

Effects of CSR Reporting and Governance Regulation

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1 Introduction

1.1 Motivation and Context

This thesis examines first- and second-order effects of EU regulations of Corporate Social Responsibility (CSR)¹ disclosure and corporate governance. In three empirical studies, the thesis addresses two motivating questions: (1) How is CSR reporting enforced, and does enforcement work? And (2) does shareholder voting on remuneration policies affect executives' compensation contracts, especially also with respect to CSR-based components?

The *first and second study* of the thesis (Chapter 2 and 3) speak to the first motivating question. The *first study* uses survey methods to document in a systematic fashion whether and how enforcement of the Non-Financial Reporting Directive (Directive 2014/95/EU) is carried out at the EU member state level. Specifically, the study explores differences (1) in the scope of enforcement, (2) the responsibility to carry out enforcement at member state level, (3) enforcement inputs such as staffing and budgeting, and (4) enforcement outputs such as enforcement activities conducted and enforcement actions taken in the case of (severe) misreporting. The *second study* builds upon the findings of the first study by exploiting a regulatory “shock” to the enforcement in Sweden identified in the survey to investigate first- and second-order effects of CSR reporting enforcement. Specifically, the second study explores whether and how enforcement affects CSR reporting characteristics, namely specificity, causal reasoning, boilerplate disclosures, and readability as well as economic effects, i.e., stock price liquidity and firms' CSR activities.

The *third and last study* of the thesis (Chapter 4) shifts the focus from CSR reporting to corporate governance. Speaking to the second motivating question, the study explores whether (the threat) of shareholder voting on executives' remuneration at the annual general meeting stipulated by the Second Shareholder Rights Directive (Directive 2017/828/EU) affects the level of total compensation and its components, the use of regulated performance metrics in executives' compensation plans and the implementation of ESG-based compensation.

The following section provides information on the two regulations explored in this thesis, namely the Non-Financial Reporting Directive and Second Shareholder Rights Directive.

¹ Following Christensen, Hail, and Leuz (2021), I use the terms CSR, ESG, non-financial, and sustainability interchangeable.

Additionally, the section presents main findings from prior research and points to important gaps in the literature.

CSR Reporting and Enforcement

With the stated objective of increasing firms' transparency of social and environmental information, on 22 October 2014, the EU regulator adopted Directive 2014/95/EU amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups (Directive 2014/95/EU, recital 1). Specifically, this so-called Non-Financial Reporting Directive (hereafter: NFRD) requires large listed firms with more than 500 employees during the financial year to report on environmental, social and employee matters, respect for human rights and anti-corruption and bribery matters (Art. 1 NFRD). By mandating the disclosure of CSR information, the EU regulator also aimed at nudging firms towards pursuing more CSR activities which is consistent with a real effects objective (Fiechter, Hitz, and Lehmann 2022) or "targeted transparency"² (Hombach and Sellhorn 2019; Fung, Graham, and Weil 2009). In this regard, the third recital to the NFRD states that "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."

A large body of literature has examined effects of CSR disclosure mandates. These studies document, for instance, increases in CSR transparency (e.g., Ioannou and Serafeim 2019; Fiechter et al. 2022; Lin, Shen, Wang, and Julia Yu 2024), CSR activities (Fiechter et al. 2022), and employee safety (Christensen, Floyd, Liu, and Maffett 2017), decreases in greenhouse gas emissions (Tomar 2023; Downar et al. 2020) and pollution (Chen, Hung, and Wang 2018) as well as improvements in supply chain due diligence (She 2022). By demonstrating reporting and real effects, these studies suggest that CSR reporting mandates (and "targeted transparency") "work".

For CSR reporting to impact decisions of investors and other stakeholders and thereby to facilitate real effects, CSR reports need to be of sufficient quality. One potential factor shaping reporting quality and thereby ensuring the effectiveness of a CSR reporting mandate is enforcement (Christensen et al. 2021). Specifically, by examining compliance with the relevant reporting standards and taking adequate measures in the case of

² Hombach and Sellhorn (2019) define targeted transparency via corporate disclosure regulation as "mandates implemented via the institutions of corporate disclosure regulation, while intended to foster public policy objectives outside of its traditional remit" (p. 140).

infringements (ESMA 2020, p. 6), enforcement increases confidence in the accuracy of information provided and improves the decision-usefulness of CSR reports.

The NFRD only contains broad provisions regarding enforcement. The 10th recital to the NFRD requires member states to “ensure that adequate and effective means exist to guarantee disclosure of non-financial information by undertakings in compliance with this Directive. To that end, Member States should ensure that effective national procedures are in place to enforce compliance with the obligations laid down by this Directive, and that those procedures are available to all persons and legal entities having a legitimate interest, in accordance with national law, in ensuring that the provisions of this Directive are respected.” However, the legislative text does not specify what “adequate and effective” mean and in particular how CSR reporting has to be enforced in practice. In 2019, two years after the entry into force of the NFRD, the EU securities regulator, ESMA, documented for the first time two forms of enforcement that have emerged in practice. While “existence-only” is intended to verify whether a CSR report has been presented by an issuer for all the relevant parts, “existence and content” refers to a review that, in addition to the existence of a CSR report, also considers whether the information provided meets in substance the reporting obligations laid down in Article 1 of the NFRD (ESMA 2019).

However, at that time ESMA only mentioned that the scope of CSR reporting enforcement is not harmonized across EU member states, but did not specify which member states apply the “existence and content” approach to enforcement and which member states confined their enforcement to an existence check (ESMA 2018). Only in 2021, ESMA pointed out in a footnote that “Enforcers in Greece, Hungary, Germany, and Sweden examined only whether the non-financial statement had been prepared (‘existence only’)” (ESMA 2021, p. 46). However, ESMA did not elaborate on this finding. Relatedly, Fiechter, Hitz, and Lehmann (2020, p. 27) mention that “documentation of existing CSR disclosure enforcement institutions (e.g., resources or staff numbers) and the enforcement activities (e.g., number of reviews or review outcomes) is, if anything, incomplete”. Accordingly, there is a lack of detailed information on CSR reporting enforcement practices, which is necessary to empirically investigate effects of CSR reporting enforcement.

The role of enforcement in the implementation of financial regulation and accounting standards has been analyzed extensively in the academic literature. Djankov et al. (2003),

for example, emphasize the importance of enforcement for new regulation's strength. Holthausen (2009) further concludes that accounting standards alone do not affect financial reporting outcomes, instead various factors, such as enforcement, shape reporting quality. In this regard, prior research documents positive effects of enforcement on the information content of earnings announcements (Landsman, Maydew, and Thornock 2012) and on reporting quality (Florou, Morricone, and Pope 2020). In addition, there is large body of literature indicating that a stricter IFRS enforcement could also favor second-order effects, especially capital market effects (Leuz and Wysocki 2016). For instance, for countries with stricter implementation and enforcement, there is empirical evidence in favor of liquidity benefits (Christensen, Hail, and Leuz 2013), reductions in the cost of equity capital (S. Li 2010), and improvements in analysts' information environment reflected by reductions in forecast errors and dispersion (Byard, Li, and Yu 2011). Related research also demonstrates positive effects of enforcement on the enactment of insider-trading laws (Bhattacharya and Daouk 2002) and the introduction of two securities regulation in the EU, i.e., the Market Abuse Directive and the Transparency Directive (Christensen, Hail, and Leuz 2016).

With regard to CSR reporting, there is only scarce literature investigating effects of enforcement. One of the few papers in this area are Tietmeyer (2023) and Krueger, Sautner, Tang, and Zhong (2024). While Tietmeyer (2023) documents that increases in the enforcement of an US water reporting regulation results in improved water quality, Krueger et al. (2024) show that stricter enforcement only by informal institutions (captured by societal norms or values) increases the liquidity benefits of CSR disclosure mandates. However, the authors are unable to document such effects for formal enforcement institutions such as better legal environments, stricter rules of law or more effective governments. In addition, findings of financial reporting enforcement may not be directly transferable to CSR reporting enforcement.

There are several factors that potentially impede the enforcement of CSR reporting³. First, CSR reporting encompasses a broad set of multifaceted issues, which are often future-orientated and qualitative in nature. Second, CSR information often lacks precise metrics or reference points. Without clear thresholds and benchmarks firms can make use of boilerplate language, thereby evading reporting requirements (Christensen et al. 2021). Finally, with regard to the NFRD, affected companies are assigned with discretionary

³ For a comprehensive overview of these challenges, see Christensen et al. (2021).

power regarding content (i.e., what has to be reported depends on a double materiality analysis), format (i.e., separate CSR report or integration of CSR information into the management report), and the choice of a reporting framework (e.g., GRI), all of which hamper the comparability of CSR information (EFRAG 2021).

Accordingly, research is necessary to investigate effects of CSR reporting enforcement. Christensen et al. (2021), specifically, call for further research investigating the role of enforcement in improving the effectiveness of CSR standards, and the interaction of public and private enforcement in the oversight of CSR reporting. Also, in the light of current regulatory developments and in line with “evidence-based policymaking” (Leuz 2018), research on the role of CSR reporting (enforcement) can help regulators revising or devising CSR disclosure mandates. For instance, in 2022, the EU regulator adopted Directive 2022/2464 (Corporate Sustainability Reporting Directive, hereafter: CSRD) which revises the NFRD to address identified shortcomings in existing CSR reporting practices (CSRD, recital 13). Specifically, the CSRD broadens the scope of firms that have to provide sustainability reports (CSRD, recital 17), expands and concretise reporting requirements (CSRD, recitals 28-33), introduces a uniform reporting framework which is mandatory for all affected firms (CSRD, recitals 37-39), and requires content assurance of the sustainability report (CSRD, recital 60). With regard to enforcement, the EU regulator strives to raise CSR enforcement to a standardized level across all member states (CSRD, recital 79)⁴.

The first two studies of this thesis speak to the first motivating question on the role of enforcement for CSR reporting. The *first study* directly addresses the information gap raised by Fiechter et al. (2022). Based on direct communications with European national competent authorities between 2021 and 2022, this study provides insights on the scope of enforcement applied, the specific institution(s) assigned with CSR enforcement, human resources and budgets of European enforcement bodies, enforcement activities conducted, and enforcement actions brought in the case of (severe) misreporting. The study is one of the first investigating the institutional foundations of CSR reporting enforcement.

⁴ A related current regulatory development in the area of CSR reporting is the so-called Omnibus Directive (Proposal for a Directive as regards certain corporate sustainability reporting and due diligence requirements (COM(2025) 81 final)). As a response to recent criticism regarding excessive CSR reporting obligations, the Omnibus Directive is intended to reduce administrative and compliance burdens for affected firms.

The *second study* builds upon the first study and investigates whether CSR reporting enforcement “works” by exploiting a shock to the enforcement of CSR reporting in Sweden identified in the survey. The first objective of this study is to examine whether enforcement effected changes in firms’ CSR reporting (first-order effects). The study thereby responds to the call of Christensen et al. (2021) for further research on the role of enforcement for the effectiveness of CSR standards. The second objective of this study is to further examine economic (or second-order) effects of enforcement. By analyzing liquidity and real effects, this study expands the scarce literature on CSR reporting enforcement (e.g., Tietmeyer 2023; Krueger et al. 2024).

Corporate Governance, Say on Pay and ESG

Another EU regulation that aimed at increasing transparency and affecting (CSR-related) decisions of shareholders is Directive 2017/828/EU (Second Shareholder Rights Directive, hereafter: SRD II). According to the EU Commission, “Effective and sustainable shareholder engagement is one of the cornerstones of the corporate governance model of listed companies” (SRD II, recital 14). Specifically, the SRD II contains provisions regarding the identification of shareholders, transmission of information, facilitation of exercise of shareholder rights, transparency of institutional investors, asset managers and proxy advisors, remuneration of directors, and related party transactions (Art. 1 SRD II). As for executives’ remuneration, the SRD II requires firms to establish a remuneration policy that contributes to the company’s business strategy, long-term interests as well as sustainability (Art. 9a SRD II) and publish a remuneration report which is in line with the remuneration policy (Art. 9b SRD II). Both the remuneration policy and the remuneration report are subject to a shareholder vote (Say on Pay, hereafter: SoP). While the remuneration report is subject to an ex-post vote that is always only advisory in nature, shareholders are enabled to cast an ex-ante vote on the remuneration policy. In this regard, the EU regulator states that “[...] remuneration is one of the key instruments for companies to align their interests and those of their directors and in view of the crucial role of directors in companies, it is important that the remuneration policy of companies is determined in an appropriate manner by competent bodies within the company and that shareholders have the possibility to express their views regarding the remuneration policy of the company” (SRD II, recital 28). In general, shareholder voting on the remuneration policy is binding. However, member states were provided with the option to attenuate this provision by only requiring an advisory

shareholder vote. Eight out of 27 EU member states (Austria, Estonia, Finland, Germany, Hungary, Ireland, Luxembourg, and Slovenia) resorted to this transposition option.

A large body of literature has examined effects of SoP regulations. Overall, these studies suggest that SoP laws have a rather modest impact on CEO pay practices (Ferri and Göx 2018). Specifically, prior literature documents improvements in the link between pay and performance (Alissa 2015; Correa and Lel 2016; Ferri and Maber 2013; Monem and Ng 2013), while results of most studies indicate that the level of compensation is largely unaffected by shareholder votes (Kronlund and Shastri 2018; Ferri and Maber 2013; Grosse, Kean, and Scott 2017; Cuñat, Giné, and Guadalupe 2015). Two studies that document decreases in CEO pay (and CEO pay growth rates) following the adoption of SoP laws are Correa and Lel (2016) and Bugeja et al. (2023). Prior literature further investigates effects of SoP laws on firm value. These studies provide rather mixed results. While Ferri and Maber (2013), Iliev and Vitanova (2019), Correa and Lel (2016), and Kind, Poltera, and Zaia (2024) report positive effects of SoP on firm value, Cai and Walkling (2011), Larcker, Ormazabal, and Taylor (2011), Larcker, McCall, and Ormazabal (2015), and Ertimur, Ferri, and Oesch (2013) do not find significant stock price reactions or document even decreases in firm value.

One potential reason for the inconsistent results documented by prior literature could relate to the settings used. Prior research largely focusses on single-country settings, such as UK (e.g., Alissa 2015; Ferri and Maber 2013; Wu, Iain, and Chalaczkiewicz-Ladna 2020), USA (e.g., Iliev and Vitanova 2019; Kimbro and Xu 2016; Balsam, Boone, Liu, and Yin 2016), and Australia (Monem and Ng 2013; Grosse et al. 2017; Bugeja et al. 2023). Results of these studies may not generalize to other countries or settings. In addition, single-country studies often face endogeneity problems. For instance, if the decision to adopt a SoP law is correlated with unobserved country-specific factors that also affect compensation or firm value, results may be biased.

In contrast, Correa and Lel (2016) investigate SoP effects based on a large cross-country sample including firms from 11 countries that adopt SoP laws between 2001 and 2012. This setting has been used repeatedly in other studies, i.e., to investigate effects of SoP on ESG-based compensation and ESG performance (Pawliczek, Carter, and Zhong 2024), on firm value measured by the market value of voting rights (Kind et al. 2024), and on insider trading profits (Bourveau, Brochet, Ferri, and Sun 2024). However, prior research did not establish other and especially more homogeneous or current cross-country settings

to investigate effects of SoP laws. In the last decade, a growing number of governments have passed or adjusted SoP laws, which are not included (or updated) in the setting of Correa and Lel (2016).

