriber revenues) and investment funds (in inflated ratings) when deciding whether and to what extent to invest (Bonsall et al., 2024).

2.4. Credit rating agencies' conservatism

Conservatism is defined by Baghai et al. (2014) as the actual firm rating net of the predicted firm rating. Conservatism has been increasing over time with firms getting lower ratings compared to the historical standards. The reasons behind this negative trend could be either a response to the changing macroeconomic environment, or the stricter rating criteria not representing the increase in default probability. The consequence for companies is seen in capital structure decisions and cash holding, as the cost of debt is clearly determined by the credit rating. As a result, firms ask for less debt and/or hold more cash than predicted by the models which do not include conservatism in the factors determining the credit rating. Baghai et al. (2014) find that a one notch increase in the rating's disadvantage reduces net debt issues by 0.2% of total assets, resulting in almost an 8% decrease in issuance (as the average net debt issues are 2.6% of assets). Debt issuance is affected with the same magnitude both initially and also when the rating standards are stable and not subject to increased stringency, with the decrease in debt issuance being directly proportional to the difference between actual rating and predicted rating. Another important consequence of conservatism is observed in companies deciding to access or exit the public bond market; if in 1989 the likelihood of an average firm obtaining a rating is 10.7%, it decreases to 3.6% in 2009; meaning that firms are less prone to entering the public bond market. Lastly, firms that suffer the conservatism of rating agencies experience lower growth rates and are less willing to undergo acquisitions due to the higher cost of debt (Baghai et al., 2014).

Vanhaverbeke et al. (2024) find that when firms disclose public financial statements, the rating becomes more conservative, and simultaneously also the rating's accuracy. The conservatism is greater for firms with an approximately BBB- rating (BBB- is often the boundary between investment grade firms and non-investment grade firms³⁷) while the extremes of the scale do not experience significant changes.³⁸ The explanation behind this is that CRAs apply a precautionary approach by adjusting ratings which are more likely to fail. Moreover, public financial information may be replacing

³⁷ Baghai, R. P., Servaes, H., & Tamayo, A. (2014). Have rating agencies become more conservative? Implications for capital structure and debt pricing. *Journal of Finance*, 69(5), 1961–2005. <https://doi.org/10.1111/jofi.12153>

³⁸ Vanhaverbeke et al. (2024) employ a database made of 260,000 companies based in Germany from the period 2002 – 2012 from the Mannheim Enterprise Panel (MEP), including data from *creditreform*, the biggest CRA in Germany.

private information, contributing to the biases of credit ratings, especially the reputational risk (Bouvard & Levy, 2018; Mariano, 2012; in Vanhaverbeke et al., 2024). Before the provision obliging companies to disclose financial information, companies were preparing financial reports but disclosing them, when requested to do so, to stakeholders through private channels. The disclosure regulation results in a negative economic impact as it affects the company's incentives to invest in R&D, changing its fundamentals by not innovating, thus having a consequence on the future profits that then result in lower credit ratings due to the lower creditworthiness. Fracassi et al. (2016) find that the judgement of the analyst explains circa 25% of the variability in the credit rating of the firm; Vanhaverbeke et al. (2024) state that the disclosure regulation would have led credit ratings to improve, if analysts did not reconsider (downgrade) their opinion, even if firms which receive lower credit ratings due to the disclosure of public financial information do not experience greater likelihood of default.

Contrary to the measures taken by policymakers, CRAs are becoming more conservative (Baghai et al., 2014). CRAs are hesitant to make use of private information in their evaluations, as in the case of rating failures, CRAs are more likely to be criticised than when issuing ratings based on public information (Mariano, 2012; in Vanhaverbeke et al., 2024). Put in other words, in the evaluation of the creditworthiness of a company the responsibility of analysts diminishes when everyone can access the same set of information, thereby not undermining the CRA's reputation. There is in fact a different level of reputational risk of analysts from the public, as overly optimistic ratings are more penalized than pessimistic ones (Balton et al., 2012; Dimitrov et al., 2015; Xia, 2014; in Vanhaverbeke et al., 2024).

Baghai et al. (2014) analyse the conservatism on corporate debt ratings, in the period 1985 - 2009, by using monthly data on Standard & Poor's debt ratings, Moody's and Fitch's senior unsecured bond ratings. In the analysis the authors match the ratings with data from the three months before financial statements, to make sure that rating agencies had accessed the information when the rating was issued. The number of companies rated BBB and BB increases over time, confirming that rating agencies have become more conservative. The authors conclude that by holding the firm's characteristics fixed, a firm rated AAA in 1985, would be rated AA- in 2009; there is an important shift in the distribution of predicted ratings, as the probability of an average firm obtaining an A rating decreases from 9.6% in 1985 to 0.6% in 2009. The more stringent credit standards over time are confirmed by Baghai et al. (2014), as the year

dummies (measuring the decrease in rating's quality with respect to that year) are positive, significant, and increasing. In addition, also the coefficients of the intercept of the OLS regression are increasing and signifying more stringent rating standards over the period analysed.

A possible solution to rating's conservatism and low informativeness, could be rating watchlists, which develop over a shorter period of time, usually three months. After the formal introduction of the watchlist, on October 1, 1991, Bannier & Hirsch (2010) observe an increase in the informativeness of ratings compared to the pre-watchlist period. After the watchlist introduction, the informativeness of downgrades has increased strongly, and this is the result of the intense demand by financial markets. Watchlists could be helpful in the mitigation of the distance between ratings' stability and accuracy, as they could be a signal of rating activity but not yet of a rating change. Hence, investors should be the ones demanding for a company to be included in the watchlist, based on the need for precise and updated information on its creditworthiness. In fact, as Chung et al. (2008); in Bannier & Hirsch (2010) state, when a higher number of investors are interested in a firm, the uncertainty about the quality of its credit is higher, and so are the possible consequences of a change in the rating on the company's credit costs.

The trigger of a rating's review is usually the announcement of a merger, a share buy-back or financial condition of a firm; in these occasions there is an interaction between the management of the company and the rating agency, with the review or the confirmation of the rating as the conclusion of the process. In recent years, the number of ratings put on review has risen to a large extent, the percentage of ratings under review at Moody's was 10% in 1998, while between 2000 and 2004 it reached 40% (Hamilton & Cantor, 2004; Chung et al., 2008; in Bannier & Hirsch, 2010). For high-quality borrowers, the watchlist improves the information role of rating agencies, by providing precise and stable information to investors. On the other hand, for low-quality borrowers the rating watchlist is perceived as a threat to companies to avoid risk-enhancing activities.

