

**Essays on the role of CSR information in capital
markets: Evidence from stakeholders and information
intermediaries**

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Table of contents

List of tables	VI
List of figures	VII
1 Introduction	1
1.1 Motivation and context.....	1
1.2 Summary of results	8
2 Corporate governance ratings and firm value - Does rating technology matter?	14
2.1 Introduction.....	15
2.2 Background.....	21
2.2.1 Corporate governance ratings	21
2.2.2 Market for corporate governance ratings.....	23
2.2.3 Empirical evidence on the use of corporate governance ratings.....	24
2.3 ISS corporate governance ratings and rating coverage	27
2.3.1 ISS Corporate Governance Quotient	27
2.3.2 Governance ratings coverage.....	28
2.3.3 Market share and investor protection.....	29
2.3.4 CGQ rating criteria and outcomes.....	32
2.4 Are ISS corporate governance ratings value relevant?	36
2.4.1 Rating construction and decomposition approach.....	36
2.4.2 Value relevance of the ISS ratings.....	40
2.5 Variation of ISS value relevance in different legal environments.....	42
2.5.1 Variation between common and code law countries	42
2.5.2 Heterogeneity within common law countries.....	43
2.6 Discussion.....	45
2.7 Conclusion	50

2.8	Appendix.....	52
3	The economic role of ESG ratings in capital markets.....	63
3.1	Introduction.....	64
3.2	ESG ratings.....	69
3.3	The ESG rating market.....	73
3.4	Economic role of ESG ratings.....	78
3.4.1	Reduction of information processing costs.....	78
3.4.2	Information content of ESG ratings.....	79
3.4.3	Ex-post verification.....	81
3.5	Empirical evidence on the economic role of ESG ratings.....	82
3.5.1	Information intermediation.....	82
3.5.2	Informational properties of ESG ratings.....	83
3.6	ESG rating quality.....	87
3.7	Regulation of ESG rating providers.....	92
3.8	Conclusion.....	93
4	(How) Do CSR disclosure mandates facilitate stakeholder pressure on firms? The case of NGOs.....	95
4.1	Introduction.....	96
4.2	Background.....	101
4.2.1	The EU Non-Financial Reporting Directive.....	101
4.2.2	Mandatory CSR disclosures as a policy tool.....	102
4.2.3	Non-governmental organizations.....	104
4.2.4	The NFRD and NGO campaigning.....	107
4.3	Sample and data.....	108
4.3.1	Sample selection.....	108
4.3.2	NGO activities.....	111

4.4	The effect of the NFRD on NGO campaigning	112
4.4.1	Descriptive statistics	112
4.4.2	Are EU firms targeted more frequently by NGO campaigns after the NFRD?	116
4.4.3	Do NGO campaign topics change in response to the NFRD? ...	121
4.4.4	Discussion.....	125
4.5	Do NGOs receive increased funding?	128
4.6	Variation in the treatment effect	129
4.7	Conclusion	132
4.8	Appendix.....	135
5	Conclusion	142
5.1	Summary of major findings and implications	142
5.2	Limitations.....	144
5.3	Outlook.....	145
	References.....	148

List of tables

Table 2.1: CGQ coverage: Number of firms covered per country.....	29
Table 2.2: Coverage ratio and investor protection per country and legal origin	31
Table 2.3: CGQ rating criteria and outcome	33
Table 2.4: Descriptive statistics for governance data	39
Table 2.5: Value relevance of ISS governance ratings and their components	41
Table 2.6: Variation of ISS value relevance in different legal environments.....	44
Table 3.1: ESG rating providers.....	76
Table 4.1: Sample description.....	109
Table 4.2: ESG characteristics and NGO campaign targets over time.....	113
Table 4.3: Effect of the NFRD on NGO campaigning activity	118
Table 4.4: Yearly treatment effect	120
Table 4.5: Campaign topic shifts for EU and US firms	122
Table 4.6: NGO funding.....	129
Table 4.7: Cross-sectional variation.....	131

List of figures

Figure 2.1: Rating process of commercial corporate governance vendors	37
Figure 2.2: ISS corporate governance rating example issue.....	52
Figure 4.1: Number of campaigns across treatment and time	115
Figure 4.2: Treatment effects over time	119
Figure 4.3: Campaign topics of EU and US firms in the pre- and post-period.....	123
Figure 4.4: Campaign topics of newly targeted firms in the post-period.....	124

1 Introduction

1.1 Motivation and context

This thesis explores the role of corporate social responsibility (CSR) information in capital markets and its use by stakeholders and information intermediaries.¹ Evidence speaks to two motivating questions: (1) What is the economic role of environmental, social, and governance (ESG) ratings in capital markets, and how are they valuable to investors? (2) Do non-governmental organizations (NGOs), as important stakeholders and intermediaries, use the information provided by mandatory CSR reporting regimes?

The first two studies (Chapters 2 and 3) address the first motivating question. The first study examines the value-creation process of corporate governance ratings to provide a better understanding of the economic role of corporate governance (CG) rating agencies and how they provide valuable services to investors. Specifically, the study discerns two rating components to differentiate between value deriving from the selection and collection of information and the aggregation thereof into ratings. The second study broadens the focus from corporate governance to ESG ratings and their providers. It explores the economic role of ESG rating agencies through a theoretical lens and contrasts it with empirical results to shed light on the functions, use cases, outcomes and current challenges related to ESG ratings.

The third study (Chapter 4) addresses the second motivating question by examining whether NGOs use CSR information mandated by the EU in the Non-Financial Reporting Directive (NFRD: Directive 2014/95/EU). The EU lists stakeholders as an important factor in the functioning of the transparency mechanism underlying the NFRD. The mechanism aims to nudge firms towards more sustainable behavior through transparency. However, it is unclear whether (non-investor) stakeholders use the mandated CSR information. Since NGOs act as both stakeholders and information intermediaries, focusing on them allows for an observation of two important links in the causal chain that connects transparency to changes in firm behavior. In light of recent research results showing that consumers rarely use firm-disclosed CSR information, the information intermediary role is of particular importance (Leonelli et al. 2024).

¹ Following Christensen et al. (2021), the terms CSR, ESG and sustainability are used interchangeably.

CSR information and information intermediaries

Corporate social responsibility (CSR) refers to “corporate activities and policies that assess, manage, and govern a firm’s responsibilities for and its impacts on society and the environment” (Christensen et al. 2021, p. 1181). Related terms are ESG (environmental, social, and governance) and sustainability. For the purpose of this dissertation, I follow Christensen et al. (2021) and use the terms synonymously. Interest in firms’ CSR performance has consistently grown over the past few decades. Climate change and the related repercussions have shifted societal expectations towards more responsible firm behavior. Additionally, the COVID-19 pandemic exposed weaknesses in the value chains and unveiled workers’ vulnerabilities (Directive 2022/2464/EU). Investors are also increasingly aware of sustainability-related risks that can materially impact a firm’s financial performance and adjusted their investment strategies accordingly. Between 2016 and 2020, sustainable investments increased by 55% (Global Sustainable Investment Alliance 2021). As of 2021, these investments totaled US\$ 30.3 trillion, or more than one-third of global assets under management (Global Sustainable Investment Alliance 2023).

For any such investment strategy, investors need information about the firm’s sustainability performance. In a survey among investors, 82% of respondents state that they incorporate CSR information into their investment decisions, with 63% doing so because they deem the information financially material (Amel-Zadeh and Serafeim 2018). Other stakeholders interested in sustainable firm behavior also require CSR information about the firm. As a result, the use of CSR information has grown considerably. Responding to the rising demand for CSR information, regulatory authorities in several regions enacted mandatory reporting regimes. In the EU, CSR reporting has been mandatory since 2014 (Directive 2014/95/EU) and has recently been extended in size and scope (Directive 2022/2464/EU). In the US, the SEC published a rule that mandates the disclosure of financially material climate-related risks (89 FR 21668).²

² The effective date of the rule is currently delayed (Release No. 33-11280 (Order Issuing Stay) from April 4, 2024).

The incorporation of information into decision-making is connected to information processing costs (Blankespoor et al. 2020). To integrate a specific piece of information in their investment decisions, investors need to be aware that the information exists (awareness costs), acquire the report and extract the information (acquisition costs), and finally analyze the information to draw inferences for their investment decision (integration costs). Investors have traditionally outsourced parts of their information processing costs to intermediaries such as financial analysts, credit rating agencies, and proxy advisors. Information intermediaries are important market participants that support the proper functioning of capital markets (Healy and Palepu 2001). In their function as information intermediaries, they monitor, aggregate, and distribute information to other market participants. This is particularly useful if the information is new or has not been widely disseminated before (Schaub 2018). To the extent that intermediaries are more efficient in collecting and analyzing data, their services are valuable to investors. Purchasing the offered products can reduce investors' information processing costs.

The market for these kinds of services in the area of financial information is well-developed. For example, credit ratings predict default with a high accuracy (ESMA 2023; Gredil et al. 2022), have informational value (Holthausen and Leftwich 1986; Hand et al. 1992) and ratings from different providers arrive at similar conclusions (Berg et al. 2022b). In the area of CSR information, similar structures are taking shape. Vendors like Institutional Shareholder Services (ISS) offer ESG data packages and provide ESG and corporate governance ratings (ISS 2024). Sustainalytics, a Morningstar company, has included ESG proxy advisory services in its business (Sustainalytics 2024b). While the information intermediaries in the two areas fulfill similar functions, the information environments they operate in differ significantly. Financial accounting “deals with the financial implications of firms’ main and regular business activities” (Christensen et al. 2021, p. 1185). It is a settled field with a standardized rule set, where data is provided in formalized ways, following established accounting systems, and reports are audited to ensure data quality. In contrast, the field of CSR reporting is still relatively new and is not (yet) integrated into stable reporting regimes. This leads to several noteworthy differences in information availability and quality.

A central issue related to the ESG information environment is the lack of a common understanding of what ESG means and how it is measured (Christensen et al. 2022; Larcker et al. 2022). Christensen et al. (2022) call the nature of ESG information “highly subjective” (p. 164). ESG reporting requirements vary with geographic regions and oftentimes do not include mandatory audits of the reports. As a result, CSR reporting is characterized by a broad array of topics, competing reporting standards, and incentives (Christensen et al. 2021). Data availability and data quality are reported as poor, with a lack of comparability (Amel-Zadeh and Serafeim 2018). Additionally, disclosure of CSR information lacks several attributes that financial accounting regulations have established, such as the aggregation of data into summary measures or accrual accounting (Wagenhofer 2023). Instead, data points are combined into reports. These reports not only contain information about the firm but also information about the firm’s value chain. The resulting reporting landscape is heterogeneous and comes with a set of new challenges for information intermediaries working in the field face. Due to the different information environments, it is not clear whether CSR information intermediaries fulfill the same economic role as financial information intermediaries.

Therefore, one objective of this thesis is to explore the role of information intermediaries in the area of CSR information and how they are valuable to investors. One of the most prominent intermediaries in that field are rating providers. In surveys, 94% of investors indicate using ESG-rating products at least once a month, with 69% using them more than once a week (SustainAbility 2023a). As a result, ratings and related data increasingly influence a multitude of investment decisions in capital markets (Gibson Brandon et al. 2022). ESG ratings are an opinion on an entity’s impact on and/or exposure to ESG characteristics based on a defined methodology (ESMA 2021b). ESG rating agencies aim to measure ESG performance and offer data sets, ratings, and analyst or risk reports. They vary in their focus and objectives: Some offer a broader perspective and consider the three pillars of ESG, while others focus on selected aspects like corporate governance, management practices, or emissions. To measure the performance, rating agencies decide whether they evaluate a firm’s exposure to and management of financially material ESG risks (risk rating, outside-in perspective) or a firm’s impact on the environment

and society at large (impact rating, inside-out perspective) (ESMA 2021b). Ratings that consider both perspectives apply a double materiality approach.

Papers one and two provide evidence regarding the first objective, i.e., the role of CSR information intermediaries and how they are valuable to investors. The first paper sets out to gain a better understanding of the role of CG rating providers. Despite the popularity of corporate governance ratings, the economic role of the ratings and their vendors is not well understood. Empirical evidence on the relation between corporate governance ratings and firm value is mixed, and results vary across studies, settings, and samples (e.g., Daines et al. 2010; Hitz and Lehmann 2015; Guest and Nerino 2020; Renders et al. 2010). The study contributes to this stream of literature by providing insights into the value relevance of the ratings based on a global sample. The goal is to examine what parts of a rating are valuable to investors and if a rating methodology provides an incremental benefit beyond the collection of information for investors. The paper exploits a data set that contains CG ratings as well as the underlying data points. It empirically discerns two components of the ratings, a public information and a proprietary technology component, and documents how the informational properties of these components vary across legal environments. The findings are relevant for investment managers and practitioners using the ratings in their investment processes. Gaining a better understanding of corporate governance ratings and their benefits and drawbacks is also important for regulators who wish to understand the rating market more thoroughly (European Commission 2022).

The second paper broadens the perspective to the economic role of ESG rating providers. It examines characteristics of ESG ratings and their market and formulates an economic role of ESG rating providers in capital markets. This role is contrasted with empirical evidence to explore to what extent the ratings fulfill the proposed functions. The paper extends the literature on the role and use of ESG ratings (e.g., Berg et al. 2022b; Christensen et al. 2022; Khan et al. 2016; Serafeim and Yoon 2023). By synthesizing present findings, the paper sheds light on the economic role of ESG ratings from different angles, and balances arguments related to the application of ESG ratings. This approach allows the paper to distill the main issues connected to ESG ratings and put them in context with current regulatory

debates, e.g., the *Proposal on the transparency and integrity of Environmental, Social and Governance (ESG) rating activities* (EU 2023/0177/COD).

CSR information and stakeholders

A further notable difference between financial and CSR information is the main target audience. CSR information is not only designed for shareholder purposes but also intended for other, non-investor stakeholders.³ The EU specifically names stakeholders as a target group in their major CSR reporting mandates, the Non-Financial Disclosure Directive (Directive 2014/95/EU) and the Corporate Sustainability Reporting Directive (CSRD: Directive 2022/2464/EU). These regulations differ from other forms or regulations for two reasons.

Firstly, the disclosure of CSR information is not only important to cater to information demands about firms' CSR performance but also a critical tool to finance the transition towards a greener economy. In the EU Green Deal, the EU states that an additional €260 billion is needed yearly to achieve the current energy and climate goals for 2030 (COM(2019) 640 final). To sustain such financial needs, public and private capital needs to be channeled towards the required investments. An important element in the implementation of such an undertaking is firms' disclosure about their CSR performance so that investors can base their investment decisions on sustainable firm characteristics. If investors are unable to do so, achieving the objectives of the Green Deal becomes more challenging.

Secondly, by enacting disclosure rules, the EU aims to push corporations to act more sustainably (Directive 2014/95/EU, Directive 2022/2464/EU). The chosen design of the regulations differs from other forms of regulation because it does not prescribe fixed outcome variables but instead relies on transparency to reach the desired goal. These interventions can be subsumed under the concept of targeted transparency (Fung et al. 2009; Hombach and Sellhorn 2019). This kind of disclosure regulation aims at inducing real effects through stakeholder pressure. Corporations are mandated to provide relevant and reliable information about their

³ Some stakeholders are included in the target group of financial accounting. For example, the IFRS name investors, lenders and other creditors as target audience of their financial accounting standards (IFRS Conceptual Framework, para. 1.2). The information is intended to help capital providers make decisions about supplying economic resources to the firm. The target audience of CSR reporting includes a broader set of stakeholders that is not limited to capital providers.

CSR performance, enabling stakeholders to update their information sets. However, these reports are a form of capital market disclosure, (non-investor) stakeholders may not access the reports. Research shows that retail consumers, as one group of stakeholders, are at times even unaware of such disclosure (Leonelli et al. 2024). Information intermediaries, like NGOs or the media, can play an important role by assisting (non-investor) stakeholders in accessing the information. By adjusting their behavior to align with their CSR preferences, stakeholders can impose pressure on firms, which translates into the integration of CSR into the firms' business models. In this way, targeted transparency aims to shape corporate behavior not only through capital market participants but also through (non-investor) stakeholders and society at large.

A growing body of empirical literature shows that targeted transparency regulations can change firm behavior and discusses stakeholder pressure as a potential channel. However, the studies do not observe stakeholder activity directly. For example, Christensen et al. (2017) demonstrate that mandatory filings of mine safety records with the SEC increase labor safety. Chen et al. (2018) find that mandatory CSR disclosure regulation in China is associated with decreased profitability, consistent with increased CSR spending and reduced environmental damage. Fiechter et al. (2022) demonstrate that such real effects can be observed for a broad, cross-industry, cross-country setting as they find that companies increased their CSR activities in response to (the passage of) the NFRD. These studies observe the changes in firm behavior as an outcome and discuss stakeholder pressure as one potential channel driving the results. However, they do not single out the underlying channels.

Therefore, the second objective of the thesis is to elicit whether stakeholders use the mandated disclosures and how they do so. The aim of the third study is to provide empirical evidence regarding these questions. It builds on the implementation of the NFRD as a major CSR reporting regulation. The magnitude of this regulatory shock provides a framework to observe potential changes in stakeholder behavior on a broad scale and in varying institutional settings. However, stakeholder activities are difficult to observe. A notable exception is NGOs. NGOs are collections of individuals who share a common belief about how the world should be (McCarthy and Zald 1977) and work independently from governments (Spar and La Mure 2003). Their

goals involve changes in the environmental, social, or governance behavior of public or private actors. Their most visible output is campaigns, where NGOs use public pressure to achieve a defined goal (Andreicovici et al. 2022; Hond and Barker 2007). Through the campaigns, this particular stakeholder action becomes observable.

Analyzing NGO campaigning activities is advantageous as it allows for an observation of two links in the targeted transparency mechanism. Firstly, it speaks to the question of whether non-investor stakeholders use the information mandated by CSR disclosure regulations. Secondly, it provides insights into the use of the information by information intermediaries. With regard to recent evidence revealing that retail consumers do not consistently react to or use (firm-disclosed) ESG information (Christensen et al. 2023; Leonelli et al. 2024), the role of information intermediaries is of particular importance. The study adds to the growing real effects literature in accounting. In contrast to empirical evidence that demonstrates that targeted transparency regulations change firm behavior, the study contributes to the understanding of how targeted transparency regulations affect stakeholder behavior. From a regulatory perspective, the findings add to the debate on CSR reporting and the effects of a regulation thereof.

1.2 Summary of results

The thesis consists of three papers. The first paper examines the value proposition of governance rating providers and the value relevance of their rating methodology. The second paper explores the economic role of ESG ratings in capital markets. The third paper investigates stakeholders' use of mandated CSR information.

Chapter 2: Corporate governance ratings and firm value – Does rating technology matter?

The first paper is an empirical-archival study and sets out to gain a better understanding of the role of CG rating providers and their ratings. It drills into the value proposition of CG rating providers by exploring the value relevance of their ratings and their proprietary rating mechanism. Despite the popularity of corporate governance ratings, the economic role of the ratings and the vendors of such ratings is not well understood. The study exploits a unique data set of ISS corporate governance ratings between 2003 and 2007 that allows for an empirical distinction

between a public information component and a proprietary technology component within the ratings. Through this, the study helps understand the economic role of governance ratings and how their value relevance varies with the institutional environment.

The study finds a positive association between the Corporate Governance Quotient, the commercial rating marketed by ISS, and Tobin's Q. The documented positive association derives from both ISS's information selection and collection skills (public information component) as well as their proprietary technology and access to private information (technology component). This finding indicates that ISS's CG ratings successfully capture information indicative of firm-level governance quality and provide incremental benefits through their proprietary rating methodology and/or the addition of non-public information.

Exploiting the characteristics of the international data set, the study continues to explore whether the documented associations vary across institutional settings. The results indicate a sensitivity of the ratings and their components to the institutional environment they are conducted in. The previously documented relations are confined to firms headquartered in the US. There are no significant relations between firm value and the ISS rating or its two informational components for non-US countries. The absence of a significant relation between the ratings and firm value means that investors interested in non-US firms cannot use the ratings in the same way as for firms headquartered in the US.

Still, investors may draw other benefits from the ratings. For example, investors may purchase the ratings to obtain the underlying data sets that are typically included with the purchase of the ratings data (Daines et al. 2010; SustainAbility 2020). In this way, investors benefit from cost savings through ISS's efficient collection of relevant information. Alternatively, investors may purchase the ratings as an ex-post verification tool. The ratings can help to demonstrate that the investor collected information about the firm and can assist institutional investors in fulfilling their fiduciary duty (European Commission 2014).

1. Introduction		<ul style="list-style-type: none"> • Motivation and context • Summary of results 	Pages 1-13
Research question	Main findings	Related literature	
Chapter 2: Corporate governance ratings and firm value – Does rating technology matter?			
Explores if and how governance ratings are valuable to investors by employing a decomposition approach to investigate different parts of the ratings Method: empirical-archival	Both parts of ISS CG ratings (public information and technology component) are value relevant. However, results are sensitive to the institutional environment and only hold for US firms but not for firms in other countries.	Hitz and Lehmann (2015) Daines et al. (2010) Guest and Nerino (2020)	Pages 14-62
Chapter 3: The economic role of ESG ratings in capital markets			
Explores the role of environmental, social, and governance (ESG) ratings in capital markets and contrasts this role with empirical finding Method: survey	ESG ratings can fulfill an important economic role in capital markets. However, ratings currently face several challenges. Main concerns are data availability and quality, low convergence, and transparency of the rating process.	Berg et al. (2022b) Christensen et al. (2022) Khan et al. (2016) Serafeim and Yoon (2023)	Pages 63-94
Chapter 4: (How) Do CSR disclosure mandates facilitate stakeholder pressure on firms? The case of NGOs			
Examines whether and how non-governmental organizations (NGOs) react to a mandated increase in CSR information Method: empirical-archival	NGOs increase their campaigning activity in the EU after the introduction of mandatory CSR reporting. Results imply that this element of the stakeholder pressure channel in the transparency mechanism works.	Fiechter et al. (2022) Christensen et al. (2017) Hombach and Sellhorn (2019)	Pages 95-142
5. Conclusion		<ul style="list-style-type: none"> • Summary of findings and implications • Limitations • Outlook 	Pages 142-147

Chapter 3: The economic role of ESG ratings in capital markets

The second paper is a survey paper that explores the economic role of ESG rating providers and contrasts this role with empirical findings. The paper aims to speak to questions regarding the characteristics of ESG ratings and their market, the economic role of ESG ratings and their providers, and the main issues currently related to the ratings. From a theoretical angle, ESG ratings are an opinion on an entity's impact on and/or exposure to ESG characteristics based on a defined methodology (ESMA 2021b). Investors can use ESG ratings to inform their investment choices, whereby the specific use case depends on the kind of investor, i.e., preferences for pecuniary or non-pecuniary benefits. ESG ratings can coordinate capital flows efficiently, facilitate benchmarking, and provide additional financing for a shift toward a green economy (e.g., Serafeim and Yoon 2023; Darendeli et al. 2021; EU 2023/0177 (COD)).

Evidence points to a meaningful economic role of ESG ratings. With a broadening user base and substantial capital flows following the ratings, the relevance of ESG ratings has grown noticeably over the last decade (Gibson Brandon et al. 2022). Empirical results find that ESG ratings have informational value: Market participants react to ratings, e.g., through adjustments of their investments (Latino et al. 2021) or changes to fund compositions (Hartzmark and Sussman 2019). However, reactions to ratings can be slow or based on methodology changes rather than underlying activities (e.g., Latino et al. 2021; Berg et al. 2022a). ESG-based investment strategies are not tied to better financial performance or improved outcomes for the environment or society at large, and some evidence suggests an overreliance on ratings and a preference for simple signals over detailed data (e.g., (Hartzmark and Sussman 2019; Auer and Schuhmacher 2016). The mismatch between the possible economic role of ESG ratings and the observed outcomes can have implications for capital markets and sustainable development.

The main issues affecting ESG ratings are essential to the rating creation process and interconnected. The field is comparatively new and lacks a common definition of what determines good ESG performance and how it can be measured (Christensen et al. 2022; Larcker et al. 2022). This likely feeds into the missing convergence of ESG ratings (Chatterji et al. 2016; Berg et al. 2022b). Low convergence can reflect a plurality of ESG ratings that focus on different aspects and is actually an attribute

investors value (European Commission 2022). However, at this stage, rating disagreement is mostly caused by measurement differences, i.e., measuring the same attribute differently, reinforcing uncertainties related to ESG ratings (Berg et al. 2022b). The data underlying the ratings is reported in less formalized ways than financial data, relies on unregulated company data, or lacks assurance. As a result, data suffers from poor data availability and quality, the handling potentially distorts ratings.

Lastly, there are continued concerns about the opaqueness of the rating process (e.g., IOSCO 2021; Kotsantonis and Serafeim 2019) that make it hard to assess the methodology and validity of the ratings (Chatterji et al. 2016). Regulation can help mitigate some of the issues raised. For example, the EU's ESG Ratings Regulation (EU 2023/0177/COD) can alleviate transparency issues relating to the rating construction. More standardized ESG reporting requirements can address data availability and quality concerns (e.g., Directive 2022/2464/EU, Regulation 2020/852/EU). Researchers can help establish to what extent the requirements increased harmonization and standardization within the field.

*Chapter 4: (How) Do CSR disclosure mandates facilitate stakeholder pressure on firms?
The case of NGOs*

The third study of this thesis is an empirical-archival study and examines whether and how non-governmental organizations (NGOs) react to a mandated increase in CSR information. While the NFRD's targeted transparency mechanism specifically names stakeholders as a target group and an integral part of the mechanism, it is unclear whether stakeholders use the mandated CSR reports. The study focuses on NGOs for two reasons: Firstly, NGOs are important stakeholders and information intermediaries who voice their concerns and formulate demands from a stakeholder perspective. Additionally, NGOs act as information intermediaries. Secondly, NGO activity, unlike most stakeholder activity, is observable in the form of campaigns against firms. A novel data set from Sigwatch, a firm that collects NGO campaigning data for a broad sample of firms, is used to observe NGO campaigning following the mandated increase in CSR information.

The study exploits the implementation of the EU's Non-Financial Reporting Directive (Directive 2014/95/EU) using a difference-in-differences design

combined with further cross-sectional analyses. The sample period begins with the passage of the NFRD in 2014. The implemented difference-in-differences design defines 2014 to 2017 as the pre-period and 2018 to 2019 as the post-period. Since the scope of the NFRD extends to all large, listed firms in the EU, the study constructs a sample of propensity-score-matched US firms as a control group.

Results show that NGOs increase their campaigning activity in the EU following the first-time publication of mandatory CSR reports. A concurrent shift in campaign topics towards more NFRD-related campaign topics is observed. Results suggest that this element in the proposed transparency mechanism works, i.e., stakeholders use the reported information to exert pressure. Additional cross-sectional analyses indicate that the effect is concentrated in large, previously targeted firms, domiciled in countries with a high regulatory quality and a relatively high NGO presence. The findings imply that firms within the scope of the NFRD are not equally exposed to additional pressure by NGO campaigning activities after the first-time publication of mandatory CSR reports.

2 Corporate governance ratings and firm value – Does rating technology matter?

Jörg-Markus Hitz,⁴ Nico Lehmann⁵, Jana Wagner⁶

Working Paper⁷

Abstract: We examine whether and how information reflected in corporate governance ratings is valuable for investors and how these informational properties of governance ratings vary across institutional settings. For a global sample of firms, we document a positive association between the Corporate Governance Quotient, a commercial rating marketed by ISS, and Tobin's Q. We show that this positive association derives from both ISS's information selection and collection skills (public information component) as well as their proprietary technology and access to private information (technology component). This finding helps explain the observed importance of governance rating agencies to investors. Digging further, we find that the observed relation holds exclusively for firms located in the US. We discuss potential explanations for this finding.

JEL Classification: G32, G34, C21, C26

Keywords: Corporate governance (CG), CG rating technology, Tobin's Q, information intermediation

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⁷ First version of the working paper: August 2022. This version: July 2024.

2.1 Introduction

We examine whether and how information reflected in corporate governance ratings is valuable for investors and how these informational properties of governance ratings vary across institutional settings. Corporate governance (CG) ratings play an important economic role. In a global investor survey, almost half of the respondents named effective corporate governance as one of the most important areas for businesses (PwC 2022). Similarly, about 39% of institutional investors responded in a survey that they have exited a portfolio company due to governance issues over the last five years (McCahery et al. 2016). To implement such strategies and to monitor governance quality, investors need information about firms' corporate governance, which is both relevant and reliable. CG ratings cater to this demand. A CG rating assesses a firm's governance quality, which is condensed into a single score, often relative to peer firms. The ratings are commercial products marketed by corporate governance rating agencies. These information intermediaries collect, aggregate, and distribute CG information, potentially saving investors transaction costs and providing novel information using their proprietary rating technology. In 2016, more than 100 rating agencies provided data on corporate governance, either as a single rating or integrated into a rating concerning environmental, social, and governance (ESG) issues (Amel-Zadeh and Serafeim 2018).

Despite the popularity of CG ratings, the economic role of the ratings and the vendors of such ratings is not well understood (e.g., Daines et al. 2010; Lehmann 2019). Lehmann (2019) shows that the initiation of CG rating coverage has positive effects on the firm, such as better monitoring, better information dissemination, and increased investor breadth. From an investor perspective, extant literature provides mixed evidence on whether and how the ratings are value relevant. Studies assessing the association between CG ratings and firm value display a range of results across different settings, with a slight majority in favor of a positive relation (e.g., Bauer et al. 2004; Black et al. 2021; Ertugrul and Hegde 2009; Renders et al. 2010). The drivers of this relation are only partly understood. Daines et al. (2010) show that CG ratings do not consistently predict future corporate events like accounting restatements, security litigation, or firm performance, calling into question the informational value of CG ratings. Guest and Nerino (2020) assess price

effects of CG rating changes for US firms, documenting a negative effect for rating downgrades that is driven by public information as well as proprietary information produced by the rating providers. Hitz and Lehmann (2015) break down the information contained in CG ratings, showing for a sample of German and UK firms that the publicly available information factored into CG ratings is priced (reflected in firm value), while the rating vendor's proprietary technology is not. In sum, it is not well understood yet why and how CG ratings are valuable to investors.

We contribute to the extant literature by providing insights into the value relevance of the rating components and the variations thereof across institutional environments. We adopt the Hitz and Lehmann (2015) approach and apply it to a global sample. This enables us to investigate the informational properties of CG ratings more comprehensively. Specifically, using a global sample enables us to shed light on country-level variation and, thus, on the potential role of different institutional setups. We build on a unique data set of *Institutional Shareholder Services* (ISS) corporate governance ratings. ISS provides proxy advisory services, a broader ESG score, and a stand-alone corporate governance rating. Covering more than 7,300 firms in 30 markets, ISS's governance rating is the most widely used and widely known score (Epps and Cereola 2008; ISS 2022). In surveys, investors praise ISS's governance rating and its governance reports (SustainAbility 2020).

Our dataset extends from 2003 to 2007 and comprises ISS's Corporate Governance Quotient (CGQ) for a global set of firms and, more importantly, the data points ISS uses to generate these CG ratings. This proprietary data enables us to discern a public information component (CGI) and a proprietary technology component (TECHNOLOGY) contained in the ratings. Isolating these two components allows us to empirically investigate which of ISS's activities are relevant for investors, shedding light on the economic role of governance rating providers. Because our dataset spans multiple legal systems, we are able to investigate the role of these institutional environments in shaping ISS's coverage decisions and the informational properties of the CG ratings. Therefore, the goal of our analysis is twofold: We seek to understand (1) which rating component/activity provides informational value and (2) how these informational properties vary across the global framework within which ISS operates.

We begin our empirical analyses by mapping ISS's firm coverage on the country level and relating it to characteristics of the institutional environment, e.g., legal tradition and investor protection variables. We find that ISS covers 27% of the Worldscope universe of our sample. The largest number of covered firms are located in the US, then ISS's home country, followed by Japan and the UK. In relative terms, the US has the highest number of covered firms (59.89%), followed by Greece (34.47%) and Spain (25.45%). Aside from the US, we observe higher ISS coverage for countries where investor protection variables turn out comparatively low. This points towards ISS coverage responding to investor demand.

Next, we examine rating characteristics and compliance rates in different institutional environments. The compliance rate states the proportion of a firm's CG characteristics that meet ISS's minimum requirements for good governance. We find an average compliance rate of 47.8%, ranging from 7.3% to 81.3%. Average compliance rates increased over time, from 42.7% in 2003 to 50.1% in 2007, which reflects an increase of 7.4 percentage points. We find considerably higher compliance rates for US firms (51.4%) compared to non-US firms (39.5%). We discuss two potential explanations for this finding: It is possible that US firms implement better governance systems. Alternatively or in addition, ISS's ratings may be specifically calibrated to the US model of governance, making it harder for firms from countries with divergent governance models to satisfy ISS's requirements for good governance.

In our main analysis, we investigate the value relevance of ISS's CG ratings. We find that ISS's ratings are significantly positively related to Tobin's Q. This is in line with previous literature (e.g., Hitz and Lehmann 2015; Morey et al. 2009; Renders et al. 2010). It suggests that ISS captures valuation relevant information in their rating, i.e., information that market participants use in estimating a firm's value. To identify the source of the relevant information, we introduce a decomposition approach, which discerns two information components contained in the rating. The first part, the Corporate Governance Indicator (CGI), reflects the public information component of the rating, which we extract from the rating's underlying data points. It represents ISS's expertise in collecting information that is indicative of corporate governance quality. If ISS is more proficient in collecting and processing publicly available information sourced, e.g., from financial reports or the media, the public

information component creates transaction cost savings for investors. The second part, TECHNOLOGY, reflects ISS's proprietary technology. It includes ISS's weighting of the collected variables and any private information ISS factors into the rating. This process is valuable to investors if the rating vendor is able to deliver a more accurate assessment of a firm's governance quality than an investor's analysis of the same matter.

Our analyses yield a highly significant positive relation between CGI and firm value. This suggests that ISS successfully identifies and collects information indicative of firm-level governance quality. The coefficient for TECHNOLOGY also turns out positive and highly significant. This is in line with the notion that ISS augments the collected information to reflect more than publicly available information. Results indicate that ISS's governance ratings are valuable to investors through their proprietary rating methodology and/or by adding private information.

Next, we explore whether our documented associations vary between countries and, thus, across different institutional settings. We have two reasons to suspect such variation. Firstly, our descriptive results point towards variations regarding coverage decisions and compliance rates between the countries in our sample. Secondly, research shows that a firm's institutional environment is a significant explanatory factor in firm-level corporate governance, often more so than firm-level characteristics (Doidge et al. 2007; Djankov et al. 2008). We, therefore, group our sample into firms from civil law countries and firms from common law countries. We find that the previously documented significant relation of firm value with the ISS rating and its two informational components holds for firms in common law countries but not for firms in civil law countries. It is possible that ISS's rating methodology functions well in common law countries, where the institutional environment is similar to the US, but does not perform well in different institutional settings with a different perception of what constitutes good corporate governance. To further pinpoint ISS's value proposition, we drill deeper into the documented sensitivity of the ratings by investigating variations within common law countries. We find significant positive associations for all three variables (CGQ, CGI, and TECHNOLOGY) for US firms. In contrast, we find no such association for firms headquartered in other common law countries such as the UK or New Zealand. The

results indicate a sensitivity of the ratings and their components towards the institutional environment they are conducted in.

We discuss several explanations for our findings. One explanation is institutional differences and a different perception of what constitutes good governance in different legal systems (Liang and Renneboog 2017). For example, the US follows a shareholder primacy approach, referring to a strong shareholder orientation that views creating shareholder value as the sole objective of the firm (Lund and Pollman 2021). In contrast, European firms, on average, are leaning more towards a stakeholder-oriented model, where stakeholder interests are as important as shareholder interests, resulting in a different understanding of good CG practices (Larcker and Tayan 2021). While ISS states that it makes adjustments to accommodate these differences, these adjustments might not be sufficient to accommodate the entirety of variations. A one-size-fits-all approach can further amplify the gap between CG ratings and firm value if firms adjust their governance in accordance with the defined ratings. Specifically, if the standards are designed in the context of a particular environment, firms following these standards outside this environment are at risk of implementing harmful standards (Rose 2007; Larcker and Tayan 2019). In this case, we do not expect a positive association between governance ratings and firm value. Yet, if the firm does not adjust its governance, a *one-size-fits-all* approach will likely not pick up on individually sensible governance specifications.