For instance, in 2017, the EU adopted the SRD II, which harmonizes SoP practices in Europe. This setting provides a research opportunity to investigate SoP effects. First, all EU firms are subject to the same SoP regulation which reduces the risk that country-specific factors that are correlated with the adoption of SoP laws affect the results. Second, prior to the SRD II, SoP practices in Europe have been heterogeneous, with some EU member states already requiring a binding shareholder vote, some EU member states only requiring an advisory shareholder vote, and some EU member states do not stipulate SoP at all. This “quasi-random heterogeneity” combined with the SRD II’s transposition option regarding the enforceability of shareholders’ voting (advisory vs. binding), enables the exploitation of treatment effect heterogeneity.

The *third study* investigates whether SoP affects executives’ remuneration contracts by exploiting a novel setting of EU firms that are subject to the same SoP regulation (SRD II), exhibit comparable legal characteristics (La Porta, Lopez-de-Silanes, Shleifer, and Vishny 1998), and operate in an environment characterized by a strict legal enforcement. The first set of empirical tests examines whether (the threat of) SoP laws affect the level of executive pay and its components. The study thereby adds to the broad SoP literature. The second set of empirical tests investigates whether SoP increases the use of regulated and thus more reliable performance metrics and affects the implementation of ESG-based compensation. By having a closer look at the underlying design of remuneration packages, this study provides a more nuanced view on the mechanisms and effectiveness of SoP laws. Finally, by exploiting treatment effect heterogeneity, the study also responds to the call from Ferri and Göx (2018) for further research that exploits the variation in SoP laws. The findings may be of potential interest for regulators and policy makers in devising or revising SoP laws.

1.2 Content and Summary of the Results

This thesis consists of three papers. As outlined in Figure 1.1, the thesis proceeds as follows. The first paper documents country-level heterogeneity in the enforcement of CSR information. The second study investigates first- and second-order effects of CSR reporting enforcement. The third study explores effects of Say on Pay on executives’ compensation plans.

Figure 1.1: Content of the Thesis

1. Introduction		<ul style="list-style-type: none"> • Motivation and Context • Content and Summary of the Results 	Pages 1-13
Main objective	Main findings	Related literature	
Chapter 2: Survey Evidence on Enforcement of CSR Reporting in EU Member States			
Explores how CSR reporting is enforced in EU member states Method: survey	Enforcement differs in the responsibility to carry out enforcement, the scope of enforcement, resources devoted to enforcement, and enforcement activities. Enforcement actions in the case of detected misreporting are quite comparable.	Coffee (2007) Brown, Preiato, and Tarca (2014)	Pages 14-48
Chapter 3: Does Enforcement of Mandatory CSR Reporting Work? Empirical Evidence on Reporting and Economic Effects			
Investigates the reporting and economic effects of CSR reporting enforcement Method: empirical-archival	Enforcement enhanced reporting quality by improving readability and causal reasoning and reducing boilerplate disclosures. Enforcement also triggered economic effects by increasing stock price liquidity and CSR activities.	Krueger et al. (2024) Fiechter et al. (2022) Lin et al. (2024)	Pages 49-95
Chapter 4: Effects of Say on Pay Mandates on Executive Compensation: Evidence from the EU's Second Shareholder Rights Directive			
Investigates whether and how SoP affects the level of compensation and the underlying design of remuneration policies Method: empirical-archival	SoP effected reductions in total and abnormal compensation and increases in ESG-based compensation. Performance measures are largely unaffected by SoP.	Correa and Lel (2016) Pawliczek et al. (2024) Ferri and Maber (2013)	Pages 96-148
5. Conclusion		<ul style="list-style-type: none"> • Summary of Main Findings and Implications • Limitations • Outlook 	Pages 149-154

Chapter 2: Survey Evidence on Enforcement of CSR Reporting in EU Member States

The *first study* of this thesis explores how CSR information according to the NFRD is enforced in EU member states. In light of the scarcity of information available on NFRD enforcement, this study provides insight into (1) the scope of enforcement, (2) the national institution(s) responsible for enforcing compliance with CSR information, (3) the equipment with human resources and budgets (enforcement inputs), (4) specific enforcement activities conducted by national competent authorities, and (5) potential sanctions in the case of non-compliance with the obligations of the NFRD (enforcement outputs). All information has been directly obtained from communications with European national competent authorities between 2021 and 2022.

The results of the survey provide two main insights. First, ESMA's documentation on the enforcement approach ("existence-only" vs. "existence and content") differs from the findings reported in this study which is largely due to more granular information obtained during the survey. As indicated previously, ESMA pointed out that four EU member states confined their enforcement to an existence check (ESMA 2021). In contrast, the survey provides a more nuanced view by showing that (1) five member states apply the "existence-only" approach (Estonia, Croatia, Germany, Greece, and Hungary), (2) two member states made changes to their enforcement by applying the "existence and content" approach from 2021 onwards (Portugal and Sweden), and (3) three member states have immediate forms of enforcement in place (Austria, Czech Republic, and Romania).

Second, enforcement of financial and CSR reporting differs in terms of the scope (and related activities), the assurance level, and the institution(s) assigned to carry out enforcement. Specifically, financial reporting enforcement invariably covers the content of financial statements. In contrast, CSR reporting enforcement is confined to an existence check in some EU member states. With regard to financial reporting, the scope of audit and enforcement are aligned (reasonable assurance), while in some EU member states there are deviations in the scope of audit and enforcement in the case of CSR reporting. Finally, in Croatia, Greece, Hungary, and Ireland, the national competent authority for financial reporting enforcement is not responsible to carry out CSR reporting enforcement. Overall, answers of enforcement bodies suggest that enforcement of CSR reporting is still in its infancy.

However, CSR reporting (enforcement) is currently undergoing major changes. In January 2025, the CSRD entered into force, which *inter alia* stipulates the development of uniform sustainability standards as well as content enforcement, thereby striving to raise enforcement to a consistent level between EU member states (CSRD, recital 37). In addition, in April 2025, ESMA has released specific CSR reporting enforcement guidelines which are intended to facilitate consistent, efficient, and effective supervisory practices (ESMA 2025).

Chapter 3: Does Enforcement of Mandatory CSR Reporting Work? Empirical Evidence on Reporting and Economic Effects

The *second study* extends the insights of the first study on the role of CSR reporting enforcement by empirically exploiting the initiation of enforcement procedures for CSR reports in Sweden. Specifically, the study examines whether enforcement improved CSR reporting and provoked economic effects. Using a difference-in-differences design with matched Danish and Finnish firms as control group, the results show that following the initiation of enforcement procedures in 2021, Swedish firms experienced improvements in report readability, increased causal reasoning, and reduced boilerplate disclosures, which resonates with a statistically and economically significant effect on a compound CSR reporting score which aggregates four CSR report characteristics (i.e., specificity, readability, causal reasoning, and boilerplate disclosures). These findings suggest that (the threat of) enforcement induced affected Swedish firms to improve their CSR reporting. Cross-sectional tests show that the effect of enforcement on CSR reporting is consistently larger for firms (1) that chose low visibility of their CSR disclosures by including them into their annual report, (2) that did not report voluntarily on CSR issues prior to the adoption of the NFRD, (3) that did not report according to GRI standards, and (4) that chose not have their CSR reports assured by auditors. These findings are consistent with the notion that firms with presumably low CSR reporting incentives were more strongly affected by the enforcement mandate.

Moving on to economic effects, this study further investigates whether the introduction of enforcement effected reductions of information asymmetries in capital markets (e.g., Krueger et al. 2024) and “real effects” on firms’ CSR activities (e.g., Chen et al. 2018; Fiechter et al. 2022). Results show that Swedish firms experienced significant increases in stock price liquidity following the introduction of CSR reporting enforcement, reflected by a decrease in Bid-Ask-Spreads, Zero-Return-Days, and Price Impact, which

resonates with a negative effect on a compound liquidity factor which aggregates all three liquidity measures using factor analysis. These findings suggest that the strengthening of enforcement reduced information asymmetries among investors by increasing the (perceived) quality of CSR reports. Moreover, enforcement effected increases in CSR activities and reduced CSR controversies, measured using LSEG's ESG scores. These findings are consistent with (the prospect of) enforcement affecting firms' decision making, hence creating real effects.

Chapter 4: Effects of Say on Pay Mandates on Executive Compensation: Evidence from the EU's Second Shareholder Rights Directive

The *third and final study* of this thesis is again an empirical-archival study. It explores effects of SoP on the level of compensation and on the use of (ESG) performance metrics in executives' compensation contracts. This study exploits the adoption of the SRD II using difference-in-differences analyses with European firms that already had binding SoP laws in place prior to the SRD II as control group (i.e., Denmark, France, Netherlands, and Sweden). This setting offers two advantages. First, all treatment firms are subject to the same SoP regulation, namely the SRD II, and operate in a highly regulated environment which reduces the risk that country-specific factors that are correlated with the adoption of SoP drive the results. Second, the SRD II contains a transposition option regarding the enforceability of the shareholder vote (advisory vs. binding) which enables the exploitation of treatment effect heterogeneity.

The paper comprises two sets of empirical tests. First, it examines the effect of SoP on the level of total compensation and its components. The results show that executives of treated firms experienced significant reductions in total compensation, abnormal compensation and the proportion of variable compensation components. Cross-sectional tests further reveal that the effect of SoP is mainly driven by firms that introduced mandatory shareholder voting on executive compensation for the first time. These findings are in line with SoP (or the anticipated threat of negative shareholder voting results, adverse proxy advisory recommendations or public pressure) reduced (perceived) abnormal compensation. Second, the study investigates whether SoP affects (ESG) compensation metrics used in executives' compensation plans. Two insights emerge from the results. First, treatment firms do not shift compensation metrics from discretionary targets ("other metrics") to regulated targets (liquidity or accounting metrics) indicating that SoP affects in particular highly visible elements of remuneration policies such as the

level of (total) compensation, while other contractual features may be neglected. Second, treated firms (started to) implement ESG-based compensation, i.e., integrated at least one CSR-related, environmental-related or social-related performance goal into executives' remuneration contracts. Potential explanations for this finding include (1) the SRD II's provisions related to the remuneration policy, which require firms to assess directors' performance using both financial and non-financial performance criteria (SRD II, recital 29), (2) shareholders' increased ESG orientation (Hartzmark and Sussman 2019; Pawliczek et al. 2024), or (3) the availability of (audited) CSR key performance indicators stipulated by the NFRD.

2 Survey Evidence on Enforcement of CSR Reporting in EU Member States

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Working Paper⁶

Abstract: This paper documents how the CSR reporting mandate stipulated by the EU Non-Financial Reporting Directive is enforced in EU member states. Based on a survey of European enforcement bodies, I identify differences in the responsibility to carry out enforcement, in the scope of enforcement adopted (“existence only” vs. “existence and content”), in the resources devoted to CSR reporting enforcement (number and knowledge of staff members), and in the enforcement activities conducted. In contrast, enforcement actions brought in the case of discovered infringements are quite comparable between EU member states. I further show that in some EU member states CSR reporting enforcement differs from traditional financial reporting enforcement in terms of the scope of enforcement (and related enforcement activities), the assurance level, and the institution(s) assigned to carry out enforcement. Overall, this survey suggests that enforcement of CSR reporting is still in its infancy.

JEL Classification: M14, M41, M42, M48

Keywords: Corporate Social Responsibility (CSR); Non-Financial Reporting Directive, enforcement

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2.1 Introduction

I document how mandatory CSR reporting is enforced in EU member states. In recent years, a shift in societal preferences has evolved. While the objective of business activities was formerly focused primarily on maximizing profits and shareholder value (Friedman 1970), companies are increasingly expected also to behave in an ecologically and socially responsible manner. This has also been recognized by policy makers (Krueger et al. 2024). The European Parliament and the Council of the European Union, for example, responded in 2014 by issuing Directive 2014/95/EU, the so-called Non-Financial Reporting Directive (hereafter: NFRD), which requires from fiscal year 2017 onwards certain large companies to annually report on environmental, social and employees matters, respect for human rights, and anti-corruption and bribery matters (Art. 1 NFRD). The NFRD regulation has been devised as a directive and in the spirit of “minimum harmonization”, allowing for high flexibility and thereby taking into account both the multidimensional nature of Corporate Social Responsibility and the need for a sufficient level of comparability between CSR reports to become useful for investors and other stakeholders (NFRD, recital 3). Member states of the European Union had to transpose the provisions of the NFRD into national law with the possibility to exercise various options inter alia with respect to the disclosure format (i.e., separate CSR report or integration of CSR information into the annual report (NFRD, recital 6), the scope of affected companies (i.e., increasing affected companies by reducing the size threshold to 250 employees (NFRD, recital 14)), the application of reporting frameworks (NFRD, recital 9), or the degree of audit intensity (i.e., verification of the existence of CSR information vs. verification of the content of CSR information (NFRD, recital 16))⁷. Consistent with different approaches to stakeholder orientation (Liang and Renneboog 2017), these options were exercised differently, resulting in variation of the CSR disclosure mandate between EU member states (e.g., CSR Europe and GRI 2017).

Member state discretion also exists with respect to enforcement of CSR reporting. The 10th recital to the NFRD quite broadly requires that “Member States should ensure that adequate and effective means exist to guarantee disclosure of non-financial information by undertakings in compliance with this Directive. To that end, Member States should ensure that effective national procedures are in place to enforce compliance with the obligations laid down by this Directive [...]” A recent report by ESMA, the European

⁷ For an overview of the exercise of the transposition options, see Appendix 2.A.

securities regulator, documents two degrees of enforcement which have emerged in practice (ESMA 2021). While some member states are “checking only whether the non-financial statement had been prepared (‘existence only’)”, enforcement institutions in other member states go beyond this by also “checking whether the information provided in the non-financial statement met the requirements of Article 19a and 29a of the Accounting Directive (‘existence and content’)” (ESMA 2021, p. 46). These quite generic observations by ESMA aside, there is no documentation revealing which enforcement principle is applied in EU member states and documenting the extent of variation, if any.⁸ Consequently, it remains an open question to what extent enforcement procedures for CSR reporting differ between EU member states.

Examining enforcement of CSR reporting in more detail is important as prior literature suggests that the success of regulations depends not only on the related provisions themselves but also hinge substantially on the proper implementation and enforcement of the rules (Leuz 2010; Shleifer 2005; Djankov et al. 2003). There is a large body of literature documenting positive effects of financial reporting enforcement, for instance, by showing that a stricter IFRS enforcement provoked liquidity (Christensen et al. 2013) and cost of capital benefits (S. Li 2010), reductions in analysts’ forecast errors and dispersion (Byard et al. 2011) as well as improvements in reporting quality (conservatism) (Florou et al. 2020). With regard to CSR reporting, Christensen et al. (2021) assume that changes in the behaviour of firms take place only in the case of sufficiently specific CSR standards and proper enforcement.