The market reacts differently to a downgrade preceded by a watchlist, than to a direct shift in the rating. The sample considered by Bannier & Hirsch (2010) consists of Moody's ratings of U.S. issuers, with 1,512 observations of direct and watchlist preceded upgrades and 2,531 direct and watchlist preceded downgrades.³⁹ In general, a watch-

³⁹ About 30% of the ratings in the sample watchlist are caused by an event (e.g., merger and acquisition). Bannier, C. E., & Hirsch, C. W. (2010). The economic function of credit rating

preceded downgrade is representing a company which has tried to put in place the necessary measures to avoid the downgrade, but which has failed to comply with the conditions raised by the rating agency to not change the rating. To this situation the market is believed to be reacting less severely. In particular, at a 1% significance level, watch-preceded downgrades trigger a -2.19% reaction compared to a direct rating downgrade resulting in a -3.65% reaction. Moreover, the market reaction related to direct downgrades is much stronger in the period post-watchlist, indicating that for rating agencies the watchlist has an impact on the information provision.

2.5. Stricter regulation following the 2008 crisis

Credit rating agencies have experienced reputational damage due to the failure to recognize the risks related to structured securities, resulting in the 2008 – 2009 global financial crisis (Huang et al., 2021). As a consequence, CRAs have been subject to higher scrutiny; and in particular the credit quality was highly criticised and greater regulatory measures were required by the public (Duff et al., 2009).

In 2007, the Credit Rating Agency Reform Act (CRARA) had the objective of increasing the competition (by setting up a clear pathway to NRSRO, which was considered a barrier to entry), the transparency, and the accountability of rating agencies, with SEC supervising CRAs, protecting against the improper use of private information and preventing conflicts of interest (Duff et al., 2009).

In 2010 the U.S. Congress passed the Dodd-Frank Wall Street Reform and Consumer Protection Act. The consequences of the Act included increased legal and regulatory fines related to the issuing of imprecise and misleading ratings, while reducing the regulatory dependence on credit ratings. Under the guidelines of the National Association of Insurance Commissioners (NAIC) (Hanley & Nikolova, 2020; in Huang et al., 2021), companies were urged to obtain a third rating when the two before did not converge. Among the risks involved there is the downgrade of average rating, causing pressure to banks and insurance companies which need to comply with the regulation related to holding higher reserve capital when holding risky high-yield (HY) bonds (Huang et al., 2021).

agencies - What does the watchlist tell us? *Journal of Banking and Finance*, 34(12), 3037–3049. <https://doi.org/10.1016/j.jbankfin.2010.07.002>

Among the most powerful regulatory reforms of the Dodd-Frank act, under Section 932 the SEC has the power to suspend or revoke a NRSRO of a particular class of securities, if their ratings are imprecise. The database of the analysis performed by Huang et al. (2021) is made of 2006 to 2015-newly issued U.S. corporate bonds, for a total of 1,283 bond issues. Previous studies demonstrate how financial regulation was the main driver of multiple ratings demand; moreover, the dependence of credit ratings contributes to a lower quality of credit ratings, in that CRAs prefer (from an economic point of view) to promote regulatory arbitrage than to sell informative ratings (Opp et al., 2013; in Huang et al., 2021). Despite this, after the Act, the authors confirm that rating agencies do issue lower credit ratings, corresponding to lower market reactions in stocks and bonds (Dimitrov et al., 2015; in Huang et al., 2021). Before the Act, 48.5% of the new issues obtained a third rating (by Fitch), while this number dropped to 35.5% after its implementation (Huang et al., 2021).

Nonetheless, the ratings accuracy in the U.S. does not seem to improve with the Dodd-Frank Act (Dimitrov et al., 2015; in Krystyniak et al., 2024) and despite the increased legal consequences and monitoring, credit ratings' quality and divergence does not seem to improve.

2.6. Conclusion

In conclusion, even though credit ratings have a longer history in financial markets compared to ESG ratings, their quality and reliability is still uncertain. Credit ratings are in fact subject to conflicts of interest, rating inflation and conservatism, which cause ratings divergence. The transparency and accuracy of the corporate disclosure is crucial in mitigating these issues, by decreasing information asymmetry among market participants and filling the gap (caused by the different methodologies) between issuer-paid and investor-paid rating agencies. The improvement in the rating's quality would benefit companies with a lower cost of capital, as well as fostering consistent ratings which would lead financial markets to function efficiently.

CHAPTER III: EMPIRICAL ANALYSIS

3.1. Introduction

From the previous chapters it is clear how the quality of corporate disclosure is a key element both in the ESG performance and in the creditworthiness evaluation of a company. As per the literature review analysed, there is no consensus on the type of relationship between the quality of corporate disclosure and the ESG ratings divergence. To explore this relationship further, this chapter conducts an empirical analysis both at regression analysis level and at a case study level.

3.2. De' Longhi Group Case study

3.2.1. Introduction

The following case study deep dives into the relationship between the quality of the sustainability corporate disclosure and the ESG ratings divergence for De' Longhi Group. The company is a consolidated multinational Group in the small domestic appliances industry, located in Treviso, Italy and listed on the Italian stock market. De' Longhi Group was chosen for the case study due to the accessibility and availability of data both from the Group itself and through online platforms.

The first subsection of the case study is related to establishing the context, followed by a comprehensive description of the methodology and the sample utilised. The case study proceeds with the analysis and presentation of the results addressing the divergence observed between ESG ratings, represented also at the pillars level.

3.2.2. Context: History of the Group

De' Longhi S.p.A. is a jointstock company, listed on the Italian stock exchange (Euronext Milan) run by Borsa Italiana. Over the years, De' Longhi S.p.A. has acquired multiple brands comprising nowadays: Ariete, Braun, De' Longhi, Eversys, Kenwood, La Marzocco, Magic Bullet, and Nutribullet.⁴⁰ The Group is active in the manufacture and distribution of small appliances in the following sectors: coffee (domestic and professional espresso coffee machines), food preparation and cooking, comfort (air

⁴⁰ De' Longhi Group
https://www.delonghigroup.com/sites/default/files/Annual%20financial%20report%2031.12.2023-courtesy%20copy_0.pdf (Accessed on September 5, 2024)

conditioning and heating) and home care (floor care and ironing). Strongly rooted in Italy, particularly in Treviso where its headquarters are located, the De' Longhi Group has been an established international player, with 3,075.9 M€ turnover in 2023, distributing its products in more than 120 markets in Europe, America, Asia Pacific and MEIA.