A second explanation is varying disclosure incentives. In the context of ESG ratings, the absence of information can be interpreted as a negative signal, specifically if that information is interpreted as material (Verrecchia 2001; Khan et al. 2016). US firms likely publish more information that ISS considers relevant in rating firm-level corporate governance. Firms operating outside the US follow different disclosure incentives relevant to their environment that may not be as well aligned with the information ISS rates. Without making a statement about the rating's ability to measure corporate governance, disclosure availability can influence governance ratings, irrespective of the actual corporate governance levels of the rated firms. The resulting gap between actual and measured governance quality can explain the missing link between the rating and firm value.

Although the ratings' positive information properties are confined to U.S. firms, the ratings appear to be in demand around the world, as documented by the coverage across countries. This indicates that CG ratings are valuable to investors in other ways. For example, executives at money-managing firms state in interviews that they purchase the ratings to acquire the underlying data in a cost-effective way (Daines et al. 2010; SustainAbility 2020). Also, the ratings offer an enhanced basis for decision-making, which can assist institutional investors in fulfilling their fiduciary duty (European Commission 2014). Buyers can also use the ratings as an ex-post verification tool for investment decisions already made, hedging themselves against criticism by demonstrating the inclusion of expert ratings when accessing governance quality (Hitz and Lehmann 2015). None of the explanations require ISS's governance ratings to be associated with firm value or to take the specifics of a legal environment into account. This is only important if one uses the final rating. The underlying information or the purchase itself is free from such requirements. It is possible that the ratings are valuable to investors without a consistent link between governance ratings and firm value.

Our paper makes several contributions: We contribute to the literature on the predictive ability and value relevance of corporate governance ratings (e.g., Daines et al. 2010; Guest and Nerino 2020; Bauwhede 2009) by showing that ISS ratings for US firms have explanatory power for firm value, consistent with informational content for investors. Our unique data set allows us to further distinguish between the main components of the ratings and their information content, shedding light on the rating creation processes and their value proposition to investors. Specifically, we extend the findings of Hitz and Lehmann (2015), from a German-UK sample to a global sample, to document how the informational properties of ISS's ratings vary across legal environments. The findings are relevant for investment managers and practitioners using the ratings in their investment processes, particularly if the ratings are used to evaluate firms headquartered outside the US. Gaining a better understanding of CG ratings and their benefits and drawbacks is also important for regulators who wish to understand the rating market more thoroughly (European Commission 2022).

2.2 Background

2.2.1 Corporate governance ratings

A corporate governance rating represents an assessment of a firm's governance quality condensed into a single score, oftentimes relative to peer firms. CG ratings are commercial products marketed by CG rating agencies such as *Institutional Shareholder Services* (ISS) or *Morgan Stanley Capital International* (MSCI). These information intermediaries collect, aggregate, and distribute CG information and provide novel information using their proprietary rating technology.⁸ In their economic role as information intermediaries, governance rating agencies offer a varied product portfolio, including reports, insights from (private) communications with firms, or customized rating tools.⁹ Corporate governance ratings remain their most visible output (Lehmann 2019). Potential customers of this output are institutional investors, corporations, or other information intermediaries, such as financial analysts or the media.

Ratings, if they reflect governance quality, can provide value through improved measurement and transparency of corporate governance practices and an increase in governance quality (Ertugrul and Hegde 2009). They can also alleviate problems of data collection and integration. Investors indicate that they struggle to take relevant data into account. Around 44% of investment professionals at asset-managing or asset-owning institutions cite the lack of data comparability as a challenge to integrating environmental, social, and governance information into their investment process (Amel-Zadeh and Serafeim 2018). Around 40% state the cost of gathering, analyzing, and quantifying the data as an impediment. Corporate governance ratings cater to investor demand for information on firms' governance

⁸ Healy and Palepu define information intermediaries as analysts that “reduce transaction costs in the capital market by providing specialized services and gathering and disseminating information” (2002), while Bushee et al. use the term “to refer to an agent that provides information that is new and useful to other parties, either because it has not previously been publicly released or because it has not been widely disseminated.” (2010).

⁹ It is not uncommon for these rating agencies to also engage in other activities of information intermediaries. ISS, for example, started its proxy advisory service in 1986 but only published the first corporate governance ratings in 2002 (ISS 2019). While both tasks are performed by the same firm, the activities of proxy advisors and governance analysts differ. Proxy advisors analyze a broad range of firm characteristics in order to provide insights as to how their customers might vote at annual meetings, while governance analysts research information on firms' governance standards, guidelines, or structures (Lehmann 2019). Both are non-financial analysts, however, for the purpose of this paper, we follow Lehmann (2019) and only consider the latter governance analysts.

quality. In this sense, rating agencies provide welfare improvements by distributing information to users willing to pay for it (Spellman and Watson 2009).

Buyers of the ratings can use the ratings in different ways. (1) They can use the information the rating is based on instead of the aggregated rating score. Gathering the relevant governance information about firms can be a time-consuming and costly process. This involves the cost of finding and identifying the information (awareness costs) as well as collecting that information (acquisition cost) (Blankespoor et al. 2020). The acquisition of a governance rating is a way to reduce the firm's transaction costs. Typically, the underlying data points are included in the rating packages. (2) Buyers can use the actual rating and incorporate it into their decision-making. For example, investors can use ratings to construct investment portfolios of firms with better corporate governance. Following an agency theory argument, better-governed firms will leave less room for managers to act in their best self-interest so that these portfolios can earn investors superior returns (Daines et al. 2010; Jensen and Meckling 1976). (3) Buyers can also use the ratings as an ex-post verification tool for investment decisions already made (Hitz and Lehmann 2015) or to fulfill fiduciary duties (Rose 2007). In this scenario, the process of buying the rating is used to demonstrate a certain level of caution in the investment process. The content and information of the rating are only of secondary importance.

Despite the benefits corporate governance ratings potentially offer, they remain a controversial product. Concerns generally arise in three, potentially intertwined, areas: (1) a potential conflict of interest, (2) doubts about the applied methodology and its effectiveness, and (3) the potential drawbacks of a standardized approach to governance (Rose 2007). In the case of ISS, the concern about a potential conflict of interest is spurred by the coexistence of its governance rating service and governance advisory service. For example, General Electric reportedly increased its governance rating from 10% to 90.5% after hiring ISS as its governance consultant, who then re-rated General Electric's improved governance (Daines et al. 2010). Concerns regarding the methodology are based on the empirical foundation of the variables. While ISS asserts that it continuously updates its rating methodology to "align with latest scientific findings, technological developments, regulatory changes and the social debate" (ISS 2018a), researchers remain skeptical about the

number of variables included, the concepts measured, and the overall composition of the methodologies employed (Aguilera et al. 2015; Ertugrul and Hegde 2009; Black et al. 2021). Bebchuk et al. (2009) argue that many of the governance provisions included may be irrelevant or endogenous products of other provisions. Additionally, researchers have cautioned that rating diverse firms against a standardized checklist might result in faulty ratings (Bebchuk and Hamdani 2009). By penalizing or rewarding certain governance features, rating firms might initiate changes in governance mechanisms rather than just evaluate them (Rose 2007). In turn, firms might adopt ill-suited governance standards (Aguilera et al. 2015).

2.2.2 Market for corporate governance ratings

Despite the concerns frequently raised in connection with (corporate governance) ratings, the ratings continue to be a commercial success. In 2016, more than 100 rating agencies provided data on corporate governance, either as a single rating or integrated into a rating concerning environmental, social, and governance issues (Amel-Zadeh and Serafeim 2018). One of the main vendors of corporate governance ratings is ISS. Next to a broader ESG score, ISS provides a stand-alone corporate governance rating. Covering more than 7,300 firms in 30 markets, ISS's governance rating is the most widely used and widely known score (Epps and Cereola 2008; ISS 2022). Besides ISS, MSCI and Sustainalytics continue to provide stand-alone governance ratings. MSCI provides the MSCI ESG Governance Metrics, which offers percentile rankings of roughly 10,000 firms (MSCI 2023b). The score is organized around four main themes: board, pay, ownership and control, and accounting. Sustainalytics offers Corporate Governance Research & Ratings for 4,000 firms (Sustainalytics 2022). The governance report and the included ratings revolve around board integrity and quality, the structure of the board, remuneration, rights of shareholders, financial reporting, and stakeholder governance. (Sustainalytics 2022) Other specialized governance rating agencies like *Deminor* or *Governance Metrics International* were bought up by larger rating agencies.

In recent years, there has been a shift from stand-alone corporate governance ratings to broader environmental, social, and governance ratings. This hints at the increasing demand for information on environmental and social issues. Many of the existing governance ratings are now integrated into new scores. Yet, the providers

of more general ESG scores often still calculate individual governance scores as one pillar of the overall ESG rating. Through the varied mergers and acquisitions in the field, a majority of governance rating agencies are now headquartered in the U.S.¹⁰ This is a noteworthy setup since corporate governance is a concept that varies with institutional environments (Liang and Renneboog 2017).

2.2.3 Empirical evidence on the use of corporate governance ratings

Empirically, results of studies assessing corporate governance ratings' predictive ability and value relevance in relation to firm performance, stock market performance, or future corporate governance events vary across studies, settings, and samples. US studies examining the connection between corporate governance ratings and (future) firm performance display a range of results. For example, Epps and Cereola (2008) find mostly insignificant coefficients for the relation between ISS's CGQ and a firm's return on equity (ROE) and return on assets (ROA) for a US sample of S&P-listed firms between 2002 and 2004. Ertugrul and Hegde (2009) scrutinize summary scores of the three main US rating agencies at the time, Governance Metrics International (GMI), The Corporate Library (TCL), and ISS, as well as eight sub-scores provided by TCL, and find mixed results for a sample of firms between 2003 and 2005. TCL and ISS exhibit a negative relation, while GMI returns a significantly positive relation with future operating performance. Brown and Caylor (2006) use the data underlying ISS's CGQ to construct their own summary index for a US dataset in 2003. Results reveal a highly significant positive correlation between the constructed governance index and Tobin's Q. An additional analysis yields that only a small subset of seven factors drive the results.

In a European setting, Renders et al. (2010) find a significant positive relation between *Deminor* ratings and company performance as measured by Tobin's Q, market-to-sales ratio, market-to-book value, ROA, and ROE for a sample of firms between 1999 and 2003. Bauer et al. (2004) report negative and insignificant relations between *Deminor* ratings and firms' net profit margin (NPM) and ROE for European firms between 2000 and 2001. Bauwhede (2009) calls these results into question and focuses her measurement on the governance dimensions that affect

¹⁰ Currently, ISS's majority shareholder is Deutsche Boerse, a German stock exchange operator. An agreement between Deutsche Boerse and ISS safeguards the independence of ISS's research (ISS 2021). Historically, ISS's roots are in the US.

operating efficiency the most (board structure and functioning). For a set of European countries between 2000 and 2001, she finds a significant positive relation between the extent to which firms adhere to international best practices and the one-year ahead ROA. Núñez Izquierdo and Garcia-Blandon (2017) do not find a consistently significant relation between ISS's *QuickScore* and one-year-ahead firm performance proxied for by Tobin's Q, ROE, and ROA for European firms listed in the S&P Europe 350 in 2013. For emerging market settings, results are equally dispersed. Klapper and Love (2004) show for a sample of 14 emerging countries a significant positive association between Credit Lyonnais Securities Asia ratings in 2001 and ROA/Tobin's Q. Black et al. (2021) find that Asset4, Thomson Reuters, and MSCI's ratings do not consistently predict future Tobin's Q in a set of firms from 15 emerging countries between the years 2002 and 2006.

Similarly, studies investigating the relation between governance ratings and stock market outcomes vary in the reported results. Bauer et al. (2008) construct portfolios based on six selected corporate governance dimensions as measured by GMI governance ratings for a sample of Japanese firms between 1999 and 2004 and find a positive relation, indicating that well-governed firms are able to outperform poorly governed firms by 10.32%. Spellman and Watson (2009) also use GMI ratings to conduct an analysis based on a sample of US firms between 2003 and 2008 and find a significant positive relation between GMI and future shareholder returns. Koehn and Ueng (2007) examine the relation between stock price appreciation and ISS's CGQ for a sample of European firms in 2003 and find that firms with a higher CGQ display a higher stock price appreciation. Yet, the results are insignificant across multiple specifications. Observing capital market reactions to rating changes, Daines et al. (2010) find no consistent significant market reactions to rating changes for a US sample between 2005 and 2007. Distinguishing between positive and negative changes, Guest and Nerino (2020) reconstruct the sample of Daines et al. (2010) and demonstrate asymmetric price reactions, i.e., significant negative market reactions to negative rating changes, while there is no significant reaction to positive rating changes. Morey et al. (2009) find a significant positive relation between *AllianceBernstein* governance ratings and firm valuation (Tobin's Q and monthly price-book ratio) in a one- to three-month window before and after the occurrence of a rating change for a sample of firms in emerging markets between

2001 and 2006. Focusing on a different effect of governance, Derwall and Verwijmeren (2007) use GMI ratings for a US-based sample between 2003 and 2005 to demonstrate that good overall corporate governance is associated with lower implied cost of equity capital, lower systematic risk, and lower idiosyncratic risk. Koehn and Ueng (2005) show a positive, if insignificant, relation between corporate governance ratings and earnings quality for a US sample.

Finally, Daines et al. (2010) explore governance ratings' ability to predict future accounting restatements and class-action lawsuits, presenting indirect insight into how the ratings can be useful. For a sample of US firms between 2005 and 2007, the results provide mixed evidence for the four main ratings at the time (CGQ, GMI, TCL, and Accounting and Governance Risk (AGR)). The ratings do not systematically predict future corporate governance events. ISS's CGQ rating exhibits particularly low levels of predictive ability. Hitz and Lehmann (2015) undertake a more direct attempt to measure the value relevance of the ratings. Based on a sample of German and UK firms between 2003 and 2007, they show that the publicly available information factored into CG ratings is priced, i.e., reflected in firm value. The second component, ISS's rating technology, is not significantly related to Tobin's Q. The results are not sensitive to the institutional differences between the two countries, i.e., the results do not differ between civil and common law countries. Guest and Nerino (2020) use a similar concept for a set of US firms between 2002 and 2016. Employing ISS's CGQ, QuickScore and the Governance Risk Indicator, the authors find that the rating agencies' proprietary content creation is an important factor in the negative market reactions measured after negative rating changes.

Taken together, there is a plethora of findings that vary in direction and intensity of the measured relations and are mostly confined to single-country settings. We lack large sample, cross-country evidence on what corporate governance ratings are used for and what parts of the ratings provide informational value for investors. Against the backdrop of the influence institutional settings have on the definition of good corporate governance, we lack an understanding of how rating properties vary within different legal contexts. We are, therefore, interested in identifying which part of the rating providers' activities has informational value for investors and how these informational properties vary across the global setup in which ISS operates.

2.3 ISS corporate governance ratings and rating coverage

2.3.1 ISS Corporate Governance Quotient

To shed light on the different parts of governance ratings and their informational properties, we exploit a unique ISS data set containing the commercially available Corporate Governance Quotient (CGQ) and the underlying data points used to construct the ratings. ISS offered the CGQ between 2002 and 2010. The corresponding rating criteria employed in this study were published in 2003 (ISS 2003). During this time, ISS collected data on 61 governance issues and three additional combination points that are collectively based on 225 data points. The issues are organized into eight groups: board, audit, charter/bylaws, anti-takeover provisions, executive and director compensation, progressive practices, ownership, and director education.¹¹ Each issue represents one statement reflecting good corporate governance from ISS's point of view and is followed by a brief explanation of how the statement should be understood.¹² For example, a statement relating to the compensation committee is formulated as "This key committee of the board should be composed solely of independent directors." (ISS 2003, p. 8). In the following explanation, ISS gives an overview of the different relations directors can have with the respective firm and defines what it considers an independent director. If all directors are classified as independent, the firm fulfills the criterion; otherwise, it's considered noncompliant with the respective criterion.

To generate the rating, ISS rates each firm against a set of defined statements by determining if the firm is compliant, resulting in a dichotomous evaluation of the firm's governance performance across the 64 governance issues. To combine these issues into a rating, ISS weighs the variables and applies its proprietary rating technology. The resulting ratings are relative scores, i.e., the CGQ gives information about the governance quality of a firm in relation to their respective peers on a percentile basis. For example, if a company scores a 97% *Industry CGQ*, it outperforms 97% of its industry peers in terms of corporate governance. ISS

¹¹ In order to reflect different institutional settings, ISS's scoring system distinguishes between US and international companies, allowing for country-specific alterations. For example, the number of issues applied varies. The following part refers to the US scoring system. The international scoring system works in a very similar way.

¹² A further sample issue can be found in Appendix 2.A, while Appendix 2.B provides an overview of the categories and the issues.

released three versions of the score: the *Industry CGQ*, the *Index CGQ*, and the *Country CGQ*. Due to a more precise mapping of the companies into industry (rather than index) groups and a larger sample size of the *Industry CGQ* compared to the *Country CGQ*, the focus here is on the *Industry CGQ*.¹³

2.3.2 Governance ratings coverage

To examine the value relevance of ISS governance ratings (components) and variations thereof across different institutional environments, we first need to take stock of ISS's coverage in our sample. Therefore, we explore the country-level variation in our data set and how this variation maps into ISS corporate governance ratings. We are interested in the global coverage of ISS's CGQ. Table 2.1 yields insights into the CGQ coverage at the country level as well as the development of coverage in the sample period. ISS provides CGQ coverage for about 27% of the firms contained in the Worldscope universe of the respective countries over the sample period. There are considerable cross-country differences in the number of firms covered. Countries with the largest number of firms covered are the US, with a total of 20,512 firm-year observations, making up 69.88% of the sample, followed by Japan (2,780 observations, 9.47%), the UK (1,904 observations, 6.49%) and Australia (520 observations, 1.77%). Even large European economies like Germany (420 observations, 1.43%) and France (408 observations, 1.39%) only provide a fraction of the sample and display relatively low numbers of rated firms. The overall number and percentage of firms covered per country remain stable for large parts of the sample. Only some countries display a sharp increase in coverage. We observe time trends for the United Kingdom and Hong Kong, where the number of firms covered more than doubled between 2003 and 2007, from 204 to 498 in the UK and from 50 to 104 in Hong Kong.

¹³ The release of the *Country CGQ* is limited to six countries, i.e. Canada, UK, Australia, France, Germany, and Japan (ISS 2003).

Table 2.1: CGQ coverage: Number of firms covered per country

Country	2003	2004	2005	2006	2007	Total	% of sample
Australia	86	82	117	118	117	520	1.77
Austria	23	18	18	19	19	97	0.33
Belgium	24	19	23	25	25	116	0.40
Bermuda	0	0	12	13	13	38	0.13
Canada	0	0	43	4	4	51	0.17
Cayman Islands	0	0	2	3	3	8	0.03
Denmark	21	19	17	18	18	93	0.32
Finland	29	28	28	29	29	143	0.49
France	88	76	78	83	83	408	1.39
Gabon	0	0	1	1	1	3	0.01
Germany	90	81	79	85	85	420	1.43
Greece	43	40	40	40	40	203	0.69
Guernsey	0	0	1	1	1	3	0.01
Hong Kong	50	56	106	104	104	420	1.43
Ireland	11	11	11	12	12	57	0.19
Israel	0	0	2	2	2	6	0.02
Italy	57	41	56	60	60	274	0.93
Japan	497	506	585	596	596	2,780	9.47
Liberia	0	0	1	1	1	3	0.01
Luxembourg	0	0	2	3	3	8	0.03
Marshall Islands	0	0	1	1	1	3	0.01
Netherlands	40	37	35	36	36	184	0.63
Netherlands Antilles	0	0	1	2	2	5	0.02
New Zealand	14	13	17	17	17	78	0.27
Norway	16	15	16	17	16	80	0.27
Portugal	13	11	12	12	12	60	0.20
Singapore	49	50	56	57	57	269	0.92
South Korea	0	0	0	0	12	12	0.04
Spain	46	31	39	40	40	196	0.67
Sweden	33	34	30	34	33	164	0.56
Switzerland	49	44	45	49	49	236	0.80
United Kingdom	204	202	503	497	498	1,904	6.49
United States	4,142	4,059	4,099	4,174	4,038	20,512	69.88
Total	5,625	5,473	6,076	6,153	6,027	29,354	100.00
Worldscope Firms	20,166	20,151	21,888	22,850	23,737	108,792	
Firms covered / Worldscope firms	28%	27%	28%	27%	25%	27%	

Notes: The table shows the number of firms covered by ISS corporate governance rating (CGQ) in the sample period between 2002 and 2007, both, for the respective years and pooled. Additionally, the number of firms covered by CGQ in relation to the pooled Worldscope universe of the respective countries is shown.

2.3.3 Market share and investor protection

To glean insights into ISS's coverage decisions and to develop an understanding of the institutional environments in which ISS is active, we map the market share data with legal origin and investor protection indicators. Table 2.2 displays the countries according to their legal origin as defined by La Porta et al. (1998). Coverage is the number of firms covered by ISS's CGQ in a country in relation to the number of firms listed in the Worldscope universe for the respective country. The three columns to

its right display investor protection indices for the country and averages for the different legal origins. The three indices are the *Anti-Self-Dealing Index* (Djankov et al. 2008), the *Regulatory Quality Index* (Kaufmann et al. 2009), and the *Accounting Enforcement Index* (Brown et al. 2014). The sample contains twelve common law countries and 17 civil law countries, of which eight have a French legal origin, five a German, and four a Scandinavian legal origin. Similar to Table 2.1, the US displays the highest country-level rating coverage, with 59.89% of US firms obtaining a CGQ. Greece and Spain, with 34.47% and 25.45% respectively, show the second and third-highest coverage. From a legal origin point of view, French and German legal origin countries show higher coverage than common or Scandinavian law countries. Note that we use *Common Law without US* for our comparisons here. As ISS's home country during that period, the US appears to follow different patterns that do not lend themselves to this comparison.

Common law countries display, on average, the highest values across all three specifications of investor protection, along with the lowest coverage levels (again, without the US). Conversely, French legal origin countries report, on average the lowest levels of regulatory quality, while countries of German legal origin report the lowest values in terms of accounting enforcement and anti-self-dealing rules. In both legal origins, we find high coverage numbers. We find a similar pattern on a country basis. Across all three specifications of investor protection, countries with lower levels of investor protection tend to show higher percentages of covered firms. For example, Greece displays notably low scores for investor protection and a coverage ratio second only to that of the US. Taken together, we observe two patterns: Coverage is high in the US, ISS's home country during that period, but not in other common law countries, and ISS coverage responds to investor demand, i.e., coverage is higher in countries where investor protection variables turn out comparatively low.

Table 2.2: Coverage ratio and investor protection per country and legal origin

Country	Coverage in %	Regulatory Quality	Accounting Enforcement	Anti-Self-Dealing	Legal Origin
Australia	7.66	1.780	52.0	0.79	1
Bermuda	14.62	1.350	26.0	0.15	1
Canada	0.57	1.660	54.0	0.65	1
Cayman Islands	17.39	1.100	26.0	0.15	1
Guernsey	4.69	1.580	56.0	0.65	1
Hong Kong	9.35	2.000	52.0	0.96	1
Ireland	12.93	1.910	41.0	0.79	1
Israel	0.36	1.200	48.0	0.71	1
New Zealand	22.54	1.720	43.0	0.95	1
Singapore	10.59	1.920	32.0	1.00	1
United Kingdom	20.29	1.790	54.0	0.93	1
United States	59.89	1.580	56.0	0.65	1
Common	18.00*	1.633	45.0	0.70	1
- without US	13.34*	1.637	44.0	0.70	
Belgium	18.23	1.480	44.0	0.54	2
France	11.86	1.250	45.0	0.38	2
Greece	34.47	0.810	26.0	0.23	2
Italy	20.21	0.950	46.0	0.39	2
Luxembourg	4.06	1.710	49.0	0.25	2
Netherlands	19.37	1.750	43.0	0.21	2
Portugal	21.20	1.120	29.0	0.49	2
Spain	25.45	1.270	42.0	0.37	2
French	19.36	1.293	40.5	0.36	2
Austria	23.10	1.640	27.0	0.21	3
Germany	13.53	1.460	44.0	0.28	3
Japan	14.82	1.230	34.0	0.48	3
South Korea	0.30	0.730	28.0	0.46	3
Switzerland	17.57	1.660	49.0	0.27	3
German	17.62*	1.344	36.4	0.34	3
Denmark	11.36	1.860	49.0	0.47	4
Finland	21.47	1.580	32.0	0.46	4
Norway	10.06	1.340	47.0	0.44	4
Sweden	11.29	1.680	34.0	0.34	4
Scandinavian	13.55	1.615	40.5	0.43	4

Notes: The table shows ISS coverage data and investor protection indices on a country level. Countries are displayed according to their legal origin as defined by La Porta et al. (1998). Coverage is the number of firms covered by ISS's CGQ in a country in relation to the number of firms listed in the Worldscope universe for the respective country. The three columns to its right display investor protection indices for the respective country and averaged for the different legal origins. The three indices are the Anti-Self-Dealing Index (Djankov et al. 2008), Regulatory Quality Index (Kaufmann et al. 2009), and Accounting Enforcement Index (Brown et al. 2014).

* Israel and Canada report very low coverage levels, likely due to data errors. We, therefore, excluded them in the calculation of the average numbers. The overall average for common law countries is 15.07 and 11.00 for common law countries without the US when Israel and Canada are included. Similarly, South Korea shows very low coverage numbers and is excluded from average calculation for German law countries. The overall average across German law countries is 13.86 when South Korea is included.

2.3.4 CGQ rating criteria and outcomes

After examining rating coverage and characteristics of the institutional environment, we set out to gain a more detailed understanding of the rating criteria. We drill deeper into the rating items, fulfillment and compliance rates, and the variation thereof within the institutional environments. Panel A of Table 2.3 lists the variables underlying the CGQ rating and the required minimum acceptable governance standards. The right-hand side of the table details the corresponding fulfillment rates per year, i.e., the percentage number of firms per year that fulfill the defined minimum requirement.

The average fulfillment rate over all variables is 51.09%, with varying results for the respective items.¹⁴ Two variables from the *Board* (Shareholder Proposals not ignored (99.62%), CEO serves on max. two boards (90.26%)) and one variable from the *Anti-Takeover Provisions* (No control share cash-out statute (97.93%)) report the highest fulfillment rates. *Director Education* (Full board participated in education program (0.44%)), a proxy contest *Combination variable* (proxy contest defense combination (4.63%)) and *Anti-Takeover Provisions* (No anti-takeover provisions (4.09%)) report the lowest average fulfillment rates. The latter also shows one of the highest change rates, increasing from 0.76% in 2003 to 7.33% in 2007. Also displaying large increases over the sample period are policy variables, e.g., “Policy of conducting regular board performance reviews should be disclosed” and “A policy authorizing the board to hire its own advisors should be disclosed” (ISS 2003, pp. 30–31).

¹⁴ Not all criteria are applicable in all countries. Appendix 2.B includes a list of the applicable exceptions.

Table 2.3: CGQ rating criteria and outcome

Panel A: ISS minimum governance standards and corresponding fulfillment rates per year							
No	Issue	2003	2004	2005	2006	2007 Average	
Board							
1	Board independent (66.7% < IO <= 75%)	35.02	34.95	24.28	25.48	26.98	29.34
2	Nominating committee 100% independent	27.56	45.09	48.77	51.49	52.61	45.10
3	Compensation committee 100% independent	52.82	57.35	60.83	63.53	64.31	59.77
4	Governance committee exists and meets	28.71	49.15	38.18	47.13	47.92	42.22
5	Board structure: Annually elected board	37.28	39.28	39.38	46.62	42.66	41.04
6	Board size: >= 6 / <=12	81.21	82.07	83.64	84.26	84.00	83.04
7	Changes in board size: Shareholder approval required	12.35	6.75	7.13	2.17	2.81	6.24
8	Cumulative Voting rights exist	6.76	6.51	6.48	6.33	6.18	6.45
9	CEO serves on max. 2 boards	81.14	84.52	94.59	95.50	95.54	90.26
10	Directors other than CEO serve on max. 5 boards	4.37	12.66	11.14	14.46	14.70	11.47
11	No former CEO on the board	76.57	73.67	75.82	76.24	81.17	76.69
12	Chairman/CEO separated/lead director specified	55.09	65.93	47.79	49.09	50.41	53.66
13	Governance guidelines disclosed	21.17	44.42	50.92	52.12	53.69	44.47
14	Shareholder proposals not ignored	99.42	99.21	100.00	99.70	99.76	99.62
15	Directors' attendance at board meetings >= 75%	76.34	79.44	79.00	79.93	80.16	78.97
16	Shareholders vote on directors to fill vacancies	43.07	49.13	58.44	50.99	51.34	50.59
17	CEO: no related-party transaction	65.08	80.16	81.90	83.80	90.71	80.33
Audit							
18	Audit committee 100% independent	61.58	66.44	70.49	71.77	72.11	68.48
19	Consulting fees < audit fees	81.16	85.93	90.01	92.43	92.58	88.42
20	Auditor rotation policy disclosed	25.24	40.61	23.37	23.88	26.17	27.85
21	Auditors ratified at annual meeting	58.15	60.00	65.43	68.35	70.45	64.47
Charter/bylaws							
22	No poison pill/no blank check preferred (BCP)	31.63	31.23	74.44	76.80	48.12	52.45
23	Shareholder-approved poison pill/no BCP	0.86	0.73	46.07	49.68	51.08	29.68
24	Poison pill with TIDE provision	71.52	71.55	76.26	78.57	80.56	75.69
25	Poison pill without sunset provision	71.21	70.91	75.60	78.02	80.01	75.15
26	Poison pill with a qualified offer clause	72.07	72.46	77.38	79.46	81.29	76.53
27	Poison pill with a trigger >= 20%	77.94	77.65	76.87	82.45	84.05	79.79
28	Majority vote to amend charter/bylaws	44.35	44.18	45.22	43.08	43.36	44.04
29	Majority vote to approve mergers	61.30	62.16	63.95	66.20	66.37	64.00
30	Shareholders may act by written consent	16.58	18.88	17.16	17.65	18.24	17.70
31	Shareholders may call special meetings	40.32	42.54	44.73	47.25	47.31	44.43
32	Shareholder approval to amend bylaws	15.30	14.49	17.75	17.78	18.53	16.77
33	Capital structure: Single class, common, no BCP	33.91	33.46	94.09	94.74	94.99	70.24
Anti-takeover provisions							
34	No anti-takeover provisions	4.44	4.11	4.15	3.91	3.84	4.09
35	Control share acquisition statute, but company opted out	77.45	78.02	78.34	78.97	78.65	78.28
36	Control share cash-out statute, but company opted out	97.61	97.96	97.98	98.08	98.04	97.93
37	Freezeout, but company opted out	15.91	15.99	17.20	17.23	17.63	16.79
38	Fair price provision, but company opted out	68.03	67.73	67.38	67.42	67.60	67.63
39	Stakeholder laws, but company opted out	68.49	72.46	72.63	72.38	72.36	71.66
40	Company has no poison pill	88.56	88.32	89.12	90.66	91.80	89.69

2 Corporate governance ratings and firm value – Does rating technology matter?

Executive and director compensation

41	Option plan cost reasonable	44.25	53.21	57.34	58.91	60.21	54.78
42	Option repricing prohibited	16.74	27.27	6.63	14.32	8.30	14.65
43	No option repricing the last three years	87.09	87.87	86.75	85.40	83.76	86.17
44	All option plans shareholder approved	86.87	83.25	88.02	89.05	84.69	86.38
45	No compensation committee interlocks	76.66	76.25	82.36	76.79	76.70	77.75
46	Directors receive portion of their fees in stock	69.74	66.34	60.20	62.60	57.54	63.29
47	No pension plan for non-employee directors	82.36	83.99	62.32	64.48	65.66	71.76
48	Company expenses options	4.73	7.31	22.76	82.31	82.60	39.94
49	Burn rate is reasonable	27.16	35.08	74.28	74.99	74.98	57.30
50	No corporate loans for option exertion	63.45	48.11	31.91	45.21	43.12	46.36

Progressive practices

51	Mandatory retirement age for directors	13.83	20.66	24.28	17.93	12.07	17.75
52	Performance of board reviewed regularly	14.86	45.66	53.41	61.73	60.74	47.28
53	Outside directors meet without the CEO	13.71	40.84	49.05	51.91	50.99	41.30
54	Board-approved CEO succession plan in place	12.02	29.31	34.46	43.75	46.11	33.13
55	Board has authority to hire outside advisors	18.93	73.01	77.17	78.82	77.10	65.01
56	Directors resign upon job change	7.63	15.48	16.13	17.23	18.77	15.05

Ownership

57	Directors > 1 year of service own stock	70.74	76.69	74.93	76.58	77.60	75.31
58	Stock ownership guidelines for executives	9.03	11.84	13.68	17.08	21.14	14.55
59	Stock ownership guidelines for executive directors	7.27	12.83	13.81	16.02	19.57	13.90
60	Officers/directors' ownership >= 1% / <= 30%	53.42	57.63	55.86	57.99	56.76	56.33

Director education

61	Full board participated in education program	0.00	0.29	0.36	0.47	1.10	0.44
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Combination Variables

C1	Independent board & officer/director ownership	43.82	49.68	23.54	26.56	27.51	34.22
C2	Board > 50% & committees 100% independent	15.15	2.10	43.43	47.29	48.53	31.30
C3	Qualifies for proxy contest defense combination points	0.76	1.08	6.55	7.41	7.33	4.63

Panel B: Yearly firm-level compliance rates

	N	Mean	Median	Min	Max	StD
2003	5,625	42.7	43.8	7.3	79.7	11.5
2004	5,473	47.7	48.4	7.3	81.3	12.3
2005	6,076	47.9	48.5	9.8	79.2	10.4
2006	6,153	50.2	50.7	14.6	80.6	10.4
2007	6,027	50.1	50.7	14.0	78.9	10.3
2003-2007	29,354	47.8	48.4	7.3	81.3	11.3

Panel C: Firm-level compliance rates by legal origin

Legal origin	N	Mean	Median	Min	Max	StD
Common	23,872	50.94	50.75	21.88	81.25	9.19
- Without US	3,360	48.37	48.98	23.53	79.25	10.08
- US	20,512	51.37	51.47	21.88	81.25	8.97
French	1,457	36.26	36.00	13.33	78.95	11.34
German	3,545	33.01	32.65	9.76	70.00	7.29
Scandinavian	480	35.25	33.33	7.32	77.27	13.28
Total	29,354	47.79	48.44	7.32	81.25	11.31
US firms	20,512	51.37	51.47	21.88	81.25	8.97
Non-US firms	8,842	39.51	36.73	7.32	79.25	11.84
Non-common law	5,482	34.07	32.65	7.32	78.95	9.28

Panel D: CGQ ratings by legal origin

Legal origin	N	Mean	Median	Min	Max	StD
Common	23,872	54.56	56.50	0.00	100.00	28.77
- Without US	3,360	69.88	76.40	0.00	100.00	24.54
- US	20,512	52.05	52.90	0.20	100.00	28.63
French	1,457	39.10	41.50	0.40	100.00	27.83
German	3,545	35.30	32.40	0.70	100.00	20.25
Scandinavian	480	37.38	34.00	0.40	100.00	27.71
Total	29,354	51.18	51.30	0.00	100.00	28.70
US firms	20,512	52.05	52.90	0.20	100.00	28.63
Non-US firms	8,842	49.18	47.60	0.00	100.00	28.75
Non-common law	5,482	36.49	33.60	0.40	100.00	23.25

Notes: Panel A displays the applicable minimum governance standards per variable defined by ISS rating methodology (ISS 2003). The columns to the right display the fulfillment rates for the respective issue in the respective years, i.e., the percentage of firms that met the minimum requirements. Fulfillment rates are based on the constructed CGI variable. Panel B displays the overall compliance rate for the sample period on a firm level, pooled and per year, i.e., the percent of variables firms complied with on average as well as additional measures (median, minimum, maximum, and standard deviation). Panel C reports compliance rates per legal origin. Panel D reports statistics on the commercially available CGQ rating.