Against the backdrop of the scarcity of information available, the objective of this paper is to document in a systematic fashion whether and how enforcement of mandatory CSR reporting differs between EU member states. Specifically, following a resource-based approach (Coffee 2007), this paper examines the institutional setting of European enforcement bodies with regard to the (1) responsibility to carry out enforcement, (2) the scope of enforcement adopted (“existence only” vs. “existence and content”), (3) the resources of these enforcement institutions to carry out their enforcement activities, i.e., staffing and budgeting, and (4) the output of enforcement, i.e., enforcement activities conducted and enforcement actions brought. By investigating these aspects, this paper responds to the call from Leuz and Wysocki (2016) for further research analyzing the

⁸ Existing studies (e.g., EFRAG 2021; CSR Europe and GRI 2017) examining the member state implementation of the NFRD and documenting country-level heterogeneity in the transposition do not report on enforcement of CSR reporting.

role, implementation, and enforcement of new regulations and Fiechter et al. (2020, p. 27) who note that “documentation of existing CSR disclosure enforcement institutions (e.g., resources or staff numbers) and enforcement activities (e.g., number of reviews or review outcomes) if, if anything, incomplete”.

I pursued my research question based on an analysis of public sources and a survey conducted with national competent authorities located in EU member states. As a first step, I examined the webpages and annual reports of national securities regulators and ESMA as well as publicly available sources to obtain information on enforcement of CSR reporting in general and to identify the scope of enforcement. As a next step, I conducted a survey by reaching out via e-mail to the respective enforcement authorities, soliciting information on that my previous research did not yield, and, more broadly, to gain a deeper understanding of the respective institutional settings of these designated enforcement authorities.

In the aggregate, my survey reveals that in 21 out of 27 member states the same national competent authority enforces compliance with both financial and CSR reporting requirements. The remaining six member states have other setups in place. In Croatia, Greece, Hungary, and Ireland, enforcement of CSR reporting is carried out by an authority other than the national competent authority responsible for the enforcement of financial reporting. In Cyprus and Estonia, the national competent authorities have not been designated as the responsible enforcement body but nevertheless carry out reviews of non-financial statements.

With regard to the enforcement scope, my analysis shows that 18 out of 27 member states⁹ apply the “existence and content” principle whereas in eight member states enforcement is confined to verifying that a report has been prepared (“existence only”). This finding is inconsistent with the information reported by ESMA in its report on enforcement and regulatory activities of European enforcers in 2020. This report lists only four member states that apply the “existence only” principle (i.e., Greece, Germany, Hungary, and Sweden) (ESMA 2021). In addition, I compared the scope of audit and enforcement since the NFRD provides member states with a similar transposition option concerning the degree of audit intensity (“existence only” vs. “existence and content”). This analysis reveals that the scope of audit and enforcement is aligned only in 14 out of 27 member states, with member states adopting the “existence only” approach with regard to

⁹ In Cyprus, the national law does not contain any requirements regarding the scope of enforcement.

enforcement predominantly coinciding with the audit principle. Also, I identified stricter requirements for enforcement compared to auditing: Specifically, in 18 out of 27 member states auditing is based on the “existence only” principle, whereas enforcement is only confined to an existence check in eight out of 27 member states.

From my direct communication with enforcement authorities, I learned that most national competent authorities have between five and ten staff members designated to the enforcement of both financial and CSR reporting. Anecdotal evidence further revealed that typically the same staff members are responsible for both the enforcement of financial and CSR information. So far, only competent authorities of five member states (i.e., Finland, Netherlands, Lithuania, Poland, and Sweden) dedicate staff members exclusively to CSR reporting enforcement. Typically, these staff members have an accounting or finance background.

Also, with regard to enforcement activities, my survey confirms the expectation of country-level heterogeneity. Competent authorities applying the “existence only” approach, for instance, mentioned that enforcement activities encompass only a review whether a non-financial statement has been published. In contrast, under the “existence and content” approach, which is consistent with the enforcement approach for financial statements, enforcers probe compliance with the existing legal regulations (Art. 19a / 29a of the Accounting Directive) by reading and assessing the main topics of the non-financial statements, reviewing the quality of the disclosures provided or verifying the plausibility of the information reported. However, the main challenges in verifying the content of CSR information are the lack of a clear set of standards as well as the scarcity of experience in reviewing non-financial statements.

In contrast, my survey does not indicate major differences in enforcement actions. More so, enforcement actions are typically the same for financial and CSR reporting. Out of the 21 national competent authorities which responded to this question, 18 draw on the catalogue of potential actions / sanctions provided by ESMA in its Guidelines on Enforcement of Financial Reporting¹⁰. These actions include requiring a restatement, a corrective note or a correction in a future non-financial statement. Additionally, in most EU member states financial penalties can be imposed in the case of severe CSR reporting

¹⁰ Only in 2025, ESMA issued specific guidelines on enforcement of sustainability information, which apply to enforcement of sustainability reports published from January 2025 onwards (ESMA 2025).

infringements. Only enforcers in six out of 21 member states indicated that they have no authority to impose such fines.

This paper contributes to the literature in two ways: First, to the best of my knowledge, this paper is the first investigating the institutional foundations of enforcement of CSR reporting and documenting in a systematic fashion country-level heterogeneity in enforcement. Existing studies (e.g., Coffee 2007; Jackson and Roe 2009; Brown et al. 2014) analyzing the inputs and outputs of European enforcement bodies have focused solely on financial reporting enforcement. Since enforcement of CSR reporting is a “different ballgame” due to its diverse member state options and lack of clear and uniform standards, these results may not be applicable. My findings may also be of potential interest to regulators and policy makers in their ongoing effort of revising CSR reporting regulations. For instance, the recently adopted Corporate Sustainability Responsibility Directive (CSRD) is pushing more towards mandatory harmonization of CSR reporting as well as its auditing and enforcement (CSRD, recital 37). Second, by gathering and compiling information on CSR reporting enforcement in a comprehensive and structured manner, this paper builds the groundwork for future research, which could empirically examine the effects of CSR reporting enforcement.

2.2 Background

2.2.1 Non-Financial Reporting Directive (NFRD)

On 22 October 2014, the European Parliament and the Council of the European Union adopted Directive 2014/95/EU amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups (NFRD, recital 1-3). This CSR disclosure mandate represented a considerable, supra-national change since before the passage of the directive only a few EU member states had transparency regulations regarding Corporate Social Responsibility in place (Grewal and Serafeim 2020). In particular, the NFRD requires large companies which are public-interest entities and exceed on their balance sheet date the criterion of the average number of 500 employees during the financial year to include in their management report a non-financial statement which contains information to the extent necessary for an understanding of the undertaking’s development, performance, position, and impact of its activities, relating to, as a minimum, environmental, social and employee matters, respect for human rights, and anti-corruption and bribery matters (Art. 1 NFRD). The NFRD had to be transposed into national law by 6 December 2016, so that a non-financial statement

was required for the first time for financial years commencing on or after 1 January 2017 (Art. 4 (a) NFRD). Accordingly, the first mandatory non-financial statements were available in 2018 and since then, have to be prepared on an annual basis.

In the spirit of a minimum harmonization, member states were provided with various options in the transposition of the NFRD, inter alia with respect to the disclosure format, the scope of affected companies, the application of reporting frameworks, or the degree of audit intensity, all of which translate into country-level heterogeneity (CSR Europe and GRI 2017). With respect to enforcement, the 10th recital to the NFRD only broadly requires that member states “ensure that adequate and effective means exist to guarantee disclosure of non-financial information by undertakings in compliance with this Directive. To that end, Member States should ensure that effective national procedures are in place to enforce compliance with the obligations laid down by this Directive, and that those procedures are available to all persons and legal entities having a legitimate interest, in accordance with national law, in ensuring that the provisions of this Directive are respected.”

Even though the NFRD does not contain any specific provisions on enforcement, a recent report by ESMA documents two different forms of enforcement which have been adopted by European enforcement bodies (ESMA 2021). While in some member states enforcers are “checking only whether the non-financial statement had been prepared (‘existence only’)” (ESMA 2021, p. 46), enforcement institutions in other member states go beyond this by also “checking whether the information provided in the non-financial statement met the requirements of Article 19a and 29a of the Accounting Directive (‘existence and content’)” (ESMA 2021, p. 46). In its Public Statement on European common enforcement priorities for 2022 annual financial reports, ESMA further points to member state differences in the enforcement scope and supervisory power but does not elaborate on these differences. Specifically, ESMA stated that “a limited number of enforcers 1) can supervise and enforce non-financial information only if it is set out within the management report or published together with it or 2) only have the power to check the existence of the non-financial information as opposed to the content or 3) do not have any supervisory powers on non-financial information at all” (ESMA 2022b, p. 8).

2.2.2 Enforcement

Enforcement can be defined as the examination of compliance of financial information with the relevant reporting standards and taking adequate measures in the case of

infringements (ESMA 2020, p. 6). By either directly sanctioning companies for detected deviations from the applicable reporting requirements or by deterring misreporting due to the threat of potential penalties in the case of uncovered infringements, enforcement serves to enhance confidence in the accuracy of information provided by undertakings (Berger 2010; Hitz 2014).

In Europe, enforcement is legally based on the so-called IAS regulation, issued in 2002, and the Transparency Directive, adopted in 2004, which both require the establishment of appropriate enforcement systems. However, neither the IAS regulation nor the Transparency Directive exactly specify what constitutes adequate enforcement systems. Hence, significant latitude has been afforded to member states when establishing competent authorities responsible for enforcement (Christensen et al. 2013). Previous research shows that this member state discretion provoked country-level heterogeneity due to regulatory tradeoffs and disparate resources devoted to enforcement (Brown et al. 2014; Christensen et al. 2016). To coordinate the resulting divergent enforcement practices and thereby achieve the stated objective of cross-national comparability of financial information, a supranational body, from 2001 to 2010 the Committee of European Securities Regulators [CESR], since 2010 the European Securities and Markets Authority [ESMA] has been instated (Art. 1 No. 5 (c) ESMA Regulation).

ESMA's harmonization efforts are reflected, for example, in its reports on corporate reporting enforcement and regulatory activities, the common enforcement priorities, both of which are published annually and include separate sections for CSR reporting, or the guidelines on enforcement of financial information (2014, 2020) which are intended to facilitate consistent, efficient, and effective supervisory practice (ESMA 2020). In 2025, in the course of the entry into force of the CSRD, ESMA also released specific guidelines on enforcement of sustainability information (ESMA 2025), which shall apply to the enforcement of 2025 sustainability reports.

2.3 Methodology

I investigate enforcement of mandatory CSR reporting in EU member states following a resource-based approach (Coffee 2007), which is characterized by an analysis of enforcement inputs (e.g., size of the regulator's budget and staff) and enforcement outputs (e.g., number of enforcement actions conducted by the enforcement authority as well as nature and amount of penalties imposed). In contrast to early approaches which employed the origin of the legal system ("code law" vs. "common law" countries) (La Porta, Lopez-

de-Silanes, and Shleifer 2006; La Porta et al. 1998) or the regulatory and governance quality (Kaufmann, Kraay, and Mastruzzi 2009, 2010) as enforcement proxies¹¹, a resource-based approach measures country differences in enforcement more holistically.

Following Coffee (2007) and Brown et al. (2014), I investigate enforcement of CSR reporting based on a combination of (1) an analysis of public sources and (2) a survey conducted with national competent authorities. Specifically, for each EU member state, I conducted a web-based analysis of publicly available information on CSR reporting enforcement. To that end, I searched for publications by auditing and consulting firms (e.g., Big4 companies) as well as academic journal articles. I also examined the webpage of ESMA and all national securities regulators for information on CSR reporting enforcement, particularly by analysing national competent authorities' annual activity reports.

I conducted my survey in two main rounds between 2021 and 2022, followed by a final follow-up e-mail in 2023. The first interaction with European enforcement bodies took place in the beginning of 2021 and was intended to determine the scope of enforcement adopted. To that end, I consulted the respective enforcement authorities to verify the information gathered during the web-based analysis or to obtain information on enforcement in the circumstance that my research did not yield any result. In a second round, carried out in the beginning of 2022, both the national competent authorities and ESMA were contacted again. I sent a short questionnaire to European enforcement bodies, and in particular, to those staff members contacted in the first phase of this project to gain a deeper understanding of the institutional setting of the designated authorities. Specifically, I consulted the enforcement institutions with regard to the following questions:

- 1) Which institution(s) is/are assigned with the *responsibility* to carry out enforcement under the NFRD?
- 2) How are these institutions equipped with *resources* to carry out their enforcement activities, in particular with respect to staffing and budgeting?

¹¹ Although these early studies indeed document country differences in enforcement, they are largely criticized for not measuring enforcement of accounting standards per se (Brown et al. 2014), being incomplete in capturing all aspects of legal regimes (Jackson 2007), and be focused too heavily on formal legal powers (Jackson and Roe 2009).

- 3) How is CSR reporting enforcement *conducted* by national competent authorities?
- 4) What kind of *enforcement actions* are taken?

With the exception of the third research question (only 13 out of 27 member states provided me with detailed information), I achieved a substantial response rate for all other issues raised. Table 2.1 reports the response rates at member state level.

To ensure that the answers obtained are complete, up-to-date, and free from inconsistencies, I provided the enforcement bodies with the preliminary results of this survey in the beginning of 2023 and asked for brief feedback if they notice any discrepancies with their answers given previously. Indeed, the national competent authorities of Cyprus, Denmark, Malta, and Sweden had minor comments concerning my findings, which I corrected subsequently.

2 Survey Evidence on Enforcement of CSR Reporting in EU Member States

Table 2.1: Survey Response Rates

Member State	Responsibility	Scope	Employees	Activities	Actions	(%)
Austria	yes	yes	yes	yes	yes	100.00
Belgium	yes	yes	yes	no	yes	80.00
Bulgaria	yes	yes	yes	no	yes	80.00
Croatia	yes	yes	no	no	no	40.00
Cyprus	yes	yes	yes	yes	yes	100.00
Czech Rep.	yes	yes	yes	no	yes	80.00
Denmark	yes	yes	yes	no	yes	80.00
Estonia	yes	yes	yes	yes	yes	100.00
Finland	yes	yes	yes	yes	yes	100.00
France	yes	no	no	no	no	20.00
Germany	yes	yes	no	no	no	40.00
Greece	yes	yes	no	no	no	40.00
Hungary	yes	yes	no	no	no	40.00
Ireland	no	yes	no	no	no	20.00
Italy	yes	yes	yes	yes	yes	100.00
Latvia	yes	yes	yes	yes	yes	100.00
Lithuania	yes	yes	yes	yes	yes	100.00
Luxembourg	yes	yes	yes	yes	yes	100.00
Malta	yes	yes	yes	yes	yes	100.00
Netherlands	yes	yes	yes	no	yes	80.00
Poland	yes	yes	yes	no	yes	80.00
Portugal	yes	yes	yes	yes	yes	100.00
Romania	yes	yes	yes	no	yes	80.00
Slovakia	yes	yes	yes	yes	yes	100.00
Slovenia	yes	yes	yes	no	yes	80.00
Spain	yes	yes	yes	yes	yes	100.00
Sweden	yes	yes	yes	yes	yes	100.00
Σ	26 (96.30%)	26 (96.30%)	21 (77.78%)	13 (48.15%)	21 (77.78%)	107 (79.26%)

This table reports response rates of my survey with European enforcement bodies conducted in 2021 and 2022

2.4 Findings

2.4.1 Responsibility for the Enforcement of CSR Reporting

The wording of the NFRD does not indicate by whom enforcement of CSR reporting is to be carried out at the member state level and whether enforcement of both financial and CSR reporting should be conducted by the same enforcement body. Relatedly, ESMA's Guidelines on Enforcement of Sustainability Information directly refer to the option of delegating enforcement tasks (ESMA 2025, 13)¹². Hence, in a first round of the survey, I asked ESMA as well as the national competent authorities dedicated to financial reporting enforcement about their responsibility for CSR reporting enforcement. In the case that the answers of the national competent authorities indicate that they do not enforce compliance with the reporting obligations under the NFRD, I further asked for the name of the institution designated to the enforcement of CSR reporting. I contacted these institutions subsequently.