According to the De' Longhi Group Annual report at 31 December 2023, the consolidated revenues are 3,075.9 €/million, slightly lower (-2.6%) than in 2022 due to the negative foreign exchange effect. In 2023 EBITDA is 437.8 €/million (corresponding to 14.2% of revenues); EBIT is 329.6 (corresponding to 10.7% of revenues), net profits are 250.4 €/million. In 2023 the Group reported 9,926 employees and the Return on Assets (ROA) is 6.80.⁴¹

The origins of the Group date back to the early twentieth century, when the De' Longhi family opened an industrial component production workshop, and over the years it became a manufacturer of finished products by third parties. The first product under the De' Longhi brand was an oil-filled radiator launched in 1974, which was a great success because it met the energy needs of families who were dealing with the oil crisis. From that moment, the Group worked to establish itself internationally and in the early 1980s opened its first international branch in New York. The product range grew constantly, making the De' Longhi Group a go-to name in the home appliances sector. During the years the M&A strategy adopted by the Group allowed to expand and diversify the product's portfolio, with the incorporation of Ariete and Kenwood in 2001, Braun in 2013, Nutribullet and Magicbullet (parent company Capital Brands) in 2020, Eversys in 2021 and lastly La Marzocco in 2024.⁴², ⁴³

The Group's sustainability journey traces back to 2017, year in which the first sustainability report was published (in accordance with the Legislative Degree 254/2016 transposed from the European Directive 2014/95/UE).⁴⁴ This directive required “*to disclose a non-financial statement [...] only to those large undertakings which are public-interest entities and to those public-interest entities which are parent undertakings of a*

⁴¹ ROA was extracted from the Bloomberg Terminal.

⁴² De' Longhi Group <https://www.delonghigroup.com/en/sustainability/documents> (Accessed on August 18, 2024)

⁴³ De' Longhi Group https://www.delonghigroup.com/sites/default/files/Annual%20financial%20report%2031.12.2023-courtesy%20copy_0.pdf (Accessed on August 21, 2024)

⁴⁴ De' Longhi Group <https://www.delonghigroup.com/sites/default/files/Dichiarazione%20Non%20Finanziaria%202017.pdf> (Accessed on September 5, 2024)

*large group, in each case having an average number of employees in excess of 500, in the case of a group on a consolidated basis” to “prepare a non-financial statement containing information relating to at least environmental matters, social and employee-related matters, respect for human rights, anti-corruption and bribery matters”.*⁴⁵

Lately, the Group has been demonstrating an increased commitment to sustainability, and this is confirmed by the upward trend in its ESG ratings with Bloomberg disclosure ratings going from 14.48/100 (in 2012) to 73.06/100 (in 2022). The ESG scores also show a positive trend, nonetheless the divergence is still significant and will be thoroughly analysed in the next sections.

3.2.3. Methodology And Sample Construction

The data was collected both from the company itself through ESG ratings reports (the company receives ESG rating reports periodically when the rating is updated; for some rating agencies this happens on an annual basis, while for others it happens more frequently) and online external data providers.⁴⁶ A total of six unsolicited ratings is considered in the analysis from leading rating agencies, three of them were shared by De’ Longhi Group, while the remaining ones were collected from online databases. Due to privacy disclosure reasons, the rating agencies are going to be named *Agency A*, *Agency B*, *Agency C*, *Agency D*, *Agency E* and *Agency F*. The ratings are all to be reconducted to the sustainability report relating to financial year 2022, which received a disclosure score from Bloomberg of 73.06/100.

The rating agencies employ different scales, both numerical and letter-grade, so I proceed to apply a 0 to 100 common scale, following the methodology employed by Capizzi et al. (2021). The authors multiply by 10 the ratings applying a 0 to 10 scale and using the conversion from letter to grade from the rating agencies, which publish on their website a conversion table. Since Agency B employs a 100 to 0 scale (where 100 represents the worst in class and 0 represents the best in class), for consistency, I convert the value to a 0 to 100 scale (where 0 denotes the minimum performance, or worst in class, and 100 denotes the maximum performance, or best in class).

⁴⁵ European Union <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0095> (Accessed on September 5, 2024)

⁴⁶ The access to the data in the ESG rating reports was granted during the internship period.

In the analysis, Agency B is included only in the ESG score due to the unavailability of ratings at the pillars level, Agency D is included only in the Social and the Governance pillars scores due to the unreliability of ESG and E pillar ratings.

Table 2 depicts the original ratings, Table 3 and Graph 1 depict the ratings of the sample converted on the common scale:

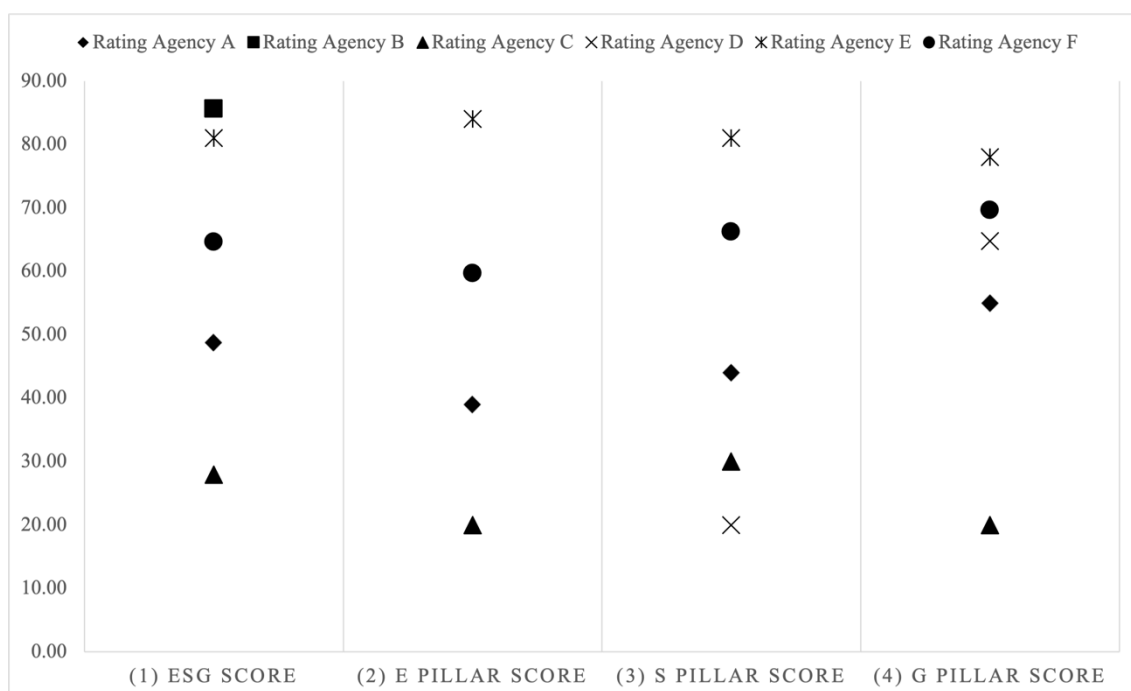
Table 2. Original ESG ratings.