Panel B of Table 2.3 presents summary statistics for compliance rates on a firm level, i.e., the proportion of a firm’s CG characteristics that meets ISS’s minimum requirements for good governance. We find an average compliance rate of 47.8%, ranging from 7.3% to 81.3%. Average compliance rates increased over time, from 42.7% in 2003 to 50.1% in 2007, which reflects an increase of 7.4 percentage points. Panel C of Table 2.3 differentiates firm-level compliance rates between legal origins. French, German, and Scandinavian legal origins firms report compliance levels between 32-35%. In common law countries, the average compliance rate is 50.94%. In line with our previous observation that the US follows a different pattern, we find that US firms have the highest compliance rate with 51.37%, compared to common law countries without the US (48.37%) and average compliance rates for the other legal origins (34.07%). Taken together, ISS corporate governance ratings show a US-focused coverage with increased coverage in environments where investor protection levels are comparably low. Average compliance rates increase over the years for the full sample but vary between institutional settings. Specifically for US firms, compliance rates are notably higher than non-US firms. On many levels, we observe different patterns for US firms compared to the rest of the sample.

2.4 Are ISS corporate governance ratings value relevant?

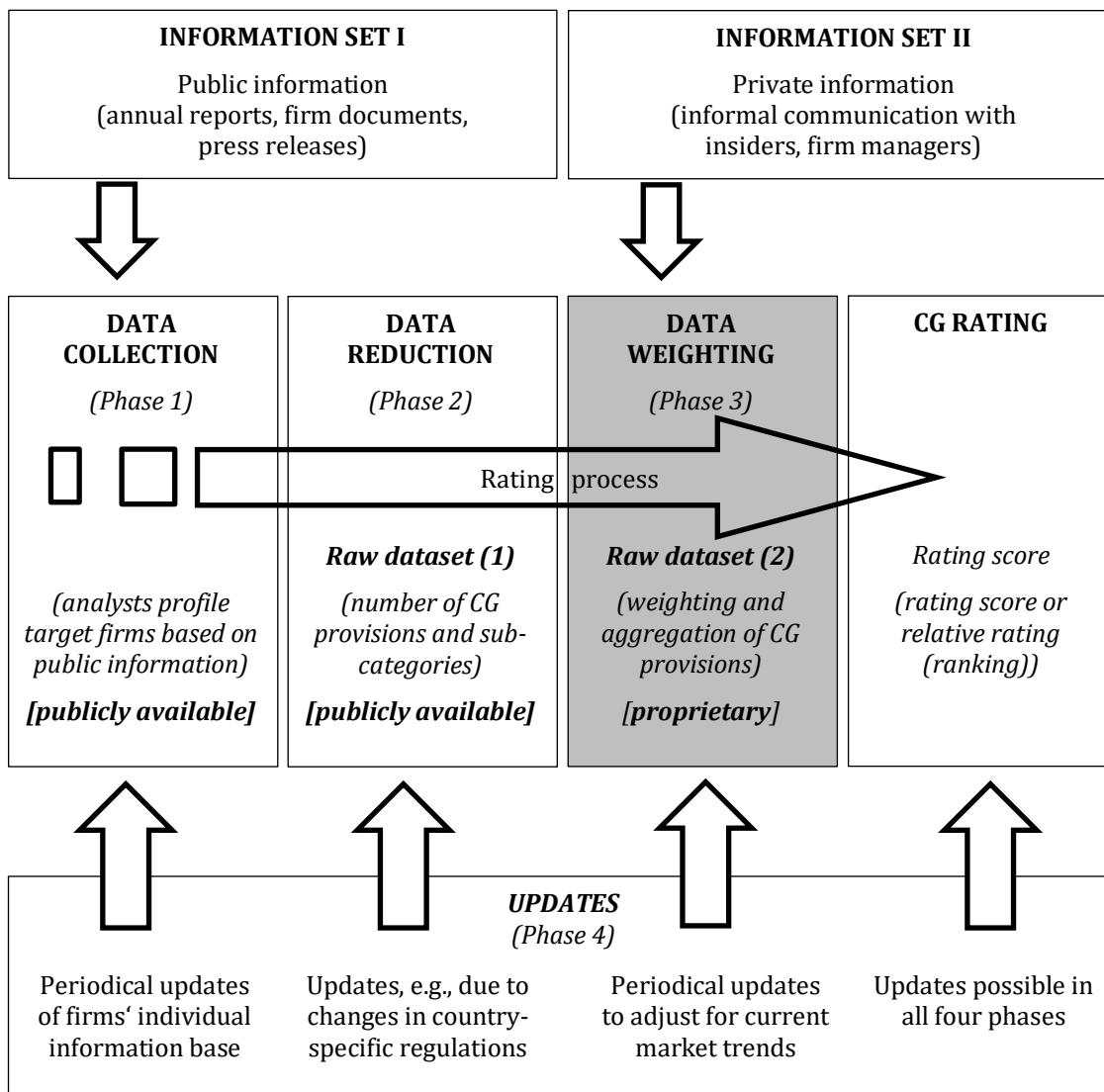
2.4.1 Rating construction and decomposition approach

To better understand the value creation process, we explore the rating creation process. Figure 2.1 displays the phases of a rating creation. The process is divided into four phases: data collection, reduction, weighting, and rating updates. Each of the phases represents a different stage in a value creation process.

Phase 1 encompasses the collection of publicly available data. This activity is valuable if the rating provider is more efficient in collecting information than the individual investor, e.g., due to extensive resources or experienced research staff. For example, ISS draws on the expertise it generates in its proxy advisor branch. Therefore, ISS potentially gathers more sophisticated information or gathers information more efficiently than individual investors. In interviews, investment professionals indicate that buying the ratings is an efficient way to receive the underlying data (Daines et al. 2010). This is in line with a transaction costs argument and related cost savings when the data is commercially available. In Phase 2, the previously collected information is condensed into a first raw dataset according to predefined governance provisions. ISS states that the company examines “hundreds of data points”, which are then distilled into the raw variables (RiskMetrics Group 2007, p. 2). Similar to Phase 1, this process provides transaction cost savings if ISS is better at reducing the collected information into the desired form.

Phase 3 reflects the rating agency’s proprietary methodology. The methodology is based on two main components: a proprietary weighting mechanism and access to private information. Both pose a potential competitive advantage for the rating agency. To gain a competitive advantage, vendors invest considerable resources in the development and continued revision of their weighting mechanisms. For example, ISS performs more than 4,000 statistical tests, employing 16 measures of firm performance and risk to develop the weighting of the variables constructed in Phase 2 (Daines et al. 2010). This process is valuable if the rating vendor delivers a more accurate assessment of a firm’s governance quality than an investor’s assessment of the same matter.

Figure 2.1: Rating process of commercial corporate governance vendors



Notes: This figure shows the four phases of a rating creation process. Figure taken from Hitz and Lehmann (2015).

The second source of competitive advantage is additional information. Despite their claims to rely solely on publicly available information, rating vendors, given their dominant position in the market, might have access to superior information channels, allowing them to collect private information that an average investor might not have access to. This information can stem from informal ties the vendors maintain with the firms or private meetings and communications (Hitz and Lehmann 2015). This additional informational content can be valuable to investors. Since only the overall outcome of Phase 3, the rating, is observable, the precise source of value creation cannot be identified. Any value created can be due to the superior weighting technology, the private information added, or both. In Phase 4, the three previous phases are reviewed and updated if necessary. ISS states that it

reviews the methodology regularly to ensure the rating reflects criteria relevant to the market (ISS 2018b). For the CGQ rating, ISS updates its corporate governance database daily; US firms are re-assessed and re-profiled every 120 days or at least three times a year, while international firms are re-assessed every time a shareholder meeting is held (ISS 2003).

Following this rating construction process, the rating can be split into two information components to empirically assess which part of the rating, if any, is valuable to investors. On a conceptual level, we split the rating into a public information component, the Corporate Governance Indicator (CGI), and a component that comprises ISS's technology, i.e., their proprietary scoring system and access to private information (TECHNOLOGY). To operationalize this idea, we first construct the naive rating based on the publicly available information ISS uses to construct the rating (CGI). We then regress the commercial corporate governance rating, the Corporate Governance Quotient (CGQ), on the public information part (CGI). The residuals represent the rating agencies' technology, i.e., any information contained in the commercial rating that is not explained by publicly available information.

To construct the CGI, i.e., the public information component, information on the governance issues defined by ISS is compiled. Based on this information, compliance with the minimum acceptable governance standard specified by ISS is established, leading to a binary coding of the issues. For example, one of ISS's criteria is whether the compensation committee is 100% independent (ISS 2003). If this is the case, the firm scores a 1; if not, the firm scores a 0. We apply this approach to all applicable standards defined by ISS. In some cases, not all criteria are applicable. For example, ISS considers a board size between 6 and 12 board members ideal (ISS 2003). In Germany, however, board size is tied to a firm's market capitalization. Thus, the issue is excluded for all German firms. We adjust the applicable standards on a country basis, taking into account the legal requirements in the countries at the time.¹⁵ Since the CGI is a relative rating, the distortion resulting from this approach is limited. Once all applicable standards are scored, we aggregate an equally weighted score per firm. This score is then ranked against the firm's industry peers

¹⁵ See Appendix 2.B and Appendix 2.C for more detailed information and an overview of the issues, the respective minimum standards as well as applicable exceptions.

to generate the rating based on publicly available information. Thus, the CGI, like the CGQ, is a firm's rating relative to its respective peers (percentile basis). For example, Zoom Technologies Inc. scored a 64.2% *Industry CGI* and a 69.6% *Industry CGQ* in 2003. This means Zoom did better than 64.2% of its industry peers based on public information and better than 69.9% of its industry peers based on the commercially available rating.

TECHNOLOGY comprises the residuals from regressing the CGQ on the CGI. In economic terms this means TECHNOLOGY reflects the incremental informational content produced in the rating process by capturing the difference between the input (public information) and the output (final rating). In more statistical terms, TECHNOLOGY is the additional explanatory power the CGQ has over and above the CGI. The residuals are estimated in a pooled regression. Even though estimating the residuals on a yearly and/or industry basis might increase the accuracy of the estimation, it is likely to reduce estimation power and produce noise due to smaller sample sizes.¹⁶ Table 2.4 reports descriptive statistics for all rating components. The values for CGQ and CGI are quite similar, with the CGI turning out slightly lower than the CGQ. This corresponds to the notion that CGQ and CGI, to a certain extent, reflect the same information (public information) but are not identical in the sense that CGQ potentially goes beyond the public information.

Table 2.4: Descriptive statistics for governance data

Governance variables	N	Mean	Median	Min	Max	StD
CGQ	21,836	53.219	53.800	0.000	100.000	28.502
CGI	21,836	50.536	50.581	0.000	100.000	29.531
TECHNOLOGY	21,836	1.650	2.721	-66.095	73.349	18.947

Notes: The table displays descriptive data pooled over the sample period for the variables contained in this study. CGQ is ISS's commercially available governance rating, the Corporate Governance Quotient, CGI is a self-construed naive governance score based on publicly available information, TECHNOLOGY reflects any incremental value CGQ contains beyond the accumulated public information.

¹⁶ Untabulated results show that inferences remain unchanged when estimating the model on a yearly or an industry basis.

2.4.2 Value relevance of the ISS ratings

To address the question of whether corporate governance ratings are value relevant and which component of the ratings provides informational value to investors, we estimate the following model:

$$\begin{aligned} \text{Tobin's } Q_{i,t} = & \beta_0 + \beta_1 \text{CGI}_{i,t} + \beta_2 \text{TECHNOLOGY}_{i,t} + \beta_3 \text{CONTROLS}_{i,t} + \beta_4 \text{YEAR FE}_t \quad (1) \\ & + \beta_5 \text{INDUSTRY FE}_i + \beta_6 \text{COUNTRY FE}_i + \varepsilon_{i,t} \end{aligned}$$

CGI and TECHNOLOGY are the two rating components resulting from the decomposition approach outlined in section 2.4.1, i.e., reflecting the public information component as well as the raters' proprietary technology and access to private information. CONTROL is a set of variables that includes firm size, leverage, average sales growth, free float, capital intensity, and the number of analysts following. Detailed variable descriptions and descriptive statistics are specified in Appendix 2.D and Appendix 2.E. The model includes year, industry, and country fixed effects (Klapper and Love 2004). The panel structure of the underlying data might cause time-series dependence. We, therefore, use heteroscedasticity robust standard errors (White 1980) and cluster at the firm level (Petersen 2009).

Table 2.5 reports the results of the ordinary least squares (OLS) regressions. Models 1, 2, and 3 report results for the models employing CGQ, CGI, and TECHNOLOGY as main variables, respectively. Across all model specifications, the control variables broadly show the expected signs and significance levels. The explanatory power of the models (with values around 0.34) is similar to previous studies conducted in the field (Hitz and Lehmann 2015). Model 1 of Table 2.5 reports the results for the more general notion of a relation between corporate governance ratings and firm value. Consistent with findings in prior literature, the results show a positive relation that turns out significant at the 1% level (coef. = 0.016, t-statistic 7.91, compare to Hitz and Lehmann 2015; Morey et al. 2009; Renders et al. 2010). This indicates that corporate governance, as measured by CGQ, is positively related to firm value. A one percent increase in CGQ heightens a firm's Tobin's Q by 0.16%, while a one standard deviation increase in CGQ (28%) heightens Tobin's Q by 4.56%. The highly significant relation indicates that ISS captures relevant governance information in its rating, i.e., information that market participants use in estimating a firm's value.

Table 2.5: Value relevance of ISS governance ratings and their components

Independent variables	Dependent variable: Firm value as measured by Tobin's Q		
	Model (1)	Model (2)	Model (3)
CGQ	0.0016*** (7.91)		
CGI		0.0012*** (5.34)	0.0011*** (5.13)
Technology			0.0016*** (5.83)
Size	-0.1437*** (-27.26)	-0.1421*** (-26.94)	-0.1436*** (-27.22)
Leverage	0.0019*** (5.88)	0.0019*** (5.73)	0.0019*** (5.89)
Growth	0.0013*** (9.30)	0.0013*** (9.24)	0.0013*** (9.30)
Free float	0.0003 (1.05)	0.0005* (1.82)	0.0003 (1.05)
Capital intensity	-0.1153*** (-4.88)	-0.1144*** (-4.81)	-0.1153*** (-4.88)
Analyst following	0.2486*** (33.35)	0.2526*** (33.80)	0.2486*** (33.36)
N	21836	21836	21836
Adj. R ²	0.3463	0.3440	0.3462
Industry FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Cluster	Firm	Firm	Firm

Notes: This table presents the results of our OLS analysis using Equation (1). CGI is a self-construed naive governance score based on publicly available information, CGQ is ISS's commercial governance rating, TECHNOLOGY reflects incremental value CGQ contains beyond public information. CONTROL comprises a set of control variables. The model includes industry, year, and country fixed effects. Standard errors are heteroskedasticity robust (White 1980) and one-way clustered at the firm level (Petersen 2009). t-statistics are reported in parentheses. ***, **, and * indicate two-tailed significances at the 1%, 5% and 10% level.

Model 2 of Table 2.5 estimates the relation between the public information component of the rating (CGI) and firm value. The coefficient for CGI obtains a positive sign and is highly significant if a bit smaller than the CGQ coefficient (coef. = 0.0012, t-statistic 5.34). This is in line with the notion that the CGI reflects only parts of the CGQ, i.e., public information. Here, a one percent increase in CGI is associated with a 0.12% increase in Tobin's Q, while a one standard deviation increase (29%) is associated with a 3.53% increase in Tobin's Q. Since CGI reflects the public information gathered by ISS, the results suggest that ISS successfully developed expertise in identifying and collecting information indicative of firm-level governance quality. Following Hitz and Lehmann (2015), additional variance explained is used as a supplementary indicator of economic significance. Results show that CGQ explains 0.66% additional variance compared to regressions undertaken with CGI. This hints at a slightly larger economic significance of the full

rating in relation to the public information contained in it. Model 3 of Table 2.5 includes the TECHNOLOGY variable, i.e., the incremental value ISS rating methodology might provide in addition to the public information contained in the rating. TECHNOLOGY obtains a positive sign and turns out significant at the 1% level (coef. = 0.016, t-statistic 5.83). The result indicates that ISS's governance ratings provide incremental value beyond the selection and collection of public information indicative of a firm's governance quality.

2.5 Variation of ISS value relevance in different legal environments

2.5.1 Variation between common and code law countries

In this section, we move on to explore whether our documented associations between firm valuation and CG ratings vary between countries and, thus, across different institutional settings. Our results so far point to a value relevance of corporate governance ratings with CGQ, CGI, and TECHNOLOGY, showing a positive association with Tobin's Q. However, the observed relations may vary across different institutional settings. We have two reasons to suspect such variation. Firstly, our descriptive results point towards variations regarding coverage decisions and compliance rates between the countries in our sample (compare to section 2.3). Secondly, research shows that a firm's institutional environment is a significant explanatory factor in firm-level corporate governance, often more so than firm-level characteristics (Doidge et al. 2007; Djankov et al. 2008). This emphasizes country-level variations in what constitutes good corporate governance practices and the complexity of measuring it.

In section 2.3, we use the four legal origins by La Porta et al. (1998) to inspect characteristics of the institutional environments. To shed light on the value relevance of governance ratings in different legal contexts, we now group the four categories into the more general categories of common and civil law countries. The two law systems display different features along multiple dimensions, e.g., with respect to ownership structures. While firms in common law countries often employ a dispersed ownership model and adopt a shareholder perspective, firms in civil law countries tend to have controlling shareholders and lean more towards a stakeholder model. Bebchuk and Hamdani (2009) observe that ISS rating criteria fit well with the model of dispersed ownership but are less compatible with the

stakeholder approach that is dominant in continental Europe. ISS states that it accommodates these differences in its rating methodology. However, it is unclear whether these adjustments are sufficient to accommodate the entirety of variations. We, therefore, re-estimate our initial model and augment it with an interaction term, indicating whether a firm is domiciled in a common or civil law country.

Models 1-3 of Table 2.6, Panel A report the results of interacting CGQ, CGI, and Technology with a common law indicator variable. In Model 1, the CGQ interaction term is highly significant and positive (coef. = 0.0025, t-statistic 5.87), indicating a strong relation between the commercial CGQ and firms' Tobin's Q in common law countries. In civil law countries, however, the coefficient is slightly negative and insignificant (coef. = -0.005, t-statistic -1.43). We observe a similar pattern in Model 2. The coefficient for the CGI interaction term turns out positive and highly significant (coef. = 0.0022, t-statistic 3.97) if slightly smaller than the CGQ interaction term. For the original variable, now reflecting the coefficient for civil law countries, the coefficient is negative (coef. = -0.0008, t-statistic -1.67). Model 3 reports the results for TECHNOLOGY. Similar to CGQ and CGI, we observe a significant positive association for firms domiciled in common law countries (coef. = 0.0026, t-statistic 4.71) and a smaller, negative coefficient for firms domiciled in civil law countries (coef. = -0.0005, t-statistic -1.09). All three specifications indicate that the previously observed results are driven by firms domiciled in common law countries rather than firms in civil law countries. The results point to a sensitivity of the ratings and their components towards the institutional environment they are conducted in. Put differently, the informational properties of ISS's ratings depend on the institutional environment of the rated firms.

2.5.2 Heterogeneity within common law countries

Given the particularities of our sample, specifically the high proportion of US firms, the high coverage of US firms on the country level as well as the US-centered approach to corporate governance ratings in the sample period, we further dissect our sample to more narrowly pinpoint ISS's value proposition. We are interested in the extent of variation in the value relevance of ISS ratings across different common law countries. Firms operating in similar environments as the rating agency's home country during that period, i.e., common law countries, are potentially easier to rate.

Table 2.6: Variation of ISS value relevance in different legal environments

Panel A: Full sample with common law indicator variable			
Independent variables	Dependent variable: Firm value as measured by Tobin's Q		
	Model (1)	Model (2)	Model (3)
CGQ	-0.0005 (-1.43)		
CGI		-0.0008* (-1.67)	0.0011*** (5.10)
Technology		0.0016*** (5.82)	-0.0005 (-1.09)
Common law x CGQ	0.0025*** (5.87)		
Common law x CGI		0.0022*** (3.97)	
Common law x Technology			0.0026*** (4.71)
N	21,836	21,836	21,836
Adj. R ²	0.348	0.347	0.347
Industry FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Cluster	Firm	Firm	Firm
Controls	Included	Included	Included
Panel B: Common law countries with US indicator variable			
Independent variables	Dependent variable: Firm value as measured by Tobin's Q		
	Model (1)	Model (2)	Model (3)
CGQ	-0.0002 (-0.48)		
CGI		0.0000 (0.00)	0.0011*** (4.74)
Technology		0.0015*** (5.46)	-0.0001 (-0.23)
US x CGQ	0.0022*** (5.57)		
US x CGI		0.0014*** (3.19)	
US x Technology			0.0024*** (4.39)
N	21,836	21,836	21,836
Adj. R ²	0.348	0.347	0.347
Industry FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Cluster	Firm	Firm	Firm
Controls	Included	Included	Included

Notes: This table presents the results of our OLS analysis using Equation (1). CGI is a self-construed naive governance score based on publicly available information, CGQ is ISS's commercial governance rating, TECHNOLOGY reflects incremental value CGQ contains beyond public information. CONTROL comprises a set of control variables. The model includes industry, year, and country fixed effects. Standard errors are heteroskedasticity robust (White 1980) and one-way clustered at the firm level (Petersen 2009). Common Law is a dummy variable based on the legal origin definition of La Porta et al. (1998), equaling 1 for common law countries. US is a dummy variable equaling 1 if the firm is headquartered in the United States. t-statistics are reported in parentheses. ***, **, and * indicate two-tailed significances at the 1%, 5%, and 10% level.

Governance models are similar and, therefore, the rating methodology needs fewer adjustments. We are interested in whether the effect holds for all common law countries or is confined to US firms. Therefore, we re-estimate our basic regression model for common law countries and augment it with a US-based indicator variable.

Results are reported in Models 1-3 of Table 2.6, Panel B. All models indicate that ISS provides meaningful corporate governance ratings within the US. CGQ (coef. = 0.0022, t-statistic 5.57), CGI (coef. = 0.0014, t-statistic 3.19), and TECHNOLOGY (coef. = 0.0024, t-statistic 4.39) show positive significant associations with Tobin's Q when interacted with the US-firm indicator. For non-US firms, however, we observe small coefficients that are not significant at conventional levels. (CGQ: coef. = -0.0002, t-statistic -0.48; CGI: coef. = 0.0000, t-statistic 0.00; TECHNOLOGY: coef. = -0.0001, t-statistic -0.23).

A possible explanation for our observations is that adjusting to a new setting takes time. After extending coverage to a new country, ISS adjusts its ratings to the new institutional environment. This involves the release of new and adjusted rating methodologies as well as considering country-specific characteristics in the rating methodology. Over time, this may lead to improved ratings, both, within the US and outside the US. We, therefore, re-estimate our main model on a yearly basis to test for learning effects. We interact CGI and TECHNOLOGY with yearly indicator variables for sets of US and non-US firms. Results are reported in Appendix 2.F. Overall, we do not see changes over time. The coefficients remain significantly positive for the US sample but do not show significant associations for non-US firms.

2.6 Discussion

We find that ISS governance ratings are value relevant for firms domiciled in the US. Both channels, (1) the selection and collection of publicly available information and (2) the proprietary weighting mechanism, are significantly and positively associated with firm value. This implies that ISS's value proposition derives from its information selection and collection skills (public information component) as well as its proprietary technology and access to private information (technology component). Our results corroborate ISS's claim of augmenting the collected information to reflect more than the public information for US firms. Ratings that reflect governance quality provide value through improved measurement and

transparency of corporate governance practices and an increase in governance quality (Ertugrul and Hegde 2009) or provide a welfare improvement by distributing relevant information to users who are willing to pay for it (Spellman and Watson 2009). Buyers of these ratings can integrate the ratings into their decision-making processes, utilize the underlying rating data, or use the rating purchase as an ex-post verification tool that demonstrates caution in the decision-making process and helps to demonstrate the fulfillment of fiduciary duties.

Drilling deeper into the different countries in our sample, the results suggest that ratings are sensitive to the institutional environment the rated firms operate in. The observed relation that ties good corporate governance ratings to higher values of Tobin's Q holds for firms based in the US but does not extend to firms domiciled in other countries. We observe the absence of this relation for the commercial ratings (CGQ), implying that the ratings are not indicative of governance quality for firms outside the US. We also find evidence that the information enhancement process is not as successful as it is for US firms, with the TECHNOLOGY component turning out insignificant. Interestingly, the variable reflecting the selection and collection of publicly available information is also not related to firm value for firms domiciled outside the US. This indicates that ISS does not collect value relevant information for firms located outside the US.

This raises two questions: Why are corporate governance ratings prominent outside of the US if the ratings are not value relevant, and why does this value relevance not extend beyond the US? We discuss two potential reasons for investor demand absent a value relevance of the ratings: obtaining the underlying data and ex-post verification.

Obtaining the underlying data. Executives at money-managing firms state in interviews that they purchase the ratings to obtain the underlying data (Daines et al. 2010; SustainAbility 2020). This points towards ISS's expertise in identifying and collecting relevant corporate governance data. In this role, governance rating agencies are part of the investment value chain by providing additional tools and insights to investors. By offering an enhanced basis for decision-making, the rating agencies can assist institutional investors in fulfilling their fiduciary duty (European Commission 2014). Investors benefit from transaction cost savings through ISS's cost-efficient collection of relevant information. In this context, the enhanced

commercially available rating is not the main focus of the rating purchase. However, this explanation is not fully in line with our results. For non-US firms, the equally weighted score that reflects the information ISS collects about a firm is not associated with firm value. Unlike ratings for US firms, where the underlying information is connected to firm value, there is a limited benefit from purchasing the underlying information on non-US firms. It is possible that investors only use parts of the information that are relevant to their decision-making while disregarding the rest. In that case, purchasing the information for non-US firms may not be as efficient as purchasing the information for US firms, but perhaps still the most effective way.

Ex-post verification. Instead of using the ratings, investors may buy the ratings to prove that they gathered available information about the firm and fulfilled their fiduciary duty. This explanation is in line with the documented missing link between the ratings and firm value for firms outside the US. In this case, neither the rating nor the underlying information is relevant to the buyer. Instead, investors draw benefits from the purchase of the rating. The actual fulfillment of the fiduciary duty can be based on different data and mechanisms. Important is the traceable transaction of buying extensive, presumably reliable data. Implicitly, this use of the ratings builds on ISS's reputation. ISS must be well established and recognized in the market to build on their ratings to demonstrate the fulfillment of fiduciary duties. With their proxy voting business and the power that comes with their voting recommendations, ISS is one of the two main players in that market. It is reasonable to assume ISS has extensive knowledge in the field.

For both explanations, obtaining the underlying data and ex-post verification, it is not important if ISS's governance ratings are tied to firm value. It is also not relevant to what extent ISS includes institutional specifics of the legal environments in their ratings to make them equally beneficial in different settings. This is only important if one uses the final rating. The underlying information or the purchase itself is free from such requirements. The ratings can be valuable to investors without a rating that is consistently tied to firm value. Our results point towards a use of ratings that does not rely on value relevance for non-US firms, with the discussed limitations regarding the underlying data. For US firms, both use cases, building on value relevance and not building on it are possible.

The question remains as to why ISS corporate governance ratings show a value relevance in the US but do not show any significant associations with firm value outside the US. We discuss three possible explanations: country-specific disclosure incentives, a one-size-fits-all approach, and alignment with rating criteria.

Country-specific disclosure incentives. This argument is related to firm disclosure of corporate governance information. Research shows a connection between ESG disclosure and ESG ratings that varies with the amount of information disclosed. While increased disclosure is connected to improved ratings or greater rating dispersion (Drempetic et al. 2020; Christensen et al. 2022), missing information can either be imputed and, therefore, be less accurate (Kotsantonis and Serafeim 2019) or the absence of information can be interpreted as a negative signal, specifically if that information is interpreted as material (Verrecchia 2001; Khan et al. 2016). If a rating is developed against a specific background, firms that operate in the same environment are likely more aligned with the rating criteria. Put differently, if ISS developed its rating business in the US, its rating model likely mirrors a US system's understanding of good governance. US firms that manage their relationship with their share- and stakeholders publish the information relevant to assessing good governance in the US context. Therefore, US firms will likely publish more information that ISS considers relevant in rating firm-level corporate governance. Firms operating outside the US likely follow different disclosure incentives relevant in their environment that may not be as well aligned with the information ISS rates. Without making a statement about the rating's ability to measure corporate governance, disclosure availability can influence governance ratings, irrespective of corporate governance levels at the rated firms. This argument is in line with our descriptive evidence, showing higher compliance rates and higher ratings for US firms compared to non-US firms. This line of argument may be amplified by firms' possibilities to alter their disclosure. ISS's rating criteria are publicly available. US firms can adjust their respective disclosure. This may be a more challenging endeavor in countries outside the US. The benefits from disclosing the relevant information are likely greater in the US than in different corporate governance systems and divergent disclosure incentives. Connected to a disclosure argument are topics like data quality, deviant governance disclosure requirements,

enforcement of such disclosures, or language barriers in collecting and processing the data.

One-size-fits-all approach. Different legal systems have different perceptions of what constitutes good governance (Liang and Renneboog 2017). The US follows a shareholder primacy approach, referring to a strong shareholder orientation that views creating shareholder value as the sole objective of the firm (Lund and Pollman 2021). European firms, on average, are leaning more towards a stakeholder-oriented model, where stakeholder interests are as important as shareholder interests, resulting in a different understanding of good CG practices (Larcker and Tayan 2021). ISS states that it makes adjustments to accommodate these differences, however, these adjustments might not be sufficient to accommodate the entirety of variations. In this case, a firm can implement a suitable governance system, but ISS's rating does not acknowledge individual reasonable governance choices. We, therefore, do not expect a significant relation between the ratings and firm value because the constructed rating criteria are not attuned to individual preferable governance choices. This argument holds for all firms but appears more likely for non-US firms with differing legal systems and divergent concepts of what constitutes good governance

Alignment with rating criteria. It is possible that firms adjust their governance systems according to a defined "good" governance standard. This reverses the argument laid out above. Firms that do not adhere to ISS's governance approach are handed a worse rating with potentially unfavorable outcomes. For example, negative rating changes can lead to negative market reactions (Guest and Nerino 2020). It may, therefore, appear sensible to comply with ISS's governance standards to protect the firm against negative consequences (Lund and Pollman 2021). However, adjusting to the specified criteria, might not be in the firm's best interest. Researchers have argued that following generally accepted principles of "good" governance may be harmful to firms (Rose 2007; Larcker and Tayan 2019). Arcot et al. (2010) report that firms that deviated for valid reasons from a suggested best governance practice in the UK outperformed companies fully compliant with the proposed governance framework. If firms apply ISS standards, even though the implemented changes do not mirror sensible choices for them, the relation between the rating and firm value weakens. Ratings and firm value may become even more

detached if firms adopt standards that follow a different perception of what constitutes good governance, e.g., firms from countries with a strong stakeholder orientation adopt governance standards that focus on a shareholder-oriented environment. While this argument holds for all firms, its implications may be more pronounced for non-US firms.

2.7 Conclusion

This paper investigates whether and how corporate governance ratings are valuable for investors. Using a decomposition approach, our results point towards a value proposition of ISS corporate governance ratings that derives from rating vendors' information selection and collection skills (public information component) as well as their proprietary technology and access to private information (technology component). However, the findings are confined to firms headquartered in the US. We do not find a significant relation between firm value and ISS ratings and its two informational components for non-US countries. This points towards a sensitivity of the ratings towards the institutional environment they are conducted in. The absence of a significant relation between ratings and firm value means that investors interested in non-US firms are not offered the same benefits due to the varying informational properties of the ratings. Still, investors may draw other benefits from the ratings, such as using them as an ex-post verification mechanism when fulfilling their fiduciary duties or reaping the benefits from purchasing the ratings' underlying data in the most cost-efficient way.

Our study improves our understanding of the economic role of governance ratings and how their value relevance varies with the institutional environment. The findings are relevant for investment managers and practitioners using the ratings in their investment processes, particularly if the actual ratings are used to evaluate firms headquartered outside the US. Gaining a better understanding of CG ratings and their benefits and drawbacks is also important for regulators who wish to understand the rating market more thoroughly (European Commission 2022). Our findings are subject to several limitations: We focus on the governance rating of one provider (ISS). Therefore, our findings may not be generalizable to other governance rating providers. Also, the data set is dated. While the data covers several years and we do not observe changes that alter our inferences in this period,

this may differ in later periods. Hence, our findings do not naturally translate into other time periods. Lastly, our sample is driven by coverage and selection effects. ISS's coverage decisions and the data requirements we impose on the observations shape the composition of our sample.

An avenue for future research is the exploration of other potential sources of value the ratings provide. We measure the direct relation between ratings and firm value. In light of our results, it appears likely that ISS governance ratings also provide benefits in a less direct way, e.g., obtaining the underlying data or using the ratings as an ex-post verification tool. Investigating these other channels empirically, particularly in countries where the relation between governance ratings and firm value is not pronounced, can improve our understanding of ratings, rating agencies, and their economic role in the market.

2.8 Appendix

Appendix 2.A: Example of ISS rating criteria

Example of ISS minimum requirements as defined by ISS Corporate Governance: Best Practices User Guide & Glossary: Corporate Governance Quotient (ISS 2003, p. 7).

Figure 2.2: ISS corporate governance rating example issue

<p>Board Issues</p> <p>1) Board Composition – an evaluation of the independence of the board members.</p> <p>The current minimum standard is that at least two-thirds of the directors on the board should be independent. Others suggest that only one non-independent director should serve on the board –the CEO.</p> <p>Directors with ties to management may be less willing and able to effectively evaluate and scrutinize company strategy and performance. Furthermore, boards without adequate independence from management may have inherent conflicts of interest. Three categories of directors are utilized: inside directors, affiliated directors, and independent directors.</p>

Notes: Example taken from ISS 2003, p. 7.

Appendix 2.B: ISS Minimum Governance Standards

Minimum Governance Standards as defined by the ISS Rating Manual (ISS 2003).

No/Issue	Minimum requirement for US-based companies	Exceptions	Regulation in countries with exceptions
Board			
1 Board composition	Board independent (66.7% < IO <= 75%)		
2 Nominating committee	Nominating committee 100% independent		
3 Compensation committee	Compensation committee 100% independent		
4 Governance committee	Governance committee exists and meets		
5 Board structure	Annually elected board	Australia, New Zealand, Portugal	“The board of directors is classified or not elected annually.”
6 Board size	Board size: >= 6 / <=12	Germany	“Board size is dictated by market capitalization.”
7 Changes in board size	Changes in board size: Shareholder approval required	Australia, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Hong Kong, Italy, Japan, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland	“Shareholder approval is required by law to increase or decrease the size of the board.”
8 Cumulative voting	Cumulative voting rights exist	Australia, Austria, Belgium, France, Ireland, Portugal, United Kingdom, New Zealand	“Shareholders do not have cumulative voting rights in director elections.”
9 Boards served on – CEO	CEO serves on max. 2 boards		
10 Boards served on – Other than CEO	Directors other than CEO serve on max. 5 boards	France	“There is a limit on the number of other boards that directors may serve on.”
11 Former CEO’s	No former CEO on the board		
12 Chairman/CEOs separation	Chairman/CEO separated/lead director specified	Austria, Germany, Norway	“The positions of chairman and CEO must be separated.”
13 Board guidelines	Governance guidelines disclosed		
14 Response to shareholder proposals	Shareholder proposals not ignored	Australia, Austria, Denmark, France, Germany, Greece, Hong Kong, Italy, Japan, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom	“There have been no shareholder proposals that received majority approval or any majority approved shareholder proposals have been acted on.”