Overall, my survey reveals that in 21 out of 27 member states the same national competent authority enforces compliance with both financial and CSR reporting requirements. In another four out of 27 member states (i.e., Croatia, Greece, Hungary, and Ireland) CSR reporting enforcement is designated to an authority other than the national competent authority¹³. In the remaining two out of 27 member states (i.e., Cyprus and Estonia), the national competent authorities have not been designated as the responsible enforcement body but nevertheless monitor (voluntarily) the disclosure of CSR information. In Cyprus this is due to the fact that the national law does not stipulate any requirements regarding the responsibility for CSR reporting enforcement. Hence, the Cyprus Securities and Exchange Commission [CySEC] is not entrusted with supervisory powers. From my direct communication, I further learned that in the Czech Republic, enforcement of both financial and CSR reporting is conducted by the Czech National Tax Offices¹⁴. In

¹² Specifically, the second guideline states that “[w]hen enforcers delegate tasks related to the enforcement of sustainability information in accordance with Article 24(2) of the Transparency Directive, the final responsibility for enforcement, including the responsibility for the establishment and maintenance of an appropriate process for enforcement, remains with the enforcer” (ESMA 2025, 14).

¹³ The responsibility for financial reporting enforcement lies with the Croatian Financial Services Supervisory Agency [HANFA], the Hellenic (Greece) Capital Market Commission [HCMC], the Central Bank of Hungary [MNB], and the Irish Accounting Supervisory Authority [IAASA], respectively. In contrast, the Croatian Ministry of Finance, the Greek Ministry of Development, the Hungarian registry court, and the Irish Corporate Enforcement Authority [CEA] have been designated for CSR reporting enforcement. Notwithstanding, HCMC indicated to me, that they are currently in the process of reviewing the relevant framework and proceeding with necessary adjustments.

¹⁴ This finding is in line with Cumming, Groh, and Johan (2018), who analyzed the enforcement intensity of the Market Abuse Directive in the EU.

contrast, ESMA specified the Czech National Bank [CNB] as the national competent authority for enforcement in its list of competent authorities designated for the purposes of the Transparency Directive (ESMA 2022c). To elaborate on this finding, I contacted ESMA. However, I did not receive any answer yet.

With regard to enforcement systems, my survey revealed two peculiarities: First, Austria and Sweden have two-tier system of enforcement in place. On the first tier, the Austrian Financial Reporting Enforcement Panel [AFREP], a private review panel, and the Council for Swedish Financial Reporting Supervision carry out reviews of CSR information. For the imposition of enforcement measures, however, the national competent authorities, the Austrian Financial Market Authority [FMA] and Swedish Financial Supervisory Authority, are responsible, respectively¹⁵. Second, in Denmark, there are two independent competent authorities responsible for the enforcement of both financial and CSR reporting. Whereas the Danish Business Authority [DBA] enforces compliance with reporting obligations of non-financial undertakings, the Danish Financial and Supervisory Authority [Danish FSA] is responsible for the enforcement of financial undertakings (e.g., banks and insurance companies).

Table 2.2 lists the competent authorities for financial and CSR reporting in EU member states.

Table 2.2: Responsibility for Enforcement

Member State	Financial reporting enforcement	CSR reporting enforcement
Austria	Austrian Financial Market Authority Austrian Financial Reporting Enforcement Panel	Austrian Financial Market Authority Austrian Financial Reporting Enforcement Panel
Belgium	Belgium Financial Service and Market Authority	Belgium Financial Service and Market Authority
Bulgaria	Bulgarian Financial Supervision Commission	Bulgarian Financial Supervision Commission
Croatia	Croatian Financial Services Supervisory Agency	Croatian Ministry of Finance
Republic of Cyprus	Cyprus Securities and Exchange Commission	n.a.
Czech Republic	Czech National Tax Offices	Czech National Tax Offices

(continued on next page)

¹⁵ A two-tier enforcement mechanism also existed in Germany until 31 December 2021. As a result of the bankruptcy of Wirecard, the private Financial Reporting Enforcement Panel [FREP/DPR] has been abolished. Since 1 January 2022, enforcement in Germany is structured as a single-tier mechanism and is carried out entirely by the German Federal Institute for Financial Services Supervision [BaFin].

Denmark	Danish Business Authority Danish Financial Supervisory Authority	Danish Business Authority Danish Financial Supervisory Authority
Estonia	Estonian Financial Supervision Authority	n.a.
Finland	Finnish Financial Supervisory Authority	Finnish Financial Supervisory Authority
France	Financial Markets Authority	Financial Markets Authority
Germany	Federal Institute for Financial Services Supervision	Federal Institute for Financial Services Supervision
Greece	Hellenic Capital Market Commission	Greek Ministry of Development
Hungary	Central Bank of Hungary	Hungarian Registry Court
Ireland	Irish Auditing and Accounting Supervisory Authority	Corporate Enforcement Authority
Italy	Companies and Securities National Commission	Companies and Securities National Commission
Latvia	Latvian Financial and Capital Markets Commission	Latvian Financial and Capital Markets Commission
Lithuania	Bank of Lithuania	Bank of Lithuania
Luxembourg	Financial Markets Supervisory Commission	Financial Markets Supervisory Commission
Malta	Malta Financial Services Authority	Malta Financial Services Authority
Netherlands	Netherlands Authority for the Financial Markets	Netherlands Authority for the Financial Markets
Poland	Polish Financial Supervision Authority	Polish Financial Supervision Authority
Portugal	Portuguese Securities National Commission	Portuguese Securities National Commission
Romania	Romanian Financial Supervisory Authority	Romanian Financial Supervisory Authority
Slovakia	National Bank of Slovakia	National Bank of Slovakia
Slovenia	Slovenian Securities Market Agency	Slovenian Securities Market Agency
Spain	Spanish Securities Market Commission	Spanish Securities Market Commission
Sweden	Council for Swedish Financial Reporting Supervision Swedish Financial Supervisory Authority	Council for Swedish Financial Reporting Supervision Swedish Financial Supervisory Authority

This table lists the national competent authorities for the enforcement of financial and CSR reporting enforcement, respectively. Information is based on direct communication with enforcement bodies.

2.4.2 Scope of Enforcement and Auditing

As delineated previously, the NFRD and in particular the 10th recital to the NFRD do not provide any details on how enforcement of CSR reporting is to be carried out at member

state level. As a result, two forms of enforcement, which differ in their degree of verification, have emerged in practice. The so-called “existence only” approach is confined to a check whether a non-financial statement has been prepared, irrespective of the veracity of the information contained therein. In contrast, the “existence and content” approach, which is consistent with the enforcement approach to financial statements, includes a verification whether non-financial statements comply with the content-related requirements of the NFRD.

Enforcement

Table 2.3 displays information on the scope of audit and enforcement. I was able to ascertain the scope of enforcement for 26 out of 27 EU member states. The French enforcement authority, the French Financial Markets Authority [AMF], replied, albeit only with reference to their homepage, and even when enquired about, no information was provided about the scope of enforcement. With the information available (e.g., ESMA’s report on enforcement and regulatory activities of European enforcers in 2020), however, the enforcement scope for France could be derived, at least to a reasonable degree of certainty.

In general, my survey reveals that 18 out of 27 member states apply the “existence and content” approach whereas enforcers in eight member states only check whether a non-financial statement has been prepared (“existence only”). This finding contradicts with ESMA’s report on enforcement and regulatory activities of European enforcers in 2020, which indicates that only Greece, Germany, Hungary, and Sweden adopted the “existence only” approach to enforcement (ESMA 2021). In Cyprus, as indicated previously, the national law does not assign any responsibilities for CSR reporting enforcement to CySEC or another institution and is also silent regarding the scope of enforcement. According to CySEC, existence checks are nevertheless conducted voluntarily.

Table 2.3: Scope of Enforcement and Auditing

Member State	Scope of Enforcement	Scope of Auditing
Austria	existence and content	existence only
Belgium	existence and content	existence and content
Bulgaria	existence and content	existence and content
Croatia	existence only	existence only
Republic of Cyprus	n.a.	existence only
Czech Republic	existence only (existence and content if relevant for the tax assessment)	existence only
Denmark	existence and content	existence and content
Estonia	existence only	existence only
Finland	existence and content	existence only
France	existence and content	existence and content
Germany	existence only	existence only
Greece	existence only	existence only
Hungary	existence only	existence only
Ireland	existence and content	existence only
Italy	existence and content	existence and content
Latvia	existence and content	existence and content (separate report: existence only)
Lithuania	existence and content	existence only
Luxembourg	existence and content	existence only
Malta	existence and content	existence only
Netherlands	existence and content	existence and content
Poland	existence and content	existence only
Portugal	existence and content (until 2020: existence only)	existence only
Romania	existence only (existence and content for the most representative companies)	existence and content
Slovakia	existence and content	existence only
Slovenia	existence and content	existence only
Spain	existence and content	existence only
Sweden	Existence and content (until 2020: existence only)	existence only

This table lists the scope of enforcement and auditing in EU member states. Information on the scope of enforcement is based on a survey conducted with national competent authorities in 2021. Information on the scope of auditing is derived from CSR Europe and GRI (2017).

My direct communication with the enforcement institutions further revealed that (1) Portugal and Sweden made changes to their enforcement scope over time, (2) in the Czech Republic and Romania a combination of the “existence-only” and “existence and content” approach are applied, and (3) in Austria and Germany enforcement intensity varies depending on the reporting format, which may explain the deviation from ESMA’s findings concerning the enforcement scope (ESMA 2021). Specifically, Portugal and Sweden started enforcement procedures in 2018 based on the “existence-only” approach.

In 2021, both countries strengthened their enforcement activities by initiating full-fledged content reviews. The Swedish enforcement body, the Council for Swedish Financial Reporting Supervision, indicated to me, that the motivation behind this change in enforcement intensity was to align financial and CSR reporting enforcement practices. In the Czech Republic and Romania, enforcement is generally based on the “existence-only” approach. However, the Czech National Tax Offices may further review the content in individual cases if the non-financial statements contain information deemed relevant for the tax assessment. In Romania, the most representative companies for the market are also subject to a verification of the content on a random basis. Finally, in Austria and Latvia (Germany), enforcement is intensified to an additional content review (only carried out) if the non-financial statement is integrated into the management report¹⁶ (Thormann and Barth 2018), which is in line with ESMA’s observation on differences in CSR reporting enforcement based on the reporting format (ESMA 2022a).

Audit

In a narrower sense, enforcement activities only refer to the review activities conducted by national competent authorities. A broader interpretation, however, also includes an involvement of other players, such as auditors or capital market participants (Hitz 2014). In this regard, Ewert and Wagenhofer (2019) analytically show that depending on the institutional environment (low vs. high enforcement intensity) auditing and enforcement can be complements (low-intensity enforcement) or become substitutes (high-intensity enforcement).

The NFRD provides member states with a similar transposition option with regard to the audit of non-financial statements. The 16th recital to the NFRD requires that statutory auditors or audit firms check that the non-financial statement has been prepared. However, based on the national transpositions of the NFRD, member states can also stipulate a verification of the content of CSR information. According to CSR Europe and GRI (2017), in 19 out of 27 member states auditing is based on the “existence only” approach, whereas in the remaining eight member states, the auditing process also includes a verification of the content of the non-financial statements. Based on this

¹⁶ The Austrian Financial Reporting Enforcement Panel [AFREP] further indicated that for separate non-financial statements, they mainly check the presence of the statements, but also conduct consistency checks with the information provided in the management report (indirect content review).

information and the results of my survey, I further investigate whether the scope of audit and enforcement coincide.

My comparison shows that there is an alignment between audit and enforcement in only 14 out of 26 member states¹⁷. Predominantly, a similarity is apparent in member states adhering to the “existence only” principle with regard to enforcement. Out of the eight member states confining their enforcement to an existence check, the audit of seven member states¹⁸ is based on the “existence only” approach. The only deviation has been recognized in Romania, where the auditor also reviews the content of the non-financial statement. Considering that in Romania, the enforcement of the most representative companies also includes a content review, there is only a minor discrepancy concerning enforcement and auditing. In addition, my comparison reveals that stricter requirements exist for enforcement compared to auditing. Whereas in 19 member states, auditing is based on the “existence only” approach, only eight member states confined their enforcement of non-financial statements to an existence check. In Portugal and Sweden, differences in audit and enforcement intensity are explained by the strengthening of CSR reporting enforcement in 2021. Accordingly, external verification of CSR reporting differs from that of financial reporting, where no deviations are discernible between the scope of audit and enforcement.

2.4.3 Enforcement Inputs (Staff Size and Budget)

Data on enforcement inputs are important to assess whether a competent authority also has the necessary resources to detect possible misconduct and carry out sufficient enforcement activities (La Porta et al. 2006). Lohse, Pascalau, and Thomann (2014), for example, find that increases in the budget of the U.S. Securities Exchange Commission leads to a decrease in the number of enforcement cases and hence, effectively deter market participants from misreporting. In this regard, Guideline 2 of the Guidelines on Enforcement of Sustainability Information states that “Enforcers should ensure the effectiveness of the enforcement of sustainability information. In order to do so, they should have sufficient human and financial resources to carry out their activities in an effective manner [...]. The human resources should be professionally skilled, experienced with the sustainability information framework and financial information and sufficient in

¹⁷ As in Cyprus no enforcement scope has been laid down, I was unable to compare the alignment of audit and enforcement.

¹⁸ These member states involve Croatia, Czech Republic, Estonia, Germany, Greece, Hungary, and Sweden.

number, taking into account the number of issuers subject to enforcement of sustainability information, their characteristics, the complexity of their sustainability statements and their ability to apply the sustainability information framework.” (ESMA 2025, 13) Accordingly, I asked European enforcement bodies about (1) the level of human and financial resources (number of staff members and budget), (2) the separation of financial and CSR reporting enforcement when dedicating staff members, and (3) the skillset of employees (i.e. academic background and sustainability experiences).

Based on my communication with European enforcement bodies, I was able to document enforcement inputs (i.e., human resources) for 19 out of 27 EU member states. No information has been provided by the Croatian, Greek, Hungarian, and Irish enforcement institutions. The German national competent authority, BaFin, currently do not dedicate specific staff members or individual budgets to the enforcement of CSR reporting. This is because currently –in line with the “existence-only” approach to enforcement– CSR reporting is not prioritized. The Italian, Romanian, and Slovakian national competent authorities did not provide information on the staff size due to privacy reasons. With regard to financial resources, European enforcement bodies did not share detailed information as either (1) the information is confidential or (2) there is no separate budget for the enforcement of CSR reporting. Accordingly, my analysis on enforcement inputs is based only on the endowment with human resources.

It can be gleaned from Table 2.4 that predominantly European enforcement bodies employ between five and ten staff members for the enforcement of both financial and CSR reporting. The Cyprus Securities and Exchange Commission [CySEC] exhibit the fewest absolute number of staff members, with only one employee responsible for enforcement. In contrast, the Polish and Belgium competent authority employ around 10 to 20 staff members¹⁹ enforcing compliance with financial and CSR reporting obligations. In addition, for the Czech, Estonian, and Slovenian enforcement bodies, determining the exact level of human resources is problematic, as staff members have to perform complementary or administrative tasks and hence do not focus solely on the enforcement of financial and CSR reporting. These organizational structures run against ESMA’s recommendation that national competent authorities should at least dedicate one full-time employee to the enforcement of financial reporting and that enforcement should not be an ancillary function (ESMA 2017).