	<i>ESG score</i>	<i>E pillar score</i>	<i>S pillar score</i>	<i>G pillar score</i>
<i>Rating Agency A</i>	A	3.90	4.40	5.50
<i>Rating Agency B</i>	14.40	-	-	-
<i>Rating Agency C</i>	D+	D+	D+	C
<i>Rating Agency D</i>	-	-	20.00	64.80
<i>Rating Agency E</i>	81.00	84.00	81.00	78.00
<i>Rating Agency F</i>	64.63	59.69	66.21	69.65

Table 3. De' Longhi Group converted ESG ratings relative to f.y. 2022 (0-100 scale).

	<i>ESG score</i>	<i>E pillar score</i>	<i>S pillar score</i>	<i>G pillar score</i>
<i>Rating Agency A</i>	48.75	39.00	44.00	55.00
<i>Rating Agency B</i>	85.60	-	-	-
<i>Rating Agency C</i>	27.93	20.00	30.00	20.00
<i>Rating Agency D</i>	-	-	20.00	64.80
<i>Rating Agency E</i>	81.00	84.00	81.00	78.00
<i>Rating Agency F</i>	64.63	59.69	66.21	69.65

Graph 1. De' Longhi Group converted ESG ratings relative to f.y. 2022.



As reported in Table 3 and in Graph 1, the divergence (both at the ESG level and at the single pillars level) between rating agencies can be easily perceived. The analysis that follows is going to provide numerical evidence of this divergence.

3.2.4. Analysis

The divergence analysis is performed following Christensen et al. (2022) method. The authors, for a given firm's ESG performance, employ the absolute difference in ratings pairs to provide "a more intuitive sense of magnitude" of the disagreement. In the following tables, designed following Berg et al. (2022), the ESG percentage disagreement of the absolute difference between ratings for the ESG score and the decomposition at the pillars level is depicted. The tables are colour-coded to provide evidence of the degree of divergence, with green representing low levels of divergence, yellow/orange representing moderate divergence and red representing high levels of divergence.

Table 4. ESG ratings' absolute difference in ratings' pairs expressed in percentage.

ESG	<i>Agency A</i>	<i>Agency B</i>	<i>Agency C</i>	<i>Agency E</i>
<i>Agency A</i>	0%			
<i>Agency B</i>	37%	0%		
<i>Agency C</i>	21%	58%	0%	
<i>Agency E</i>	32%	5%	53%	0%
<i>Agency F</i>	16%	21%	37%	16%

Table 5. Environmental pillar ratings' absolute difference in ratings' pairs expressed in percentage.

Environmental	<i>Agency A</i>	<i>Agency C</i>	<i>Agency E</i>
<i>Agency A</i>	0%		
<i>Agency C</i>	19%	0%	
<i>Agency E</i>	45%	64%	0%
<i>Agency F</i>	21%	40%	24%

Table 6. Social pillar ratings' absolute difference in ratings' pairs expressed in percentage.

Social	<i>Agency A</i>	<i>Agency C</i>	<i>Agency D</i>	<i>Agency E</i>
<i>Agency A</i>	0%			
<i>Agency C</i>	14%	0%		
<i>Agency D</i>	24%	10%	0%	
<i>Agency E</i>	37%	51%	61%	0%
<i>Agency F</i>	22%	36%	46%	15%

Table 7. Governance pillar ratings' absolute difference in ratings' pairs expressed in percentage.

Governance	<i>Agency A</i>	<i>Agency C</i>	<i>Agency D</i>	<i>Agency E</i>
<i>Agency A</i>	0%			
<i>Agency C</i>	35%	0%		
<i>Agency D</i>	10%	45%	0%	
<i>Agency E</i>	23%	58%	13%	0%
<i>Agency F</i>	15%	50%	5%	8%

Table 8. Average absolute difference and variance of the ESG ratings and pillars.

	<i>Average absolute difference (expressed in %)</i>	<i>Variance</i>
<i>ESG</i>	29.52%	23.77
<i>E</i>	35.45%	27.50
<i>S</i>	31.64%	25.22
<i>G</i>	26.13%	22.55

The divergence between ESG ratings depicted in Table 4 shows a minimum of 5% (between Agency B and Agency E) and a maximum of 58% (between Agency B and Agency C). The average of the ESG ratings divergence is 29.52%, indicating moderate levels of divergence, with variance equal to 23.77 (Table 8).

Table 5 depicts the divergence in the Environmental pillar, reaching a minimum of 19% (between Agency A and Agency C) and a maximum of 64% (between Agency C and Agency E), both in relative and absolute terms. Higher levels of divergence are more frequent in the Environmental pillar, as evidenced by the highest average (35.45%) and the highest variance across the pillars (with standard deviation of 27.50) reported in Table 8.

The divergence in the Social pillar depicted in Table 6 reaches a minimum of 10% (between Agency C and Agency D) and a maximum of 61% (between Agency D and Agency E). The divergence is lower for this pillar compared to the Environmental pillar, with an average of 31.64% and a variance of 25.22 (Table 8).

Lastly, Table 7 depicts the divergence in the Governance pillar, reaching an absolute (among the three pillars) and relative minimum of 5% (between Agency D and Agency F) and a maximum of 58% (between Agency C and Agency E). The divergence is the lowest in this pillar, with an average of 26.13% and the lowest variance (i.e., standard deviation of 22.55) depicted in Table 8.

3.2.5. Results And Conclusion

The aim of the case study is to analyse the divergence between ESG ratings in a multinational company with a disclosure rating ranked in the third quartile. From the analysis it can be concluded that the divergence is not uniformly distributed across the three pillars, with rating agencies agreeing the most in the Governance pillar (contrarily to what was found in Billio et al. (2024); Capizzi et al. (2021), see Chapter I), and disagreeing the most on the Environmental pillar and the Social pillar. Divergence is in

fact the most pronounced for the Environmental pillar where rating agencies find the greatest inconsistencies.

A justification for this inconsistency could be attributed to the lack of standardisation of criteria and methodologies (defined by Berg et al. (2022) as including scope, measurement and weight). In fact, by analysing the ratings closely, these three factors diverge between rating agencies even at great level (e.g., Environmental pillar weight ranging from 15% to 50%).