Appendix 2.B (continued)

15 Board attendance	Directors' attendance at board meetings 75%		
16 Board vacancies	Shareholders vote on directors to fill vacancies	Australia, Austria, Belgium, Denmark, Finland, Germany, Greece, Hong Kong, Italy, Japan, New Zealand, Norway, Portugal, Singapore, Sweden, Switzerland, (France, Spain)	"Vacant board seats are filled by directors who are (subsequently) elected by shareholders."
17 Related party transactions	CEO: no related-party transaction		

Audit

18 Audit committee	Audit Committee 100% independent		
19 Audit fees	Consulting fees < audit fees		
20 Auditor rotation	Auditor rotation policy disclosed	Spain	"Periodic auditor rotation is required."
21 Auditor ratification	Auditors ratified at annual meeting	Austria, Japan	"Ratification of an independent accounting firm must be put up for shareholder ratification."

Charter/bylaws

22 Poison pill adoption	No poison pill/no blank check preferred (BCP)	Finland, Germany, Sweden	"Poison pills are not permitted."
23 Poison pill - Shareholder approval	Shareholder-approved poison pill/no BCP	Canada, Norway	"All poison pills are subject to shareholder approval."
24 Poison pill features - TIDE provision	Poison pill with TIDE provision		
25 Poison pill features - sunset provision	Poison pill without sunset provision		
26 Poison pill features - Qualified offer clause provision	Poison pill with a qualified offer clause		
27 Poison pill features - trigger provision	Poison pill with a trigger $\geq 20\%$		

Appendix 2.B (continued)

28 Amendment to the charter/bylaws	Majority vote to amend charter/bylaws	Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom (Hong Kong, Singapore, Italy)	“A supermajority vote of shareholders is required to amend certain provisions of the charter or bylaws.” (“A simple majority vote of shareholders is required to amend (certain) provisions of the charter or bylaws.”)
29 Approval of mergers	Majority vote to approve mergers	Hong Kong, Italy, (Singapore)	“A simple majority vote of shareholders is required to approve [certain] types of mergers or business combinations.”
30 Written consent	Shareholders may act by written consent	Austria, Denmark, Finland, Hong Kong, Norway, Sweden	“Shareholders may not act by written consent.”
31 Special meetings	Shareholders may call special meetings	Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom	“Shareholders may call special meetings.”
32 Board amendments	Shareholder approval to amend bylaws	Australia, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Netherlands, New Zealand, Norway, Singapore, Spain, Sweden, Switzerland, United Kingdom	“The board cannot amend the bylaws without shareholder approval or can only do so under very limited circumstances.”
33 Capital structure	Capital Structure: Single class, common, no BCP	Norway	“Blank check preferred stock is not authorized.”
Anti-takeover provisions			
34 Anti-takeover provisions	No anti-takeover provisions		
35 Acquisition statute	Control share acquisition statute, company opted out	Statute not applicable for non-US based firms	
36 Cash-out statute	Control share cash-out statute, but company opted out	Statute not applicable for non-US based firms	
37 Freeze out statute	Freezeout, but company opted out	Statute not applicable for non-US based firms	
38 Fair price provision	Fair price provision, but company opted out	Statute not applicable for non-US based firms	
39 Stakeholder laws	Stakeholder laws, but company opted out	Statute not applicable for non-US based firms	

Appendix 2.B (continued)

40	Endorsement of poison pills	Company has no poison pill	Statute not applicable for non-US based firms	
Executive and director compensation				
41	Cost of option plans	Option plan cost reasonable		“Analysis of the cost of stock-based incentive plans.”
42	Option re-pricing	Option repricing prohibited	Japan, Sweden	“Option repricing is prohibited without prior shareholder approval.”
43	Option re-pricing	No option repricing the last three years		
44	Shareholder approval of option plans	All option plans shareholder approved	France, Greece, Singapore	“All stock-based incentive plans have been approved by shareholders.”
45	Compensation committee interlocks	No Compensation Committee interlocks		
46	Director compensation	Directors receive min. portion of their fees in stock		
47	Pension plans for non-employee directors	No pension plan for non-employee directors		
48	Option expensing	Company expenses options		
49	Option burn rate	Burn rate is reasonable		
50	Corporate loans	No corporate loans for option exertion	France, Ireland, United Kingdom	“Option plans may not provide for company loans to employees.”
Progressive practices				
51	Retirement age for directors	Mandatory retirement age for directors	France	“A mandatory retirement age is in place for directors.”
52	Board performance reviews	Performance of board reviewed regularly		
53	Meetings of outside directors	Outside directors meet without the CEO		
54	CEO succession plan	Board-approved CEO Succession plan in place		
55	Outside advisors available to Board	Board has authority to hire Outside advisors		
56	Directors resign upon job change	Directors resign upon job change		

Appendix 2.B (continued)

Ownership

57	Director ownership	Directors > 1 year of service own stock
58	Executive stock ownership guidelines	Stock ownership guidelines for executives
59	Director stock ownership guidelines	Stock ownership guidelines for executive directors
60	Officer and director stock ownership	Officers/directors' ownership >= 1% / <= 30%

Director education

61	Director education	All board members should participate in "ISS accredited" director education programs
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Combination variables

C1	Board composition and ownership	Independent board & officer/director ownership 1%-30%
C2	Board composition and key committee structure	Board > 50% & committees 100% independent
C3	Proxy contest defenses	Qualifies for proxy contest defense combination points

Notes: The table shows the minimum governance standards as defined by the ISS Rating Manual (ISS 2003). Not all issues are applicable in all countries. Exceptions are listed in the table above, along with a reason for the exception. Mostly, regulatory requirements in the respective country make it very difficult for a firm to be compliant or non-compliant. Therefore, an exception is defined. In constructing the CGI, these variables are excluded for the respective firms. Since the resulting rating is relative, the consequences of excluding certain variables are minimal. In addition to evaluating the issues, there are combinations of issues, where ISS considers the compliance of these issues in combination to contribute incrementally to a firm's corporate governance. These variables are represented by a "C"

Appendix 2.C: Exceptions in rating specifications

Not all firms are rated on the same number of issues. On a country level, the varying regulatory requirements necessitate a nuanced approach. For example, if, due to legal requirements, the defined minimum standard cannot be fulfilled in a country, the issue is excluded for all firms in the country. E.g., ISS considers a board size between 6 and 12 board members ideal (ISS 2003). In Germany, however, board size is tied by market capitalization. Thus, the issue is excluded for all German firms. Also, ISS made slight changes to the US rating methodology in 2005 and 2007. The changes are taken into account when constructing the CGI for US firms. However, alterations were minimal so it remains mainly ISS's 2003 methodology that is applicable.

Appendix 2.D: Variable definitions

Corporate governance variables		
Variable	Definition	Source/item code
CGQ	Corporate Governance Quotient Commercial governance ratings provided by ISS as a relative rating either in relation to firms of the same industry, index or country	Based on governance ratings provided by ISS
CGI	Corporate Governance Indicator Naive rating based on the same criteria as the commercially available governance rating (raw data provided by ISS). Scores are equally weighted, not adjusted for yearly trends and, in line with the CGQ, a measure relative to industry, index or country peers in the same year. Variable is defined as $CGI_{its} = \frac{p_{its}-1}{m_{ts}-1}$, where p_{its} equals the rank of the firm i in year t in industry s and m_{ts} is the sum of all ranked firms in the same industry s in the same year t . Rank is calculated based on firm i 's compliance with the relevant criteria in year t relative to all firms in industry s .	Self-constructed
TECHNOLOGY	Reflects the incremental value ISS governance ratings contribute beyond public information, i.e., value created through ISS's proprietary weighting mechanism or the addition of private information ISS might have access to.	Self-constructed
Firm value variables		
Tobin's Q	Measurement of firm value calculated by dividing average fiscal year's market value by average fiscal year's total assets	$\frac{dwta + mv - dwse}{dwta}$
Investor protection indicators		
Anti-self-dealing	Indicator for investor protection, specifically shareholder expropriation	Djankov et al. (2008)
Accounting enforcement	Measurement of the enforcement of accounting standards and audit quality	Brown et al. (2014)
Regulatory quality	Indicator of public enforcement strength and quality of the legal system	Kaufmann et al. (2009)
Legal origin	Definition of legal origins based on observed differences in legal systems	La Porta et al. (1998)
Legal origin variables		
Common law	Indicator variable grouping countries into common or civil law countries	La Porta et al. (1998)
US	Indicator variable indicating if a firm is based in the United States	ISS

Note: Table continued on the next page.

Appendix 2.D (continued)

Control variables		
Variable	Definition	Source/item code
Size	Log of the financial year's total assets	dwta
Growth	Three year's average in net sales	wc01001
Leverage	Total debt divided by total assets	wc03255 wc02999
Free float	Number of shares in free float in relation to the number of total shares outstanding	noshff
Capital intensity	Property, plant, and equipment to total assets	wc02501 wc02999
Analyst following	Number of one-year future earnings per share (EPS) estimates	F1NE
Year dummies	Based on fiscal year-end	wc05350
Industry dummies	Based on first-digit Standard Industrial Classification (SIC) industry classifications	wc07021
Country dummies	Based on country data provided by ISS	

Appendix 2.E: Descriptive statistics

Panel A: Governance variables						
	N	Mean	Median	Min	Max	StD
CGQ	21,836	53.219	53.800	0.000	100.000	28.502
CGI	21,836	50.536	50.581	0.000	100.000	29.531
TECHNOLOGY	21,836	1.650	2.721	-66.095	73.349	18.947

Panel B: Valuation and control variables						
	N	Mean	Median	Min	Max	StD
Tobin's Q	21,836	1.900	1.349	0.402	54.279	2.334
Total Assets (in billions US\$)	21,836	12.085	0.910	0.000	1949.366	73.706
Leverage (in %)	21,836	22.923	17.996	0.000	328.378	27.115
Growth (in %)	21,836	15.253	8.237	-45.359	700.025	48.055
Free Float (in %)	21,836	79.371	85.000	0.000	100.000	20.628
Capital Intensity (in %)	21,836	24.601	16.751	0.000	95.566	24.343
Analyst Following	21,836	6.406	4.000	0.000	54.000	6.975

Notes: The table displays descriptive data pooled over the sample period for the variables contained in this study. CGQ is ISS's commercially available governance rating, the Corporate Governance Quotient, CGI is a self-construed naive governance score solely based on publicly available information, TECHNOLOGY reflects any incremental value CGQ contains beyond the accumulated public information, Tobin's Q measures firm value, total assets are in billion US\$, leverage is defined as total debt to total assets, growth is the average growth in net sales over the last three years, free float is the number of shares in free float in relation to the number of shares outstanding, capital intensity is calculated as PPE to total assets, analyst following is the number of one-year future EPS estimates.

Appendix 2.F: Yearly estimation and learning effects

Yearly estimations and learning effects		
Dependent variable: Firm value as measured by Tobin's Q		
Independent variables	Model (1)	Model (2)
	US firms	Non-US firms
CGI	0.0021*** (5.49)	0.0008 (1.29)
Technology	0.0024*** (4.89)	0.0001 (0.16)
2004 x CGI	-0.0010*** (-2.62)	-0.0008 (-1.33)
2004 x TECHNOLOGY	0.0000 (0.04)	0.0012* (1.70)
2005 x CGI	-0.0012*** (-3.00)	-0.0010* (-1.85)
2005 x TECHNOLOGY	-0.0015*** (-2.71)	0.0002 (0.26)
2006 x CGI	-0.0009** (-2.21)	-0.0007 (-1.27)
2006 x TECHNOLOGY	-0.0001 (-0.26)	-0.0008 (-1.02)
2007 x CGI	-0.0007 (-1.46)	0.0002 (0.38)
2007 x TECHNOLOGY	-0.0012* (-1.76)	-0.0003 (-0.44)
Size	-0.1631*** (-24.48)	-0.0993*** (-15.47)
Leverage	0.0023*** (6.72)	-0.0008* (-1.75)
Growth	0.0013*** (8.01)	0.0010*** (4.34)
Free float	0.0012*** (3.23)	-0.0012*** (-2.85)
Capital intensity	-0.0238 (-0.81)	-0.2275*** (-6.43)
Analyst following	0.2848*** (29.51)	0.1838*** (17.21)
N	14,982	6,854
Adj. R ²	0.349	0.361
Industry FE	Yes	Yes
Country FE	Yes	Yes
Year FE	Yes	Yes
Cluster	Firm	Firm

Notes: CGI is a self-construed naive governance score based on publicly available information, CGQ is ISS's commercial governance rating, TECHNOLOGY reflects incremental value CGQ contains beyond public information. CONTROL comprises a set of control variables. The model contains industry, year, and country fixed effects. Standard errors are heteroskedasticity robust (White 1980) and one-way clustered at the firm level (Petersen 2009). 200* x var is an interaction effect between the indicated year and the variable (CGQ, CGI, TECHNOLOGY). t-statistics are reported in parentheses. The superscripts ***, **, and * indicate two-tailed significances at the 1%, 5%, and 10% level.

3 The economic role of ESG ratings in capital markets

Jana Wagner¹⁷

Working Paper¹⁸

Abstract: In this paper, I shed light on the economic role of ESG ratings, the dynamics of the rating market, and the quality and potential challenges of environmental, social, and governance (ESG) ratings. The relevance and use of ESG ratings have increased significantly, with large capital flows following ESG ratings. ESG rating providers function as information intermediaries that can reduce information processing costs and coordinate capital flows according to ESG criteria. Based on a review of literature central to the debate, I find that empirical evidence on the economic role is mixed with varying predictive abilities regarding financial outcomes or better ESG performance. Main challenges of ESG ratings relate to a lack of a common definition of ESG, data availability and quality, the convergence across raters, and rating validity that is hard to assess. Regulatory efforts like the European Union's Corporate Sustainability Reporting Directive (CSRD: Directive 2022/2464/EU) and the current proposal targeting rating providers (EU 2023/0177/COD) might be able to address some of these issues.

JEL Classification: G11, G24, M14, Q50, Q56

Keywords: Environmental, social, and governance (ESG) ratings, non-financial disclosure, corporate social responsibility (CSR), sustainability, measurement, investment performance, impact investing

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3.1 Introduction

The objective of this paper is to explore the economic role of environmental, social, and governance (ESG). To this end, I review literature central to the debate and aim to answer the following questions: (1) What are ESG ratings, and what are characteristics of the ESG rating market? (2) What is the economic role of ESG ratings and ESG rating providers? (3) What do we know about this role from an empirical point of view? (4) What are the main issues related to ESG ratings?

ESG ratings and the ESG rating market

ESG ratings are an opinion on an entity's impact on and/or exposure to ESG characteristics based on a defined methodology (ESMA 2021b). ESG ratings are provided by professional rating agencies that use their defined methodology to aggregate information about a firm's ESG performance into a single rating or multiple sub-ratings. Generally, there are two types of ratings: (1) *risk ratings* evaluate firms' exposure to and management of financially material ESG risks (outside-in perspective), and (2) *impact ratings* measure firms' impact on ESG factors, i.e., a firms' impact on the environment and society at large (inside-out perspective) (ESMA 2021b).¹⁹ Ratings that consider both perspectives apply a double materiality approach, i.e., risks to the firm and impact of the firm on the environment and society are each considered as a materiality aspect.²⁰ The final ratings and underlying data sets are offered to market participants and stakeholders, who purchase the products if they expect them to provide benefits.

The global sustainable investment market has grown notably in the last decade. In 2022, sustainable investments amounted to US\$ 30.3 trillion, or more than one-third of global assets under management (Global Sustainable Investment Alliance 2023). Investment volume increased by 55% over a four-year period (2016 to 2020) and is expected to increase further (Global Sustainable Investment Alliance 2021).

¹⁹ The two perspectives are fundamentally different. Whenever possible, I will make a distinction and use language indicating this. However, at this point, research does not consistently differentiate between the two perspectives. Therefore, when necessary, I will refer to ESG performance instead of a more specific term.

²⁰ The concept of double materiality is increasingly used in the ESG context. For example, the European Sustainability Reporting Standards (ESRS: Regulation 2023/2772/EU), the Corporate Sustainability Reporting Directive (CSRD: Directive 2022/2464/EU), and the Global Reporting Initiative (GRI) all use a double materiality concept.

Many investors rely on ESG ratings to inform their decisions. A survey by SustainAbility reveals that more than 90% of investors surveyed use ESG-rating products at least once a month with 69% using them more than once a week (2023a).

ESG rating providers aim to cater to this growing demand by increasing their coverage and extending their product portfolios. In 2021, the ESG data market surpassed a volume of US\$ 1 billion, representing a 28% growth over the previous five years (Opimas 2022). Studies put the number of major rating vendors somewhere between 100 and 150 (KPMG 2020; Amel-Zadeh and Serafeim 2018), with the estimated number of available ESG ratings and rankings globally amounting to over 600 (SustainAbility 2020). This ample supply notwithstanding, studies estimate that in some jurisdictions, demand outweighs supply (PRI 2019).

As a result, large capital flows from retail and institutional investors follow ESG ratings (e.g., Hartzmark and Sussman 2019) and regulatory bodies like the European Union (EU) see potential for ESG ratings to help the transition towards a greener economy (2023/0177 (COD)). Despite the growing market, stakeholders question the reliability of ESG ratings. About 50% of investors and corporations indicate in surveys that they have only moderate trust that ESG ratings accurately measure ESG performance (SustainAbility 2023b). This puts the ESG rating market in a curious position that also attracts attention from regulators. The EU is in the finishing phases of regulating ESG rating providers to enhance the ratings' integrity, quality, and reliability (EU 2023/0177/COD).

Economic role of ESG Ratings

The size of the ESG rating market and the ongoing reliance on ESG ratings suggest a meaningful economic role of ESG rating providers. From a theoretical perspective, these rating providers function as information intermediaries by collecting, aggregating, and distributing (new) ESG information. Intermediaries can help the proper functioning of capital markets by improving market efficiency (Healy and Palepu 2001). Ratings can increase the credibility of disclosed information, helping stakeholders overcome informational disadvantages (Nipper et al. 2022; Chatterji and Toffel 2010). The services offered by rating providers can significantly lower information processing costs, i.e., reducing awareness and acquisition costs through

monitoring and data collection, as well as integration costs by aggregating the data into easy-to-interpret ratings (Blankespoor et al. 2020).

Investors can use the provided ratings to guide their investment decisions. The specific use case depends on the kind of investor. Financially motivated investors use ESG ratings to seek superior financial performance (Derwall et al. 2011), while non-financially motivated investors seek to generate a positive impact or aim to send a signal about their social responsibility (Riedl and Smeets 2017). A prerequisite for any investment strategy based on ESG ratings to function is that 1) ratings accurately measure the specified criteria and 2) investors understand a rating's objectives and structure their investment decisions accordingly. The information in ratings can further be used to benchmark firms and facilitate the interpretation of information, particularly in fields where users find it hard to evaluate absolute numbers (Darendeli et al. 2022; Hsee 2000; Hsee and Zhang 2010).

If the suggested mechanisms work, better-informed market participants can make better decisions such as investment, employment, or consumer choices (Chatterji and Toffel 2010), and ratings can assist a proper resource allocation in the market (Serafeim and Yoon 2023). However, it is possible that the channels do not work as proposed, and the economic reasons for the demand for ESG ratings derive from different rating characteristics. Users may, for example, benefit from the act of buying the rating instead of using its informational properties. For example, ESG ratings can be used as an ex-post verification tool. A requirement to do so can stem from contractual or regulatory obligations or may arise from a desire to reduce risk related to the decision-making process (not the decision itself).

ESG ratings can have further implications. For example, stakeholders can use the information to guide their activism, e.g., active investors can inform their decision on who to engage with (Barko et al. 2022), while stakeholders like NGOs can use ratings to help decide on a target or specify a focus topic of their campaign. Ratings can increase the salience of already publicly available information (Hartzmark and Sussman 2019), providing more attention to a company's actions and outcomes. This can lead to increased scrutiny by regulators, increased public pressure, and potential reputational effects with related repercussions like changes in firm behavior (Darendeli et al. 2022; Chatterji et al. 2009). Given the focus of this paper

on the economic role of ESG ratings in capital markets, said implications are not pursued further.

Taken together, ESG ratings can fulfill an important economic role in a variety of ways and offer benefits to users with heterogeneous objectives. In the best case, ESG ratings can coordinate capital market flows efficiently, reduce information asymmetries, increase market efficiency, and provide additional financing for a shift towards a green economy. In the worst case, there is capital misallocation and inefficiencies in markets, with increased uncertainty about ESG performance and lowered demand for green assets.

Empirical Evidence

Empirical evidence on ESG ratings speaks to three overarching questions: (1) Do ESG ratings reduce information processing costs?, (2) Do ESG ratings have informational value?, and (3) Do ESG ratings have a predictive ability? Overall, evidence regarding the economic role of ESG ratings reveals mixed results. There is some evidence that ESG ratings reduce information processing costs and information asymmetries. Generally, the ratings appear to have informational value. Market participants react to ratings, e.g., through adjustments of their investments, or changes to fund compositions (Hartzmark and Sussman 2019). This is in line with an informational value of ESG ratings. However, in some cases, reactions materialize slowly (Berg et al. 2022a), reverse after a while, or are based on methodology changes instead of changes in the rated activities (Latino et al. 2021). Empirical results on the cost of capital effects of ESG ratings are mixed, and predictions regarding ESG ratings or ESG information are not clear-cut. Some of the ratings have predictive abilities in terms of stock market performance or ESG news (Serafeim and Yoon 2023). However, investments according to ESG criteria do not consistently lead to improved financial outcomes for investors (Auer and Schuhmacher 2016) or society at large (Raghunandan and Rajgopal 2022).

These observations do not speak to a purely informational role of ESG ratings but also align with arguments that relate to compliance, ex-post verification, or social motives. Some findings are in line with an interpretation of investors' overreliance on ESG ratings, and there are hints that some investors prefer simple-to-use signals about firms' ESG performance without displaying interest in the underlying data,

methodology, or rating reliability (Hartzmark and Sussman 2019; Auer and Schuhmacher 2016).

Main issues

The mismatch between the possible economic role of ESG ratings and the observed outcomes can have implications for capital markets and sustainable development. The main issues affecting ESG ratings are essential to the rating creation process and interconnected. The field is comparatively new and lacks a common definition of what determines good ESG performance and how it can be measured (Christensen et al. 2022; Larcker et al. 2022). This likely feeds into the missing convergence of ESG ratings (Chatterji et al. 2016; Berg et al. 2022b). Low convergence can reflect a plurality of ESG ratings that focus on different aspects and is an attribute investors value (European Commission 2022). However, at this stage, rating disagreement is mostly caused by measurement differences, i.e., measuring the same attribute differently, reinforcing uncertainties related to ESG ratings (Berg et al. 2022b). In the worst case, rating disagreement can be an obstructive factor in the way ESG ratings function. It can impede the timely pricing of relevant information and increase uncertainty (Serafeim and Yoon 2023). This uncertainty has the potential to drive other channels like cost of capital or the demand for ESG stocks (Avramov et al. 2022).

The data underlying the ratings is reported in less formalized ways than financial data. It is at times unregulated or lacks assurance. Potential biases arise where no data is reported, where firms report heterogeneous data without clear guidance on what to report, and where there is an opportunity for firms to engage in greenwashing. As a result, data often suffers from poor data availability and quality, the handling of which has the potential to distort ratings. ESG ratings also suffer from transparency issues connected to the rating process. Investors appear to be unaware of different rating types (Larcker et al. 2022), while firms do not feel like the ratings are connected to their actual performance (IOSCO 2021).

Lastly, there are continued concerns about rating providers' black-box approach and the opaqueness of the rating process (e.g., IOSCO 2021; Kotsantonis and Serafeim 2019), which make it hard to assess the methodology and validity of the ratings (Chatterji et al. 2016). This concern is not unique to ESG ratings but a

common field of discussion in the area of information intermediaries in general and rating providers in particular. The arguments relate to the providers' intellectual property rights on the one hand and the demand to understand the rating methodology and the resulting implications on the other. Regulation can help mitigate some of the issues raised. The EU has increased and further specified ESG reporting requirements with the Corporate Sustainability Reporting Directive (CSRD: Directive 2022/2464/EU) and the EU Taxonomy (Regulation 2020/852/EU). The EU's ESG Ratings Regulation (EU 2023/0177/COD) can alleviate issues relating to transparency concerns.

The remainder of the paper is as follows. In Chapter 3.2, I outline ESG ratings and their construction before exploring the ESG rating market in Chapter 3.3. Chapter 3.4 outlines the economic role of ESG ratings in capital markets, while Chapter 3.5 contrasts this role with empirical. Chapter 3.6 examines rating quality and current challenges affecting it. Chapter 3.7 discusses regulation as a possible remedy to some of the issues. In the concluding chapter, I discuss research and policy implications.

3.2 ESG ratings

What are ESG ratings?

In the broadest sense, ESG ratings are an assessment of an entity's ESG performance. Unlike the area of creditworthiness and credit ratings, ESG performance and ESG ratings are not (yet) well defined. Some definitions are vague in terms of what ESG ratings measure, e.g., naming "ESG performance" or "ESG quality" without further detailing what these terms refer to. Other definitions refer to different concepts. For example, Larcker and Tayan (2020) focus on ESG factor's relevance for firms: "[A]n ESG rating takes into account broad environmental, social, and governance factors across companies in vastly different industries to predict how the company is positioned to withstand external shocks caused by large environmental, social or governance events." (p.439) The EU extends this perspective to include impacts on the environment and society at large and requires the use of a methodology and a ranking system, indicating a comparative component of ratings: "'ESG rating' means an opinion, a score or a combination of both, regarding a rated item's profile or characteristics with regard to environmental, social and human rights, or

governance factors or exposure to risks or the impact on environmental, social and human rights, or governance factors, that are based on both an established methodology and a defined ranking system of rating categories, irrespective of whether such ESG rating is explicitly labelled as ‘ESG rating’, ‘ESG opinion’ or ‘ESG score’” (Article 3 EU 2023/0177/COD).

A lack of a shared definition and understanding is common in developing and less formalized areas like ESG reporting and rating²¹ (Lamont 2012; Christensen et al. 2022). Such an understanding will likely develop over time. Until then, ESG ratings are rating providers' interpretations of good ESG performance, and the industry will face ongoing efforts to establish a common understanding (Berg et al. 2022b). For the purpose of this paper, I build on and extend the European Securities and Markets Authority (ESMA) definition and define ratings as follows: ESG ratings are an opinion on an entity's impact on and/or exposure to ESG characteristics based on a defined methodology (ESMA 2021b).

ESG ratings are provided by professional rating agencies that use their defined methodology to aggregate information about a firm's ESG performance into a single or multiple sub-ratings, e.g., separate environmental, social, and governance scores. Depending on the rating provider, the chosen criteria, measurement, and aggregation thereof can vary widely. Often, the measured criteria are benchmarked against a peer group to determine the final rating. The rating and underlying data sets are marketed to investors and other stakeholders. Unlike credit ratings, the ESG rating industry is typically based on a subscriber-pays model, and ratings are often unsolicited, i.e., ratings are not commissioned by the rated entity. While ratings provide a very condensed form of ESG-related information about an entity, they also demand a certain level of user involvement. The ESG rating market offers a variety of ESG ratings with different focal points. Users will need an understanding of the ratings and the underlying methodology to choose a rating that fits their intended goal.

²¹ Work in sociology argues that it takes time to develop a common theorization and understanding of a topic that includes a common evaluation, consensus on what to focus on, and how to weigh different information. See Christensen et al. (2022) for a brief overview of Espeland and Stevens (1998); Knorr-Cetina (1999), and Lamont (2012).

How are ratings constructed?

ESG rating providers specify their rating objectives. Generally speaking, there are two types of ratings: a risk rating and an impact rating (ESMA 2021b). A risk rating evaluates a firm's exposure to and management of financially material ESG risks. In doing so, the ratings adopt an outside-in perspective. An example of this is the *Morgan Stanley Capital International* (MSCI) ratings: "MSCI ESG Ratings provide an opinion of companies' management of financially relevant ESG risks and opportunities." (MSCI 2024a) The framework defined by MSCI does not integrate the firm's impact on the environment but focuses on the environment's impact on the firm and the handling thereof. In contrast, a CDP rating adopts an inside-out perspective and measures a firm's impact on ESG factors, i.e., a firm's impact on the environment and society at large: "Our scores show organizations and their stakeholders where they are on the road towards operating in line with a 1.5-degree, deforestation-free and water-secure future." (CDP 2024b) Ratings that consider both perspectives apply a double materiality approach. The FTSE Russell Rating is an example of such an approach: "The FTSE Russell ESG Data Model aims to assess corporate 'ESG exposure and performance', both in terms of measuring the impact of the scored entity on the external environment (e.g. through theme and pillar Exposures) and measuring the scored entity's risk exposure or resilience to ESG-related risks (e.g. through pillar and theme Scores)." (FTSE Russell 2024b) Within their framework, each provider decides on the rating's scope and focus. According to these criteria, a rating methodology is devised, and each step along the rating creation process is guided by the rater's particular choices and, therefore, only to a certain extent comparable to other rating processes. The defined rating methodology is difficult to validate, particularly in a field without a common set of standards and without an eventual realization (Serafeim and Yoon 2023).

What data do ratings rely on?

Data is the basis for all ESG ratings. Therefore, data availability, quality, and handling influence the rating outcome. Rating providers mainly rely on company-reported data but also use unstructured data from other sources, e.g., media reports or NGO campaigns, purchase data from other data providers, or use databases provided by governments, NGOs, or regulators (e.g., MSCI 2024a). In some cases, rating

providers send out questionnaires to gather additional data or base their score entirely on questionnaire responses (e.g., CDP 2023). Other rating providers use artificial intelligence to screen, collect, and (pre-)analyze data (e.g., Morningstar Sustainalytics 2024; RepRisk 2023). When data is not available or of poor quality, rating providers rely on assumptions and imputations or use rule-of-thumb simplifications (Kotsantonis and Serafeim 2019). At times, data standardization is required as different firms may report different data points for the same aspect. The choice of standardization method or benchmark group can impact the results (Kotsantonis and Serafeim 2019). The result of this data collection process is typically an extensive data set that features several thousand raw data points about a given firm.

What methodologies are used?

In a final step, rating providers aggregate the collected data into a final rating and/or multiple sub-ratings, such as individual environmental, social, and governance scores. The methodology underlying this process is partly publicly available, while other parts represent rating providers' proprietary trade secrets. Methodologies to construct the final rating vary widely. Therefore, I only briefly describe two exemplary processes.

MSCI offers a risk rating that evaluates firms based on a rating scale from AAA (leader) to CCC (laggard) (MSCI 2024a). For environmental and social issues, firms are rated on a selection of two to seven out of 37 key issues that are determined based on a firm's exposure to ESG risk as well as industry- and market-specific factors. The measurement of governance is based on six key issues that are the same for all companies. MSCI assigns weights to the key issues based on industry classification for environmental and social issues. Each key issue typically contributes between 5%- 30% to the overall score. MSCI calculates three pillar scores (environmental, social governance), which are then aggregated into the final rating and benchmarked against a defined peer group. The exact weights and calculations are not disclosed.

The London Stock Exchange Group (LSEG) provides the LSEG ESG Score, previously known under Refinitiv/Asset4. It employs more than 700 analysts who collect up to 630 ESG measures per firm to construct their rating (LSEG 2023). Data is collected

from publicly available sources and is mostly updated once a year unless there are exceptional circumstances. The rating is based on a subset of 186 measures that are defined as material for the industry. These measures are grouped into ten categories that form three pillars (E, S, and G). LSEG calculates a percentile-based ESG score with an additional controversy overlay that discounts the score for any material controversies the firm faces. Again, firms are benchmarked against industry peers. Like MSCI, the exact weights and scoring are not published. Both rating providers give rated firms access to the scores and allow feedback and corrections. The final ratings are offered to interested buyers.

3.3 The ESG rating market

Development of the ESG rating market

The ESG data market surpassed a volume of US\$ 1 billion in 2021, representing a 28% growth over the previous five years (Opimas 2022). The investment volume increased by 55% over a four-year period (2016 to 2020) (Global Sustainable Investment Alliance 2021). At the beginning of 2020, sustainable investments amounted to US\$ 30.3 trillion, or more than one-third of global assets under management (Global Sustainable Investment Alliance 2023).

Globally, the ESG markets have developed at different speeds. Europe dominates the market, with an estimated 81% of sustainably invested assets worldwide invested in European capital markets (Morningstar 2020). In comparison, the US accounts for 14% of these assets. Roughly 60% of total spending on ESG data derives from the European market, with another third stemming from the North American market (Opimas 2020). Recently, the US saw net outflows in sustainable fund flows (- US\$ 5.1 billion), while areas like the EU continue to experience net inflows in sustainable funds (+ US\$ 3.3 billion) (Morningstar 2024). This is in line with European investors considering ESG an ethical responsibility, significantly more so than their US counterparts (Amel-Zadeh and Serafeim 2018).

In recent years, market structures have shifted, and through a multitude of M&As, the rating industry has been condensed to a few major players that dominate the market. In the medium term, oligopoly structures, such as those in the credit rating market, with similar issues are possible (ESMA 2021b, p. 113). As a result of M&A activities, the market displays a geographic concentration of major rating providers

in the US. Yet, all maintain significant operations in the EU (European Commission 2021a). A notable exception is ISS, whose majority stakeholder is Deutsche Boerse, the Frankfurt Stock Exchange organization (Deutsche Boerse Group 2021).

Demand: Who uses ESG ratings?

Reasons for buying and using ESG ratings are varied. Ratings can be used to inform or evaluate investment decisions, for benchmark construction, or for benchmarking the own company against competitors. About 4% of ESG data spending stems from companies buying ESG data to benchmark themselves against competitors (European Commission 2021a; Opimas 2020), but also as a basis for engaging with firms, corroborating claims, or conducting an ESG risk assessment. Most firms report their own ESG ratings in public documents (European Commission 2022).

The increase in sustainable investment in the last decade raised the demand for ESG information and ratings. In 2021, for example, 3,826 signatories of the Principles of Responsible Investment (PRI) committed to incorporate ESG factors into their investment decisions (PRI 2021). Any such sustainable investment strategy, however it is formed, requires ESG-related input data to classify assets according to the defined criteria. The increased need for ESG information is mirrored in the increasing demand for and use of ESG ratings and other ESG data products. In surveys, 94% of investors indicate using ESG-rating products at least once a month, with 69% using them more than once a week (SustainAbility 2023a). Other survey respondents report that they expect to increase their use of ESG ratings in the future (European Commission 2022). As a result, ratings and the related data increasingly influence a multitude of investment decisions in capital markets (Gibson Brandon et al. 2022).

Main buyers of ESG data are assets managers (59%), sell-side institutions (19%), asset owners (12%), consulting firms and investment advisors (6%), and corporations (4%) (Opimas 2020). The group of ESG data users also includes benchmark administrators, regulators and standard setters, framework developers, and stakeholders (European Commission 2021a). Ratings are also used for academic purposes. More than 1,200 papers are using LSGE's ESG rating alone (Berg et al. 2020).

Supply: Who constructs ESG ratings?

The increasing demand for ESG information is met by a growing supply of ratings and other ESG data-related services. Exact numbers are hard to come by, specifically with the currently still developing ESG definitions. Studies put the number of major rating vendors somewhere between 100 and 150 (KPMG 2020; Amel-Zadeh and Serafeim 2018), with the estimated number of available ESG ratings and rankings globally summing up to over 600 (SustainAbility 2020). ESG rating providers operate a subscriber pay-based model, where, unlike in credit ratings, the user of the rating pays to obtain the rating. This reduces concerns about conflicts of interest and typically implies only limited interaction between raters and the rated (IOSCO 2021).