¹⁹ Due to privacy reasons the data on staffing levels are in some member states only based on ranges.

For comparative purposes amongst different jurisdictions, I further put into perspective the number of undertakings subject to CSR reporting as the number of companies affected by the NFRD varies widely between EU member states²⁰. For instance, in Slovakia only two companies are required to disclose a non-financial statement. In France and Germany, in contrast, more than 300 undertakings are subject to the NFRD (European Commission 2020), respectively. In the aggregate, this analysis yields an average ratio of 9.83, meaning that one full-time employee is responsible for the enforcement of ten non-financial statements. With a ratio of 38.3 (0.08), I observed the highest (lowest) ratio of issuers of CSR reports to employees in Sweden (Estonia). However, these results should be treated cautiously, because numbers can be skewed due to (1) institutional features, (2) no separation of financial and CSR reporting enforcement, or (3) selection models used (risk-based vs. sampling and rotation approach) (ESMA 2025, 16).

With regard to the separation of financial and CSR reporting enforcement, my survey shows that in practice predominantly both financial and CSR reporting enforcement are carried out by the same employees. Currently, only competent authorities of five member states (i.e., Finland, Lithuania, Netherlands, Poland, and Sweden) dedicate staff members explicitly to CSR reporting enforcement.

From my direct communication with enforcement bodies, I further learned that staff members of only five out of 27 member states (i.e., Belgium, Latvia, Luxembourg, Poland, and Spain) were explicitly specialized in sustainability aspects, e.g., through training or education. The Belgian and Luxembourg enforcement authority further pointed out that there are some employees who have a more in-depth knowledge of CSR reporting and thus ensure to provide other colleagues with relevant trainings or guidance as needed. Similarly, at the Spanish Securities Market Commission [CNMV], some staff members are more specialized and thus devote a higher part of their time to review CSR reporting than financial reporting.

In contrast, the Finnish Financial Supervisory Authority [Fin-FSA] mentioned that reviewing CSR aspects is based on learning by doing. In a similar vein, the Austrian Financial Reporting Enforcement Panel [AFREP] denied an explicit sustainability education of their staff members, but they ensure sufficient knowledge of their employees

²⁰ This procedure is in line with ESMA (2017), who, among other things, assessed the sufficiency of human resources in terms of the number of total IFRS issuers in a jurisdiction per full-time employee dedicated to financial reporting enforcement in its Peer Review on Guidelines on Enforcement of Financial Information.

through participation in relevant courses. In this regard, AFREP pointed out that finding adequate providers for such trainings is still a major challenge for auditing and enforcement bodies. Anecdotal evidence further shows that the requirement to exhibit a high degree of experience in the field of accounting often contradicts with graduation in sustainability studies. Remarkably, the Slovenian enforcement authority explicitly stated that they are currently unable to effectively supervise CSR information due to the extensive scope of legislation and lack of sufficient human resources with relevant experience. For detailed information on the enforcement inputs refer to Appendix 2.B, which quotes answers given by national competent authorities.

Finally, I analyzed the webpages of designated enforcement authorities with regard to vacancies in the field of enforcement. This investigation was intended to obtain information on whether prospective employees should have a certain qualification in the area of CSR reporting (e.g., a degree in the field of sustainability studies, special CSR education or training). As of 2022, five enforcement bodies (Austria, Belgium, Ireland, Luxembourg, and Sweden) have advertised vacancies for enforcement staff. However, only the Austrian Financial Reporting Enforcement Panel [AFREP] refers to required knowledge of CSR reporting in its job advertisement, as applicants should be familiar with CSR reporting requirements. Overall, the educational background at European enforcement bodies seems to be still financial or accounting.

2 Survey Evidence on Enforcement of CSR Reporting in EU Member States

Table 2.4: Enforcement Inputs

Member State	Number of Employees	Assignment to CSR Enforcement	Number of Affected Firms	Enforcement Ratio (CSR Enforcement)	Enforcement Ratio (Total)
Austria	4 FTEs ²¹	No	67	16.75	16.75
Belgium	ca. 10-20 FTEs	No	66	4.40	4.40
Bulgaria	10 FTEs	No	19	1.90	1.90
Republic of Cyprus	1 FTE	No	15	15.00	15.00
Denmark	4 FTEs	No	77	19.25	19.25
Estonia	110 FTEs ²²	No	9	0.08	0.08
Finland	9 FTEs	Yes (3)	85	28.33	9.44
France	12 FTEs	No	310	25.83	25.83
Latvia	40 FTEs	No	11	0.28	0.28
Lithuania	4 FTEs	Yes (2)	13	6.50	3.25
Luxembourg	7 FTEs	No	30	4.29	4.29
Malta	5 FTEs	No	8	1.60	1.60
Netherlands	Ca. 10 FTEs	Yes (3)	97	32.33	9.70
Poland	Ca. 15 FTEs	Yes (3)	143	47.67	9.53
Portugal	7 FTEs	No	33	4.71	4.71
Slovenia	43 FTEs	No	17	0.40	0.40
Spain	7-8 FTEs	No	98	12.25	12.25
Sweden	5.3 FTEs ²¹	Yes (1)	203	203.00	38.30
			Σ = 1,301	Ø = 23.59	Ø = 9.83

This table reports information on human resources at European enforcement bodies received in the survey.

²¹ The staff size for Austria and Sweden solely pertains to the Austrian Financial Reporting Enforcement Panel and the Council for Swedish Financial Reporting Supervision.

²² Not all 110 staff members at the Estonian national competent authority are dedicated to enforcement.

2.4.4 Enforcement Outputs (Enforcement Activities and Actions)

Ample human and financial endowment do not automatically result in high-quality enforcement outputs. The fact that an enforcement body may be well resourced, for example, does not necessarily imply that these resources are deployed wisely and in the intended manner (Jackson and Roe 2009). Accordingly, information on enforcement outputs is needed to compare enforcement between EU member states holistically. Enforcement outputs can be divided into enforcement activities conducted by national competent authorities to detect misconduct and enforcement actions imposed in the case of discovered infringements (Jackson and Roe 2009). According to ESMA's report on corporate reporting enforcement and regulatory activities for 2021 (2020), enforcement bodies have assessed 711 (737) non-financial statements (thereof 338 based on the "existence only" approach and 373 on the "existence and content" approach), representing an examination rate of 36 % (37 %) and leading to an action rate of 10 % (5 %). To gain further insights on how CSR reporting is carried out in practice, I asked European enforcement bodies about the nature of enforcement activities conducted and potential enforcement sanctions.

Enforcement Activities

The response rate to this question was rather low since I was able to obtain information on enforcement activities for only 13 member states. Quoted answers of the enforcement bodies are delineated in Table 2.5. In the aggregate, my survey reveals considerable heterogeneity in enforcement activities between EU member states. One reason for that finding could relate to differences in human and financial resources devoted to CSR reporting enforcement, as delineated in section 2.4.3. Heterogeneity could be further explained by the vague wording of the 10th recital to the NFRD resulting in two different degrees of enforcement ("existence only" vs "existence and content"). Enforcement institutions applying the "existence only" approach mentioned that enforcement activities encompass only a review whether issuers that have a reporting obligation based on the NFRD, have published a non-financial statement. This monitoring activity differentiates from the enforcement of financial reporting as well as from the "existence and content" approach in that the latter also encompasses an assessment of the compliance with the existing legal regulations (Art. 19a / 29a of the Accounting Directive). More precisely, the Spanish Securities Market Commission [CNMV] pointed out that a verification of the content entails a full reading and assessment of the main topics of the CSR information,

internal discussions with the team assigned to that issuer, and in the case that there are any doubts, a written letter sent to the issuer asking for additional clarification or providing some recommendations to improve CSR reporting in the future. The Portuguese enforcement body further indicates that examining the content of CSR information also encompasses a review of the quality of the disclosures provided. According to the Austrian Financial Reporting Enforcement Panel, the main challenge in verifying the content of CSR information is the lack of a clear set of standards²³. Enforcement activities typically involve comparing a target disclosure with an actual disclosure. In the case of CSR reporting with its various options and discretion, there are only scarce target disclosures. As a result, currently, the review of CSR information rather includes a verification of the plausibility of the information provided.

Finally, I observed differences in the coverage of firms subject to CSR reporting enforcement. In Italy, enforcement of CSR reporting is generally based on the “existence and content” approach. Companies are selected based on a random selection and rotation approach. For all other companies which are subject to enforcement but not selected during this process, the Italian Companies and Securities National Commission [CONSOB] checks the existence of non-financial statements. Relatedly, the Bank of Lithuania [LB] indicated to me that they reviewed the non-financial statements of all 21 companies listed on the regulated market of the Lithuanian stock exchange (AB Nasdaq Vilnius), although only 13 out of these 21 companies are required by Lithuanian law to disclose a non-financial statement and are thus subject to enforcement. Considering the increased relevance of CSR aspects, LB also intends to regularly analyse the information provided by these companies either in its entirety or on a selective basis.

²³ This has also been recognized by the EU Commission. Recital 37 to the CSRD, amending the NFRD, states that “common sustainability reporting standards are also necessary to [...] facilitate its supervision and enforcement.”

Table 2.5: Enforcement Activities

Member State	Enforcement Activities
Austria	Assessment of compliance with the existing legal regulations.
Republic of Cyprus	CySEC is monitoring CSR reporting at national level in the context of informing its EU duties. CySEC reviews whether issuers with securities listed on a regulated market have published a non-financial statement. This monitoring activity is different from enforcement activities of financial reporting. As regards financial reporting of issuers, CySEC has enforcement powers based on national law, which it exercises in accordance with ESMA's Guidelines on Enforcement of financial information.
Estonia	The enforcement of CSR information has involved monitoring the disclosure of information for existence.
Finland	So far, no enforcement activities have been conducted with regard to CSR reporting. Fin-FSA reviews sustainability reports and ex-ante briefing on the sustainability regulation and the ECEP. This is a conscious choice because Fin-FSA collects information on the level of sustainability reporting by companies so that they can target the main shortcomings when they start enforcement in full force.
Italy	The supervision of non-financial statements shall be carried out on a selection of companies made annually based on a series of parameters that must be set by CONSOB, including risk factors for CSR information. Additionally, considering that the information contained in the non-financial statements can also be relevant for the purpose of monitoring financial reporting, a group of issuers with listed shares subject to financial disclosure supervision is identified, taking into account the sector and the companies that, due to the selected production and organizational structures, present non-financial statements of significant interest for synergic supervision on both CSR and financial information. CONSOB also establishes the criteria on the basis of an approach founded on random selection and rotation. CONSOB verifies the publication of the CSR information for each obliged party (existence check) by publishing the list on its website. In general, CONSOB examines the compliance of CSR information with the relevant legal requirements of Article 19a / 29a of the Accounting Directive (including content check).
Latvia	On-site (according to plans) and off-site inspections, including financial and CSR reporting.
Lithuania	For enforcement activities, CSR disclosures of the selected listed companies are reviewed and, if necessary, instructions are given to correct improperly disclosed information in future reports. The Bank of Lithuania has reviewed the non-financial statements of all 21 companies listed on the regulated market of AB Nasdaq Vilnius for the year 2020 and disclosed the findings on its homepage. The Bank of Lithuania further plans to regularly analyse the information provided by these companies either in its entirety or on a selective basis, taking into account the increased relevance of certain aspects (principles).

(continued on next page)

Luxembourg	Enforcement is an ex post control of financial information published by issuers. The enforcement process begins with the selection of the issuers which will be examined in the context of enforcement. The selection model applied is based on a mixed model whereby a risk-based approach is combined with a sampling and rotation approach. The risk-based approach adopted by the CSSF considers the risk of misstatements and the possible impact of such a misstatement on the financial markets. In the context of its examination process, the CSSF identifies the most efficient way to enforce financial information. The examination program, defined every year for the selected issuers, includes unlimited scope examinations, focused scope examinations and follow-up examinations. These examinations include direct and repeated contacts (meetings, exchange of e-mails and conference calls) with representatives of the issuer and/or its external auditor in order to analyze the most sensitive problems and issues and obtain information, documents and other objective evidence required to perform the examination. Some examinations may also lead to on-site inspections at the issuers concerned.
Malta	The enforcement activities carried out by the MFSA in the case of financial information are those which are allowed under the Guidelines on Enforcement of Financial Information. In the case of CSR information, findings are communicated to issuers to ensure that disclosures are appropriately included in future financial information.
Portugal	The CMVM conducts, in accordance with its supervision model, an analysis of statements disclosed by issuers in order to verify that all the information legally required is indeed included in those reports, i.e., the CMVM is tasked with checking the existence of the non-financial statements and assessing the compliance of its content with the applicable disclosure requirements (which also encompass rules regarding the quality of the disclosures provided).
Slovakia	The control of financial and CSR information is in accordance with the ESMA Guidelines (ESMA/2014/1293 and ESMA32-50-218.)
Spain	A full review entails a full reading and assessment of the main topics of the CSR report, internal discussions within the team assigned to that issuer, and where there are some doubts, CNMV could send a written letter to the issuer asking for additional clarifications or providing some recommendations to improve the CSR reporting in the future.
Sweden	Review of annual and semi-annual reports of companies listed on a regulated market with Sweden as home member state. The enforcement is conducted according to EMSA guidelines.

This table contains quoted answers of European enforcement bodies with regard to enforcement activities.

Enforcement Actions

With regard to enforcement actions the NFRD does not contain any specific requirements. However, ESMA's report on enforcement and regulatory activities of European enforcers for 2020 documents that in the case of CSR reporting infringements national competent authorities predominantly (39 out of 42 breaches) adopted enforcement measures within the meaning of ESMA's Guidelines on Enforcement of Financial Information (ESMA

2021)²⁴. According to Guideline 7 of the Guidelines on Enforcement of Financial Information, these actions encompass the requirement to reissue a (non-) financial statement, to disclose a corrective note or to correct a material misstatement in a future (non-) financial statement (ESMA 2020). ESMA's 2020 activities report further indicates that in three cases other enforcement actions have been brought (ESMA 2021)²⁵. To gain more detailed information, I consulted European enforcement bodies about the kind of enforcement actions imposed in the case of discovered CSR reporting infringements. In addition, I asked national competent authorities about the possibility (and amount) of imposing financial penalties as such sanctions have a stronger deterrent effect against misreporting²⁶. I was able to gather information on enforcement actions for 21 out of 27 EU member states. Answers of European enforcement bodies are quoted in Table 2.6.