The divergence is high for De' Longhi Group ESG ratings, also considering its above average Bloomberg disclosure score (73.06).⁴⁷ This suggests that even when the disclosure quality is high, the differences in methodologies may drive the ESG rating divergence, highlighting the complexity and lack of homogeneity in the evaluation process of ESG ratings.

3.3. Hypothesis development, research design, sample construction and descriptive statistics

3.3.1. Hypothesis development

As mentioned in the introduction, the literature does not agree on how the quality of the corporate reporting impacts the ESG ratings divergence. In fact, Christensen et al. (2022) state that divergence is to be traced back to greater disclosure and to the higher number of factors to be evaluated by rating agencies. The high amount of qualitative data calls for a subjective evaluation, when information is thoroughly disclosed (e.g., number of days lost due to injuries), and a rating agency needs to evaluate it in a positive/negative performance (Khan et al., 2016; in Christensen et al., 2022). Contrarily, Kimbrough et al. (2022) find that the adherence to higher levels of GRI (Global Reporting Initiative) reporting standards contributes to the usefulness of the report, leading to lower disagreement, with higher quality reports benefitting from lower ESG rating disagreement. Moreover, firms with voluntary ESG reports result in lower ESG disagreement among ESG raters, indicating that ESG reports are useful to ESG rating agencies.

Due to these contradicting opinions, the research hypothesis is going to be kept open; therefore, I hypothesize:

⁴⁷ The average Bloomberg disclosure score refers to the sample utilised for the regression analysis of the previous section (average disclosure score = 58.86).

H1: *The quality of ESG disclosure is related to ESG rating divergence.*

3.3.2. Empirical model

Following the approach of Christensen et al. (2022), in the empirical analysis the dependent variable is the ESG disagreement (measured through the standard deviation of the ESG ratings), the main independent variable is the ESG disclosure score, and the control variables were selected among the ones employed by Christensen et al. (2022).

The regression analysis is performed following the ordinary least squares (OLS) regression model:

$$ESG_disagreement_{it} = \beta_0 + \beta_1 ESG_disclosure_{it} + \sum \beta_k Controls + \varepsilon_{it} \quad (1)$$

where $ESG_disagreement_{it}$ is the standard deviation for the ESG ratings of firm i issued by the rating agencies in the sample, in year t . The $ESG_disclosure_{it}$ is the Bloomberg disclosure score related to year t . As Christensen et al. (2022) underline, the disclosure score is released at time t , while the ESG rating is issued in $t+1$, referring to year t , this is why in the regression the disclosure score is lagged by one year.

The control variables ($\sum \beta_k Controls$) included in the regression (retrieved from Bloomberg Terminal) are:

- Company's mean of ESG ratings (this is calculated as the average of the three ratings collected in the sample from firm i , for the performance in year t) (*VAR 6*);
- Company's size – measured through turnover (in €) (*VAR 8*);
- Company's performance – measured through Return On Assets (ROA) (*VAR 9*);
- Company's book to market value (the book value was calculated by subtracting the total liabilities to the total assets, while the market value was retrieved directly from Bloomberg) (*VAR 10*);
- Company's leverage (*VAR 11*).

3.3.3. Sample Construction

To construct the sample three major ESG rating agencies were considered, S&P, Refinitiv and Bloomberg. The companies in the sample were either part of the S&P500 Dow Jones Index or from STOXX Europe 600. The ESG disclosure scores span from

2015 to 2022, while the ESG ratings span from 2016 to 2022. The sampling method was random, with an initial sample of 79 companies (some companies were excluded due to missing data), and the final sample summing up to 62 firms, for a total of 1305 firm-year observations. The companies included in the sample can be consulted in Appendix A. The Bloomberg (“BESG ESG rating”) and S&P (“S&P global ESG position”) ESG ratings were retrieved from Bloomberg database, complemented by Refinitiv’s ESG ratings.⁴⁸ The database was constructed during the month of August 2024. The ratings from Refinitiv and S&P are in a 0 – 100 numerical scale, while Bloomberg employs a 0 – 10 rating scale. To make the comparison possible, I multiplied Bloomberg’s ESG ratings by 10, following Capizzi et al. (2021).

The Bloomberg’s disclosure score includes both environmental, social and governance disclosure, with the score ranging from 0 to 100, including disclosure via annual reports, corporate website and sustainability reports (Christensen et al., 2022). The three pillars have equal weight, and the evaluation is customized for each sector and geography, as to be evaluated based on the relevant industry and geography-specific data (Bloomberg, 2024).

Table 9. Descriptive statistic of ESG ratings and correlation between ESG ratings.

	(1) Mean	(2) Standard Deviation	(3) Bloomberg	(4) Refinitiv
<i>Bloomberg</i>	44.95	12.40		
<i>Refinitiv</i>	75.81	14.01	0.46	
<i>S&P</i>	72.09	23.65	0.21	0.55

Table 9 reports the descriptive statistics of the ESG ratings from the three rating agencies considered in the regression. Column (1) displays the mean for each rating, column (2) displays the standard deviation for each rating. Columns (3) and (4) display the pairwise correlation between ratings from different rating agencies. The mean of the ratings are close for Refinitiv and S&P; the largest standard deviation (23.65) is reported for S&P, whilst Bloomberg shows the lowest divergence (12.40).

On the correlations side, the highest correlation is for Refinitiv and S&P (0.55), while the lowest is between Bloomberg and S&P (0.21).

⁴⁸ The ESG ratings from Refinitiv were provided by the thesis supervisor.

3.3.4. Descriptive Statistics

The descriptive statistics for the control variables used in the testing is depicted in Table 10. The mean of the *Average ESG ratings* is 64.28, and the standard deviation is 22.18, indicating substantial variation in the firm's ESG ratings. The mean of the ESG disclosure score is 60.43 and the standard deviation is 9.82, indicating substantial disagreement, however the variance is lower with respect to the *Average ESG ratings*. The companies' mean turnover is 54,460.50 (M€) and the standard deviation is quite large at 69,472.41 (M€). The mean of Return on Assets is 5.82, indicating positive investments, the variance (i.e., standard deviation of 8.02) indicates small inhomogeneity in ROA. The book to market value average is 0.26 indicating that the market has strong beliefs in the companies' future performances, the variance is 0.21. The leverage mean is 5.14, indicating high levels of debt, and the variance is 5.46. In general, as the mean and variance are close to each other, the dataset does not include high levels of outliers.