The ratings are supplied by a variety of actors that differ in terms of data and methodology, the services and products offered, their target group, or their organizational structures. Table 3.1 provides an overview of the main rating providers, the focus of the rating, the data used, and their coverage. The largest three ratings, MSCI, *Institutional Shareholder Services* (ISS) ESG, and Sustainalytics, account for 60% of the market (Opimas 2022). The larger providers offer a wide range of services, from data collection, aggregation, and rating construction to consultancy services, proxy vote recommendations, benchmark construction, and rating of financial products (second-party opinion). Others offer more focused products, like measuring sustainability management systems (EcoVadis 2023b). Some providers, like ISS or MSCI, were active in different capital market service fields like proxy advisory services before branching out into their ESG-related businesses later on, often through the acquisition of specialized ESG rating agencies.

3 The economic role of ESG ratings in capital markets

Table 3.1: ESG rating providers

Rating (owner, headquarter)		
Focus	Data	Coverage
MSCI ESG Rating (MSCI, New York)		
Risk rating “MSCI ESG Ratings provide an opinion of companies’ management of financially relevant ESG risks and opportunities.” (MSCI 2024a, p. 4)	Public documents, e.g, financial and sustainability disclosures, government and academic data sets, media searches	8,500 companies (14,000 issuers, including subsidiaries) 680,000 equity and fixed-income securities worldwide
ISS ESG Corporate Rating (Deutsche Boerse, Frankfurt) ²²		
Double materiality “ISS ESG’s Corporate Rating enables investors to evaluate companies’ ESG-related risks, opportunities, and impact along the corporate value chain.” (ISS ESG 2023a, p. 1)	Publicly available information, including company disclosure, proxy statements, media, governmental and international institutions, recognized non-governmental organizations, databases such as the CDP Supplementary non-public company-provided documents	12,500 issuers 7,800 companies
ESG Risk Rating (Sustainalytics, owned by Morningstar, Chicago)		
Risk rating “The ESG Risk Rating scoring model is designed to capture how well a company is managing its current exposure to ESG risks.” (Sustainalytics 2023, p. 3)	Company disclosure and website, annual reports, sustainability reports, codes of conduct, press releases, and other sustainability-related publications, media, non-governmental organizations Companies can provide feedback on data and report	16,000 companies across public equity, fixed-income, and private sectors
Bloomberg ESG Scores (Bloomberg, New York)		
Risk rating “Bloomberg ESG scores measure a company’s management of financially material ESG issues.” (Bloomberg 2023, p. 2)	Publicly available, company-reported ESG data Does not incorporate estimates or analyst opinion	15,000 companies, equaling 90% of global market capitalization, coverage in over 100 countries 90% of EU and US corporate investment-grade bond indices 70,000 funds
CDP (CDP Worldwide, London)		
Impact rating “A CDP score provides a snapshot of a company’s disclosure and environmental performance. (...) Our scores show organizations and their stakeholders where they are on the road towards operating in line with a 1.5-degree, deforestation-free and water-secure future.” (CDP 2024a)	Firm responses to questionnaires provided to CDP, information not verified through CDP	23,000 companies, equaling two-thirds of global market capitalization 1,100 states, regions and cities

²² The headquarters of Deutsche Boerse (Frankfurt Stock Exchange) is in Frankfurt. However, an agreement between Deutsche Boerse and ISS safeguards the independence of ISS’ research (ISS 2021). The headquarters of ISS can, therefore, arguably still be in Rockville, USA, while its owner’s headquarters are in Frankfurt.

3 The economic role of ESG ratings in capital markets

FTSE Russell's ESG Score (LSGE, London)		
<p>Double materiality</p> <p>“The FTSE Russell ESG Data Model aims to assess corporate ‘ESG exposure and performance’, both in terms of measuring the impact of the scored entity on the external environment (e.g. through theme and pillar Exposures) and measuring the scored entity’s risk exposure or resilience to ESG-related risks (e.g. through pillar and theme Scores).” (FTSE Russell 2024b, p. 23)</p>	<p>Publicly available sources at the entity level, including corporate reports, websites and press releases</p>	<p>8,000 securities in 47 emerging and developed markets, including the FTSE All-World Index, FTSE All-Share Index, and Russell 1000 Index</p>
LSEG ESG score (LSGE, London, previously Refinitiv/Asset4)		
<p>Risk approach</p> <p>“ESG scores from LSEG are designed to transparently and objectively measure a company’s relative ESG performance, commitment and effectiveness” (LSGE 2023, p. 4)</p>	<p>Publicly reported data, ESG controversies overlay captured from global media sources</p>	<p>15,500 public and private companies globally, thereof 5,900 in North America, and 3,700 EU</p> <p>90% of the global market capitalization</p>
RepRisk (RepRisk, Zurich)		
<p>Risk approach</p> <p>“Born out of credit risk management, the purpose of RepRisk’s dataset is not to provide ESG ratings, but to systematically identify and assess material ESG risks. RepRisk has always taken an outside-in approach to ESG risks, by analyzing information from public sources and stakeholders, and intentionally excluding company self-disclosures.” (RepRisk 2023, p. 2) ²³</p>	<p>Public sources, e.g., media (print, online and social), blogs, regulators, government bodies, think tanks, newsletters</p>	<p>230,000 public and private companies</p> <p>65,000 infrastructure projects</p>
S&P Global Corporate Sustainability Assessment (S&P, Manhattan)		
<p>Double materiality</p> <p>“S&P Global ESG Scores, calculated from the CSA, measure a company’s performance on and management of material ESG risks, opportunities, and impacts (...)” (S&P 2023, p. 2)</p>	<p>62 industry-specific questionnaires, each contain approximately 100-130 questions</p> <p>By invitation or request</p> <p>Publicly available data if invited companies do not participate</p>	<p>Over 13,500 companies</p>

Notes: The table is based on the following sources: MSCI 2024a, 2024b; ISS ESG 2023a, 2023b; Sustainalytics 2023, 2024a; CDP 2024b; Bloomberg 2023; CDP 2024a; FTSE Russell 2023, 2024a; LSGE 2023; RepRisk 2023; S&P 2023.

²³ RepRisk also offers a rating that facilitates corporate benchmarking and is a combination of firm and country sector risks. “The rating provides decision support in risk management, compliance, investment management, and supplier risk assessment.” (RepRisk 2024, p. 1) However, the rating is not RepRisk’s main product. I therefore focus on the database as the main ESG risk related product.

Most providers operate for-profit businesses, while some ratings are offered by NGOs or other non-commercial companies (e.g., CDP), contributing to the diversity of players in the ESG rating market. The coverage of ESG ratings has increased over the years, and most ESG rating providers have global coverage. LSEG, for example, covers more than 15,000 listed and private firms globally (LSEG 2023), the RepRisk ESG Risk Platform covers more than 230,000 public and private companies and 65,000 infrastructure project (RepRisk 2023). Still, coverage mostly focuses on specific geographies (developed economies) or asset classes (listed firms) (AMF 2020b). In the following chapter, I discuss possible reasons for the demand detailed in this chapter. To that end, I outline the different ways users can benefit from the constructed ratings and discuss the related economic role of ESG ratings.

3.4 Economic role of ESG ratings

Investors buy/use ESG ratings if the expected benefits exceed the costs. Potential benefits can be enhanced or facilitated investment decisions (providing useful information (Yang 2022)) or can be derived in other forms (underlying ESG data sets, ex-post verification). The benefits users draw vary with the intended use. The related use cases and economic reasons for doing so are varied and complex. This implies that there is not a single economic argument that carries all the use cases, and while some arguments will hold for all types of stakeholders, an analysis of use cases is fragmented. The following chapter outlines two general use cases: using the informational content of the rating (Chapters 3.4.1. and 3.4.2) and using other rating properties to derive benefits (Chapter 3.4.3).

3.4.1 Reduction of information processing costs

ESG rating providers act as information intermediaries by collecting, aggregating, and distributing ESG information. Through this intermediation, information is incorporated into prices more quickly, and the easy-to-interpret nature of ESG ratings allows a broader range of stakeholders to gain insight into ESG performance and react to that information. In their role as information intermediaries, ESG rating agencies can provide a reduction of information processing costs (Blankespoor et al. 2020). Raters collect a wide range of data types and thousands of connected data points. In doing so, they provide sought-after data, which is costly to collect, difficult to understand (Christensen et al. 2022) or that investors cannot access on their own

(Drempetic et al. 2020). The collected data is bundled into data packages and offered as a product. In this form, the data packages do not offer any form of data aggregation or interpretation but can reduce information awareness and acquisition costs if rating providers are more efficient in creating these data sets.²⁴ If rating agencies have access to private/hard-to-obtain information, benefits further increase.

In a next step, rating agencies aggregate data into easy-to-understand ratings that provide interpretation (Berg et al. 2022b) and offer complexity reduction (Raghunandan and Rajgopal 2022). The wealth of available ESG information requires a good understanding of the market and economic knowledge to interpret the information in a useful way. If the goal is, for example, to use ESG information for valuation purposes, users need to decide what data is relevant, assign a weight to mirror relative importance, and feed this into a model that assesses ESG performance. Ratings are the final product of this process. In this form, ratings mirror the raters' interpretation of the data in a specific context (e.g., industry) or with a defined focus (e.g., a company's ESG-related risk). To the extent that buying the ratings is more cost-efficient than aggregating and interpreting the data themselves, users benefit from a rating purchase through lowered integration costs (Blankespoor et al. 2020).

3.4.2 Information content of ESG ratings

Information asymmetry

Incomplete information leads to market frictions and makes it hard for investors to know the true value of a given characteristic. Market participants may price protect against such information asymmetries, guarding their own interests (Welker 1995). To the extent that ESG performance is relevant for equity valuation, transparency about ESG performance potentially reduces information asymmetries (Cho et al. 2013; Cui et al. 2018). A reduction in information asymmetry can have market effects such as improved market efficiency, greater liquidity, or reduced volatility (e.g., Welker (1995)). As such, rating agencies can help smooth market frictions that

²⁴ An alternative view is that the choice of data collection and the collection process itself are a form of aggregation and interpretation. Within the framework of disclosure processing cost, I will stick to the narrow definition and refer to the collected data as raw data without interpretation.

arise from information asymmetry and adverse selection problems (Chatterji and Toffel 2010).

More financial disclosure and a reduction in information asymmetries can also lower a non-diversifiable component in the cost of capital calculation by reducing covariance with other firms in the market (Lambert et al. 2007; Leuz and Verrecchia 2000). The case is not so clear-cut regarding ESG information. Pástor et al. (2021) argue that where capital market participants are green, they accept higher prices for green assets, thus reducing the firm's cost of capital. Avramov et al. (2022) maintain that rating divergence could increase uncertainty about a firm's ESG performance, raising the firm's cost of capital. Pedersen et al. (2021) contend that the cost of capital is lower for highly rated firms in a market where all investors derive utility from ESG. Yang (2022) argues that the cost of capital only decreases in markets with large amounts of responsible investors.

Investment choices

By providing information about a company's ESG performance, ESG ratings can help guide investment choices that reflect the investors' ESG preferences (Chatterji et al. 2009). In this regard, ESG ratings do not differ greatly from the use of financial information. Investors use ratings to determine certain aspects of a firm and incorporate the information into their investment decisions. It is important to note the different rationales behind using ESG ratings for investment decisions. Financially motivated investors use ESG ratings to yield higher returns or reduce investment risk. Whether this means investing in firms with high or low ESG scores depends on the investor's view of ESG and its relation to future firm performance.²⁵ To the extent that ESG ratings contain information about a firm's future performance that is not yet priced, investors can build portfolios that reap abnormal returns (Khan et al. 2016).

²⁵ A full discussion of the subject is beyond the scope of the paper. Broadly speaking, there are a couple of streams on the connection between ESG and firm performance. One stream links better ESG performance to better firm outcomes via channels like better resources, employees, or lower litigation risk (Khan et al. 2016). A different stream views ESG investments as increasing costs and a competitive disadvantage (Friedman 1970). Connected are arguments that view ESG investments as an expression of delegated philanthropy or a simple manifestation of agency problems where insiders invest in "good causes" based on their own preferences (Liang and Renneboog 2020).

Non-financially motivated investors aim to generate a positive impact and use ESG ratings to locate corresponding firms or portfolios (Derwall et al. 2011). This kind of investor accepts lower returns in exchange for non-pecuniary benefits like reduced emissions or the development of green technologies (Riedl and Smeets 2017). In this case, ratings must be tied to a firm's ESG performance and impact. The last type of investor is also not financially motivated but invests in highly rated firms and products to send a social signal (Riedl and Smeets 2017). In such a case, the informational content of the rating is irrelevant, but rather, the green signal a rating sends is of interest. A prerequisite for any investment strategy based on ESG ratings to function is that 1) ratings accurately measure the specified criteria measure, and 2) investors understand a rating's objectives and structure their investment decisions accordingly.

The standardized measurement of ESG characteristics allows rating users to compare firm performance across industries or countries, providing context and comparison. This helps users benchmark firms and evaluate ESG information about a firm within a specific context (Tomar 2023). Even if a rating or a specific piece of information is publicly available, adding a relative performance component may still represent new information, particularly in areas where users find it hard to evaluate absolute numbers (Darendeli et al. 2022; Hsee 2000; Hsee and Zhang 2010). Additional information about peer performance can, in turn, lead to altered investment decisions or a more nuanced choice of business partners.

3.4.3 Ex-post verification

If the suggested mechanisms work, it follows that better-informed market participants can make better investment decisions (Chatterji and Toffel 2010), and ratings can assist a proper resource allocation in the market (Serafeim and Yoon 2023). However, it is possible that the channels do not work as proposed, and the economic reasons for the demand for ESG ratings derive from different rating characteristics.

Users may benefit from buying the rating instead of using its informational properties. For example, ESG ratings can be used as an ex-post verification tool. A requirement to do so can stem from contractual or regulatory obligations or may arise from a desire to reduce risk related to the decision-making process (not the

decision itself). In the latter case, ESG ratings function as an exculpation mechanism, where users employ the rating to demonstrate due diligence and the inclusion of ESG factors in decision-making processes. Contractual obligation can arise in the construction of investment portfolios. For example, ESG funds can use ESG ratings to specify cut-off points to ensure the fund is structured according to details in the fund's prospectus (Berg et al. 2022a). It is also possible that market participants and investment advisors use ratings to fulfill regulatory obligations. For example, in the EU, the Sustainable Finance Disclosure Regulation (SFDR) requires financial market participants to disclose how sustainability risks are considered in the investment process and if and how they consider adverse impacts of their investment decisions on sustainability factors (Regulation 2019/2088/EU). Taken together, ESG ratings can fulfill an important economic role in a variety of ways and offer benefits to users with heterogeneous objectives. This is reflected in an increasing demand for and use of ESG ratings and a sizeable ESG rating and data market.

3.5 Empirical evidence on the economic role of ESG ratings

The economic benefits of ESG ratings outlined in Chapter 3.4 follow theoretical arguments, some of which originate in the literature on financial information. It is not clear if ESG ratings fulfill all the proposed roles and use cases and if the assumed functionalities are available to (all) stakeholders. At the same time, Chapter 3.3 documents a sizeable ESG rating market and reports on the extended use of ratings. I therefore set out to review the empirical evidence on ESG ratings. It is not meant as a comprehensive review of all available literature but rather a collection of papers and arguments that allows for an evaluation of the economic role of ESG ratings and to what extent they perform the discussed functions.

3.5.1 Information intermediation

There is evidence that ESG ratings reduce information processing costs. Blankespoor et al. (2020) interpret the fact that ESG data packages exist as a stand-alone product as an indicator that the data in its collected but unaggregated form is useful. This speaks to a reduction in information awareness and acquisition costs. In interviews, users of ESG ratings describe the data sets of ESG ratings as useful and, at times, even more useful than the rating itself (European Commission 2021b). About 44% of surveyed investors indicated that ESG information from data

providers is the most common source of ESG data (SustainAbility 2023b). The development of products where the data is purchased and then fed into customizable tools that aggregate data according to the buyer's wishes supports such an argument.

Empirical evidence on the channel of disclosure processing costs is scarce. One paper that can be interpreted as a reduction in information processing costs is Hartzmark and Sussman (2019). The authors investigate mutual fund flows related to the introduction of Morningstar's five-globe sustainability rating system in 2016 for US funds and find that after the publication of the five-globe rating, fund flows increased (decreased) significantly for funds with the highest (lowest) rating. The authors interpret the findings as a sign that investors value sustainability and discuss the importance of salience in the investment process. There is another aspect to this reaction, though: Fund compositions, as well as the ESG ratings for firms in the funds, were publicly available before the publication of the five-globe rating. Still, the aggregation of the percentile-based ESG ratings into the visibly easier-to-interpret five-globe system is followed by fund flows. The response to the simplified version speaks to a reduction in integration cost. It is also possible that the introduction of the five-globe rating, which was published through white papers and marketing campaigns, reduced information awareness costs. More recent research documents a decrease in the mutual flows shown by Hartzmark and Sussman (2019). Within a year after the introduction of the five-globe rating, fund flows stopped following the globe rating (Gantchev et al. 2020).

3.5.2 Informational properties of ESG ratings

Do ratings have informational value?

A key element of ESG ratings is the assumption that they have informational value. At first glance, empirical results indicate that ratings have informational value. Researchers document market reactions to rating changes (Berg et al. 2022a; Latino et al. 2021; Glück et al. 2021), portfolio rebalancing following rating initiation or changes (Hartzmark and Sussman 2019) and real effects in terms of firm-level governance performance (Berg et al. 2022a) or emission reductions (Chatterji et al. 2009). However, taking a closer look, the results do not support purely economic reasons but reveal a complex field of findings.

Berg et al. (2022a) document measurable stock market reactions to MSCI rating changes for 3,665 US firms between 2013 and 2020, where downgrades are associated with stronger reactions than upgrades. However, reactions unfold gradually within a timespan of two years, which is not in line with classical arguments about market reactions to new information. The reactions are not moderated by the size of the change or the underlying reasons, e.g., material changes in the firm's management practices. Similarly, ESG fund composition changes after rating changes. However, adjustments are slow and take up to two years, indicating that the fund managers do not regard rating changes as financially material information but may use them to fulfill expectations or adhere to contractual obligations. Both effects are persistent and do not reverse in the considered time frame.

Latino et al. (2021) find that retail investors react to rating changes for firms listed at the NYSE, NASDAQ, and AMEX exchange between 2019 and 2020 by selling firms with a rating downgrade, leading to an economically meaningful decline in abnormal returns that varies with the size of the downgrade. This is in line with investors using ESG ratings to re-evaluate firms and conforms to theoretical expectations about reactions to new information. However, investors also react when the rating changes are caused by a change in methodology, which is not connected to ESG performance changes. The results reverse within five months. Results can be interpreted as investors following ESG ratings without a clear understanding of the underlying mechanisms.

ESG ratings can also moderate stock market reactions. Serafeim and Yoon (2023) show for a sample of 31,854 US firms between 2011 and 2018 that ESG ratings have a predictive ability in relation to ESG news. When the consensus rating for a firm is low (high), market reactions to good ESG news are higher (smaller), in line with arguments about asymmetric price reactions and the pricing of forecasts. However, high levels of ESG rating disagreement lower this predictive ability. In cases of material ESG issues, high rating disagreement leads to a lack of market reaction.

Evidence further points towards information content of ESG ratings that facilitates benchmarking. Darendeli et al. (2022) use an LSEG coverage extension from the Russel 1000 to the Russel 2000 in 2017 to explore the effects of an information shock based on ESG ratings and find significant effects in customer-supplier

relationships. Results are concentrated in low corporate social responsibility (CSR) suppliers, where information asymmetries were high before the shock, and where customers or suppliers are highly visible. The findings speak to an increase in transparency after ESG rating initiation and related reductions in information asymmetry. The findings also correspond to benchmarking and public pressure as channels. Ernstberger et al. (2023) and Errico (2023) use the same setting and find that the information shock facilitates enforcement activities. Ernstberger et al. (2023) find a significant 4.81% increase in uncovered firm misconduct. Errico (2023) finds a significant increase in enforcement activities that is concentrated in firms with high reputational exposure, i.e., high ESG media coverage, analyst coverage, and size but is not sensitive to the ESG scores.

Empirical literature offers mixed results on the relation between ESG ratings and a reduction in the cost of capital and, thereby, one proxy for information asymmetry. Gibson Brandon et al. (2021) document for a sample of S&P 500 firms between 2010 and 2017 a positive relation between ESG rating disagreement and a firm's annual cost of capital, arguing that the divergence can increase uncertainty, which prompts investors to require an uncertainty premium. Glück et al. (2021) find that an increase in MSCI's ESG rating is linked to reduced systematic risk and a connected reduction in a firm's cost of capital. The effect is only observable for increases in the governance pillar of the rating and does not materialize for the environmental or social pillar.

Do ESG Ratings have a predictive ability?

When ratings are used for portfolio construction, investors expect a predictive ability in terms of financial and/or ESG outcomes, depending on their preference. Results regarding financial outcomes vary based on the ratings or rating components used, geographic regions, and industries. Serafeim and Yoon (2023) find that ratings have different predictive abilities, i.e., ratings are connected to future stock returns to varying degrees. The different rating providers' predictive ability seems to impede the timely incorporation of accurate ratings into prices, and portfolios can be built on the differential predictive abilities. Khan et al. (2016) suggest that a differentiation between financially material and immaterial attributes of a rating helps to understand that relationship. They find that high rating scores in

material parts of a rating predict future stock market performance, whereas high scores in immaterial parts of a rating do not. The overall score does not reliably predict future performance.

Auer and Schuhmacher (2016) compare portfolio returns based on high and low ESG ratings for firms across different industries in the EU, US, and the Asia Pacific region. Using Sustainalytics' ratings for a sample of 2,118 firms between 2004 and 2012, they find that industry, geographic region, and the ESG criteria used to construct portfolios shape the portfolio returns. The authors do not find consistent increases or decreases in investment performance in the US and the Asia Pacific region. In Europe, however, investors pay a price for certain sustainable portfolios, depending on the chosen industry and ESG criterion.

Several studies point to a connection between high ESG ratings and more stable performance during crises. For example, Ding et al. (2021) use 6,700 global firms and find that firms with higher LSEG ratings experience better stock price performance during COVID-19. Similarly, Albuquerque et al. (2020) find that S&P 500 firms with higher environmental and social ratings by LSEG prior to COVID-19 had stronger stock market performance during the pandemic. However, Berg et al. (2020) use the sample of Albuquerque et al. (2020) and show that the results are driven by the backdating of ESG rating data, a technique where rating providers rewrite the originally uploaded ratings. Using data from 2011 and 2017 for the same sample, results hold for the rewritten 2017 data but vanish for the original 2011 sample. Since rewriting ESG ratings after their publication is an ongoing practice, this calls whole research strands into question.

In terms of corporate behavior and ESG outcomes, results are equally mixed. Yang (2022) finds for a set of US firms (NYSE, NASDAQ, and AMEX) between 2012 and 2013 that MSCI environmental and social ratings do not reliably predict future corporate misbehavior. Controlling for rating disagreement that arises from a difference between MSCI ratings and a rating constructed based on external information about corporate misbehavior, results indicate that ESG ratings contain useful information that predicts future outcomes. This relation becomes blurred by other, potentially greenwashed information in the ratings. If rating agencies do not correct for this behavior, ratings are a noisy signal about a firm's future corporate behavior.

Raghunandan and Rajgopal (2022) use a list of ESG funds to determine whether these funds show better track records in terms of ESG outcomes such as compliance with labor laws, emissions, CEO payments, or fines paid for violation of social and environmental regulations. For 147 ESG and 2,428 non-ESG funds between 2010 and 2018, they find that ESG funds display a worse track record than non-ESG funds in terms of ESG performance. The authors show that funds select firms with higher ESG ratings. The ratings, however, are not influenced by federal violations but appear to be driven by higher disclosure. This weakens the relation between ESG ratings and ESG outcomes and explains why funds that select firms based on ESG ratings do not show better track records. At the same time, ESG funds charged higher fees while underperforming in terms of financial outcomes.

Finally, there is evidence of real effects, i.e., firms reacting to ratings and changing their behavior. Again, results are heterogeneous. Chatterji and Toffel (2010) find for a sample of 598 firms between 1999 and 2004 that firms which receive a first-time KLD rating reduce their emission significantly more than unrated firms. This effect is concentrated in firms with initially lower ratings and firms operating in highly environmentally regulated industries. Berg et al. (2022a) document that firms react to rating changes by adapting the management of their governance score, whereas the management of the other scores remains unchanged. However, adaptation goes both ways, where management of governance factors improves after a downgrade but also deteriorates after an upgrade.

3.6 ESG rating quality

The empirical evidence in Chapter 3.5 points towards a mismatch between the possible economic role of ESG ratings and the observed outcomes. In this chapter, I explore reasons and consequences of this mismatch and discuss potential remedies. Outlining potential consequences, Christensen et al. (2022) caution that unreliable ratings can hinder an accountability process that could otherwise discipline firms. If ratings are a distorted signal of ESG performance, firms have reduced incentives to invest in their ESG performance and alter their performance (Larcker et al. 2022; Yang 2022). If managers use ESG ratings to improve their ESG performance, the incentivized measures might be a poor fit for the firm or neglect important issues (Berg et al. 2022b).

Regulators voice concerns about possible capital misallocation and market inefficiencies if ESG ratings do not accurately measure ESG performance, but investment flows follow the ratings (ESMA 2020). They can have implications for investor protection, financial stability, and sustainable development. Inaccurate measurement can also hinder the transition to a greener economy. Increasing investments in accordance with ESG criteria influence asset prices and portfolio decisions (Avramov et al. 2022) The uncertainty surrounding ESG ratings and performance impedes the construction of optimized portfolios and reduces demand for green investments by norm-constrained institutional investors.

A central issue related to ESG ratings is the shared understanding of ESG. At this point, there is no common understanding of what ESG means and how it is measured (Christensen et al. 2022; Larcker et al. 2022). Christensen et al. (2022) call the nature of ESG information “highly subjective” (p. 164). While the field of financial accounting is established and has a common set of rules, the field of ESG information is relatively new. When information is available, ESG raters need to judge whether the reported data implies a good or bad ESG performance. This is difficult (1) when there is no common understanding of what determines good ESG performance, (2) when firms report different figures for the same topic (e.g., work-related incidences, see Kotsantonis and Serafeim 2019 for further examples) and (3) when a multitude of available metrics requires raters to choose the relevant metrics and how to include them in the score. As a result, increased disclosure is associated with higher rating disagreement (Christensen et al. 2022). Until there is a common understanding of what determines good ESG performance means, ESG raters must rely on their individual definitions. The resulting rating is, therefore, an interpretation of what the individual ESG rater perceives as good performance (European Commission 2021b).

This feeds into the discussions about ESG rating disagreement and the low convergence of ESG ratings (Chatterji et al. 2016; Berg et al. 2022b; Christensen et al. 2022). Berg et al. (2022b) find correlations between six prominent ESG ratings that range between 0.38 to 0.71. The authors dissect rating divergence to identify how and why ratings differ and find that the primary factor driving the divergence

is measurement (56%), followed by scope (38%) and weights (6%).²⁶ For scope (including different attributes in the rating) and weights (giving included attributes different relative importance), one can argue that low convergence reflects a plurality of ESG ratings that focus on different aspects catering towards diverse user preferences (e.g., single vs. double materiality) (Chatterji et al. 2016; European Commission 2022). In fact, survey respondents prefer a variety of rating types that focus on different outcomes (European Commission 2022).²⁷ A variety of rating agencies and specialized ratings can support market competition and serve a broad investor range with heterogeneous objectives. Therefore, a low convergence does not necessarily point towards issues in ratings and rating methodology. However, the measurement divergence (measuring the same attribute differently) is a problem, i.e., when convergence is low in classes of ratings measuring the same constructs and with the same objective function. Chatterji et al. (2016) define this measurement as common theorization, i.e., a common understanding of ESG that ties actions to outcomes. As long as ESG ratings lack this attribute, interpretation of ratings is difficult and the conclusions drawn may be flawed.

Data availability in the ESG context exacerbates the above-discussed issues. ESG data is not as widely available as financial data and provided in less formalized ways (AMF 2020b). Rating providers might seek and obtain different data at different points in time from different sources (Christensen et al. 2022). Data availability and data quality are reported as poor with a lack of comparability (Amel-Zadeh and Serafeim 2018), lack of standards (Berg et al. 2022b, p. 7), reliance on unregulated or unaudited firm-reported data, with a possible incentive to engage in greenwashing (Yang 2022), and a lack of assurance (European Commission 2021a). All this fuels data gaps or inconsistencies that ESG rating providers need to handle. This requires interpretation, e.g., interpreting missing data as the worst outcome, attributing average industry performance, or using generic rules and data imputations (Kotsantonis and Serafeim 2019).

ESG disclosure mandates can be a possible remedy. Fiechter et al. (2022) find increased ESG reporting after the EU's non-financial reporting directive (NFRD:

²⁶ Chatterji et al. (2016) find similar results, where different theorization explains only roughly about half of the rating differences, attributing the remaining differences to different measurement.

²⁷ In a US context, the SEC sees a variety of ratings, even if each correctly measures the set definition of good ESG performance, as a difficulty in investment decisions (SEC 2019).

Directive 2014/95/EU). Krueger et al. (2024) show that ESG reporting mandates improve a firm's information environment and have positive capital market effects, particularly in environments in which governments mandate information, with little room for compliance options, and with informal enforcement. The increasing number of reporting mandates, such as the EU's CSRD (Directive 2022/2464/EU), or the SEC's climate-related disclosures (89 FR 21668) can increase the availability of standardized data with a better quality. However, without a common understanding of what constitutes good ESG practices, adding additional data to the market is not sufficient to resolve the issue. The EU's Taxonomy has the potential to mitigate this concern. It defines sustainable economic activities and defines measurement rules, at least for the activities covered in the regulation (Regulation 2020/852/EU). Such a classification system can support a common understanding and further alleviate difficulties rating providers face in terms of data and definitions.

The disconnect between the reported data and the underlying activity has spurred criticism. The concern is that ratings do not measure ESG performance but rather pick up on ESG disclosures (Drempetic et al. 2020; Lopez de Silanes et al. 2019). If, for example, missing data is punished, then ratings are driven by data availability rather than the underlying activity. This can lead to size-related rating biases where larger firms have more resources to provide disclosure and, therefore, receive higher ratings (Drempetic et al. 2020; Dobrick et al. 2023). Raghunandan and Rajgopal (2022) find that ESG ratings are driven by ESG news coverage and the availability of ESG disclosures but not the content of those publications. Baker et al. (2024) show that firms with increased diversity disclosures receive higher ESG ratings and increased ownership by norm-constrained investors while at the same time incurring more discrimination violations and hiring a less diverse set of employees. The reliance on unregulated or unaudited data when calculating ESG ratings provides an opportunity for greenwashing, where the costs are low and potential benefits for the firm are high (Baker et al. 2024). ESG raters' incentive to uncover such behavior is a function of how many sophisticated users require the rating to be informative and how many trusting investors buy the rating regardless (Yang 2022).

There is also evidence that is consistent with firms attempting to manage their ESG rating beyond firm disclosures. Cornaggia and Cornaggia (2023) observe for a sample of 300 US firms from 2009 to 2019 a 14% increase in Sustainalytics' raw scores after a 1% increase in weights for this score, particularly in raw scores measuring preparedness (e.g., having policies in place). The results are more pronounced for firms with more ESG-focused investors or customers, indicating that firms actively try to manage their ESG scores but do so in a very cost-efficient manner that does not focus on impact or material changes. This can affect a rating's informational quality. Rating biases further affect rating quality. Liang and Renneboog (2017) find a strong correlation between a firm's ESG rating and its country of origin. Berg et al. (2022b) find a rater effect, where firms that score high in one part of the rating also receive higher scores in the other parts of the rating. Benchmarking firms within a peer group can further distort ratings (Kotsantonis and Serafeim 2019).

The last issues I discuss pertain to ESG raters' transparency and communication. Rating users might not be aware of different rating types (Larcker et al. 2022). For example, users might choose an ESG rating-based strategy to have an impact but use an ESG risk rating to construct their portfolio. If this is the case, the invested capital does not flow towards the intended goal. ESG rater's communication, particularly their marketing, potentially sustains such tensions (Simpson et al. 2021). With regard to transparency, there are continued concerns about a black-box approach to ratings and opaqueness of the rating process (Chatterji et al. 2016; IOSCO 2021; Kotsantonis and Serafeim 2019). The partly unobservable rating process makes it hard to assess the validity of the ratings (Chatterji et al. 2016). The difficulties of observing realizations of outcomes that discipline ratings (Serafeim and Yoon 2023) and a state of constant relativity (ESMA 2021b) further complicate matters of assessing rating quality. Transparency concerns, the observed deficiencies of ESG ratings, and possible repercussions for capital markets worry regulatory bodies (e.g., SEC 2021; ESMA 2021a).

3.7 Regulation of ESG rating providers

One potential remedy to the transparency issue is a regulation that requires ESG rating providers to disclose the necessary information to understand the rating and the underlying processes. Regulatory bodies argue that transparency on rating methodology and the origin of the data is a prerequisite for reliable ratings and that the absence thereof can weaken the entire system (AMF 2020a; ESMA 2020). ESG rating providers uphold their intellectual property rights and the protection of their business model. For example, MSCI argues that the disclosure of rating models, weighting, and data processes threatens intellectual capital, the results of innovation, and trade secrets. Therefore, any transparency requirements should be tailored to protect know-how and not infringe on intellectual property rights (MSCI 2023a).

In Europe, the EU considered the arguments and concluded that the topic is sufficiently important to start work on an ESG rating regulation. In the following, I outline the EU's ESG rating provider regulation (*Proposal on the transparency and integrity of Environmental, Social and Governance (ESG) rating activities* (EU 2023/0177/COD)) as an example of regulatory approaches in the area. This regulation aims to enhance the transparency and reliability of ESG ratings. In its approach, the EU opts for a market solution that allows for different kinds of ratings and does not interfere with rating methodology or the general rating process. Instead, ESG raters have to disclose key information for users to understand the ratings in general but are exempt from disclosing details that would uncover trade secrets and sensitive business information. The EU followed a similar approach for the regulation of credit rating agencies (e.g., Regulation No 1060/2009/EC, Regulation 2017/2402/EU).

The ESG Ratings Regulation is currently in its final phase. The European Parliament and Council of the EU reached a provisional political agreement on the proposal in February 2024. Subject to the approval of the Council and the Parliament, the regulation starts applying 18 months after its into force. In its current form, the regulation requires ESG rating providers established in the EU to be authorized and supervised by the ESMA. The regulation sets out transparency and organizational requirements. Rating providers will have to disclose if they follow a double materiality perspective and, if not, will have to specify whether they provide an

impact or a risk rating. Separate scores for E, S and G should be provided. If a single overall rating is provided, the weighting of the three pillars needs to be disclosed. Rating providers will need to report whether the applied methodologies are based on scientific evidence and report on time horizons and whether the rating is backward- or forward-looking. The regulation further requires a separation of business models that forbids, for example, consulting and auditing activities, credit rating activities, or benchmark development within the same legal entity. Simplifications are possible for small rating providers for a transitional period of three years.

The EU's feedback process revealed general approval for a regulatory approach, but the level of regulatory intervention remains a topic of debate. Some participants demand more mandated harmonization between rating providers (e.g., Better Finance 2023), while others criticize the transparency requirements as being too extensive (e.g., EcoVadis 2023a; MSCI 2023a). In light of the issues pertaining to ESG ratings, it appears unlikely that the regulation of ESG rating providers alone is sufficient to address the concerns discussed in this paper. However, it is likely that it is an important piece of regulation that contributes to the reliability of ESG ratings in combination with further regulatory efforts.

3.8 Conclusion

This paper explores ESG ratings and the ESG rating market, their economic role, and the extent to which they fulfill that role. Results document a growing market in terms of demand and investment flows. At the same time, there is a mismatch between the possible economic role of ESG ratings and the observed outcomes. ESG ratings face multiple challenges, such as data quality and availability, which undermine the consistency and reliability of ESG ratings and increase market uncertainty. Despite these issues, ESG ratings have the potential to be an important economic force in the market. They can function as information intermediaries and coordinators of capital flows and support the functioning of markets that incorporate ESG information into decision-making. To fulfill this role, the issues currently surrounding ESG ratings need to be addressed. In the EU, regulatory changes are underway that can help mitigate some of the concerns. For example, the CSRD and the EU Taxonomy can foster a harmonization of the European ESG

disclosure landscape and support the process of shaping common definitions. The Ratings Regulation can help with transparency concerns relating to the rating creation process.