Overall, my survey indicates that enforcement measures are typically the same for financial and CSR reporting and thus, quite comparable between member states. Out of the 21 national competent authorities which responded, 18 draw on the catalogue of potential actions provided by ESMA (i.e., re-issuance of the non-financial statement, corrective note or correction in a future non-financial statement). By contrast, in Austria and Germany, enforcement actions are based on the so-called "name and shame" mechanism. If non-compliance with reporting obligations is detected, the respective error has to be published on the companies' homepages. The publication of erroneous reporting is based on the notion that investors will react negatively and thereby penalising infringing firms (Hitz, Ernstberger, and Stich 2012).²⁷ The Austrian Financial Market Authority further indicated to me that if CSR reporting errors are published, the respective companies are also required to correct the erroneous information based on the Austrian Stock Exchange Act. In Cyprus, as delineated previously, the national competent authority has not the legal power to enforce compliance with the requirements of the NFRD and hence cannot impose enforcement actions. In Romania, the only enforcement

²⁴ Specific guidelines on the enforcement of sustainability reporting have only been published in April 2025. Accordingly, in previous years, national competent authorities had to rely on the Guidelines on Enforcement of Financial Information. Enforcement bodies from Malta, Slovakia, and Sweden explicitly stated that CSR reporting enforcement is based on these guidelines, although not directly involving CSR reporting. With regard to enforcement actions, there are no deviations between both guidelines.

²⁵ ESMA did not elaborate on these three actions.

²⁶ Cumming et al. (2018), for instance, show that infringements of the Market Abuse Directive are more rigorous detected when minimum pecuniary fines are higher.

²⁷ For the German capital market, Hitz et al. (2012) document significant negative market reactions around the publication of error findings. The results, further, weakly indicate that sanctioning by the capital market is stronger, the more severe the error is.

action according to the law on issuers of financial instruments and markets operations is the imposition of monetary sanctions.

In 13 out of 21 member states, pecuniary penalties can be further imposed in the case of severe CSR reporting infringements. No monetary sanctions are stipulated by the Austrian²⁸, Danish, Dutch, Cypriot, and German law due to (1) the outlined “name and shame” mechanism (Austria and Germany) and (2) a lack of formal power for imposing fines (Cyprus, Denmark, and Netherlands²⁹). In addition, the level of potential fines is comparable with those in the case of financial reporting infringements. However, from my direct communication, I learned that monetary sanctions are rather potential enforcement actions which have not / rarely been imposed yet. In this regard, the Spanish Securities Market Commission [CNMV] indicated to me that they have not issued any significant monetary fine for non-compliance with CSR reporting requirements in the past due to an extremely high degree of compliance. In contrast, the Estonian, Finnish, and Lithuanian enforcement institutions –although empowered by law with the possibility to impose fines– mentioned that they have not commenced sanctioning proceedings against CSR reporting infringements but will do so only upon the entry into force of the CSRD. Also, the lack of uniform reporting standards contradicts with the imposition of monetary sanctions. Overall, this survey indicates that the main enforcement actions brought are corrections in future non-financial statements.

²⁸ Only in the case that issuers transmit information or documents that are intentionally incorrect or incomplete, the Austrian Financial Market Authority [FMA] can impose a fine up to 100,000 euros.

²⁹ The Danish Business Authority has only the possibility of notifying the police in the case of a severe infringement, which, in contrast, can impose pecuniary penalties. Relatedly, in the Netherlands, the supervision of financial and CSR reporting enforcement is by means of civil law, not by administrative law.

2 Survey Evidence on Enforcement of CSR Reporting in EU Member States

Table 2.6: Enforcement Actions

Member State	Reissuance	Corrective Note	Correction in a future CSR report	Pecuniary Penalties
Austria		Error publication on the homepage of the respective companies (“name and shame”)		
Belgium	Yes	Yes	Yes	2,500 € and 250,000 €
Bulgaria	Yes	Yes	Yes	2,500 € - 51,000 €
Cyprus	CySEC has no enforcement power in the case of non-compliance with the national law transposing the NFRD			
Czech Republic	No	Yes	Yes	Up to 3 % of the value of total assets
Denmark	Yes	Yes	Yes	No
Estonia	Yes	Yes	Yes	No
Finland	Yes	Yes	Yes	No
Germany		Error publication on the homepage of the respective companies (“name and shame”)		
Italy	Yes	Yes	Yes	20,000 € - 150,000 €
Latvia	No	Yes	Yes	Up to 10,000,000 € or up to 5 % of last year’s income
Lithuania	Yes	Yes	Yes	Up to 10,000,000 € or up to 5 % of last year’s income
Luxembourg	Yes	Yes	Yes	125 € - 125,000 €
Malta	Yes	Yes	Yes	Up to 150,000 €
Netherlands	Yes	Yes	Yes	No
Poland	Yes	Yes	Yes	Up to 1,050,000 € or 5 % of last year’s income
Romania	No	No	No	3,000 € - 9,100,000 €
Slovakia	Yes	Yes	Yes	Up to 100,000 €
Slovenia	Yes	Yes	Yes	5,000 € - 500,000 €
Spain	Yes	Yes	Yes	Yes
Sweden	Yes	Yes	Yes	No

This table summarises information on enforcement actions. Information is based on my survey conducted with European enforcement bodies.

2.5 Conclusion

In this paper, I provide novel insights on enforcement of mandatory CSR reporting in the European Union. The NFRD provides member states with various options when transposing the NFRD into national law. A largely overlooked member state discretion pertains to the enforcement of CSR reporting. A recent report by ESMA documents that enforcement differs with regard to the responsibility to conduct enforcement and the scope of enforcement adopted (“existence only” vs. “existence and content”) (ESMA 2021). However, ESMA does not elaborate on these findings or provide details at member state level.

Based on a survey of European enforcement bodies, conducted in 2021 and 2022, I document in a systematic fashion, heterogeneity in the institutional setting, enforcement scope adopted, and enforcement activities conducted by European enforcement bodies. In contrast, I do not find systematic differences in enforcement actions brought in the case of non-compliance and also compared to financial reporting enforcement. Overall, this survey suggests that considerable effort is necessary to align enforcement practices between EU member states and to attain a sufficient level of enforcement which is comparable to that for financial reporting.

In January 2025, the CSRD entered into force, which replaces reporting requirements under the NFRD. Inter alia, the CSRD stipulates the development of uniform sustainability reporting standards as well as content enforcement and auditing of sustainability reports (CSRD, recital 37), both of which shall impair heterogeneity between EU member states. It is up to future research to investigate whether this alignment will indeed reduce differences in the enforcement between EU member states and between financial and CSR reporting.

My survey is subject to the following limitations: First, since most of the information provided in this paper is based on communication with national competent authorities of EU member states, the correctness of my findings depends on the answers provided. Accordingly, I am unable to rule out the possibility of a response bias (i.e., the possibility that answers of enforcement institutions are biased to gloss over insufficient enforcement practices) (de Jong, Mertens, van der Poel, and van Dijk 2014). Second, I gathered information on enforcement of CSR reporting between 2021 and 2022. Accordingly, I could not track changes in the enforcement or institutional setting of national competent authorities that occurred in the meantime. However, to mitigate concerns that the

information disclosed in this paper is misleading or outdated, I provided the national competent authorities with my preliminary results with the request for brief feedback in case that information therein is incorrect. Indeed, national competent authorities of four member states provided corrections or updated information.

2.6 Appendix

Appendix 2.A: Country-Level Implementation of the NFRD according to CSR Europe and GRI (2017)

Member State	Final Legislation	Scope Extension	Safe Harbor Principle	Content Assurance	Separate Report
Austria	17 January 2017	No	Yes	No	No
Belgium	11 September 2017	Yes	Yes	No	No
Bulgaria	3 June 2016	No	Yes	Yes	No
Croatia	9 December 2016	No	Yes	No	No
Cyprus	2 June 2017	No	Yes	No	No
Czech Republic	1 January 2017	No	Yes	No	No
Denmark	1 June 2015	Yes	Yes	Yes	No
Estonia	10 December 2015	Yes	n.a.	No	Yes
Finland	30 December 2016	No	Yes	No	No
France	11 August 2017	No	Yes	Yes	Yes
Germany	18 April 2017	No	Yes	No	No
Greece	7 July 2016	Yes	Yes	No	Yes
Hungary	15 June 2016	No	No	No	Yes
Ireland	4 August 2017	No	Yes	No	No
Italy	10 January 2017	No	Yes	Yes	No
Latvia	29 December 2016	No	Yes	Yes	No
Lithuania	23 December 2016	Yes	Yes	No	No
Luxembourg	4 August 2016	Yes	No	No	No
Malta	2 December 2016	No	Yes	No	No
Netherlands	23 March 2017	No	Yes	No	Yes
Poland	11 January 2017	Yes	Yes	No	No
Portugal	28 July 2017	Yes	Yes	No	No
Romania	27 February 2017	Yes	Yes	Yes	No
Slovakia	11 June 2015	Yes	No	No	Yes
Slovenia	21 March 2017	No	Yes	No	No
Spain	25 November 2017	Yes	Yes	No	No
Sweden	1 December 2016	Yes	Yes	No	No

Appendix 2.B: Enforcement Inputs (Human Resources)

Member State	Dedicated staff for CSR Reporting Enforcement	Knowledge
Austria	The same employees are responsible for both financial and CSR reporting enforcement.	Staff members have financial/accounting expertise. They are, however, skilled in CSR reporting enforcement through training and courses.
Belgium	The same employees enforce financial and CSR reporting.	A few staff members have better knowledge of CSR reporting requirements. The staff members who have a more in-depth knowledge of non-financial reporting give their colleagues support when necessary as every staff member controls its own portfolio of companies.
Bulgaria	All staff members are responsible for the enforcement of financial and CSR reporting.	So far, there are staff members that are explicitly specialized in the field of CSR reporting.
Republic of Cyprus	The officer responsible for the enforcement of CSR reporting is also responsible for the enforcement of financial information.	There are no staff members explicitly specialized in CSR reporting of listed issuers.
Czech Republic	In the Czech Republic, enforcement is carried out by the individual tax offices. Furthermore, it is usual that the scope of work of every employee at the tax offices includes more administrative work, i.e., it is impossible to determine the staff site and say unequivocally, that there are determined particular employees for the enforcement of non-financial reporting.	
Denmark	The same employees are responsible for the enforcement of both financial and CSR information.	The staff members are specialized in financial information. They have basic knowledge of CSR information too, but are not specialized in this topic yet.
Estonia	There are no staff members who are only responsible for the enforcement of CSR reporting.	There are no employees who are explicitly specialized in CSR aspects.
Finland	Three staff members out of the total of nine are engaged in sustainable issues but as part-time.	There are no staff members with special CSR education or expertise. The educational background of all staff members is financial/accounting. Reviewing CSR aspects is based on learning by doing.
Germany	n.a.	n.a.
Italy	There are some staff members that are mainly dedicated to the enforcement of CSR information.	

(continued on next page)

2 Survey Evidence on Enforcement of CSR Reporting in EU Member States

Latvia	FCMC has not appointed individual staff members who are only responsible for the enforcement of CSR reporting.	There are three staff members who are specialized in CSR issues, explicitly in sustainability related issues. However, these employees are responsible for the development of regulations.
Lithuania	There are no employees at the Bank of Lithuania whose duties are related only to the enforcement of CSR information. Two FTEs from Capital Market Supervision Division are dedicated to performing reviews of CSR reporting for listed companies. However, these staff members also carry out other tasks assigned to them. Two FTEs also work on financial reporting enforcement. The performance of the FTEs responsible for CSR reporting enforcement is almost equal in comparison to enforcement duties for financial reporting.	The education of the staff is economic/financial.
Luxembourg	The same employees enforce financial and CSR information.	All staff members have adequate qualifications to enforce both financial and CSR information. While some of them are experts in a specific domain, they ensure to provide others with relevant trainings or guidance as needed.
Malta	Staff members are involved in financial and CSR reporting reviews as well as other duties.	The staff members have an accounting background. They are well versed in sustainability related regulation and regularly attend training sessions on CSR reporting.
Netherlands	Although the enforcement team supervises financial and CSR reporting, part of the team (about 3 – 4 people) was already partially involved in CSR reporting supervisory activities.	All team members have now been brought up to speed with respect to CSR information to enable them to review both the financial and CSR information.
Poland	1-5 FTEs are solely responsible for the enforcement of CSR reporting. 11-15 staff members enforce compliance with financial reporting requirements.	The staff members responsible for the enforcement of CSR reporting are explicitly specialized in CSR aspects, e.g., through special training or education.
Portugal	None of the seven staff members are exclusively allocated to the supervision of CSR statements, and most of them are also responsible for the enforcement of financial information.	There aren't any staff members who are already specialized in CSR aspects – even though, some of them regularly attend training sessions dedicated to sustainability themes.
Romania	There are no dedicated staff members for the enforcement of CSR reporting. The team with enforcement of financial information responsibility covers also the CSR reporting.	At this moment, there are no staff members with an explicit specialization in CSR reporting.

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2 Survey Evidence on Enforcement of CSR Reporting in EU Member States

Slovakia	The same employees are responsible for the enforcement of financial and CSR information.	
Slovenia	At ATVP the work is complementary between departments. ATVP has one department within which employees, among other tasks, supervise CSR reporting. Internally it is organized into six departments. All of them working in accordance with the fundamental responsibility of the ATVP – that is to carry out supervision.	Due to extensive scope of legislation in the field of CSR reporting, the main obstacle is a lack of sufficient human resources at ATVP to enable an effective supervision of CSR information, and the fact that the staff does not have enough relevant experience in this matter.
Spain	The same staff is responsible for the review of the financial and CSR reporting of issuers.	There are some staff members who are more specialized and who devote a higher part of their time to review CSR reporting than financial reporting.
Sweden	The same employees are responsible for the enforcement of both financial and CSR information. One person who, beside his work on IFRS matters, is responsible for CSR aspects.	The person responsible for CSR information enforcement is not a sustainability expert.

This table contains quoted answers given by European enforcement bodies on enforcement inputs, i.e., human resources.

3 **Does Enforcement of Mandatory CSR Reporting Work? Empirical Evidence on Reporting and Economic Effects**

Annika Haase³⁰, Jörg-Markus Hitz³¹

Working Paper³²

Abstract: We investigate the effects of enforcement of mandatory CSR reporting on CSR reports and on economic outcomes. Drawing from a survey among enforcement authorities in the European Union (EU), we identify and empirically exploit the initiation in 2021 of enforcement procedures for CSR reports in Sweden. Using difference-in-differences analyses with matched Danish and Finnish firms as control group, we find a positive, economically significant effect of enforcement on various CSR report characteristics, including an increase in readability and a reduction in boilerplate disclosures. These reporting effects are larger for firms with low CSR reporting incentives. Moving on to economic effects, we find that the introduction of enforcement effected increases in stock price liquidity and in firms' CSR activities. These findings indicate that CSR reporting enforcement reduced information asymmetries and triggered real effects. Taken together, our findings suggest that enforcement potentially "works" for CSR reporting.

JEL Classification: G18, G38, K22, K32, L21, M14, M41, M48

Keywords: Corporate social responsibility (CSR); sustainability reporting; disclosure regulation; enforcement, reporting quality

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3.1 Introduction

We investigate the effects of enforcement of mandatory CSR reports. Policy makers around the world have in recent years introduced CSR reporting regulation (e.g. Krueger et al. 2024) aimed at increasing transparency and comparability about the environmental and social dimensions of firms' activities, and at facilitating decision making by investors and other stakeholders. For example, the EU's Non-Financial Reporting Directive (NFRD), starting with fiscal year 2017, introduced mandatory preparation of "non-financial reports" for public interest entities across the EU with the stated aim of increasing CSR transparency, and, following from that, firms' CSR orientation. More recently, 2024, the U.S. SEC enacted a mandate for certain public firms to provide disclosures on climate risks (Securities and Exchange Commission 2024).