Table 10. Descriptive statistic of control variables.⁴⁹

	<i>Mean</i>	<i>Standard Deviation</i>
<i>Average ESG ratings</i>	64.28	22.18
<i>ESG Disclosure Score</i>	60.43	9.82
<i>Turnover</i>	54,460.50	69,472.41
<i>ROA</i>	5.82	8.02
<i>BTM</i>	0.26	0.21
<i>Leverage</i>	5.14	5.46

3.4. Results

In this section, the results of the regression analysis based on Equation (1) are depicted in Table 11. The software utilized for the analysis is R, and the strings used can be consulted in Appendix C. The variable *ESG_Disclosure* was lagged by one year (*Lagged_Disclosure*), as to have ESG ratings and the disclosure scores referring to the same year.

To regress the independent variable (*ESG_Disclosure*) on the dependent variable (*ESG_divergence*), the `lm()` function in R was used. Below is the code for all the control variables included in the regression:

⁴⁹ The period for the descriptive statistics of the control variables is 2016 – 2022.

```
#Regression with Lagged Disclosure Rating and Avg_ESG (V6)
  model_2 <- lm(V7 ~ Lagged_DISCLOSURE_SCORE + V6, data
= data_filtered)
  summary(model_2
```


Table 11. Results of the regression.

	LM 1	LM 2	LM 3	LM 4	LM 5	LM 6
Lagged_Disclosure	0.048 (1.4069)	-0.159*** (-3.58084)	-0.166*** (-3.72972)	-0.168*** (-3.76734)	-0.140** (-3.05193)	-0.144** (-3.19094)
ESG_ratings_average		0.241*** (6.84985)	0.240*** (6.80878)	0.239*** (6.80153)	0.234*** (6.67435)	0.230*** (6.68157)
Firm Turnover			0.00000709 (1.42183)	0.00000724 (1.45718)	0.00000822 (-1.65437)	0.00000739 (1.51426)
ROA				-0.078 (-1.83518)	-0.096* (-2.24702)	-0.048 (-1.09292)
BTM					-3.774* (-2.20017)	-0.655 (-0.35563)
Leverage						0.282*** (4.16311)
Intercept	17.714*** (-8.65525)	14.396*** (7.17925)	14.562*** (7.25841)	15.135*** (7.47426)	14.902*** (7.38195)	12.869*** (6.30647)
Adj. R ²	0.001157	0.098120	0.100300	0.105200	0.113100	0.145700
n	1305	1305	1305	1305	1305	1305

Notes: The t-statistics are in parentheses. The significance levels at the 0.05, 0.01 and 0.001 are indicated by *, **, ***, respectively.

In column LM1, the direct regression of ESG disclosure score (*Lagged_Disclosure*) on ESG rating divergence is observed (without incorporating the control variables), the coefficient on *Lagged_Disclosure* is positive but not significant.

Column LM2 shows the results of the regression including the control variable *ESG_rating_average*, and the results show that *Lagged_Disclosure* has a significant negative impact on the ESG rating divergence ($p < 0.001$). The estimated coefficient is -0.159, implying that a one-unit increase in the lagged disclosure score is associated with 0.159 percentage points decreases in ESG rating disagreement, holding all other factors constant. Contrarily to the independent variable, the control variable *ESG_rating_average* has a significant positive impact on the ESG ratings disagreement, with a coefficient of 0.241 ($p < 0.001$).

Column LM3 shows the results of the regression including *ESG_rating_average* and *Firm Turnover*. The results show that *Lagged_Disclosure* has a significant negative impact on the ESG rating divergence ($p < 0.001$), the impact of firm turnover leads the result to be slightly higher. The estimated coefficient is -0.166, suggesting that a one-unit increase in the lagged disclosure score is associated with 0.166 percentage points decrease in ESG rating disagreement, holding all other factors constant. As in LM2, the control variable *ESG_rating_average* has a significant positive impact on the ESG ratings disagreement, with a coefficient of 0.24 ($p < 0.001$). The firm turnover effect is statistically insignificant.

Column LM4 shows the results of the regression including *ESG_rating_average*, *Firm Turnover* and *Return on Assets (ROA)*. The results are in line with the previous models, showing that *Lagged_Disclosure* has a significant negative impact ($p < 0.001$) on the ESG rating divergence (with an estimated coefficient of -0.168), the impact of ROA leads the result to be slightly higher than the previous model. As in LM3, the control variable *ESG_rating_average* has a significant positive impact on the ESG ratings disagreement, with a slightly lower coefficient of 0.239. The *Firm Turnover* and *ROA* effects are statistically insignificant.

Column LM5 shows the results of the regression including *ESG_rating_average*, *Firm Turnover*, *ROA* and *Book to Market Value (BTM)*. The results show that *Lagged_Disclosure* has a significant negative impact on the ESG rating divergence ($p < 0.01$), the coefficient is slightly lower at -0.14. As in LM4, the control variable *ESG_rating_average* has a significant positive impact on the ESG ratings disagreement, with a slightly lower coefficient of 0.234. In this model, *ROA* and *BTM* exhibit a

significant negative correlation with ESG ratings divergence ($p < 0.05$). In particular, a one-unit increase in both variables is associated with 0.096 and 3.774 percentage points increase in ESG rating disagreement, respectively. The effect of *Firm Turnover* remains statistically insignificant.

Column LM6 shows the results of the regression including *ESG_rating_average*, *Firm Turnover*, *ROA*, *BTM* and *Leverage*. The results show that *Lagged_Disclosure* has a significant negative impact on the ESG rating divergence ($p < 0.01$), the coefficient is slightly lower at -0.144. As in LM5, the control variable *ESG_rating_average* has a significant positive impact on the ESG ratings disagreement ($p < 0.001$), with a coefficient of 0.23. In this model, *Leverage* exhibits a significant positive impact on ESG ratings divergence ($p < 0.001$). In particular, a one-unit increase in companies' leverage is associated with 0.282 percentage points increase in ESG rating disagreement. In this model, *Firm Turnover*, *ROA* and *BTM* are statistically insignificant.

Consistent with the hypothesis regarding the existence of a relationship between the ESG disclosure quality and the ESG rating divergence, I find that the estimated coefficient on ESG disclosure score (*Lagged_Disclosure*) is negative and statistically significant across all models (except for LM1 for which the coefficient is positive and not significant). These findings suggest that as a company increases its ESG disclosure, the ESG rating divergence across rating agencies seems to decrease. In terms of other factors supporting the negative relationship between ESG disclosure score and ESG rating divergence, I find *ROA* and *BTM* in LM5 having a negative and significant effect.

Contrarily, for the other control variables I generally find that the estimated coefficient on *ESG_ratings_average* is always positive and significant across all models (LM2 to LM6), suggesting that ESG rating agencies tend to disagree more about firms with an higher ESG performance. Similarly, the estimated coefficient on *Leverage* is positive and significant (in LM6) suggesting that companies with higher levels of debt (to the equity), tend to suffer with greater ESG rating divergence.