Academia can be an important part in assessing to what extent the regulations can help standardizing the ESG information environment and guide the discourse towards potential improvements. This kind of research is at the cross-section between ESG data and ESG ratings. Currently, data availability and quality are very closely connected to ESG ratings. This makes it difficult to assess data and ratings separately. In a two-step process, researchers can establish in how far regulations improved the standardization and reliability of ESG data. Once data availability and quality are no longer drivers of ESG ratings, researchers can separate rating methodology from data and study characteristics like value relevance of the rating methodology, the incremental value it offers, or how characteristics vary across the three pillars of ESG ratings.

Further, we need to deepen our understanding of the ESG rating market and its participants. Currently, we only partially understand the market for ESG ratings and how and why users benefit from the ratings. Yet, the political relevance of ESG and the growing size of the market underscore its significance. It is, therefore, important to further investigate and uncover the drivers of this market and identify users and their motives. Differentiating between shareholders and different kinds of stakeholders will shed light on each group's role in the market and the specific benefits they derive. With a better understanding of why ESG ratings are used, it will become easier to assess whether ESG ratings live up to each group's expectations and where potential shortcomings lie. In extension, research can further pinpoint those areas and map possible routes of change.

4 (How) Do CSR disclosure mandates facilitate stakeholder pressure on firms? The case of NGOs

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Working Paper³⁰

Abstract: We examine whether and how non-governmental organizations (NGOs) react to a mandated increase in corporate social responsibility (CSR) information. We exploit the implementation of the EU's Non-Financial Reporting Directive (NFRD: Directive 2014/95/EU) using a difference-in-differences design combined with further cross-sectional analyses. Results show that NGOs step up their campaigning activity in the EU following the first-time publication of mandatory CSR reports. Additionally, we observe a concurrent shift in campaign topics towards more NFRD-related concerns in campaigns targeting EU firms. Our findings are potentially important to (EU) regulators who rely on stakeholder pressure to accomplish the desired goals via a CSR transparency mechanism.

JEL Classification: G38, M14, M41, M48

Keywords: Corporate social responsibility (CSR); disclosure regulation; stakeholder reactions; Directive 2014/95/EU, non-governmental organizations (NGOs), Non-Financial Reporting Directive (NFRD)

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4.1 Introduction

We examine whether and how non-governmental organizations (NGOs) react to a mandated increase in corporate social responsibility (CSR) transparency. For reporting years 2017 and after, the Non-Financial Reporting Directive (NFRD: Directive 2014/95/EU) came into force in the European Union (EU). It requires large public interest entities to prepare and disclose CSR reports that contain, at a minimum main risks, policies and their outcome regarding environmental, social, and employee matters, human rights and anti-corruption concerns, as well as bribery and board diversity questions. With the directive, the EU aimed to increase transparency about firms' CSR performance and foster an increase in CSR activities (Directive 2014/95/EU, recital 1 and 3). The EU states that the "disclosure of non-financial information is vital for managing change towards a sustainable global economy by combining long-term profitability with social justice and environmental protection" (Directive 2014/95/EU, recital 3).

With the NFRD, the EU relies on a transparency mechanism to reach the desired outcome (Fung et al. 2009; Hombach and Sellhorn 2019). Corporations are mandated to provide information about their CSR performance. Stakeholders consume the information directly or use the output of information intermediaries. Particularly for non-investor stakeholders, intermediaries, like NGOs or the media, can play an important role in accessing the provided information. If the information is relevant, stakeholders adjust their behavior to correspond to their CSR preferences and impose these preferences on firms, e.g., through purchase decisions or social pressures.

Firms that anticipate or are affected by this stakeholder pressure respond by adjusting their actions, which translates into the integration of CSR into the firms' business models. Shareholders who respond to stakeholders' actions can put further pressure on firms through the stock market. Additionally, the process of generating CSR reports can alter managers' information sets, leading to changes in firms' CSR behavior (Fiechter et al. 2022). In this paper, we focus on the role of stakeholder pressure as an essential part of the proposed mechanism. However, whether stakeholders use the disclosures mandated by the NFRD and how they do so remain open empirical questions.

Prior literature shows that stakeholders react to and use general CSR information. For example, consumers react to revelations of corporate irresponsibility (Christensen et al. 2023; Houston et al. 2022), carbon footprint displays (Beyer et al. 2024), ESG news (Dube et al. 2023) and CSR ratings (Meier et al. 2022), individuals use diversity disclosures in job advertisements (Choi et al. 2023), and corporate customers use CSR ratings in supply-chain contracting decisions (Darendeli et al. 2022). However, these findings may not hold for mandated CSR information. CSR reports are a form of capital market disclosure that stakeholders may not access regularly or face difficulties extracting the most relevant information (Christensen et al. 2021). For example, customers indicated in surveys that they rarely rely on firm disclosure, and some are unaware of ESG and annual reports (Leonelli et al. 2024).

A related strand of literature focuses on mandated CSR information. Evidence finds that CSR disclosure “works”, i.e., real effects and changes in firms’ behavior are observed after the introduction of a transparency regulation (e.g., Christensen et al. 2017; Chen et al. 2018; Fiechter et al. 2022; She 2022). While these papers observe the desired outcome and discuss stakeholder pressure as a channel driving the results (e.g., Fiechter et al. 2022), they do not single out the potential channels. There is limited evidence that explores stakeholders’ use of mandated CSR information directly. Dyreng et al. (2016) provide evidence for NGOs as a stakeholder group and examine a specific UK setting in which NGOs first push for the full disclosure of mandated subsidiary information and then build campaigns based on the reports. Qualitative evidence regarding the regulatory process of the Extraction Payments Disclosure in the US suggests that NGOs are interested in mandated information and use it in their campaigning activities (Andreicovici et al. 2022). Yet, we lack broad-scope evidence with regard to stakeholders’ use of mandated CSR-related disclosures. Understanding whether and how stakeholders use the information disclosed in mandatory CSR reports is important from a regulatory point of view. If stakeholders are unable to or uninterested in accessing or processing the mandated information, an essential part of the designed mechanism does not function properly.

To explore stakeholder reactions to the NFRD, we focus on NGOs as a specific group of stakeholders. NGOs are non-governmental actors that pursue goals related to

environmental, social, or governance matters and become active if there is a belief that a society can no longer be efficiently governed by public regulators alone (Daubanes and Rochet 2019). One strategy of NGOs to achieve their goals is to pressure firms with campaigns that aim to change a specified behavior. We choose NGOs for two reasons. Firstly, NGOs are important stakeholders who voice their concerns and formulate demands from a stakeholder perspective (Dyrenge et al. 2016). Additionally, NGOs can act as information intermediaries, collecting information about firms' behavior and disseminating this information to other stakeholder groups. In this way, we can observe two important functions in the causal chain that links transparency regulation to real effects: the role of stakeholders and the role of intermediaries. In light of recent research results indicating that retail consumers do not consistently react to or use (firm-disclosed) ESG information, the latter role is of particular importance (Christensen et al. 2023; Leonelli et al. 2024). Secondly, NGO pressure, unlike most stakeholder activity, is observable in the form of campaigns against firms. We use a novel data set from Sigwatch, which collects NGO campaigning data for a broad sample of firms, to observe NGO campaigning around the mandated increase in CSR information.

However, it is ex-ante not clear if NGOs use the information in mandated CSR reports. Mandated CSR reports are capital market information that is communicated through capital market channels (Hombach and Sellhorn 2019). NGOs may not access these channels regularly. Further, the incremental informational value of the reports may be negligible: Firms may be careful not to disclose incriminating information or the information may be less useful once it is publicly available. Alternatively, the predefined scope, breadth, and depth of the disclosed information may reduce NGOs' information processing costs (Blankespoor et al. 2020), while the increased standardization of the disclosed information can support NGOs in benchmarking firms' activities (Tomar 2023). The increased attention to CSR topics can further facilitate NGO campaigning (Fiechter et al. 2022). In this case, NGOs' cost-benefit tradeoff improves and allows NGOs to increase their campaigning activities. This is consistent with the role of stakeholders in the targeted transparency mechanism, i.e., stakeholders benefitting from mandating CSR information and using it to increase stakeholder pressure.

We use the increase in mandatory CSR reporting following the NFRD to examine whether NGOs increase their campaigning activity. The magnitude of this regulatory shock provides a framework to observe potential changes on a broad scale and in varying institutional settings. The passage of the NFRD in 2014 marks the beginning of our sample period. We implement a difference-in-differences (DiD) design with the years from 2014 to 2017 as our pre-period and 2018 to 2019 as our post-period. Since the scope of the NFRD extends to all large, listed firms in the EU, we construct a sample of propensity-score-matched US firms as our control group (Fiechter et al. 2022).

In our main analysis, we examine whether the NFRD leads to an increase in NGO campaigning activity. We find a significant increase in NGO campaigns targeting EU headquartered firms following the first-time publication of mandatory CSR reports. On average, firms are targeted with an additional 1.09 campaigns, translating into an average increase of about 13%. Additionally, we observe a concurrent shift in campaign topics towards more NFRD-related concerns in campaigns targeting EU firms but not in campaigns targeting US firms. Our results indicate that NGOs react to the NFRD and the resulting disclosures by stepping up their campaigning activity and shifting the focus of their campaign topics. To shed more light on our main finding, we estimate a yearly version of our main model. We make two observations: Firstly, we do not observe any significant coefficients in the pre-treatment period, which increases our confidence that the observed effects are attributable to the CSR disclosure mandate. Secondly, we observe the onset of significant changes in NGO campaigning behavior in 2018, consistent with the first-time disclosure of mandated CSR reports.

From an economic perspective, the results are reasonable. Mandated CSR reports likely change the cost-benefit equilibrium of NGOs, reduce information processing costs, and allow NGOs to increase their campaigning activities for a given set of resources. The EU's specific reporting requirements, paired with the demand to use international reporting frameworks, can facilitate benchmarking and thus help NGOs better understand a firm's individual performance in relation to their industry peers. Increased public attention to NFRD-related issues may lead to a heightened stakeholder interest in CSR-related topics and translate into increased stakeholder pressure, even before the first reports are published (Fiechter et al. 2022). However,

the timing of our treatment effect does not support such an interpretation. Instead, the onset of the effect after the first-time publication indicates that it is the reports that are important to NGOs. An alternative explanation for the observed results relates to NGO funding. Individual stakeholders who find it hard to engage with large companies might delegate this task to NGOs and simultaneously raise their donations to enable NGOs to voice their concerns for them. We implement an NGO funding analysis to test whether increased financial resources are the basis for increased campaigning activity but do not find significant results for NGO income, expenses, or expenses per campaign.

Next, we conduct cross-sectional analyses and split our sample according to firm and institutional characteristics. First, we examine whether the treatment effect varies predictably within EU firms along with firm characteristics that influence NGOs' cost-benefit tradeoff. We find that NGOs are more likely to target relatively large firms in the post-period. Even though the reduction of information processing costs is likely greater in smaller firms, it may not be sufficient to outweigh the benefit of targeting larger, more prominent firms. Similarly, we observe a concentration of the treatment effect in firms previously targeted by an NGO campaign. Second, we let the treatment effect vary on a country level to account for different institutional characteristics that may influence our results (Liang and Renneboog 2017). We find that firms are more likely to be targeted by an NGO campaign if they are domiciled in a country with a relatively high NGO presence or in countries with relatively high regulatory quality.³¹ NGOs do not seem to broaden their scope regarding firms targeted outside the country they are headquartered in, even though the more standardized CSR reporting might have made this easier. Taken together, we observe that NGOs act in a way that is consistent with the transparency mechanism the EU designed.

This study makes several contributions. It provides empirical evidence that stakeholders not only use general CSR information (Beyer et al. 2024; Christensen et al. 2023; Darendeli et al. 2022) but also use mandated CSR information. More specifically, it shows that the EU's CSR disclosure mandate facilitates NGO campaigning targeting EU firms within the scope of the directive. This finding

³¹ Kaufmann et al. (2009) define regulatory quality as a country's ability to develop and enforce effective policies and regulations that support private sector growth.

supports the transparency mechanism implemented by the EU by showing that NGOs, as a particular group of stakeholders, use the mandated CSR disclosures to increase stakeholder pressure. With this, we add to the transparency regulation literature, providing broad-scope evidence of the functioning of such a disclosure mandate (Andreicovici et al. 2022; She 2022; Dyreng et al. 2016). More generally, our study adds to the understanding of stakeholders' use of (mandated) CSR information and to the growing real effects literature in accounting. We add to the empirical evidence demonstrating that targeted transparency regulations change firm behavior (e.g., Christensen et al. 2017; Chen et al. 2018; Fiechter et al. 2022) by providing empirical evidence for a stakeholder pressure channel. With this, we contribute to the understanding of channels underlying the observed real effects. From a regulatory perspective, the findings add to the debate about the users of mandated CSR reports and can help inform policy choices regarding regulatory methods.

4.2 Background

4.2.1 The EU Non-Financial Reporting Directive

With the publication of the Commission's Green Paper in 2001, the EU identified the CSR concept as an essential element for the realization of a competitive and dynamic economic environment (European Commission 2001). A lack of transparency and consistency of the CSR information firms published voluntarily led the EU to develop mandatory CSR reporting standards, which focused on creating comparable levels of transparency regarding CSR information throughout the European Union (Directive 2014/95/EU, recital 1). The EU emphasized the importance of non-financial information for the desired change towards a sustainable economy (Directive 2014/95/EU, recital 3). The resulting NFRD initially passed parliament in April 2014 but did not enter into force until the beginning of 2017. Accordingly, the first mandatory reports were published in 2018.

The NFRD requires large public-interest companies with more than 500 employees to publish annual CSR reports.³² The directive requires CSR reports that contain a

³² Firms are defined as large if their balance sheet total is greater than €20 million, or net sales exceed €40 million. Companies are in the public interest if their securities are listed on a regulated market in an EU member state, if they are a credit institution or insurance company, or if a member state has designated them as a company in the public interest (Directive 2014/95/EU).

description of the business model and the disclosure of non-financial key performance indicators. Additionally, the directive also mandates the disclosure of particular topics: At a minimum, the reports need to cover main risks, policies, and their outcome regarding environmental, social, and employee matters, human rights concerns, as well as anti-corruption and bribery questions. Firms should prepare their statements based on internationally recognized standard frameworks, such as the UN Global Compact, GRI, or ISO 26000. The compiled information can be integrated into the management report or published in a separate report. A statutory audit of the final report is not required. Due to its legal structure, the NFRD has some leeway regarding transposition into national law.

4.2.2 Mandatory CSR disclosures as a policy tool

The enacted NFRD differs from other forms of regulation in that the EU decided not to prescribe a rigid set of rules but instead to rely on transparency to reach the desired goal. By enacting disclosure rules, the EU aims to push corporations to act more socially and environmentally responsible. To reach the desired goal, the underlying mechanism relies not only on capital market participants but also on non-investor stakeholders and society at large. This kind of intervention can be subsumed under the concept of targeted transparency (Fung et al. 2009; Hombach and Sellhorn 2019). Hereby, corporations are mandated to provide relevant and reliable information about their CSR performance. The resulting report is still a form of capital market disclosure, while the mandated reports aim to reach a broader set of stakeholders (Hombach and Sellhorn 2019). The published CSR reports can include new information, make existing information available at reduced information processing costs, or allow stakeholders to infer additional information through benchmarking processes.

The provided information enters stakeholders' information sets and is considered in decision-making processes. Stakeholders can consume the information either directly or use the output of information intermediaries like the press or NGOs. If the information is relevant, stakeholders adjust their behavior to correspond to their CSR preferences and impose these preferences on firms, e.g., through product purchase decisions. Firms that are affected by this stakeholder pressure respond by adjusting their actions, which translates into the integration of CSR into the firms'

business models. In addition to the benchmarking and stakeholder pressure channels, the passage of CSR disclosure mandates can increase stakeholders' awareness of CSR-related issues and thus further promote stakeholder pressure. Firms anticipate (heightened) stakeholder pressure and change their actions accordingly (Fiechter et al. 2022). Shareholders who respond to stakeholders' actions can put further pressure on firms through the stock market.³³

A growing body of literature explores stakeholders' use of CSR information. For example, Christensen et al. (2023) investigate consumers' reactions to the revelation of corporate irresponsibility and find that consumers only react to highly visible events. Beyer et al. (2024) examine how consumers react to (different formats of) carbon footprint disclosure and observe that consumers choose less carbon-intensive options when supplied with carbon footprint information. Dube et al. (2023) document that consumers react to ESG news, while Meier et al. (2022) report that consumers react to CSR ratings. Choi et al. (2023) observe that firms' diversity disclosures in job advertisements influence individuals' job-seeking behavior. Darendeli et al. (2022) find that corporate customers use CSR information to inform supply chain decisions. While these papers show that stakeholders use CSR information, we lack evidence regarding stakeholders' use of mandated CSR information that is a form of capital market information and is communicated through capital market channels (Hombach and Sellhorn 2019).

Prior literature on mandated CSR information demonstrates that, on a general level, CSR disclosure regulations change firm behavior. For example, Christensen et al. (2017) demonstrate that mandatory filings of mine-safety records with the SEC increase labor safety (measured as reductions in accidents) for an industry-specific US setting, the mining industry. Chen et al. (2018) find that mandatory CSR disclosure regulation in China is associated with a decrease in profitability, consistent with increased CSR spending, and reduced environmental damage in the areas most impacted by the disclosure regulation. Fiechter et al. (2022) demonstrate that such real effects can be observed for a broad, cross-industry, cross-country setting as they find that companies increased their CSR activities in response to (the

³³ Another mechanism discussed relates to internal learning, where the process of generation of CSR reports alters managers' information sets, leading to changes in firms' CSR behavior (Fiechter et al. 2022). While this can also lead to the desired real effects of a CSR disclosure regulation, we focus on the role of stakeholders in this paper.

passage of) the EU's NFRD. She (2022) shows that the disclosure of supply chain due diligence practices is connected to increases in due diligence and human rights performance along the supply chain. While these papers observe the desired outcome and discuss stakeholder pressure as one potential channel driving the results (e.g., Fiechter et al. 2022), these papers do not single out/distinguish the potential channels.

Additionally, the link between disclosure and outcome is complex, particularly when non-investor stakeholders are concerned. For example, the (new) information needs to enter stakeholders' information sets so they can update their preferences and act on them (Hombach and Sellhorn 2019). For non-investor stakeholders, this is not obvious. The communication via capital market channels makes it unlikely that non-investor stakeholders access the disclosed information directly. Yet, targeted transparency regulations build on and specifically call non-investor stakeholders a target group for the disclosed information. To reach all of the intended user groups, information intermediaries, like NGOs or the media, can play an important role by assisting (non-investor) stakeholders in accessing the information.

4.2.3 Non-governmental organizations

In the targeted transparency framework, NGOs can be important information intermediaries who convey relevant information to (non-investor) stakeholders. Various terms, such as activist groups, stakeholder activism, or pressure groups, are synonymously used with the term NGO. In essence, all these terms refer to a collection of individuals who share a common belief about how the world should be (McCarthy and Zald 1977). Importantly, NGOs define themselves as working independently from any government and not working for profit or political office (Spar and La Mure 2003).

NGO activism occurs when there is a belief that a society can no longer be efficiently governed by public regulators alone (Daubanes and Rochet 2019). This can be the case for global firms with international value chains that are not governed by a single set of rules mandated by one jurisdiction but are instead rooted in multiple states with different rule sets (Habermas 2001). These firms can choose production sites along the value chain that offer the best cost-benefit trade-off, which does not

always correspond with a society's expectations about that firm's behavior. Increasing industry influence on standard-setting and other behavior not perceived as fair can also result in the belief that additional monitoring and enforcement are necessary (Daubanes and Rochet 2019). NGOs' goals involve changes in the environmental, social, or governance behavior of public or private actors. To achieve their goals, NGOs choose between two types of action: (1) public politics and (2) private politics (Baron and Diermeier 2007). Public politics comprises lobbying activities of NGOs to influence the legislative processes of a specific topic (Baron and Diermeier 2007). For example, NGOs lobbied for the NFRD as they participated in public consultation phases between 2016 and 2020. Yet, this may not be the most effective way to reach the desired outcome since lobbying is time- and capital-intensive and can be countered by groups representing the other side of the spectrum (Baron and Diermeier 2007).³⁴ Therefore, NGOs have increasingly resorted to the second option, private politics (Baron 2001).

Private politics involves the targeting of private actors by making demands and launching campaigns (confrontation), but also through collaborations and negotiations (collaborative). Collaborative practices are sometimes visible through labels granted to firms that comply with an NGO's demand, like the World Wildlife Fund (WWF) label printed on consumer products. But mostly, negotiations and collaborations are not easily observed by outsiders. This is different for confrontational practices, like campaigns. Campaigns are the most visible and most controversial output of an NGO.³⁵ They can manifest in the form of boycotts, protests, online petitions, emotional videos, or lawsuits (Couttenier and Hatte 2016). In campaigns, NGOs use public pressure, i.e., the mobilization of stakeholders into various forms of organized action, to achieve a defined goal that is related to their shared belief (Andreicovici et al. 2022; Hond and Barker 2007). For example, in 1995, Greenpeace prominently prevented the disposal of Shell's Brent Spar oil rig in the North Sea with the help of broad public support and a boycott of Shell gas stations (Nash 1995).

³⁴ Between 2002 and 2014, NGOs in the US spent US\$2.3 billion on lobbying activities, while firm expenditure for lobbying in the same period exceeded US\$36 billion (Daubanes and Rochet 2019).

³⁵ For example, Baron and Diermeier (2007) compare NGO campaigns to extortion.

Ultimately, from an NGO's point of view, a campaign is successful when (1) the campaign draws considerable public attention to the issue³⁶ and/or (2) the target changes its behavior in the desired way (Lenox and Eesley 2009). The success of an NGO campaign critically hinges on the NGO's ability to gather sufficient public attention and support for their cause. Since campaigns are costly, NGOs stage their campaigns strategically, weighing costs and benefits, and only implement campaigns with a high probability of success.³⁷ Targeting large, visible firms where reputation is important, e.g., a high-value brand, likely draws attention from the general public (Lenox and Eesley 2009; Hatte and Koenig 2020). Similarly, firms are more likely to be targeted if they are heavy polluters, are profitable, or have previously been responsive to campaigns (Baron and Diermeier 2007).

The targeted firm will only comply with the NGO's demand if the cost of non-compliance outweighs the cost of compliance. This firm-specific equilibrium will determine a firm's response to a particular request and the likelihood that the firm will give in to the NGO's demands. Costs that NGOs can impose on a given firm can relate to reputational concerns (Andreicovici et al. 2022), increasing costs of production, e.g., through increased regulatory risks (Baron and Diermeier 2007), decreasing sales through, e.g., boycotts (Lenox and Eesley 2009) or through targeting of a firm's supply chain (Baron and Diermeier 2007). Through their actions, NGOs can pressure firms into internalizing negative externalities and satisfy their demands (Lenox and Eesley 2009).

Besides more firm-specific triggers, a firm's environment also influences whether a firm or a group of firms is targeted by an NGO campaign. Couttenier and Hatte (2016) show that when firms are (predictably) in the center of attention and largely covered by the media, such as firms being sponsors for large sports events, NGOs adapt their strategies and target these firms instead of potential other targets. Rehbein et al. (2004) demonstrate that activism is more likely where the issues prevalent in a firm are of specific interest to society. Also, NGO activity varies across

³⁶ NGOs benefit from campaigns that are well perceived in public, even if firms do not give in to the NGO's request, because it brushes up their reputation and increases the NGO's ability to secure funds for future campaigns (Lenox and Eesley 2009).

³⁷ The selection of an important issue, the choice of a suitable target, and the implementation of a successful campaigning strategy are crucial (Baron and Diermeier 2007). The campaigning strategy requires the creation of a direct link between the issue at hand and the targeted firm, suggesting that the issue can be addressed if only the target changes its practices (Spar and La Mure 2003).

industries. In segments where public participation is easy, e.g., boycotts of consumer products, activism is more likely than in fields where it's harder for individuals to participate (Baron and Diermeier 2007).

4.2.4 The NFRD and NGO campaigning

We examine whether and how NGOs react to a mandated increase in CSR information. With this, we investigate if and to what extent NGOs fulfill the role the EU envisioned for stakeholders in the functioning of the NFRD mechanism. In the case of NGOs, this means NGOs utilizing the CSR reports and/or the setting surrounding the NFRD to increase their activity. Focusing on NGOs' most visible output, NGO campaigns, the transparency mechanism translates into increased campaigning activity from NGOs. However, it is ex-ante not clear if and how NGOs use this information. Mandated CSR reports are a form of capital market disclosure that stakeholders may not access regularly or face difficulty extracting the most relevant information (Christensen et al. 2021). Even if NGOs are capable of fully processing and integrating the information contained in the reports, the incremental informational value might be negligible. For example, firms may be careful not to disclose incriminating facts in the reports. Finally, the information published in CSR reports is then publicly available, which might decrease the utility NGOs draw from the reports for their campaigning activities. If this holds, we do not expect an increase in NGO campaigning following the NFRD.

Alternatively, NGOs may benefit from the (implementation of) the NFRD. The increased public attention to CSR-related issues may facilitate the gathering of sufficient public support, which allows NGOs to voice a credible and (potentially) costly threat (Baron and Diermeier 2007). Further, NGOs possibly benefit from reduced information processing costs due to the predefined scope, breadth, and depth of the disclosed information and simplified access (Blankespoor et al. 2020). Lastly, even if the disclosed reports do not contain incremental information, increased standardization of the disclosed information can support NGOs in benchmarking firms' activities, providing new insights and grounds for increased campaigning activity (Tomar 2023). In this case, we expect to see an increase in NGO campaigning activity following the NFRD. Taken together, it is ex-ante unclear if NGOs adjust their activities in accordance with/in reaction to the NFRD.

4.3 Sample and data

4.3.1 Sample selection

Our sample period spans from 2014 to 2019, starting with the year the NFRD was passed, including its entry into force in 2017 and the first-time publication of mandatory CSR reports in 2018. Our pre-treatment period runs from 2014 to 2017 and the post-treatment period from 2018 to 2019. We chose 2018 as the treatment year since it is the publication of the CSR reports we are interested in (vs. the observation of effects that relate to the anticipation of the NFRD). We are aware that the implementation of the NFRD, like most regulatory settings, does not involve a random treatment assignment. Thus, our setting falls short of the ideal randomized trial (Atanasov and Black 2016). We, therefore, construct a propensity-score-matched control group of US firms that are similar to our EU treatment groups based on a vector of observable firm characteristics. We use US firms as the control group because there have not been any significant changes regarding CSR disclosure requirements during our sample period (Ioannou and Serafeim 2017).³⁸

We use a “doubly robust” procedure in that the vector of matching variables is identical to the control variables included in the regression model, i.e., Tobin’s Q, total assets, leverage, asset turnover, cash flow from operations, property, plant and equipment (PPE), percentage of the number of shares in free float, number of analysts, environmental, social, and governance (ESG) score, CSR report and pre-target (for variable definition see Appendix 4.A). Additionally, we include the outcome variable. We match treatment and control firms with more than 499 employees in 2014 based on average values for 2014-2017, using a caliper of 0.1 and allowing for replacement.³⁹ Details on the matching procedure are reported in Appendix 4.B. Panel A of Table 4.1 summarizes the sample selection. First, we select all EU and US firms with ISIN and financial year data available on Worldscope between 2014 and 2019. Then, we drop observations that do not have all the required data points and balance the sample. This results in 3,534 EU and 3,756 US

³⁸ The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 requires listed firms belonging to the oil and gas industry to disclose information about mineral purchases from the Democratic Republic of Congo, mine safety records, and payments made to the government of countries where minerals are extracted in their SEC filings. Since then, no major modification of a mandatory nature has taken place, making US firms a suitable control group for our sample.

³⁹ We run regressions with different matching specifications, e.g., using smaller calipers (not reported). Our inferences remain the same.

4 (How) Do CSR disclosure mandates facilitate stakeholder pressure on firms?

firm-year observations. After the matching procedure, the sample consists of 569 firm observations over six years for our treatment and control group, respectively (Table 4.1, Panel B). Table 4.1, Panel D reports descriptive statistics after the matching procedure. For our analyses, we combine two types of data: financial and ESG-related data gathered from Worldscope and Refinitiv, as well as NGO campaigning data provided by Sigwatch. In later analyses, we complement this dataset with NGO funding data that we collect manually for a subsample of the NGOs in our sample. An overview of the industry distribution and financial characteristics are presented in Table 4.1, Panel C and D.

Table 4.1: Sample description

Panel A: Sample selection							
	EU		US				
Firm with ISINs & fiscal year-end data from 2014-2019	40,510		36,318				
<i>Exclude:</i> Missing Worldscope data	23,930		18,273				
<i>Exclude:</i> Missing Asset4 data	10,530		6,933				
<i>Exclude:</i> Firms with less than 500 employees in 2014	541		1,780				
<i>Exclude:</i> Firms without balanced sample structure	1,975		5,576				
Balanced sample before matching	3,534		3,756				
Balanced sample after matching	3,414		3,414				

Panel B: Yearly sample distribution							
	2014	2015	2016	2017	2018	2019	Total
EU	569	569	569	569	569	569	3,414
US	569	569	569	569	569	569	3,414

Panel C: Industry distribution according to Fama-French code (12 industries)			
	EU	US	Total
Business Equipment (<i>Computers, Software, Electronic Equipment</i>)	228	528	756
Chemicals and Allied Products	168	138	306
Consumer Durables (<i>Cars, TV's, Furniture, Household Appliances</i>)	90	90	180
Consumer Non-Durables (<i>Food, Tobacco, Textiles, Apparel, Toys</i>)	222	510	732
Finance	588	438	1,026
Healthcare, Medical Equipment, and Drugs	192	120	312
Manufacturing (<i>Machinery, Trucks, Planes, Paper, Printing</i>)	540	402	942
Oil, Gas, and Coal Extraction and Products	96	78	174
Other (<i>Mines, Construction, Transportation, Hotels, Entertainment</i>)	600	636	1,236
Telephone and Television Transmission	186	114	300
Utilities	120	78	198
Wholesale, Retail, and Some Services (<i>Laundries, Repair Shops</i>)	384	282	666
Total	3,414	3,414	6,828

4 (How) Do CSR disclosure mandates facilitate stakeholder pressure on firms?

Table 4.1 (continued)

Panel D: Summary statistics									
	Total			EU			US		
	N	Mean	Std. dev.	N	Mean	Std. dev.	N	Mean	Std. dev.
Firm characteristics									
Tobin's Q	6,828	0.47	0.46	3,414	0.44	0.48	3,414	0.49	0.45
Total assets	6,828	16.03	1.52	3,414	16.06	1.77	3,414	16.00	1.21
Leverage	6,828	0.26	0.16	3,414	0.25	0.17	3,414	0.28	0.15
Asset turnover	6,828	0.78	0.59	3,414	0.79	0.63	3,414	0.77	0.55
PPE	6,828	0.24	0.23	3,414	0.24	0.23	3,414	0.24	0.23
Operating cash flow	6,828	0.09	0.07	3,414	0.09	0.07	3,414	0.09	0.06
Information environment									
Free float	6,828	4.22	0.48	3,414	4.26	0.35	3,414	4.19	0.59
Analyst following	6,828	2.57	0.63	3,414	2.60	0.61	3,414	2.53	0.64
ESG characteristics									
ESG score	6,828	58.64	17.46	3,414	60.1	17.6	3,414	57.18	17.21
ESG controversies	6,828	89.33	23.52	3,414	87.17	26.14	3,414	91.50	20.34
CSR report	6,828	0.89	0.31	3,414	0.93	0.25	3,414	0.86	0.35
NGO campaigning activities									
Targeted firms	6,828	0.48	0.50	3,414	0.54	0.50	3,414	0.42	0.49
Targeted firm year	6,828	0.24	0.43	3,414	0.31	0.46	3,414	0.17	0.37
Newly targeted firm year	1,617	0.10	0.30	1,051	0.07	0.26	566	0.14	0.35
Number of campaigns	6,828	2.03	8.10	3,414	2.72	8.89	3,414	1.34	7.15
NFRD-related topics	1,617	0.55	0.28	1,051	0.58	0.28	566	0.51	0.29

Notes: This table describes the sample. Panel A gives insights into the sample selection of firm-year observations for our treatment (EU) and control (US) group. Detailed information about the propensity-score-matching procedure is provided in Appendix 4.B. Panel B shows the firm-year observations for the treatment (EU) and control (US) group by year. Accordingly, Panel C gives information about the composition of the industry. Panel D presents descriptive statistics for firm characteristics, information environment, CSR characteristics, and NGO campaigning activities for the total sample, the treatment group (EU), and the control group (US). All variables are described in Appendix 4.A.

4.3.2 NGO activities

Sigwatch data set. Sigwatch is a European consultancy firm that advises firms on their interaction with NGOs. Sigwatch collects a broad dataset of NGO campaigning activities, covering roughly 7,000 firms in more than 130 countries (Koenig 2017). They identify NGOs worldwide and scan their websites systematically for campaigning activities in 18 languages. The data comprises not only the targeted firm, the originating NGO, the power of the NGO, and the issue but also the sentiment and prominence of the campaign. Sigwatch defines a campaign as multiple events an NGO carries out over time to achieve a defined objective. Campaigns differ in length, intensity and with regards to targets and issues.⁴⁰ For example, one campaign can target multiple firms at the same time. Similarly, NGOs team up to start large campaigns, often targeting multiple firms at once. Most campaigns focus on one specific issue. However, there are also campaigns targeting firms for multiple related issues in the same campaign. For our analyses, we reshape the data to represent different aspects of the data set.

Firm-level data. For our main analyses, we use NGO campaigns per firm year as our outcome variable. We aggregate the campaigning data on a firm-year basis so that each observation represents one firm. If a firm is targeted multiple times a year, we aggregate the number of campaigns to a yearly number. All other variables, e.g., the sentiment of an NGO campaign, are averaged over the campaigns that occur for a firm in a given year. We merge the constructed NGO data with our financial data where possible. The resulting dataset is a cross-section of firms that fulfilled our financial data requirements outlined above and all NGO data that we were able to merge into the financial data.

NGO level data. In further analysis, we reshape the data set along the targeting NGOs. In doing this, we can observe up to five NGOs that are active in a given campaign. Firm-level data is no longer reliably observable in this version of the data, as multiple NGOs can target a single firm in the same campaign. This form of the data helps us better understand which NGOs target specific firms, when they do so, and what they focus their campaigns on. We use all available NGOs and distinguish

⁴⁰ While we can observe detailed information about the campaigning activity, the data set does not include information about the start and the duration of the campaign.

between NGOs headquartered in the EU or outside the EU. Naturally, the number of observations is different from our firm-level data and also varies over the years since we do not balance or match data in this form.

4.4 The effect of the NFRD on NGO campaigning

4.4.1 Descriptive statistics

We split our descriptive analyses into two parts: an analysis of firms' CSR characteristics and insights into NGOs' campaigning behavior towards our treatment and control firms. First, we are interested in firms' ESG performance, scandals, and reporting behavior over time. Therefore, we partition our sample into treatment and control, as well as pre (2014 to 2017) and post (2018 to 2019) NFRD groups. Table 4.2, Panel A presents the result of these splits. Informed by the mean, we observe an increase in firms' ESG scores over time of roughly 11.9% for the treatment and 8.5% for the control group. This is in line with prior research, e.g., Fiechter et al. (2022). At the same time, the controversy overlay in the EU reduces in the post-period, indicating an increasing criticism of firms' practices.⁴¹ For US firms, the controversy overlay remains mostly stable. In the pre-period, EU firms tend to (voluntarily) report more often than US firms (91% in the EU, 85% in the US), with larger differences in the share of reporting companies in the post-period (98% in the EU, 87% in the US).