For CSR reporting to impact decisions of investors and other stakeholders, potentially facilitating economic effects (e.g., on information asymmetries among market participants, or on corporate decision making), CSR reports need to be of sufficient quality. For example, to be decision useful, reporting on greenhouse gas emissions needs to be sufficiently accurate, comparable, and reliable (Greenstone, Leuz, and Breuer 2023). One potential factor shaping CSR reporting quality is enforcement of CSR reporting requirements. In that sense, enforcement may play an important role in ensuring the effectiveness of a CSR reporting mandate (Christensen et al. 2021), for example by avoiding greenwashing by mandated firms. The literature on financial reporting is rich with evidence on the important role of enforcement in moderating reporting quality and in facilitating economic effects. For example, the IFRS adoption literature shows that economic effects such as liquidity benefits materialize to very different degrees on the country or the jurisdiction level, depending on the quality of formal and informal institutions (for an overview, see De George, Li, and Shivakumar 2016). For example, Christensen et al. (2013) show that the liquidity benefits that prior literature established upon mandatory adoption of IFRS across countries are concentrated in those jurisdictions that concurrent with adopting IFRS made substantial changes (improvements) to their enforcement systems. Positive reporting effects of enforcement are established, e.g., by Florou et al. (2020) who document a positive relation between enforcement intensity and reporting quality (conservatism).

Against this backdrop, our paper investigates the role of enforcement for mandatory CSR reporting. Specifically, we investigate the (first-order) effects of enforcement of

mandatory CSR reports on CSR report characteristics, and economic effects on stock price liquidity and on corporate decision making, as reflected by firms' CSR activities. We do so for two reasons. First and foremost, little is known yet about the role of enforcement in the context of CSR reporting, and it is an empirically open question whether CSR reporting enforcement "works" in ways similar to financial reporting. For example, it is not clear that enforcement will materially affect CSR report characteristics, because CSR reporting has some features that make it potentially less enforceable than financial reporting. For one thing, many CSR activities and their outcomes are difficult to measure, as they rely on internal information, require subjective estimates, and / or lack external reference points (Christensen et al. 2021). Examples include dimensions such as employee satisfaction, or a firm's impact on biodiversity. Also, lack of information may impede proper enforcement, as many CSR metrics rely on information from outside the firm, e.g., information on labor safety along the supply chain. These concerns aside, even if enforcement positively affects CSR reporting, it is not clear that it will affect decision making by investors, other stakeholders, and firms. Similarly, is it an open question whether enforcement facilitates economic effects in ways consistent with regulatory intent, e.g., by reducing information asymmetries among investors, or by increasing corporate investments in CSR activities.

Second, and related, we aim to inform current policy debates on the design and effects of CSR reporting mandates. We do so by exploring the role of enforcement within the EU's NFRD regulation, which represents the most widespread CSR transparency mandate to date. Evidence on the role of enforcement for mandatory CSR reports helps understand the effects of this regulation. This is particularly relevant because the NFRD left the decision whether to install enforcement mechanisms to the individual EU member states.³³

Identifying causal effects of enforcement of CSR reporting is challenging. Characteristically, institutional features and regulatory choices such as EU member state initiation of enforcement procedures are correlated with various other institutional characteristics, and with deep-engrained country factors such as legal tradition (Liang and

³³ In contrast, the EU's recent 2022 Corporate Sustainability Reporting Directive (CSRD), which starts becoming effective in 2025, introduces a harmonized EU enforcement landscape by making enforcement of sustainability reporting mandatory across all EU member states (Directive 2022/2464/EU, recital 79).

Renneboog 2017). This “causal density” limits causal inferences that can be drawn, e.g., from comparing CSR reporting characteristics for firms located in countries with enforcement procedures in place and for firms from non-enforcement countries. Similarly, attribution of effects becomes ambiguous in settings where the reporting change (introduction of CSR reporting mandate) is “bundled” with a strengthening of enforcement (see Christensen et al. 2013). To circumvent these issues, we exploit a country setting with a “decoupled” introduction of enforcement. Specifically, we leverage findings from the survey of Haase (2025) on CSR enforcement. This survey reveals that starting in 2021, i.e., four years after the coming-into-force of the NFRD, the Council for Swedish Financial Reporting Supervision (hereafter: “the Council”) introduced for the first time systematic content / compliance reviews of mandatory CSR reports based on random selection. This regulatory initiative substantially altered the enforcement landscape in Sweden. For instance, in 2022, the Council conducted reviews of the CSR reports of 17.5 percent of listed firms within the scope of the mandate (50 out of 286 firms), with enforcement action (correction of CSR reports) taken in six cases.

We use a difference-in-differences (DiD) design to investigate the effects of the change in enforcement strength in Sweden on CSR reports and on economic outcomes (stock liquidity and CSR activities). Our sample period comprises the years 2018-2023, with a pre-period of four years (2018-2021), and a post-period of two years (2022-2023).³⁴ We construct our control group using propensity-score matching (PSM) of listed firms from Denmark and Finland. Both jurisdictions are geographically close and they are institutionally similar to Sweden (e.g. Liang and Renneboog 2017). Also, both Denmark and Finland established CSR reporting enforcement procedures concurrent with the coming-into-force of the NFRD in 2018, i.e., both countries did not enact changes to enforcement over our sample period. Drawing from detailed lists of firms within the scope of enforcers’ supervision which were provided to us by the three enforcement authorities from Sweden, Denmark and Finland, we identify all listed firms within the scope of the NFRD.

In our first set of empirical tests, we investigate the effect of the initiation of enforcement on CSR reports. We use textual analyses of CSR reports to collect and construct four distinctive CSR report characteristics: Specificity (proportion of quantitative CSR

³⁴ We code reports according to the year of their publication. For example, the 2018 reports are the reports for the fiscal year 2017, which were published in 2018.

information), readability (using the Flesch Reading Ease metric), causal words (proportion of causal wording), and boilerplate disclosures (phrases that are frequently used by our sample firms). Our DiD analyses reveal significant effects of the enforcement change in Sweden on three of our four CSR report metrics, suggesting increases in readability and in the use of causal words, and a decrease in the use of boilerplate disclosures. These effects resonate with a statistically and economically significant effect on a compound CSR Reporting Score which aggregates our four CSR report characteristics. Our CSR reporting findings are robust to various alternative sample specifications, i.e., for a full, unmatched sample, a balanced sample, a sample based on matching without replacement, a standardized sample used across all our tests, and for a sample using an alternative control group of matched German firms. We also estimate yearly treatment effects and find no indication of pre-trends before the enforcement change, and a sharp, immediate effect on reporting characteristics upon enactment of enforcement. This means that our main effect evolves over time consistent with a causal link to the introduction of enforcement.

Cross-sectional analyses using our compound CSR Reporting Score as dependent variable show that the documented CSR reporting effect is consistently larger for firms with presumably low CSR reporting incentives, i.e., for (i) firms that chose low visibility of their CSR disclosures by including them into their annual report (rather than publishing a standalone CSR report), (ii) firms that were “mandatory” adopters of CSR reporting (as opposed to voluntary adopters), (iii) firms that chose not to adopt a high-quality global reporting standard (GRI), and (iv) firms that chose not to have their CSR reports assured by auditors. These findings are in line with the expectation that firms with previously low incentives for preparing high quality CSR reports were particularly affected by the enforcement mandate. This variation in our main effect is plausible and further increases confidence in the validity of our CSR reporting findings.

In our second set of empirical tests, we investigate the effect of the enforcement change on economic outcomes. We focus our analyses on two economic effects of mandatory CSR reporting that prior literature has established: Reduction of information asymmetries in capital markets (e.g. Krueger et al. 2024), and “real effects” on firms’ CSR activities (e.g. Chen et al. 2018; Fiechter et al. 2022). We measure information asymmetries using stock price liquidity, which has a clear theoretical link to reporting quality (Christensen et al. 2013). We estimate a modified version of our baseline DiD model using as outcome

variable, respectively, three individual measures of liquidity and a compound illiquidity factor (Krueger et al. 2024). Our findings yield a statistically significant negative impact of the Swedish enforcement regulation on bid-ask spreads, on zero return days, and on the compound illiquidity factor, while the negative coefficient on price impact remains insignificant. These findings are robust to all of our five alternative sample specifications, and the yearly treatment effects evolve over time in ways consistent with a causal effect. In line with prior evidence for IFRS (Christensen et al. 2013), these findings indicate a potentially important role of enforcement of CSR reports in reducing information asymmetries among investors.

Our second set of tests of economic effects gauges whether the enforcement change in Sweden affected corporate decision making, specifically firms' CSR activities. A growing literature documents such positive real effects of CSR disclosure mandates (e.g. Chen et al. 2018; Fiechter et al. 2022). We use in our DiD analyses four alternative proxies for CSR activities based on LSEG's CSR Scores. Across all four specifications, we obtain significantly positive treatment effects. Again, these findings are robust to our alternative sample specifications, and the treatment effects evolve over time in ways consistent with a causal enforcement effect. These findings suggest that the Swedish enforcement regulation affected firms' decision making and created real effects, i.e., it bore down on efforts (activities) by affected firms to increase CSR performance.

Taken together, our findings show that enforcement significantly impacts the content of CSR reports, and that it affects both information asymmetries in capital markets and corporate decision making. Therefore, our paper makes several contributions. First, we are among the first to provide plausibly causal evidence of the effects of enforcing mandatory CSR reporting. One of the few papers in this area is Tietmeyer (2023), who demonstrates a positive role of enforcement in the context of a very specific setting, i.e., water quality reporting in the U.S. In comparison, ours is a setting of comprehensive CSR reports which include information on numerous environmental and social aspects and outcomes, with high variation between industries (Fiechter et al. 2022). Second, by demonstrating the impact of enforcement for such a comprehensive CSR reporting mandate, we also contribute to the literature investigating the role of country-level institutions, such as enforcement authorities, in shaping reporting and economic outcomes (see, e.g., in the context of IFRS adoption, Brüggemann, Hitz, and Sellhorn 2013). We do so by singling out the specific role of public enforcement authorities and their

activities. This also sets our paper apart from Krueger et al. (2024), who use aggregate measures of country-level institutional strength to show that stricter informal enforcement increases the liquidity benefits of CSR disclosure mandates, while no such effect is found for formal enforcement mechanisms. Third, by showing that “enforcement works”, our paper is potentially informative for regulators and policy makers who consider devising or revising CSR reporting mandates.

3.2 Institutional Background

3.2.1 The EU’s Non-Financial Reporting Directive (NFRD)

In April 2014, the European Parliament adopted the so-called “Non-Financial Reporting Directive” (NFRD), or “CSR Directive”, which was then transposed into member states’ national laws by December 2016. The NFRD mandates “public interest entities”—notably large listed firms—to prepare annual “non-financial reports” (CSR reports) starting in fiscal year 2017, which means the first mandatory CSR reports were filed in 2018. The NFRD requires mandatory annual CSR reports, at a minimum, to present information on policies, main risks, and outcomes related to environmental matters, social and employee factors, respect for human rights, anti-corruption issues, and diversity in the board of directors. These reporting requirements were further specified by implementation guidelines that the European Commission published in June 2016. Also, the NFRD allows firms to prepare their CSR reports using existing national or international reporting frameworks such as the standards developed by the Global Reporting Initiative (GRI) (Directive 2014/95/EU, recital 9).

The stated objective of the NFRD is to increase transparency and comparability of CSR disclosures by affected EU firms in order to increase the relevance, consistency and comparability of CSR disclosures for firms across the European Union (Directive 2014/95/EU, recital 21). The EU regulator regards this transparency objective also as a means to increase firms’ CSR activities, stipulating that “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).

Empirical findings by Fiechter et al. (2022) show that the introduction of the NFRD increased CSR transparency across treated EU firms. More so, the authors demonstrate that these affected EU firms, relative to U.S. control firms, on average increased their

CSR activities in response to the regulation, and that they started doing so early on, after the regulation was adopted, i.e., even before it came into force. This evidence indicates that the regulators' intent to coerce firms into becoming more CSR-oriented was met. At the same time, it remains an open question which channels effected these observed "real effects", and whether reporting characteristics such as report quality or institutional characteristics such as country-level enforcement mechanisms played a role to that end.

3.2.2 Enforcement of the NFRD in Sweden

While the NFRD broadly required EU member states to ensure that proper mechanisms are in place to enforce compliance with the regulation's provisions, it did not provide any specific guidance or requirements to that end, effectively making the initiation of enforcement a member state decision (Directive 2014/95/EU, recital 10). Therefore, it is not clear whether and how member states implemented enforcement mechanisms similar to enforcement of IFRS, i.e., full-fledged content reviews and sanctioning regimes. Information on the enforcement of CSR reports on the EU country level is, if anything, scarce. No official EU documentation or guidance exists that provides details on country-level enforcement institutions and their activities. For example, ESMA, the European Securities Regulator, in a recent report reveals that in 2022, EU enforcement authorities conducted a total of 403 reviews of CSR reports, 334 out of which were full content reviews (ESMA 2023, 48). However, ESMA does not reveal which EU countries had such enforcement procedures in place, and which didn't.

The survey of Haase (2025) documents that 19 out of 27 member states applied the "existence and content" approach to enforcement, while 8 EU member states confined their enforcement to ensuring that mandatory CSR reports had been prepared and filed ("existence only").³⁵ Moreover, Haase (2025) shows that Sweden and Portugal had made changes to the enforcement scope over time. While both Swedish and Portuguese enforcement authorities had initially opted for an "existence-only" approach for the first three reporting years under the NFRD (2018-2020), they then strengthened their review activities starting in 2021 by adopting an "existence and content" approach.

³⁵ This finding slightly differs from ESMA's 2022 report on corporate reporting enforcement and regulatory activities, which states that enforcers in Estonia, Germany, and Greece only examined whether a non-financial statement has been prepared (ESMA 2023).

The institutional changes in Sweden and Portugal represent unbundled “substantive improvements in enforcement” (Christensen et al. 2021) and thus create settings that potentially help us investigate effects of introducing full-fledged enforcement of CSR reporting absent other concurrent changes in CSR reporting regulation. We chose to focus our analyses on the Swedish setting for two reasons. First, the Swedish setting, compared to Portugal, includes a relatively large set of firms subject to enforcement³⁶. Second, in contrast to Portugal, the Swedish enforcement authority, over various informal exchanges, provided detailed information on the institutional background that helps us leverage this setting. Details on the Swedish institutional background are summarized below.

Sweden initiated enforcement procedures for CSR reports in 2021 within its existing enforcement framework for financial statements of listed firms. Within this framework, the officially designated enforcement authority is the *Swedish Financial Supervisory Authority (Finansinspektionen)*. The actual task of conducting enforcement activities, however, has been delegated, from 2007 to 2018 to the Stockholm Stock Exchange (Hartmann, Marton, and Andersson Sols 2020), and since 2019 to the *Council of Swedish Financial Reporting Supervision* (hereafter: the Council), a body consisting of representatives from various areas of financial reporting (Chapter 16, Section 4 and 5 Swedish Securities Market Act). Accordingly, the Swedish enforcement model is characterized by a two-tier architecture. On the first tier, the Council conducts reviews of periodic reports of companies listed on a regulated market with Sweden as home member state. The Council yields no authoritative power to impose sanctions in the case of infringements. Therefore, once the Council in its review concludes that a report is erroneous, or if the firm under review is unwilling to cooperate / divulge information requested by the Council, the case is referred to the *Swedish Financial Supervisory Authority*, the second tier, for sanctioning or for a final ruling on the error.