3.5. Conclusion

In this chapter the relationship between the ESG disclosure quality and the ESG rating divergence is analysed both through a company case study and through an empirical analysis. The case study highlights the great degree of divergence (especially in the Environmental and Social pillars), for a third quartile-disclosure-score company.

These results underline the complexity and lack of homogeneity in the evaluation process of ESG ratings, which contributes to the information asymmetry gap, hindering the transparency and accuracy necessary for stakeholders to make informed decisions and for the market to function efficiently, especially in the context of sustainable finance.

The empirical analysis suggests the existence of a negative relationship between the quality of ESG disclosure and the ESG rating divergence. In general, a one-unit increase in the lagged disclosure score is associated with 0.159-0.168 percentage points decrease in ESG rating disagreement.

Conclusions

The ESG ratings landscape is dominated by divergence, which constitutes one of the greatest obstacles in their informativeness. ESG rating divergence causes confusion both to investors due to perceived uncertainty, but also to companies (Billio et al., 2021), as it represents a deterrent for improving ESG performance (Berg et al., 2022).

Rating divergence is observed also in credit ratings, particularly between solicited and unsolicited ratings, as well as between investor-paid and issuer-paid agencies. These differences stem from the methodologies used, with solicited and issuer-paid agency models relying on both qualitative and quantitative information, while unsolicited and investor-paid agencies typically having access solely to quantitative data. For less transparent companies, as the rating's methodology becomes stricter, the accuracy and timeliness advantage of an investor-paid CRA (unsolicited rating) decreases compared to an issuer-paid credit rating agency (solicited rating). Therefore, the quality of the disclosure represents a crucial aspect in the reduction of the credit rating disagreement.

ESG ratings should be representative of the degree of engagement and compliance on ESG topics, and so provide a converging measure between ESG rating agencies. As this is not the case, Christensen et al. (2022) and Kimbrough et al. (2022) analyse the impact of the quality of sustainability reporting on the ESG rating divergence. The authors obtain opposite results, Kimbrough et al. (2022) find that companies issuing voluntary ESG reports and companies adhering to higher levels of GRI (Global Reporting Initiative) reporting standards benefit from lower ESG rating disagreement. Christensen et al. (2022) on the contrary indicate that the divergence in ESG ratings can be attributed to greater levels of disclosure and to the larger number of factors to be assessed by rating agencies, with the high amount of qualitative data requiring an interpretation and enhancing the likelihood of ESG rating inconsistencies.

To contribute to this debate, the aim of this thesis is to examine ESG disagreement and how it relates to the quality of ESG disclosure. The analysis concerning the ratings' divergence is carried out through a case study on De' Longhi Group. The multinational Italian-based company shows great divergence between its unsolicited ESG ratings. From the analysis it can be concluded that divergence exists (confirming Billio et al., 2021; Capizzi et al., 2021; Chatterji et al., 2016; Christensen et al., 2022; Gangi et al., 2022; Gibson et al., 2021; Zumente & Lāce, 2021). Divergence is however not uniformly

distributed across the three pillars as results from the literature analysis in Chapter I. The impact of the pillars on ESG rating divergence for the De' Longhi Group shows the highest divergence for the Environmental pillar, followed by the Social and lastly by the Governance pillar. These findings are in line with Christensen et al. (2022), confirming that the Environmental pillar shows the greatest standard deviation and the G pillar the lowest standard deviation among the companies in the sample; similarly, Billio et al. (2024) and Gangi et al. (2022) find that the E pillar shows the greatest convergence. Differently, the findings of the case study do not agree with Billio et al. (2021), Capizzi et al. (2021) and Gibson et al. (2021) finding that the G pillar leads to the greatest divergence among the pillars. The results of the case study suggest that even when the disclosure score is high, the differences in evaluation methods made of different categories and indicators may drive the ESG rating divergence, highlighting the complexity and lack of homogeneity in the evaluation process of ESG ratings.

The empirical analysis is carried out using a sample of 1,305 companies in the S&P500 Dow Jones Index and from STOXX Europe 600. Consistent with the hypothesis on the existence of a relationship between the ESG disclosure quality and the ESG rating disagreement, I find that the estimated coefficient on ESG disclosure score is negative and statistically significant in the complete model including all the control variables. However, the results do not coincide to what Gibson et al. (2021) find, as the regression analysis performed does not evidence a significant relation between gross profitability and ESG rating disagreement.

The findings of the empirical analysis suggest that as a company's ESG disclosure score increases by one-unit, the ESG rating divergence across rating agencies decreases by 0.159 percentage points, holding all other factors constant. The results imply that the higher quality of ESG corporate disclosure result in lower ESG disagreement, confirming the findings of Kimbrough et al. (2022). As a consequence, a possible solution to the ESG disagreement is a more granular approach in the sustainability corporate disclosure. The transparency and the quality of the corporate disclosure are factors which could positively impact ESG divergence by rendering it lower. These aspects are key in the ESG divergence landscape, and they are addressed by the new Corporate Sustainability Reporting Directive (CSRD). The main objective of the European Sustainability Reporting Standards (ESRS) through the CSRD is to fulfil the needs of investors and financial markets to be able to discern companies taking action to improve their ESG performance overall. High quality ESG reports could be easily compared between

companies reducing the gap represented by the different methodologies and different sources of information employed in the ESG rating calculation, while simultaneously reducing the ESG rating disagreement.

The analysis conducted has some limitations. First, the geography, the number of observations and the rating agencies considered, which comprises 1,305 firm-year data drawn from the U.S., using and the European area, and incorporates ratings of S&P Global, Refinitiv ESG and Bloomberg. This sample represent research limitations as it excludes several leading rating agencies and developing countries both of which could lead to different and significant results. Second, the limited period of time considered due to the availability of data, could challenge the robustness of the findings.

Possible future research could extend the period analysed in order to provide a wider perspective on the trends of ESG rating divergence. Moreover, it would be interesting to delve into the impact of ESG disclosure quality on divergence at the pillars level, as it is proven that those behave differently, and this could contribute to noteworthy results. Moreover, as the European Union is taking actions to increase the comparability and the reliability of information, it would be interesting to analyse the impact of the provisional agreement of the Council of the European Union waiting for the ultimate approval by the Council and the Parliament before going through the formal adoption procedure. The regulation provides that ESG rating agencies will need an authorization and will be subject to the supervision by the European Securities and Markets Authority (ESMA). In addition, the rating could be provided separately through the three pillars, specifying the weighting of each pillar. The impact on ESG rating disagreement of this regulation promoting transparency could be further explored and lead to interesting results.