⁴¹ The controversy score is constructed in a way that firms without any controversies receive a score of 100. For each controversy Asset4 records, this score is reduced according to scale and frequency of the controversies. Asset4 does account for a size bias by using severity weights which adjust the score based on a company's market capitalization Refinitiv (2021).

4 (How) Do CSR disclosure mandates facilitate stakeholder pressure on firms?

Table 4.2: ESG characteristics and NGO campaign targets over time

Panel A: ESG characteristics of firms								
	Pre-period (2014-2017)				Post-period (2018-2019)			
	N	Mean	Min.	Max.	N	Mean	Min.	Max.
Total								
ESG score	4,552	56.70	7.14	93.27	2,276	62.53	8.92	94.25
ESG controversies	4,552	90.25	0.70	100.00	2,276	87.51	0.45	100.00
CSR report	4,552	0.88	0.00	1.00	2,276	0.92	0.00	1.00
EU								
ESG score	2,276	57.80	7.14	93.27	1,138	64.72	8.92	94.25
ESG controversies	2,276	89.22	0.70	100.00	1,138	83.08	0.45	100.00
CSR report	2,276	0.91	0.00	1.00	1,138	0.98	0.00	1.00
US								
ESG score	2,276	55.60	7.18	91.53	1,138	60.35	13.15	92.99
ESG controversies	2,276	91.27	1.92	100.00	1,138	91.94	2.27	100.00
CSR report	2,276	0.85	0.00	1.00	1,138	0.87	0.00	1.00
Panel B: Top 10 targeted firms								
Firm	Industry	Country	Number of campaigns	NFRD- (%)				
Royal Dutch Shell PLC	Oil, Gas, and Coal Extraction and Products	NL	629	57.76				
Coca-Cola CO	Consumer Non-Durables	US	491	58.78				
Walmart INC	Wholesale, Retail, and Some Services	US	451	59.61				
Bayer AG	Healthcare, Medical Equipment, and Drugs	GER	427	39.06				
BP PLC	Oil, Gas, and Coal Extraction and Products	UK	362	60.31				
Total SA	Oil, Gas, and Coal Extraction and Products	FR	246	59.03				
Tesco PLC	Wholesale, Retail, and Some Services	UK	244	54.27				
Enel SpA	Utilities	IT	238	60.79				
Mondelez International INC	Consumer Non-Durables	US	236	60.00				
RWE AG	Utilities	GER	221	75.66				

4 (How) Do CSR disclosure mandates facilitate stakeholder pressure on firms?

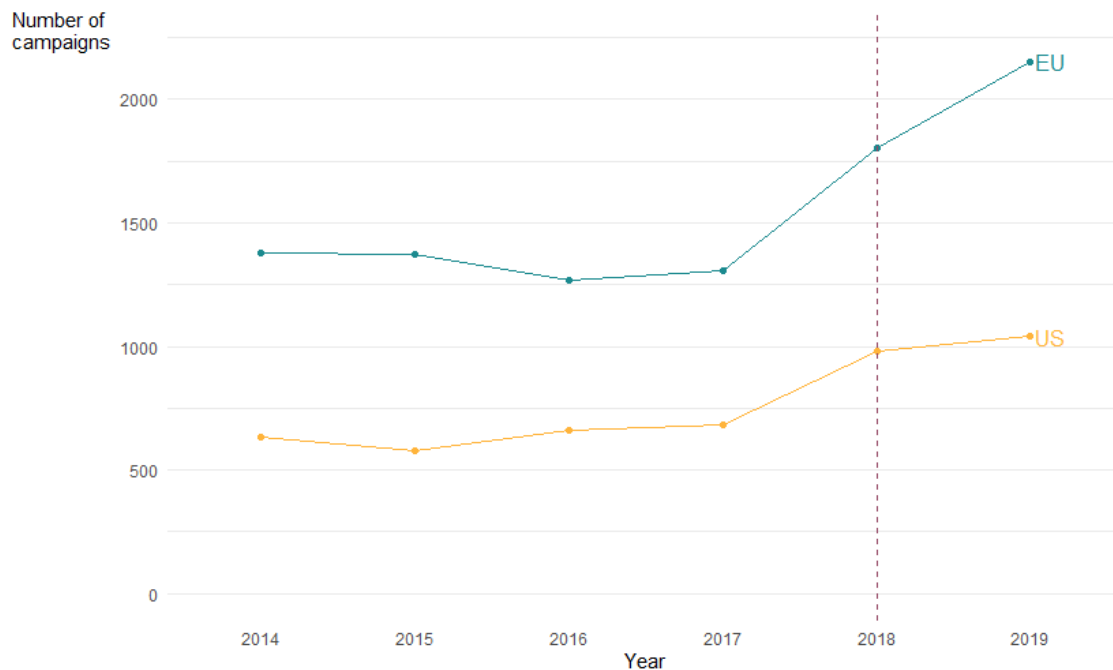
Table 4.2 (continued)

Panel C: NGO activities against firms and newly targeted firms over time									
Year	Total			EU			US		
	Firms (new)	Campaigns (new)	NFRD (%) (new)	Firms (new)	Campaigns (new)	NFRD (%) (new)	Firms (new)	Campaigns (new)	NFRD (%) (new)
2014	229 (32)	2,010 (51)	56.96 (35.71)	159 (14)	1,379 (24)	57.34 (48.65)	70 (18)	631 (27)	56.09 (21.21)
2015	252 (24)	1,950 (33)	58.67 (55.77)	158 (13)	1,371 (22)	58.93 (50.00)	94 (11)	579 (11)	58.06 (68.75)
2016	256 (16)	1,931 (20)	55.52 (61.11)	163 (8)	1,268 (11)	57.91 (72.22)	93 (8)	663 (9)	50.91 (50.00)
2017	243 (15)	1,989 (19)	57.68 (60.87)	164 (12)	1,309 (16)	57.98 (64.71)	79 (3)	680 (3)	57.13 (50.00)
2018	305 (33)	2,783 (41)	58.46 (50.75)	194 (9)	1,803 (11)	60.18 (56.25)	111 (24)	980 (30)	55.16 (49.02)
2019	332 (39)	3,194 (52)	61.05 (73.61)	213 (22)	2,153 (35)	63.96 (82.35)	119 (17)	1,041 (17)	55.35 (52.38)
Total	1,617 (159)	13,857 (216)	Ø 58.32 (55.31)	1,051 (78)	9,283 (119)	Ø 59.78 (63.43)	566 (81)	4,574 (97)	Ø 55.36 (45.52)

Notes: In Panel A, we provide descriptive statistics on the ESG characteristics of the whole sample and the treatment (EU) and control (US) group for our pre- and post-period. Panel B reports the top 10 targeted firms in our sample (by number of campaigns). Panel C shows the number of targeted firms, the number of campaigns, and the share of NFRD-related campaign topics for each group over time. In parenthesis are the newly targeted firms, the number of campaigns related to newly targeted firms, and their share of NFRD-related campaigns.

Next, we are interested in NGO campaigning behavior towards firms. Out of the 6,828 firm-year observations, 24% are targeted by at least one NGO campaign in the given year (Table 4.1, Panel D). This translates into 48% of our firms being targeted at least once during the sample period. On average, firms are targeted with two campaigns, and more than half of the campaigns are concerned with NFRD-related topics. Figure 4.1 displays a steady increase in campaigns over the years, both in the EU and the US. Table 4.2, Panel C reveals that NGOs target a few firms they have not targeted before every year. However, these firms only make up a small part of their campaigning activity (9.8% of targeted firms and 1.6% of the campaigns), hinting at repeat actions against previously targeted firms. The difference between the number of firms targeted per year and the number of campaigns implemented by NGOs results from repeated NGO action against a firm in a given year.

Figure 4.1: Number of campaigns across treatment and time



Notes: This figure displays the yearly number of campaigns EU and US firms are targeted with over our sample period. Our sample includes 569 EU and 569 US firm observations yielding 6,828 firm-year observations in total. The dotted line in 2018 marks the start of our post-period (2018 to 2019). The years 2014 to 2017 serve as our pre-treatment period.

Finally, we are interested in the top 10 firms targeted by NGOs in terms of the number of campaigns and the percentage number of those campaigns that are related to NFRD topics. In Table 4.2, Panel B, the list of firms ranked by the number of NGO campaigns reveals that Royal Dutch Shell PLC is the most frequent target. Industry peers like Total SA and BP PLC are also often targeted. Shell is targeted for issues like *oil and gas drilling offshore* or *protecting the Arctic from exploitation*. There are also two retail firms on the list, Walmart INC and Tesco PLC. Tesco is targeted for issues along its supply chain like *power over suppliers*, *supply chain sustainability*, *labor rights*, or *food and salt content*. For most firms, about every second campaign is related to NFRD-related topics over the entire sample period. A notable exception on this list is Bayer AG with 39% NFRD-related topics. Campaigns here focus on issues relating to *biotech* or *pesticide impact on bees*.

4.4.2 Are EU firms targeted more frequently by NGO campaigns after the NFRD?

To assess the overall effect of the NFRD on NGO campaigns targeting EU headquartered firms, we estimate the following generalized difference-in-differences model:

$$\begin{aligned} \text{Number of campaigns}_{i,t} = & \beta_0 + \beta_1 \text{POST}_t * \text{EU}_i + \beta_2 \text{Controls}_{i,t} \\ & + \beta_3 \text{Firm FE}_i + \beta_4 \text{Year FE}_t + \varepsilon_{i,t} \end{aligned} \quad (1)$$

Our dependent variable, *number of campaigns*, is the number of campaigns a firm i is targeted within year t . We use firm-level Sigwatch data to generate this variable. All campaigns in the Sigwatch database that target a specific firm in a given year are counted and summed up to generate the dependent variable. The indicator variable *POST* differentiates between our pre- and post-treatment period, i.e., the indicator equals 0 for financial years from 2014 to 2017 and turns to 1 for financial years from 2018 to 2019. Similarly, the indicator variable *EU* differentiates between our treatment and control group, where EU firms are our treatment group, while matched US firms represent the control group. *Controls* is a vector of variables that captures a given firm's economic factors, its information environment as well as its CSR-related aspects. We expect these factors to influence the number of campaigns, as large, economically active, and visible firms are more likely to draw attention from the general public. Tobin's Q, total assets, leverage, asset turnover, cash flow

from operations and property, plant, and equipment control for economic characteristics of the firm. Percentage of the number of shares in free float and number of analysts following control for the firm's information environment, while the ESG score and CSR report items capture firm-specific CSR aspects. Additionally, pre-target indicates whether the firm has been the target of an NGO campaign in the pre-period since we expect NGOs to retarget firms. We expect retargeting firms to be less costly, with higher chances of success, and, therefore, more likely (Dimson et al. 2015). All variables are defined in detail in Appendix 4.A. We estimate Equation (1) using OLS regression and heteroskedasticity-robust standard errors clustered at the firm level (Petersen 2009; Conley et al. 2018). We implement a set of firm and year fixed effects to control for time-invariant unobservable changes in firm characteristics and time trends (*Year FE, Firm FE*).

Table 4.3 reports findings from estimating Equation (1). We report results for estimating our main model in four sets. Column (1) reports results without using fixed effects or control variables. Column (2) introduces control variables, while Columns (3) and (4) additionally introduce firm and year fixed effects. Column (4) reports results for estimating our main model with the natural logarithm of our dependent variable. All models are estimated with standard errors clustered at the firm level. Over all four specifications, we find a highly significant, positive treatment effect for EU firms in the post-period. In the following discussion, we will refer to our model specification in Column (3) unless otherwise indicated.⁴² The reported average treatment effect of our main model is 1.0946 (t-statistics = 5.40), which means that EU firms are targeted on average with one additional campaign in the post-period. This translates into a 13% increase for EU firms compared to the pre-period (Column (4)).

⁴² We also estimate a Poisson regression of the model specification in Column (3) (untabulated). Our inferences remain unchanged.

4 (How) Do CSR disclosure mandates facilitate stakeholder pressure on firms?

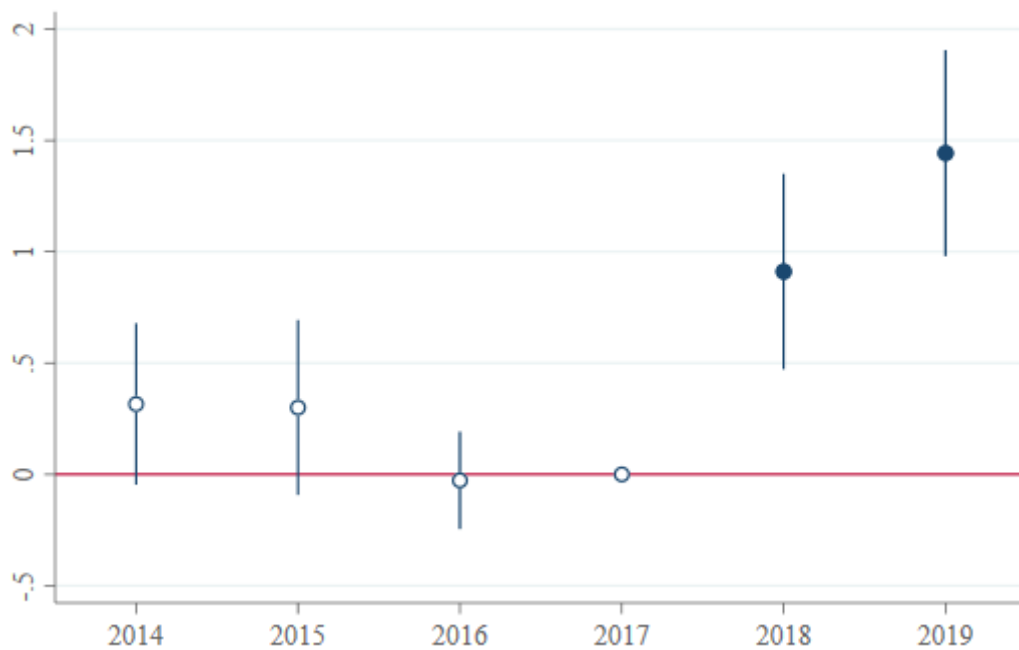
Table 4.3: Effect of the NFRD on NGO campaigning activity

	(1)	(2)	(3)	(4)
Dependent:	Number of campaigns	Number of campaigns	Number of campaigns	Ln of number of campaigns
Treat	2.0733*** (6.55)	0.8352*** (2.71)		
Post	0.1194*** (4.07)	0.1027* (1.89)		
Treat x Post	1.0164*** (5.08)	0.9127*** (4.61)	1.0946*** (5.40)	0.1337*** (7.49)
Tobin's Q		1.1462*** (3.15)	-0.1248 (-1.19)	-0.0384* (-1.68)
Total assets		1.2346*** (5.22)	-0.2561*** (-3.87)	-0.0981*** (-5.30)
Leverage		0.2477 (0.65)	0.9223*** (3.32)	0.3102*** (4.24)
Asset turnover		1.2377*** (3.88)	-0.4322*** (-3.61)	-0.1982*** (-4.75)
PPE		2.6287*** (5.85)	-4.1416*** (-8.47)	-0.7496*** (-6.82)
Operating cash flow		0.0915 (0.13)	0.7797** (2.51)	0.2519** (2.07)
Free float		1.1924*** (4.41)	0.2047*** (4.33)	0.0491*** (2.92)
Analyst following		-0.3461*** (-3.09)	0.3738*** (5.87)	0.1373*** (5.33)
ESG score		0.0016 (0.24)	-0.0012 (-0.48)	0.0016*** (3.23)
CSR report		-0.5281*** (-3.34)	0.5951*** (4.59)	0.3386*** (5.93)
Pre-target		2.4686*** (8.22)		
N	6,828	6,828	6,828	6,828
Adj. R ²	0.031	0.157	0.863	0.772
Firm FE	No	No	Yes	Yes
Year FE	No	No	Yes	Yes
Cluster	Firm	Firm	Firm	Firm

Notes: This table presents the results of our difference-in-differences analysis using Equation (1). The dependent variable is the number of campaigns. Column (1) reports the model without controls and fixed effects. Column (2) reports controls but without fixed effects. Columns (3) and (4) report the results with controls and firm and year fixed effects. Column (3) uses our regular dependent variable specification, while Column (4) uses the natural logarithm of our dependent variable. All variables are described in Appendix 4.A. t-statistics are reported in parentheses. ***, **, and * indicate two-tailed significances at the 1%, 5%, and 10% level.

To shed further light on the observed effect, we estimate yearly treatment effects. This specification enables us to better understand when the observed effect sets in. From a technical perspective, the yearly estimation of our model allows us to gauge the validity of our DiD analysis. In line with our research design, we use 2017, the last year of our pre-period, as the benchmark year. All remaining specifications of the model remain the same. Results are plotted in Figure 4.2; coefficients are shown in Table 4.4.

Figure 4.2: Treatment effects over time



Notes: This figure visualizes the treatment effects of our yearly estimated difference-in-differences model from Table 4.4, with *number of campaigns* as the dependent variable. The x-axis shows the years, with 2017 as the benchmark year. The y-axis indicates the treatment effect. The lines show the according confidence intervals. Statistical two-sided significance of the coefficients at the 1% level is indicated by filled points.

The results reveal two insights. Firstly, we do not observe any significant yearly effects in the pre-treatment period. Implementing a DiD analysis requires parallel trends in the pre-treatment period, or put differently, no significant differences in NGO activity between the treatment and control group in the years between 2014 and 2017. The absence of significant coefficients in the pre-treatment period yields no indication that the parallel trend assumption is violated. This increases our confidence that the observed effects are, in fact, attributable to the NFRD and the corresponding change in the information environment.

Table 4.4: Yearly treatment effect

Dependent: Number of Campaigns	
EU x 2014	0.3010 (1.64)
EU x 2015	0.2688 (1.34)
EU x 2016	0.0278 (0.25)
EU x 2018	1.0017*** (4.51)
EU x 2019	1.4821*** (6.38)
Tobin's Q	-0.1233 (-1.17)
Total assets	-0.2430*** (-3.60)
Leverage	0.8534*** (3.03)
Asset turnover	-0.4168*** (-3.44)
PPE	-4.1892*** (-8.59)
Operating cash flow	0.6089* (1.92)
Free float	0.2078*** (4.37)
Analyst following	0.3780*** (5.90)
ESG score	-0.0007 (-0.27)
CSR report	0.5905*** (4.48)
N	6,828
Adj. R ²	0.863
Firm FE	Yes
Year FE	Yes
Cluster	Firm

Notes: This table presents the results of a yearly difference-in-differences analysis with 2017 as the benchmark year. The dependent variable is the number of campaigns. The model is estimated using firm and year fixed effects and standard errors clustered at the firm level. All variables are described in Appendix 4.A. t-statistics are reported in parentheses. ***, **, and * indicate two-tailed significances at the 1%, 5% and 10% level.

Secondly, we observe the onset of significant treatment effects from 2018 on, with coefficients of 1.0017 (t- statistics = 4.51) for 2018 and 1.4828 (t- statistics = 6.38) for 2019, respectively. The observed effects fit with the NFRD's timeline: While 2017 marks the entry into force of the NFRD, it is too early for the publication of the first mandatory reports. Only in 2018 did firms publish reports mandated by and

prepared in line with the requirements of the NFRD. The onset of significant treatment effects in 2018 coincides with the first-time publication of mandatory CSR reports.

4.4.3 Do NGO campaign topics change in response to the NFRD?

In the previous section, we observe a significant increase in NGO campaigns targeting EU firms after the first-time publication of mandatory CSR reports. To inspect the relation between mandated CSR reports and the corresponding campaigns more closely, we examine campaign topics and a potential shift therein after the treatment. More specifically, we check whether we see an increase in NFRD-related topics for EU firms in the post-period. Increases in NGO campaigns that target NFRD-related issues are an indicator that NGOs use the mandated report to inform their campaign topics.

For this kind of analysis, we change the level of observation to the *issue level* in our dataset. Overall, the dataset provides 954 distinct campaign issues. For each campaign, the data contains up to five issues. We use the guidelines on non-financial reporting by the European Commission (2017), to identify four NFRD-related thematic aspects, i.e., *Environmental matters*, *Social matters*, *Corruption*, and *Others*. Based on the examples in the guidelines, we classify all issues manually into the four categories. All campaign issues not classified into the NFRD-related issues are subsumed under the *non-NFRD-related* category.⁴³ Examples of the allocation process are shown in Appendix 4.C. We use all issues to determine the relative share of each category for each campaign and then aggregate these observations to the firm-year level. This way, we can not only differentiate between NFRD-related and non-NFRD-related topics but can also observe the shift within NFRD-related topics more clearly. We run our analyses for a potential topic shift on four different levels: the full sample, firms targeted in the pre- and post-period, newly targeted firms in the post-period, and finally, we change to the NGO level and the focus topics of NGOs.

⁴³ Example include *Soft drinks/sodas and sugar* or *Access to medicine (IP, cost, neglected diseases)*.

Table 4.5: Campaign topic shifts for EU and US firms

EU	N	Pre	N	Post	Difference	t	p > t
No campaigns	569	0.59	569	0.57	-0.02*	-1.3426	0.0900
Non-NFRD-related topics	569	0.17	569	0.17	0.00	-0.4747	0.3180
NFRD-related topics	569	0.24	569	0.26	0.03**	1.9508	0.0258
Corruption	569	0.01	569	0.01	0.00	1.3542	0.0881
Environmental matters	569	0.08	569	0.11	0.03***	3.7602	0.0001
Other	569	0.08	569	0.07	-0.01	-1.4839	0.9310
Social matters	569	0.07	569	0.07	0.00	0.2761	0.3910
US	N	Pre	N	Post	Difference	t	p > t
No campaigns	569	0.73	569	0.73	0.00	-0.1025	0.4590
Non-NFRD-related topics	569	0.11	569	0.14	0.02	2.0418	0.9790
NFRD-related topics	569	0.15	569	0.13	-0.02	-1.6647	0.9520
Corruption	569	0.00	569	0.00	0.00	-1.6113	0.9460
Environmental matters	569	0.09	569	0.05	-0.04	-3.1258	0.9990
Other	569	0.04	569	0.04	0.00	-0.6525	0.7430
Social matters	569	0.02	569	0.04	0.02***	3.4815	0.0003

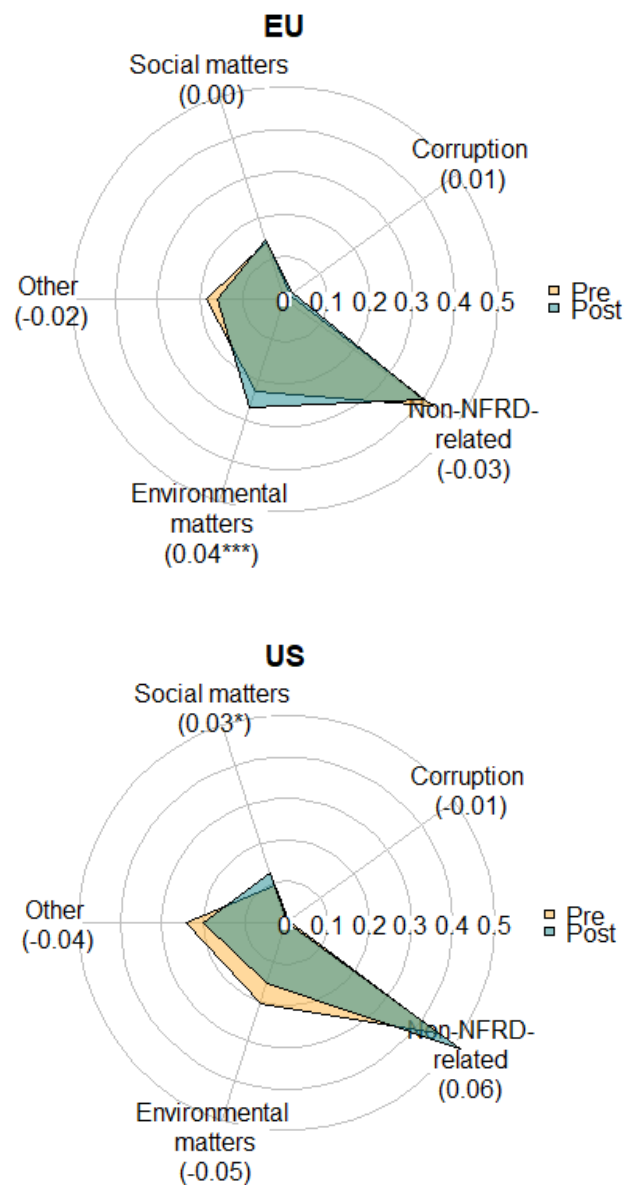
Notes: This table reports statistics for a one-sided paired t-test testing the shift in campaigns from the pre- to the post-period against all firms, independently of when they are first targeted. ***, **, and * indicate significances at the 1%, 5%, and 10% level.

Full sample. For our first set of analyses, we focus on the overall changes in topic, taking the whole sample into account and distinguishing between the pre- and the post-period. Table 4.5 shows that NFRD-related campaigns targeting EU firms make up about 24% in the pre-period. This increases in the post-period to 26%. The mean difference is significant at the 5% level (t-statistic = 1.95). Taking a more detailed look into NFRD-related campaigns, we observe a shift towards environmentally focused campaigns. The difference is three percentage points and is highly significant at the 1% level (t-statistic = 3.76). For US firms, we observe an overall increase in non-NFRD-related topics and a concurrent decrease in NFRD-related topics in the post-period. The most prominent shift here is a significant increase in campaigns focusing on *Social* matters by two percentage points (t-statistic = 3.48).

Firms targeted in the pre- and post-period. For our second set of analyses, we drill deeper into our sample and include only firms targeted in the pre- and post-period. Looking at this subset of firms allows us to observe the changes in topics for firms already in the focus of NGOs. From a theoretical angle, NGOs probably had files and extensive background information on these firms. If we observe changes in the campaign's topics here, the mandatory CSR reports likely offered some new insights about these firms, e.g., new information, validation of suspected facts, or insights

from benchmarking. Figure 4.3 shows the distribution of campaign topics in the pre- and post-period and the corresponding mean difference. Detailed results are reported in Appendix 4.D. For EU firms (n = 197), we observe a significant shift from *Others* (-2%, t-statistic = -1.80) to *Environmental matters* (4%, t-statistic = 2.43). For US firms (n = 104), there is a clear shift from *Others* (-4%, t-statistic -2.05) and *Environmental matters* (-5%, t-statistic = -1.77) towards *Social matters* (3%, t-statistic = 1.94).

Figure 4.3: Campaign topics of EU and US firms in the pre- and post-period

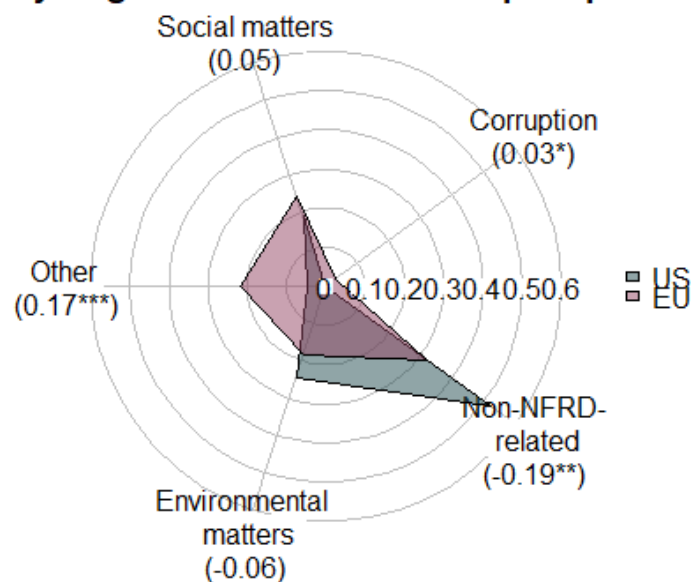


Notes: This figure shows the shift in campaign topics from the pre- to the post-period for EU and US firms, respectively. The sample is restricted to firms targeted in the pre- and post-period (EU: n = 197 firms and US = 104 firms). The differences are shown in parenthesis in percentage points and are tested by a one-sided paired t-test that assumes that the NFRD-related topics are larger in the post-period and the non-NFRD-related topics are smaller in the post-period. Statistics are reported in Appendix 4.D. ***, **, and * indicate significances at the 1%, 5%, and 10% level.

Newly targeted firms. In a third set of analyses, we restrict our sample to firms that become first-time targets of an NGO campaign in the post-period. Newly targeted firms may be firms that NGOs became aware of for the first time or firms they had on file and can now use the additional information to update and confirm the information. We cannot distinguish between the reasons for the new campaigning activity, but we can observe whether the campaigns are related to NFRD topics. Figure 4.4 shows the proportion of the defined categories for EU and US firms, respectively. Detailed results are reported in Appendix 4.D. Overall, we observe that 68% of the campaigns against newly targeted EU firms in the post-period are NFRD-related, which is higher than the 61% share for all EU firms in the post-period. In comparison, for US firms, campaign topics relating to the NFRD make up 48% of the overall number of campaigns. The difference between non-NFRD-related campaigns in the EU and the US is significant (-0.19, t-statistic = -2.20), i.e., in the US, newly targeted firms are targeted by campaigns that are significantly less concerned with NFRD topics than their EU counterparts.

Figure 4.4: Campaign topics of newly targeted firms in the post-period

Newly targeted EU vs. US firms in post-period



Notes: This figure shows campaign topics for firms newly targeted in the post-period, i.e., firms that have not been the target of an NGO campaign before. The figure displays the topics for campaigns against EU and US-headquartered firms, respectively (EU: n=31 firms and US: n=41 firms). The differences are shown in parenthesis in percentage points and are tested by a one-sided unpaired t-test that assumes that the NFRD-related topics are larger for EU than for US firms and the non-NFRD-related topics are smaller for EU than for US firms. Statistics are reported in Appendix 4.D. ***, **, and * indicate significances at the 1%, 5%, and 10% level.

NGOs. We run comparable analyses on the NGO level, i.e., we examine whether the share of NGOs focusing on NFRD topics (>50% NFRD-related campaigns in the pre-period) increases in the post-period. Detailed results are reported in Appendix 4.D and Appendix 4.E. We find that NGOs that previously did not focus on NFRD-related topics tend to increase their NFRD-related campaigning significantly in the post-period. We do not observe significant changes for NGOs that already focused on NFRD-related campaigns. These results are in line with the previously reported findings on the campaign topic level.

4.4.4 Discussion

Our results indicate that NGOs react to the NFRD and the resulting disclosures by stepping up their campaigning activity after the first-time publication of mandatory CSR reports. From an economic perspective, this appears sensible. NGO activities such as public campaigning are costly. Therefore, for each campaign an NGO launches, there is a rigorous weighing of the cost connected to implementing a campaign and the benefit of achieving the desired outcome (Baron and Diermeier 2007). This cost-benefit trade-off likely changes for NGOs with the implementation of the NFRD. Specifically, for publicly available information, NGOs face disclosure processing costs, i.e., costs to discover information (awareness costs) and costs of acquiring and analyzing (integrating) information (Blankespoor et al. 2020). Mandating the disclosure of information decreases NGOs' awareness and acquisition costs since reporting firms, date and place of the disclosure are predetermined. A higher level of comparability due to an increased use of national or international reporting standards likely further reduces NGO's integration cost.

It is also possible that the reduction in disclosure processing costs alone is not sufficient for NGOs to launch (additional) campaigns if the newly disclosed reports do not contain incrementally useful information. Absent the release of (new) useful information, a benchmarking effect may help stakeholders and NGOs to better understand a firm's individual performance in relation to their industry peers (Tomar 2023). The EU's detailed reporting requirements paired with the demand to use international reporting standards, mandates all firms to disclose similar information. This may enhance comparability and thus facilitate benchmarking. Even for firms that voluntarily reported previous to the regulation, this may shift

the setup of the report and reveal new information in some areas. This can also lead to a network effect (Gao et al. 2019), where users of the reports benefit from the increasing number of firms reporting in a standardized way.

Against this backdrop, it seems plausible to observe increased NGO campaigning in the EU after the publication of mandatory CSR reports. It is also in line with previous literature. For example, the findings can be reconciled with evidence from Darendeli et al. (2022) who demonstrate that stakeholders respond to a CSR information shock in the form of CSR ratings. In both cases, stakeholders seem to pay attention to the disclosed CSR information. The concurrent shift in campaigning topics also indicates that NGOs follow these disclosures and use the information in the reports. This is consistent with results reported in Dyreng et al. (2016), who show that NGOs utilize information from a UK transparency requirement, in their case, the publication of subsidiary locations (including those in tax havens).

The onset of the observed effect after 2017 indicates that NGOs wait for the first-time publication to profit from the benefits of mandatory CSR reports.⁴⁴ Voluntary CSR reports do not appear to offer the same kind of benefit. This is in line with qualitative evidence that suggests that NGOs perceive mandatory reports as superior to voluntary reports (Andreicovici et al. 2022). For example, NGOs named timeliness, facilitated access, and the degree of granularity as characteristics of mandated reports that help reduce their cost of collecting, analyzing, and integrating the information. Also, NGOs point out the increased standardization and reliability of mandatory reports. In using the mandated information to actively pressure firms within the scope of the NFRD, NGOs fulfill the role the EU envisioned for stakeholders in their CSR mandate. This shows that it is not only shareholders that react to the (passage of) the NFRD (Grewal et al. 2019), but it is also stakeholders, specifically NGOs, that take action following the entry into force of the mandate.

There are, however, alternative explanations for the observed effect. The (passage of the) NFRD and the related media coverage likely led stakeholders to assign greater importance to CSR and pay additional attention to CSR-related topics (Christensen et al. 2021). NGOs may benefit from this increased public attention in multiple ways. Firstly, the success of a campaign critically hinges on public

⁴⁴ For the potential benefits of mandated disclosures, we refer to the discussion in Section 4.4.2.

support (Baron and Diermeier 2007).⁴⁵ With an increased societal interest in NFRD-related topics, subjects that NGOs conventionally cover now become more salient in the public discussion. The increase in society's interest in CSR-related topics may boost demand for NGO activities. Secondly, stakeholder pressure, as one strategy of NGOs, now draws from a larger pool of potentially interested individuals, equipping NGOs with a more powerful tool to target firms. Thirdly, the passage of the NFRD puts a predictable group of firms in the limelight. NGOs may utilize these periods of increased media attention to benefit from the firms' (temporary) prominence (Couttenier and Hatte 2016). However, the timing of the documented effect does not support such an interpretation. For the alternative explanations discussed above, the passage of the NFRD is sufficient for NGOs to benefit from the mandate. Public attention increased with the passage of the NFRD, increased the salience of CSR topics and the firms, and offered an opportunity to increase stakeholder pressure (Fiechter et al. 2022). Different from Fiechter et al. (2022) we do not observe anticipatory effects. The onset of treatment effects only after the first time publication of mandatory CSR reports is, therefore, more in line with arguments relating to benchmarking, disclosure standardization and quality, and reductions in disclosure processing costs.

A further alternative explanation is increased NGO funding. NGOs may step up their campaigning activities irrespective of the potential benefits of mandated CSR reports due to increased donations. CSR-interested stakeholders may find it hard to confront large companies as individuals. Instead, they might delegate this task to NGOs who can voice their concerns for them. In donating (additional) financial resources to NGOs, stakeholders support NGOs in that effort and pursue their own CSR-related interests. For a given set of costs, such an increase in NGO funding enables NGOs to extend their activities without using or benefitting from the information published in the reports. We test this possibility in the next section.

⁴⁵ Lower levels of public support may cause a target to fight back harder, lowering the chances of a successful campaign (Baron and Diermeier 2007).

4.5 Do NGOs receive increased funding?

We estimate the following regression model to get a better understanding of the influence the NFRD might have on NGO funding:

$$\begin{aligned} \text{NGO funding variable}_{i,t} = & \beta_0 + \beta_1 \text{POST}_t * \text{TREAT}_i + \beta_2 \text{Controls}_{i,t} \\ & + \beta_3 \text{NGO FE}_i + \beta_4 \text{Year FE}_t + \varepsilon_{i,t} \end{aligned} \quad (2)$$

TREAT distinguishes between NGOs headquartered in the EU and NGOs headquartered outside the EU.⁴⁶ We hand-collect income and expense data from the NGO annual reports for all years between 2014 and 2019. We do not distinguish between forms of income or specific types of expenses, e.g., expenses related to campaigning, because not all NGOs offer this level of detail in their reports. Additionally, we find that the classification of campaigning-related expenses varies among NGOs. To use comparable data, we concentrate on the bottom-line items. We do not balance our analyses due to the resulting reduction in sample size.⁴⁷ We estimate Equation (2) in three versions, which we report in Table 4.6. Column (1) investigates changes in NGO income, Column (2) uses NGO expenses as the dependent variable, while Column (3) investigates the possibility that the expenses per campaign changed in the post-period. All models use the reported control variables (variable definitions in Appendix 4.A) as well as *NGO* and *Year FEs*.

We find no significant results for our variables of interest. Income and expenses decrease slightly but insignificantly for EU-headquartered NGOs in the post-period (income: coef. = 2.1947, t-statistics = -0.95 and expenses: coef. = -0.3652, t-statistics = -0.15), while expenses per campaign increase insignificantly (coef. = 1.9748, t-statistics = 0.66). Taken together, the results do not indicate that increased funding and public attention drive the significant increases in the number of firms targeted in the post-period. The insignificant coefficient for the *Expenses per Campaign* variable is in line with our previous results. If NGO campaigns get larger, i.e., include more target firms, we would expect the expenses per campaign to either remain constant or increase. Similar levels of NGO funding, in connection with the increased

⁴⁶ In untabulated versions we also estimate specifications where *TREAT* differs between NGOs targeting mostly EU headquartered firms (> 50% of their overall targets). Our inferences remain unchanged.

⁴⁷ Untabulated results with the balanced data set yield similar results.

number of targeted firms, can be an indicator of reduced costs to implement a campaign/include targets in existing campaigns.

Table 4.6: NGO funding

	(1) Income	(2) Expenses	(3) Expenses per Campaign
Treat x Post	-2.1947 (-0.95)	-0.3652 (-0.15)	1.9748 (0.66)
NGO power	2.4320 (1.09)	-0.0217 (-0.01)	-3.8645 (-1.31)
Firms per campaign	0.0188 (0.14)	0.0643 (0.46)	-0.0157 (-0.09)
Sentiment	1.6353* (1.66)	0.0305 (0.03)	-2.1322* (-1.67)
Prominence	2.2046** (2.05)	2.2342** (2.01)	2.0053 (1.44)
Partnership	-4.5971 (-1.01)	-2.0315 (-0.43)	12.4134** (2.11)
N	530	529	529
Adj. R ²	0.951	0.943	0.606
NGO FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Notes: This table presents results from estimating Equation (2). The dependent variable is (1) NGO income, (2) NGO expenses and (3) the expenses per campaign. All specifications use NGO and year fixed effects. All variables are described in Appendix 4.A. t-statistics are reported in parentheses. ***, **, and * indicate two-tailed significances at the 1%, 5%, and 10% level.

4.6 Variation in the treatment effect

To get a better understanding of the stakeholder pressure channel and how it is applied across firms, we document variations of the treatment effect across the firms within the scope of the directive. Specifically, we are interested in whether the observed effect applies uniformly across all firms within the scope of the NFRD or if there is a concentration in specific firms. To address these questions, we estimate total effect models that allow for variation within the treatment group, i.e., variation within the EU sample. We partition our sample according to firm- and country-level characteristics that vary the cost-benefit trade-offs of NGOs.

First, we are interested in whether NGOs strategically change their campaigning activities by targeting smaller firms in the post-period. On the one hand, it is possible that NGOs focus their campaigning activities on larger firms since campaign support and public attention are likely larger for these firms (Hatte and Koenig 2020; Lenox

and Eesley 2009). If this is the case, the mechanism works better for a specific subset of firms. On the other hand, the increase in the amount and quality of the information from the reporting mandate may be more pronounced in small firms. We design two non-overlapping indicator variables that distinguish between larger and smaller firms in our sample based on a median split. Column (1) of Table 4.7 reports the results. The coefficients for small and large firms both turn out significant, however, large firms display a larger coefficient with higher significance levels than small firms. (coef. = 0.1476, t-statistics = 2.14 for small firms; coef. = 1.9406, t-statistics = 5.29 for large firms). This finding likely relates to the strategic implementation of NGO campaigns, pointed out in Section 4.2.3. Cost-benefit analyses of NGOs not only relate to the cost of collecting the information but also the perceived utility an NGO can gain from an implemented campaign. It is, therefore, likely that smaller firms have a more pronounced reduction in information processing costs, but there are more benefits of targeting larger, more prominent firms.

In the second split, we distinguish between firms that were targeted in the pre-period and firms that were not. The costs for retargeting a firm are arguably lower than the cost of an initial campaign. Even after the publication of mandatory CSR reports, information processing costs might still be higher for firms not previously targeted. Also, if an NGO already implemented a successful campaign against a firm, this may generate further advantages like knowing a firm's reaction or having an idea of what compromises the firm will accept. Alternatively, it may become easier for NGOs to include new firms in their current or planned campaigning activity if new information is available or benchmarking is facilitated. Column (2) in Table 4.7 reports highly significant results for previously targeted firms, while the coefficient for the newly targeted firms remains small and insignificant (coef. = 2.5691, t-statistics = 5.49 for previously targeted firms; coef. = 0.0536, t-statistics = 1.25 for new targets). This finding points towards a concentration of NGO pressure. It is also in line with the descriptive evidence reported in Section 4.4.1, which shows that firms that have been the target of an NGO campaign before are repeatedly targeted.

4 (How) Do CSR disclosure mandates facilitate stakeholder pressure on firms?

Table 4.7: Cross-sectional variation

	(1)	(2)	(4)	(5)
	Target size	Pre-target	NGO presence	Regulatory quality
Treat x Post x Small firm	0.1476** (2.14)			
Treat x Post x No small firm	1.9406*** (5.29)			
Treat x Post x Pre-target		2.5691*** (5.49)		
Treat x Post x No pre-target		0.0536 (1.25)		
Treat x Post x Low NGO presence			0.6150*** (3.24)	
Treat x Post x High NGO presence			1.5238*** (4.51)	
Treat x Post x High reg. qual.				1.4807*** (3.82)
Treat x Post x Low reg. qual.				0.7834*** (4.33)
N	6,828	6,828	6,828	6,828
Adj. R ²	0.864	0.865	0.863	0.863
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Cluster	Firm	Firm	Firm	Firm

Notes: This table presents the results of our cross-sectional variations. Column (1) reports results based on firm-level variation in terms of target size. Column (2) indicates the effect for firms that have been targeted in the pre-period vs. firms that have not. Columns (3) and (4) are based on country-specific variation in terms of NGO presence and regulatory quality. t-statistics are reported in parentheses. ***, **, and * indicate two-tailed significances at the 1%, 5%, and 10% level.

Next, we are interested in whether NGOs become more international, i.e., if NGOs target more firms outside the country they are headquartered in in the post-period. Hatte and Koenig (2020) show that NGOs are more likely to target firms in closer geographical proximity and firms publishing data in the same language spoken at the NGO headquarters. However, if CSR reports become more standardized with the passage of the NFRD, NGOs may find it easier to target firms outside their home country. We implement a split that separates countries with a high vs. low number of NGOs in relation to the firms listed in the respective country. Column (3) of Table 4.7 shows the results of this estimation. We find positive and significant coefficients for both variables. The coefficient for high NGO presence is larger, implying that firms are more likely to be targeted if they are domiciled in a country with a

relatively high NGO presence (coef. = 1.5238, t-statistics = 4.51). The findings are in line with previous research regarding NGO campaigning behavior, e.g., Hatte and Koenig (2020).

Finally, we are interested if the degree of NGO activity following the NFRD varies across institutional characteristics. We, therefore, split our sample according to two non-overlapping indicators that distinguish countries' regulatory quality based on a median split (Kaufmann et al. 2009). The results of this estimation are reported in Column (4) of Table 4.7. While both variables turn out highly significant, the magnitude of the coefficient indicates that the effect is more pronounced in countries with a comparatively higher regulatory quality (coef. = 1.4807, t-statistics = 3.82 for high regulatory quality; coef = 0.7834, t-statistics = 4.33 for low regulatory quality). It appears that it is easier for NGOs to implement campaigns against firms domiciled in countries where the regulatory quality is higher and, therefore, the mandated reports are potentially of a higher quality.

4.7 Conclusion

We examine whether and how NGOs react to a mandated increase in CSR information. We exploit the implementation of the NFRD using a difference-in-differences design combined with further cross-sectional analyses. The NFRD is a widespread, cross-country, cross-industry regulation mandating large listed companies to report on their CSR activities. We examine whether NGOs, as one specific stakeholder group, step up their campaigning activity following the CSR disclosure mandate. We find that, on average, NGOs significantly increase campaigns targeting firms headquartered in the EU following the first-time publication of CSR reports mandated by the NFRD. Concurrent with the increase in campaigns, we observe a shift in campaign topics towards NFRD-related concerns. The onset of the effect following the first-time publication with the related shift in topics indicates that NGOs derive benefits from the reports and likely use information and settings to their advantage. These findings suggest that one element in the causal chain of the stakeholder pressure channel of the proposed transparency mechanism works, i.e., NGOs as stakeholders and intermediaries use the mandated information. Additional cross-sectional analyses indicate that the effect is concentrated in large,

previously targeted firms domiciled in countries with a high regulatory quality and a relatively high NGO presence.

Our findings are subject to several limitations. Firstly, we caution that we investigate the effects of a particular setting, i.e., the NFRD. The NFRD is an exceptional regulation in terms of the number of countries that implemented the requirements, the number of industries regulated simultaneously as well as the breadth and depth of the information required. We, therefore, caution that the results presented in this paper may not directly speak to other forms of targeted transparency regulation or CSR disclosure mandates in different settings. Relatedly, the presented results may vary with institutional environment conditions not considered in this paper. We leave it to future research to explore the heterogeneity of member state implementation variation of the NFRD and its effect on stakeholder activity. Further limiting the generalizability of our findings, we acknowledge that our findings are specific to the firms in our sample. Data availability and research design choices, like requiring Asset4 data availability or imposing a balanced sample structure, reduce the firms included in our sample to a subset of all firms within the scope of the NFRD.

Secondly, our study faces challenges related to the identification strategy. We address these concerns by implementing a DiD design and constructing a propensity-score-matched US control group, controlling for a wide range of additional variables and using a comprehensive set of fixed effects. We also underpin the validity of our identification strategy by providing evidence showing that the parallel trend assumption is not violated. Still, we cannot fully rule out that other unobserved variables drive our results. Thirdly, we acknowledge that regulatory shocks come with some caveats, like an anticipation effect or the dependence of the effect on existing regulation or the institutional environment (Leuz and Wysocki 2016). Lastly, we point out that we ultimately cannot single out which channels drive the observed results. We find evidence that is consistent with a decrease in information processing costs. However, it is possible and also likely that further channels like benchmarking attenuate or reinforce our results. We leave it to future research to disentangle these effects further.

These potential limitations aside, our study provides cross-sectional and cross-industry evidence that NGOs, as a specific set of stakeholders, react to the information mandated by the NFRD. This is of particular interest to EU regulating

4 (How) Do CSR disclosure mandates facilitate stakeholder pressure on firms?

bodies as it provides first evidence regarding the stakeholders involved in the functioning of the envisioned transparency mechanism.

4.8 Appendix

Appendix 4.A: Variable definition

Variable	Description	Data source
Firm characteristics		
Tobin's Q *	Log of (market capitalization (wc08001) + total liabilities(wc03351)) / (common equity (wc03501) + total liabilities (wc03351))	Worldscope
Total assets*	Log of total assets (wc02999)	Worldscope
Leverage *	Total liability (wc03351) scaled by total assets (wc02999)	Worldscope
Asset turnover *	Net sales (wc01001) scaled by total assets (wc02999)	Worldscope
PPE*	Property, plant & equipment (wc02501) scaled by total assets (wc02999)	Worldscope
Operating cash flow *	Cash from operations (wc04860) scaled by total assets (wc02999)	Worldscope
Industry membership	Fama-French industry code (12 industries)	Worldscope
Information environment		
Free float	Log of percentage of shares in free float (noshff)	Worldscope
Analyst following	Log of number of financial analysts following (eps1ne)	I/B/E/S
ESG characteristics		
ESG Score	Asset4 ESG Score (tresgs)	Asset4
ESG Controversies	Asset4 ESG Controversy Score (tresgccs)	Asset4
CSR Report	Asset4 CSR Reporting item (cgvsdp026)	Asset4
NGO campaigning activity		
Targeted firm	Binary variable that is 1 for firms that are targeted at least once by an NGO campaign from 2014 to 2019 and 0 otherwise (time-invariant)	Sigwatch
Targeted firm year	Binary variable that is 1 if a firm is targeted by an NGO campaign in a specific year and 0 otherwise (time-variant)	Sigwatch
Newly targeted firm	Binary variable that is 1 if a firm gets targeted the first time and 0 otherwise.	Sigwatch
Number of campaigns	Number of campaigns against a specific firm in a given year.	Sigwatch
Pre-target	Binary variable that is 1 if a firm has previously been targeted by a campaign and 0 otherwise.	Sigwatch
NFRD-related topic	Share of NFRD-related campaign topics (= environmental matters, social matters, corruption, and others) against a firm.	Sigwatch

Appendix 4.A (continued)

Variable	Description	Data source
NGO characteristics		
NGO power	Geographical reach of an NGO campaign, on a scale from local (+0.5) to global (+2.75).	Sigwatch
Prominence	Prominence of mentioning firm in campaign ranging from mentioned in headline (+4), mentioned in first paragraph (+3), mentioned elsewhere in communication (+2), mentioned in accompanying report (+1)	Sigwatch
Sentiment	Tone of campaign against firm ranging from very negative (-2), negative (-1), neutral (0), positive (+1), very positive (+2)	Sigwatch
Partnership	Binary variable that is 1 if the targeted firm is working with an NGO and 0 otherwise.	Sigwatch
Income	Yearly income of an NGO	Hand collected
Expenses	Yearly expenses of an NGO	Hand collected
Expenses by campaign	Yearly expenses of an NGO/yearly number of campaigns	Hand collected

* winsorized, yearly at the 1 and 99th percentile

Appendix 4.B: Details of the matching procedure

Variable		Treat	Control	Bias	% Bias Reduct.	t	p > t
Number of campaigns	Unmatched	1.79	1.93	-2.00		-0.36	0.721
	Matched	1.85	0.86	14.30	-600.5	2.68	0.007
Tobin's Q	Unmatched	0.45	0.63	-38.40		-6.68	0.000
	Matched	0.46	0.47	-2.10	94.5	-0.39	0.695
Total assets	Unmatched	15.95	16.15	-12.50		-2.19	0.029
	Matched	15.97	15.94	1.90	84.5	0.33	0.740
Leverage	Unmatched	0.25	0.30	-29.20		-5.07	0.000
	Matched	0.25	0.27	-14.40	50.6	-2.78	0.006
Asset turnover	Unmatched	0.80	0.80	0.30		0.05	0.958
	Matched	0.80	0.78	3.10	-924.6	0.58	0.563
PPE	Unmatched	0.24	0.28	-17.40		-3.02	0.003
	Matched	0.24	0.24	-0.30	98.2	-0.06	0.954
Operating cash flow	Unmatched	0.09	0.10	-22.40		-3.91	0.000
	Matched	0.09	0.09	-3.40	84.9	-0.60	0.546
Free float	Unmatched	4.23	4.43	-63.70		-11.18	0.000
	Matched	4.27	4.18	27.60	56.7	3.30	0.001
Analyst following	Unmatched	2.66	2.64	3.80		0.66	0.508
	Matched	2.67	2.58	14.70	-286.2	2.57	0.010
ESG score	Unmatched	57.31	47.92	51.60		8.99	0.000
	Matched	57.33	55.00	12.80	75.2	2.30	0.021
Pre-target	Unmatched	0.29	0.31	-4.40		-0.76	0.447
	Matched	0.30	0.16	31.10	-612.8	5.91	0.000
CSR report	Unmatched	1.91	1.48	113.00		19.54	0.000
	Matched	1.91	1.84	16.50	85.4	3.41	0.001

Notes: This table presents the descriptive statistics of the unmatched and matched samples. The treatment group contains European-headquartered firms, while the control group includes US-headquartered firms. We match treatment and control firms based on three-year averages preceding the entry into force of the NFRD, using a caliper of 0.1 and allowing for replacement.

4 (How) Do CSR disclosure mandates facilitate stakeholder pressure on firms?

Appendix 4.C: Issue classification in NFRD and non NFRD-related campaign topics

Guidelines on non-financial reporting from the European Commission (2017/C 215/01)		Classification of NFRD and non-NFRD-related campaign topics	
Thematic aspect	Example and KPIs	NFRD category	Examples of campaign issues in Sigwatch data
Environmental matters	Energy performance and improvement in energy performance Energy consumption from non-renewable sources and energy intensity Greenhouse gas emissions Extraction of natural resources Impact and dependence on natural capital Waste management	Environmental matters	153 of 954 issues: Financial institutions & carbon, divestment Waste recycling Eco-friendly packaging Automotive carbon emissions, fuel efficiency Carbon trading, cap and trade Wind energy...
Social and employee matters	Gender diversity Employee entitled to parental leave Worker who participate in activities with high risk of accidents Number of occupational accidents Employee turnover Ratio of employees working under temporary contracts Average hours of trainings Employee consultation process Number of persons with disability employed	Social matters	78 of 954 issues: Fair pay and living wage Labor rights in general Workplace safety Human rights in general Cocoa farming and child labor ...
Respect for human rights	Occurrences of server impacts on human rights to its activities Process for receiving and addressing complaints, mitigate remedies to human rights violations Operations and suppliers at significant risk human rights violations Processes to prevent child labor, unsafe work condition Respect of freedom of association		

4 (How) Do CSR disclosure mandates facilitate stakeholder pressure on firms?

Appendix 4.C (continued)

Anti-corruption and bribery matters	Anti-corruption policies, procedures and standards Corruption-related risk assessments Internal control processes and resources allocated to prevent corruption Whistleblowing mechanism	Corruption	9 of 954 issues: Anti-trust & protection from monopolies Complicity in money laundering Corruption and bribery Unauthorized development Censorship & protection of whistleblowers...
Other	Supply chain Use of conflict materials	Other	45 of 954 issues: Fashion - supply chain responsibility Conflict diamonds & precious stones Organic production standards Tax havens, avoidance & financial transparency CSR/ESG standards and reporting...
		Non-NFRD-related topics	669 of 954 issues: Battery/caged/indoor poultry and eggs Food healthiness & nutritional content Soft drinks/sodas and sugar Access to medicine (IP, cost, neglected diseases) Alcohol and health...

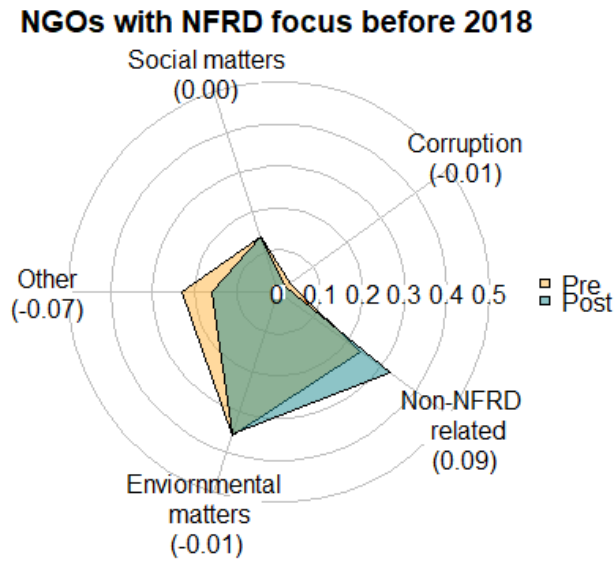
Note: This table shows the manual classification of campaign issues in NFRD-related and non-NFRD-related campaign topics. We classify the issues from the Sigwatch data based on the thematic aspects that need to be included in the CSR report according to the guidelines on non-financial reporting by the European Commission (2017/C 215/01). Based on the examples that are given by the European Commission, we sort the campaign issues accordingly.

Appendix 4.D: Change in campaign topics over time

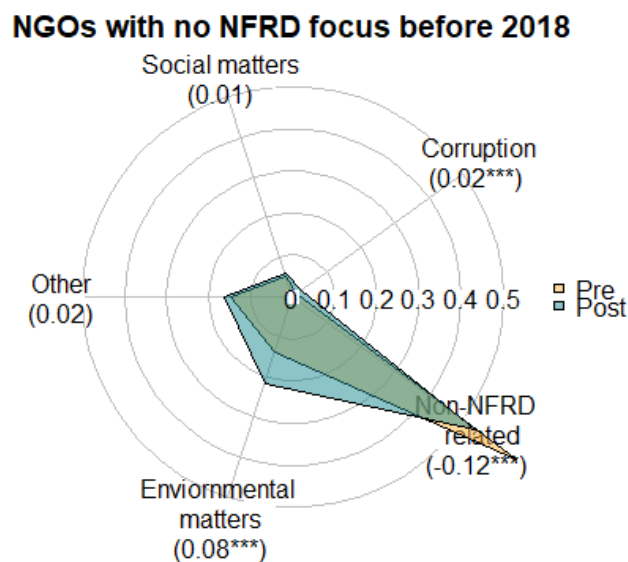
Panel A: Pre- and post-targeted firms							
EU	N	Pre	N	Post	Difference	t	p > t
Non-NFRD-related topics	197	0.43	197	0.40	-0.03*	-1.4015	0.0813
NFRD-related topics	197	0.57	197	0.60	0.03*	1.4015	0.0813
Corruption	197	0.02	197	0.02	0.01	1.0872	0.1390
Environmental matters	197	0.23	197	0.27	0.04***	2.4381	0.0078
Other	197	0.19	197	0.16	-0.03	-1.8049	0.9640
Social matters	197	0.14	197	0.15	0.00	0.3201	0.3750
US	N	Pre	N	Post	Difference	t	p > t
Non-NFRD-related topics	104	0.45	104	0.52	0.06	2.5448	0.9940
NFRD-related topics	104	0.55	104	0.48	-0.06	-2.5448	0.9940
Corruption	104	0.01	104	0.00	-0.01	-1.6216	0.9460
Environmental matters	104	0.20	104	0.15	-0.05	-1.7745	0.9610
Other	104	0.24	104	0.20	-0.04	-2.0530	0.9790
Social matters	104	0.09	104	0.13	0.03*	1.9448	0.0273
Panel B: Newly targeted firms							
Post	N	Pre	N	Post	Difference	t	p > t
Non-NFRD-related topics	41	0.52	31	0.32	-0.20**	-2.2050	0.0155
NFRD-related topics	41	0.48	31	0.68	0.20**	2.2050	0.0155
Corruption	41	0.00	31	0.03	0.03*	1.4384	0.0803
Environmental matters	41	0.24	31	0.19	-0.06	-0.7377	0.7680
Other	41	0.05	31	0.22	0.17***	3.0498	0.0020
Social matters	41	0.19	31	0.24	0.05	0.7415	0.2310
Panel C: Pre- and post-targeting NGOs							
NFRD focus	N	Pre	N	Post	Difference	t	p > t
Non-NFRD-related topics	282	0.24	282	0.33	0.09	5.4433	1.0000
NFRD-related topics	282	0.76	282	0.67	-0.09	-5.4433	1.0000
Corruption	282	0.03	282	0.02	-0.01	-1.9103	0.9710
Environmental matters	282	0.36	282	0.36	0.00	-0.2556	0.6010
Other	282	0.23	282	0.16	-0.07	-5.9479	1.0000
Social matters	282	0.14	282	0.14	0.00	0.0949	0.4620
No NFRD focus	N	Pre	N	Post	Difference	t	p > t
Non-NFRD-related topics	282	0.65	282	0.53	-0.12***	-6.4523	0.0000
NFRD-related topics	282	0.35	282	0.47	0.12***	6.4523	0.0000
Corruption	282	0.01	282	0.03	0.01***	2.4996	0.0065
Environmental matters	282	0.14	282	0.22	0.08***	4.9872	0.0000
Other	282	0.15	282	0.16	0.02	1.1999	0.1160
Social matters	282	0.05	282	0.06	0.01	1.0303	0.1520

Notes: This table reports statistics for shifts in campaign topics. Panel A reports one-sided paired t-test testing the shift in campaigns against firms that are targeted in the pre- and post-period. Panel B reports one-sided unpaired t-tests for differences between campaigns newly targeting EU and US firms in the post-period. Panel C reports statistics of a one-sided paired t-test testing shifts in the NGO focus for NGOs that target in the pre- and post-period. (NFRD-focus: >50% NFRD-related campaigns in pre-period). All t-tests assume that the NFRD-related topics are larger and the non-NFRD-related topics are smaller in the post-period. ***, **, and * indicate significances at the 1%, 5%, and 10% level.

Appendix 4.E: NFRD focus of NGOs



Notes: This figure shows the shifts in the NGO campaigning focus, i.e., if NGOs that previously had an NFRD-focus (NFRD-focus: >50% NFRD-related campaigns) shift their focus in the post-period. The differences are shown in parenthesis in percentage points. The sample is restricted to NGOs that target in the pre- and post-period. The differences are tested by a one-sided paired t-test. Statistics are reported in Appendix 4.D. ***, **, and * indicate significances at the 1%, 5%, and 10% level.



Notes: This figure shows the shifts in the NGO campaigning focus, i.e., if NGOs that previously did not have an NFRD-focus (NFRD-focus: >50% NFRD-related campaigns in pre-period) shift their focus in the post-period. The differences are shown in parenthesis in percentage points. The sample is restricted to NGOs that target in the pre- and post-period. The differences are tested by a one-sided paired t-test that tests whether the NFRD-related topics are larger in the post-period and non-NFRD-related topics are smaller in the post-period. Statistics are reported in Appendix 4.D. ***, **, and * indicate significances at the 1%, 5%, and 10% level.

5 Conclusion

5.1 Summary of major findings and implications

This thesis explores the role of environmental, social, and governance (ESG) information in capital markets and its use by stakeholders and information intermediaries. Specifically, it provides evidence regarding two questions: (1) What is the economic role of ESG ratings in capital markets, and how are they valuable to investors? (2) Do NGOs, as important non-investor stakeholders and intermediaries, use the information provided by mandated CSR reporting regimes? On the basis of three papers, the thesis contributes to two streams of literature: the first stream is related to the role of ESG and governance ratings in capital markets (e.g., Berg et al. 2022a; Christensen et al. 2022; Guest and Nerino 2020), while the second relates to real effects following transparency about corporate social responsibility (CSR) performance (e.g., Fiechter et al. 2022; Christensen et al. 2017).

With regard to the first literature stream, the first and second studies investigate the role of information intermediaries in the area of CSR information and how they are valuable to investors. The first study examines the incremental value of rating methodology, i.e., whether and how corporate governance ratings are valuable to investors. Using a unique data set of ISS corporate governance ratings, the study empirically discerns two rating components: a public information component and a proprietary technology component. Main findings show a positive association between ISS corporate governance ratings that derives from both ISS's information selection and collection skills (public information component) as well as their proprietary technology and access to private information (technology component). However, the documented relation only holds for firms headquartered in the US. For firms outside of the US, there is no statistically significant relation between firm value and the rating or either of its two informational components. Investors can still benefit from the ratings, e.g., purchase the ratings to acquire the underlying data in a cost-effective way or using the ratings as ex-post verification tools.

The second study examines ESG ratings and the ESG rating market, explores the economic role of ESG rating providers, and contrasts this role with empirical findings. Empirical results speak towards a meaningful economic role of ESG ratings. Rising demand and an increasing amount of capital flows following ESG ratings

increased their relevance in the last decade (Gibson Brandon et al. 2022). However, ratings in their current form are not connected to better financial or sustainable outcomes (Auer and Schuhmacher 2016; Raghunandan and Rajgopal 2022), suffer from data availability and quality issues (Amel-Zadeh and Serafeim 2018), display a low convergence across ratings that is driven by divergent measurements of the same items (Berg et al. 2022b), and are criticized for the lack of transparency regarding their rating processes (ESMA 2021b). As a result, the uncertainty surrounding ratings introduces uncertainty in the market (Berg et al. 2022b). Regulators are concerned about possible capital misallocation and market inefficiencies if ESG ratings do not accurately measure ESG performance. In Europe, the EU proposed a regulation aiming to improve ESG rating providers' transparency. Taken together, the findings of the first two papers speak to a meaningful economic role of (providers of) governance and ESG ratings. Both offer services that are valuable to investors. However, for the analyzed channels, the value proposition does not extend to all use cases and comes with caveats, e.g., ratings are sensitive to the environment they are conducted in or suffer from rating biases. Still, both ratings are commercially successful products, indicating that investors derive benefits from these products through other channels. Alternative explanations for the continued use of the ratings include the purchase of ratings to obtain the underlying data. In interview evidence, the underlying data set for both ratings is described as useful and, at times, even more useful than the ratings (Daines et al. 2010; European Commission 2021a). Further alternative use cases relate to the use of ratings to comply with contractual obligations or acquiring the rating as an ex-post verification tool. These arguments are still in line with an economic role of the rating providers.

With regard to the second literature stream, the third paper aims to elicit whether and how stakeholders use mandated CSR information. To answer this question, the study leverages the implementation of the EU's Non-Financial Reporting Directive (NFRD: Directive 2014/95/EU) using a difference-in-differences design combined with further cross-sectional analyses. The magnitude of this regulatory shock offers a framework to observe shifts in stakeholder actions across different institutional environments. Main findings show that NGOs increase their campaigning activity in the EU following the introduction of mandatory CSR reporting, with a notable shift

towards NFRD-related topics. The effect is more pronounced for larger firms, even though the increase in available information is likely higher for smaller firms. Additionally, a high concentration of NGOs headquartered in a country correlates with more frequent targeting of firms in that country. NGOs do not appear to broaden their focus to include a wider range of firms, even though standardized CSR reporting can facilitate this.

The implications of the findings are twofold. Results suggest that one element in the causal chain of the „stakeholder pressure“ channel of the proposed transparency mechanism works, i.e., NGOs as stakeholders and intermediaries use the mandated information. This is an important finding for the discussion about regulatory approaches that build on transparency mechanisms to change firm behavior. However, it is possible that the outcomes do not fully correspond to the desired objective. NGOs, for example, use the mandated information but focus on actions that are aligned with their cost-benefit functions, i.e., targeting larger firms because public campaign support is likely larger there (Hatte and Koenig 2020). As a result, smaller firms are exposed to less additional scrutiny or public pressure by this particular stakeholder group than larger firms.

5.2 Limitations

The studies in this thesis are subject to several limitations. First, the results of the two empirical studies (papers one and three) may not be generalizable. There are several reasons for this. One relates to data availability and the imposed data requirements. In the first paper, ISS's coverage decisions, as well as the imposed data requirements, shape the sample construction. Additionally, the data set is dated. While the paper does not document any changes that affect the results during the sample period of multiple years, this may not be true for later periods. For the third paper, data requirements, in particular the availability of the LSEG ESG rating, as well as research design choices, like the implementation of a difference-in-differences design with a propensity-score-matched control group, reduce the firms in the sample to a subset of the firms within the scope of the regulation. Therefore, the findings are specific to the sample firms and may not be transferable to firms outside the scope of the papers without further consideration. Additionally, the studies are conducted within a particular setting. The first study focuses on

corporate governance ratings provided by ISS. It is possible that the results are not applicable to other governance rating providers. The third paper investigates the NFRD as a specific CSR information shock. The documented findings may not speak to different targeted transparency regulations or other CSR disclosure mandates.

Second, there are endogeneity concerns that cannot fully be ruled out. In the first paper, firms' corporate governance choices are endogenous. It is possible that it is not corporate governance that influences firm value but that firm value guides corporate governance choices. The third study faces challenges regarding the identification strategy. Despite statical methods mitigating these concerns (difference-in-differences design, fixed effects, propensity-score-matched control group, broad range of control variables), it is possible that unobserved variables drive the results. Third, regulatory shocks, like the implementation of the NFRD used in the third study, come with caveats, like possible anticipation effects or the dependence of the effect on existing regulation or the institutional environment (Leuz and Wysocki 2016). Country-level implementations of the regulation or the implemented enforcement processes may influence the results.

Fourth, papers one and three discuss channels for the respective mechanisms. In the first paper, the channels relate to ways corporate governance ratings can be valuable to investors. The third paper observed stakeholder actions and discusses reductions of information processing costs and benchmarking as possible channels. In both cases, the papers do not pinpoint which of the proposed channels drives the results. Lastly, the second paper is based on a selection of papers chosen based on their relevance and the implications of their findings. This process involves a certain degree of subjectivity. Additionally, the available literature may be biased by selective publications (favoring positive results) and specification searching (adjusting specifications to generate (highly) significant results) and, therefore, not mirror the entirety of discovered findings (Blanco-Perez and Brodeur 2020; Brodeur et al. 2020).

5.3 Outlook

The findings of the thesis point to several research opportunities. With regard to CSR reporting, there is still a lack of broad-scope evidence regarding the functioning of the targeted transparency mechanism and stakeholders' involvement therein.

Paper three of this thesis provides evidence with regard to NGOs as a particular stakeholder group. More evidence relating to other stakeholder groups is needed, particularly with regard to their use of information and the source of that information. Mapping different stakeholders' informational needs and channels and cross-referencing them with the information (channels) required by regulatory mandates can help to understand to what extent a targeted transparency mechanism works and identify areas of improvement. While paper three builds on the implementation of the NFRD to add to this literature, the Corporate Sustainability Reporting Directive (CSRD: Directive 2022/2464/EU) offers new research opportunities in that area. Like the NFRD, the CSRD builds on a targeted transparency mechanism and names stakeholders as an important target group of the regulation.

The implementation of the CSRD as a new CSR reporting mandate offers researchers opportunities to participate in the post-implementation review. This involves assessing whether and to what extent the regulation has achieved its defined objectives. In the context of the research area of this thesis, this is interesting from two perspectives. Firstly, it closely aligns with the research related to stakeholders' use of mandated CSR information and can, therefore, contribute to painting a more holistic picture of the users, use cases, and outcomes of mandated CSR information. The CSRD is a multifaceted regulation with member-state implementation choices, diverse user groups, and extensive reporting requirements. It requires detailed analyses that take the complex variations into account. Secondly, research related to ESG ratings identifies data availability and quality as an issue driving the construction of ESG ratings. As a result, ESG data quality and availability are closely linked to ESG ratings, making an independent assessment of the ratings challenging. Mandating high-quality, comparable, and audited CSR information can be a way to address this concern. Once research shows that the CSRD improves ESG data quality and availability in the EU, researchers can assess rating methodologies and the incremental benefits thereof more precisely. This adds to the understanding of the economic role of ESG rating providers. Research can further assess the implementation and outcomes of the ESG rating providers' regulation. The results can inform the debate about the need and implications of such regulatory interventions. It can further contribute to the functioning of the chosen style of

regulation, i.e., a market-based approach that provides information to better understand the ratings but allows for different kinds of ratings and protects the providers' intellectual capital. On a more general note, research needs to develop methods to handle unreliable time series in commercial ESG ratings. For example, Berg et al. (2020) show that the backdating of ESG rating data, a technique where rating providers rewrite the originally uploaded ratings, influences findings in ESG rating-based research.

A further interesting field for research is the channels through which ESG and corporate governance ratings provide value. There is evidence that speaks in favor of an economic role that is not only tied to the final rating but also derives from the raters' information collection or the ratings' use as ex-post verification tools. Papers one and three of this dissertation as well as extant literature discuss these channels as potential ways rating providers are valuable to investors but do not measure them directly (e.g., Daines et al. 2010). Investigating these channels empirically can improve our understanding of ratings, rating agencies, and their economic role in the market. Overall, transparency about firms' CSR performance, the measurement thereof, as well as the users, communication channels, and real effects provide fruitful avenues for future research. From a societal perspective, more research in this area can help in better understanding how to guide firm behavior and investment choices and support the transition towards a greener economy.

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