Decreasing the ESG rating divergence is crucial in driving informed sustainability-oriented choices, both for consumers, investors and companies.

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Appendix A

STOXX Europe 600	S&P Dow Jones Index
A2A SpA (A2A.MI)	Adobe Inc. (ADBE.US)
Adidas AG (ADS.DE)	Amazon.com, Inc. (AMZN.US)
Allianz SE (ALV.DE)	Apple Inc. (AAPL.US)
ArcelorMittal S.A. (MT.AS)	Carnival Corporation & plc (CCL.US)
Bayer Aktiengesellschaft (BAYN.DE)	Caterpillar Inc. (CAT.US)
Bayerische Motoren Werke Aktiengesellschaft (BMW.DE)	The Coca-Cola Company (KO.US)
Capgemini SE (CAP.PA)	CVS Health Corporation (CVS.US)
Carrefour SA (CA.PA)	Devon Energy Corporation (DVN.US)
Danone SA (BN.PA)	eBay Inc. (EBAY.US)
Deutsche Bank Aktiengesellschaft (DBK.DE)	Edison International (EIX.US)
AB Electrolux (publ) (ELUX-B.ST)	Expedia Group, Inc. (EXPE.US)
Enel SpA (ENEL.MI)	Ferrari N.V. (RACE.US)
Eni SpA (ENI.MI)	Ford Motor Company (F.US)
Heineken N.V. (HEIA.AS)	Hasbro, Inc. (HAS.US)
H & M Hennes & Mauritz AB (HMB.SS)	Intel Corporation (INTC.US)
Hugo Boss AG (BOSS.DE)	Johnson & Johnson (JNJ.US)
Intesa Sanpaolo S.p.A. (ISP.MI)	Kellanova (K.US)
Kering SA (KER.PA)	The Kraft Heinz Company (KHC.US)
L'Oreal SA (OR.PA)	Mastercard Incorporated (MA.US)
LVMH Moët Hennessy - Louis Vuitton, Société Européenne (MC.PA)	Mondelez International, Inc. (MDLZ.US)
Compagnie Générale des Établissements Michelin Société en commandite par actions (ML.PA)	Morgan Stanley (MS.US)
Nestlé S.A. (NESN.SW)	Netflix, Inc. (NFLX.US)
Nokia Oyj (NOKIA.HE)	Norwegian Cruise Line Holdings Ltd. (NCLH.US)
Pandora A/S (PNDORA.CO)	Paramount Global (PARA.US)
Renault SA (RNO.PA)	PayPal Holdings, Inc. (PYPL.US)
Siemens Aktiengesellschaft (SIE.DE)	PepsiCo, Inc. (PEP.US)
Telecom Italia S.p.A. (TIT.MI)	Pfizer Inc. (PFE.US)
Unicredit S.p.A. (UCG.MI)	Shell plc (SHEL.LN)
Volkswagen AG (VOW.DE)	Stellantis N.V. (STLA.US)
Zurich Insurance Group AG (ZURN.SW)	United Airlines Holdings, Inc. (UAL.US)
	United Parcel Service, Inc. (UPS.US)
	Visa Inc. (V.US)

Appendix B

```
install.packages("readxl")
install.packages("dplyr")
install.packages("tidyr")
install.packages("broom")
library(readxl)
library(dplyr)
library(tidyr)
library(broom)

#list excel files in the directory
library(readxl)
setwd("/Users/gloria/Documents/tesi/ch3REG/regression")
data <- read_excel("Rfinal_merged_file.xlsx")
#the list is going to be grouped by company code (1 - 62)
#and arranged by the years. Then the disclosure score is
#lagged by 1 year.
data <- data %>%
  group_by(V0) %>%
  arrange(V1) %>%
  mutate(Lagged_DISCLOSURE_SCORE = lag(V3, n = 1)) %>%
  ungroup()
#filter the N/A in lagged disclosure and the years #before
#2016, so as to avoid using those rows
data_clean <- data %>%
  filter(!is.na(Lagged_DISCLOSURE_SCORE))
data_filtered <- data %>%
  filter(V1 > 2015)
#check if the data is filtered well
summary(data_filtered)
head(data_filtered)

#Regression with Lagged Disclosure Rating
```



```

    model_1 <- lm(V7 ~ Lagged_DISCLOSURE_SCORE, data =
data_filtered)
    summary(model_1)

#Obtaining the "tidy" model of the regression results
    tabella_tidy <- tidy(model_1)

#Exporting in a CSV file
    write.csv(tabella_tidy, file =
"tabella_regressione_tidy.csv")

#Regression with Lagged Disclosure Rating and Avg_ESG (V6)
    model_2 <- lm(V7 ~ Lagged_DISCLOSURE_SCORE + V6, data
= data_filtered)
    summary(model_2)
    tabella_tidy2 <- tidy(model_2)
    write.csv(tabella_tidy2, file =
"tabella_regressione_tidy2.csv")

#Regression with Lagged Disclosure Rating, Avg_ESG (V6) and
#Turnover (V8)
    model_3 <- lm(V7 ~ Lagged_DISCLOSURE_SCORE + V6 + V8,
data = data_filtered)
    summary(model_3)
    tabella_tidy3 <- tidy(model_3)
    write.csv(tabella_tidy3, file =
"tabella_regressione_tidy3.csv")

#Regression with Lagged Disclosure Rating Rating, Avg_ESG
#(V6), Turnover (V8) and ROA (V9)
    model_4 <- lm(V7 ~ Lagged_DISCLOSURE_SCORE + V6 + V8 +
V9, data = data_filtered)
    summary(model_4)
    tabella_tidy4 <- tidy(model_4)

```

```

write.csv(tabella_tidy4, file =
"tabella_regressione_tidy4.csv")

#Regression with Lagged Disclosure Rating, Avg_ESG (V6),
#Turnover (V8), ROA (V9) and Leverage (V10)
model_5 <- lm(V7 ~ Lagged_DISCLOSURE_SCORE + V6 + V8 +
V9 + V10, data = data_filtered)
summary(model_5)
tabella_tidy5 <- tidy(model_5)
write.csv(tabella_tidy5, file =
"tabella_regressione_tidy5.csv")

#Regression with Lagged Disclosure Rating, Avg_ESG (V6,
#Turnover (V8), ROA (V9), Leverage (V10) and BMV (V11)
model_6 <- lm(V7 ~ Lagged_DISCLOSURE_SCORE + V6 + V8 +
V9 + V10 + V11, data = data_filtered)
summary(model_6)
tabella_tidy6 <- tidy(model_6)
write.csv(tabella_tidy6, file =
"tabella_regressione_tidy6.csv")

```