In individual conversation, the Council provided details on the Swedish enforcement system for mandatory CSR reports. The Council divulged that it had made a substantial change to its enforcement of CSR reports in 2021 by enacting for the first time a full-fledged system of periodic content reviews. The motivation behind this regulatory

³⁶ In Portugal, as of 2020, only 33 companies are affected by the NFRD and subject to enforcement (European Commission 2020), contrasting with 286 firms in Sweden over our sample period (see Table 3.2).

decision, as indicated by the Council, was to align financial and non-financial reporting enforcement practices, which means that there was no regulatory or other external event triggering the enforcement change. Accordingly, over the first three reporting years of the NFRD regime, 2018–2020, mandatory CSR reports were subject to checks that reports were prepared and filed, while from fiscal year 2020 (i.e., reports filed 2021) onwards, full-fledged content reviews of compliance of the CSR reports with the NFRD requirements were conducted, including enforcement actions upon establishing non-compliance. The Council’s decision to strengthen enforcement of CSR reports was not publicly announced at the time. Going further, the Council did not inform either auditors or affected companies of the procedural change. This lack of a public announcement makes it unlikely that firms and their auditors anticipated the regulatory change. Moreover, it suggests that the change in enforcement became publicly known only gradually, for example in the shape of corrections / restatements of CSR reports in response to enforcement action.

From the survey of Haase (2025), we further derive information on resources and enforcement actions. Accordingly, a total of 5.3 full-time staff are charged with enforcement activities (financial and CSR reports) at the Council. Out of these employees, one specialist is solely charged with enforcing CSR reporting. With regard to enforcement actions, Haase (2025) shows that enforcement of CSR reporting is conducted in accordance with the principles binding for enforcement of IFRS, i.e., ESMA’s Guidelines on Enforcement of Financial Information (ESMA 2020). These guidelines, among other things, require random selection of (a substantial fraction of) reviews, and sanctioning of non-compliance. Accordingly, in Sweden, potential sanctions in the case of error findings include the restatement of the CSR report, a corrective note or a correction in a future CSR report. In addition, in cases of substantial infringements, the Swedish enforcer is at liberty to impose monetary sanctions³⁷.

Table 3.1 reports details on the CSR reporting enforcement activities in Sweden from 2021 (the year enforcement reviews were initiated) to 2023. In 2021, the Council reviewed 40 out of 286 CSR reports (coverage rate of 14 percent), which resulted in enforcement actions in five cases (enforcement action rate of 12.5 percent). In 2022 and 2023, the coverage rate (enforcement action rate) increased (decreased) to 17.5 percent

³⁷ Enforcement cases are published only anonymously on the Swedish Financial Reporting Supervision’s homepage. Accordingly, we can only identify the misreporting issue, but not the responsible firm.

(12 percent) and 18.2 percent (0 percent), respectively.³⁸ In all cases of detected misreporting (see Appendix 3.A for a detailed account), the Council required from the respective firm a correction in a future CSR report.

Table 3.1: Enforcement of CSR Reporting in Sweden 2021-2023

	2021	2022	2023
Firms subject to enforcement	286	286	286
Enforcement reviews undertaken	40	50	52
Coverage rate	14.0%	17.5%	18.2%
Enforcement actions	5	6	0
Enforcement action rate	12.5%	12.0%	0

This table is based on information on enforcement of CSR reporting conducted by the Council for Swedish Financial Reporting Supervision, which we received in direct conversation with the Council.

Taken together, enforcement of CSR reporting in Sweden underwent a substantive change in 2021, when full-fledged enforcement reviews were initiated. The numbers of both reviews conducted and enforcement actions taken, suggest that this enforcement change represented a substantial, rather immediate strengthening of enforcement oversight which had not been anticipated by the affected firms. The change in enforcement occurred three years after the NFRD's coming into force, and was, to the best of our knowledge, not accompanied by other concurrent securities market or reporting regulation.³⁹ In the remainder of the paper, we investigate the reporting and economic effects of this regulatory change.

³⁸ This action rate is comparable to that documented by ESMA for all EU Member States: In 2022, European enforcement bodies undertook a total of 403 reviews of non-financial statements, representing a coverage rate of 18 percent. This enforcement rate is further comparable to that for financial reporting (16 percent) (ESMA 2023).

³⁹ We conducted extended research to identify regulations and other events that occurred in our sample countries around the time of our treatment, i.e., around the introduction of full-fledged enforcement procedures in Sweden in 2021. Specifically, we focused on the period from end of 2020 to mid 2022. For this time period, we first queried ChatGPT about any regulatory activities/pronouncements during this period, and then followed up on any potential hits. Parallel to this, we conducted a web search of media articles. Additionally, we searched the websites of the relevant authorities (securities regulators) in Sweden, Denmark, and Finland, and of all Big4 auditing firms in these three countries. Our search did not, for any of our three countries, yield any indication of concurrent regulations or other events that would potentially impact firms' CSR reports, stock price liquidity, or CSR activities. Therefore, these analyses increase our confidence that there were no confounding events and regulations around our treatment period. This specifically also applies to the EU's CSRD regulation, which took shape around 2021 and was eventually passed December 2022. The CSRD, while affecting CSR reporting mandates and the enforcement thereof, applies uniformly across all EU countries, i.e., it affects identically firms both in Sweden and in EU countries from which we derive control groups for our empirical analyses.

3.3 Research Design

3.3.1 Sample Selection

Our sample period stretches from 2018, the year for which the first mandatory CSR reports were published, to 2023. We define treated firms as listed Swedish firms within the scope of the NFRD. As the regulatory “shock”—the initiation of content-based enforcement reviews in Sweden in 2021—does not randomly subject firms to enforcement supervision, this setting falls short of the experimental ideal of a random assignment (Atanasov and Black 2016). Therefore, we use a control group of firms that over the sample period were also subject to the NFRD but were not exposed to an enforcement change. Specifically, we use control firms from Denmark and from Finland because both countries introduced content-based enforcement in 2018 concurrent with the coming-into-force of the NFRD, and because Scandinavian firms, including firms from Sweden, Denmark, and Finland, operate in environments with the same legal origin and with comparable institutional settings. Specifically, CSR orientation is also very similar in these Scandinavian countries (Liang and Renneboog 2017). For robustness, we also re-run all our analyses for an alternative control group of matched German firms.

We use propensity-score matching (PSM) to identify control firms from Denmark and Finland. Specifically, we construct three control samples for our three sets of analyses (reporting effects, liquidity effects, and effects on CSR activities). Consistent with the notion of “doubly robust estimators” (Shipman, Swanquist, and Whited 2017) we base the matching for each of our control samples on average pre-period values of control variables, on industry classification, and on the average pre-period values of our respective outcome variables. Due to the relatively small number of potential control firms, we allow for replacement and use a caliper of 0.10.

Identifying firms that fall within the scope of the NFRD is challenging because official documentation of affected firms does not exist. Prior research identifies treated firms along the NFRD’s size thresholds based on their total assets, net turnover and number of employees (e.g., Fiechter et al. 2022). Due to varying national transpositions of the NFRD and to missing values in databases, this workaround is somewhat error-prone, which is an issue especially for small sample sizes. Therefore, we identify our treatment and control firms using data directly provided by enforcement authorities. Each of the Swedish, Danish and Finnish enforcement authorities provided us with lists of all

respective listed firms within the scope of the NFRD, i.e., firms that in 2021 were subject to mandatory CSR reporting and its enforcement.

Table 3.2: Sample Selection Process

Panel A: Baseline sample			
	Sweden	Denmark	Finland
Start: Firms affected by the NFRD according to enforcement authorities (2018-2023)	1,716	564	528
<i>Less observations of firms:</i>			
Without LSEG coverage	(110)	(126)	(0)
Without at least one pre- and post-period obs.	(420)	(72)	(96)
Baseline sample	1,186	366	432
Panel B: Reporting effects sample			
	Sweden	Denmark	Finland
Start: Baseline sample	1,186	366	432
<i>Less observations of firms:</i>			
Without data on reporting attributes	(55)	(6)	(21)
Without data on control variables	(38)	(15)	(28)
Final sample before matching	1,093	345	383
Final sample after matching (with replacement)	897	367	522
Panel C: Liquidity effects sample			
	Sweden	Denmark	Finland
Start: Baseline sample	1,186	366	432
<i>Less observations of firms:</i>			
Without liquidity data	(48)	(26)	(18)
Without data on control variables	(7)	(5)	(0)
Final sample before matching	1,131	335	414
Final sample after matching (with replacement)	765	613	162
Panel D: Real effects sample			
	Sweden	Denmark	Finland
Start: Baseline sample	1,186	366	432
<i>Less observations of firms:</i>			
Without LSEG ESG data	(234)	(73)	(150)
Without data on control variables	(2)	(1)	(2)
Without at least on pre and post period obs.	(2)	(1)	(0)
Final sample before matching	948	291	280
Final sample after matching (with replacement)	601	249	364

This table reports details on the selection of our four samples. To perform our three main sets of tests (reporting effects, liquidity effects, and real effects), we generate from the Baseline Sample (Panel A) our three individual samples, i.e., the reporting effects sample (Panel B), the liquidity effects sample (Panel C), and the real effects sample (Panel D). PSM is based on all Swedish, Danish, and Finnish firms affected by the NFRD and with complete data on our matching parameters.

Table 3.2 reports details on our sample selection process. As reported in Panel A, we start with the lists of affected companies which we obtained from the respective enforcement bodies. Accordingly, 286 Swedish, 94 Danish, and 93 Finnish firms, respectively, were subject to the NFRD mandate in 2021. This translates into 1,716 Swedish, 564 Danish, and 528 Finnish firm-year observations, respectively, for our sample period (2018-2023). In a first step, we eliminate observations with missing Refinitiv coverage and restrict our sample to firms with at least one pre- and post-period observation. This yields our baseline sample of 1,186 Swedish, 366 Danish, and 432 Finnish firm-year observations.

Next, we derive from our baseline sample three distinct matched samples that we use for our three sets of analyses. Panel B of Table 3.2 documents that to construct our *reporting effects sample*, we eliminate observations without data or with incomplete data on our reporting attributes (i.e., reports that were not analyzable using automated text analysis) and observations with missing control variables. Using matching with replacement, we arrive at a final sample after matching of 897 treatment and 889 control group observations, respectively. For our *liquidity effects sample* (Panel C of Table 3.2) we eliminate observations with missing daily liquidity data and missing data on control variables. Matching with replacement yields our final sample of 765 treatment and 775 control group observations. Finally, to construct our *real effects sample* (Panel D of Table 3.2) we eliminate observations with missing LSEG ESG data, missing data on control variables and with insufficient numbers of observations. Matching with replacement yields a final sample of 601 treatment and 613 control group observations. In the Appendix (Appendix 3.C, 3.D, and 3.E) we provide for each of our three test samples additional descriptive information on the sample distribution per year and industry, and on the unmatched and matched test variables for both treatment and control samples.

To gauge robustness and to reduce the sensitivity of our findings to our specific sample selection choices, we repeat each of our three main sets of analyses (effects on CSR reporting, on stock price liquidity, and on CSR activities) for five alternative sample specifications: (1) the *baseline sample* is based on the initial baseline sample of treatment and control firms before matching (as reported in Panel A of Table 3.2), corrected for missing observations; the *balanced sample* specification, which is the tightest conceivable specification, reduces selectivity effects, e.g., from using 2021 as frame of reference for selecting sample firms; (3) the *PSM without replacement* specification

eliminates potential bias from replacement of firms; (4) the *Standardized PSM* sample specification creates one unique matched sample (matched on general covariates)⁴⁰ which is used across all three sets of tests, increasing comparability; (5) the *German control firms* sample is an alternative sample using as controls German firms instead of Danish and Finnish firms, hence tapping a larger selection of potentially comparable firms, from a somewhat institutionally less similar country.

3.3.2 Difference-in-Differences Model

In our empirical tests we investigate the effects of the introduction of content-based enforcement in Sweden on CSR report characteristics and on economic outcomes (liquidity, CSR Activities) for firms within the scope of enforcement supervision, relative to control firms. To that end, we estimate variations of the following generalized DiD model:

$$OUTCOME_{i,t} = \beta_0 + \beta_1 TREATED_i + \beta_2 CONTROLS_{i,t} + \beta_3 FIXED\ EFFECTS_i + \varepsilon_{i,t} \quad (1)$$

We estimate Eq. [1] using OLS regression and heteroscedasticity-robust standard errors clustered at the firm-level. As dependent variable *OUTCOME*, we use three sets of outcome variables capturing, respectively, CSR report characteristics (section 3.4), Stock Price Liquidity (section 3.5.1), and CSR Activities (section 3.5.2). *TREATED* is an indicator variable that equals 1 for all treated firms (Swedish firms) in the post treatment period, and 0 otherwise. As the change in enforcement was enacted in 2021 without any public announcement (see section 3.2.2), this regulatory decision only diffused into the public domain gradually, especially with the first mandated corrections of CSR reports being published in 2022. We therefore chose 2022 as first post treatment year, defining as pre-period the years 2018-2021, and as post-period the years 2022-2023.⁴¹ *CONTROLS* is a vector of control variables that we construct individually for each of our three sets of empirical tests, respectively, drawing from prior studies in the respective fields. As *FIXED EFFECTS* we include firm-fixed effects to control for time-invariant fixed differences between treatment and control groups and year-fixed effects to account for common time trends that have a similar effect on treatment and control firms. These fixed effects also subsume the separate indicators for *POST* and *TREATMENT*. Accordingly,

⁴⁰ To create the *Standardized PSM* sample, we match on size, analyst following, leverage, operating cashflow, free float, asset turnover, growth opportunities, ROA, and industry affiliation.

⁴¹ We also estimated our main models using an alternative specification with 2021-2023 as post period. All our main findings in Table 3 prevail, but some of them at lower levels of statistical significance.

the coefficient β_1 on *TREATED* is our estimate of the treatment effect of the enforcement change. Appendix 3.B provides definitions for all our variables.

3.4 Reporting Effects

3.4.1 CSR Report Characteristics

In our first set of empirical tests, we investigate whether enforcement affects CSR reports. We manually collected CSR reports for the sample period 2018-2023 for all treatment and control firms in our reporting effects sample (see Panel B of Table 3.2, and Appendix 3.C) to construct four individual CSR report characteristics. Where firms did not prepare standalone CSR reports but chose to integrate their reports into the annual report, we extracted the relevant parts of the annual reports. Financial data used in our analyses is obtained from Refinitiv (e.g., Liang and Renneboog 2017; Lys, Naughton, and Wang 2015; Dyck, Lins, Roth, and Wagner 2019).

Using textual analysis, we infer from CSR reports four distinct reporting characteristics: *Specificity*, *Readability*, *Causal Words*, and *Boilerplate*. We chose these characteristics as they capture different dimensions of textual disclosures, dimensions which are conceivably affected by enforcement actions aimed at increasing CSR report quality / compliance. Our first metric is *Specificity*, which measures the frequency with which the CSR report refers to quantitative values. The underlying idea is that as specificity increases, narrative disclosures become less vague (Dyer, Lang, and Stice-Lawrence 2017; Lin et al. 2024). Following Hope, Hu, and Lu (2016), we calculate *Specificity* as the proportion of quantitative items in the CSR report in relation to its total word count. We do so using Linguistic Inquiry Word Count 2015 (LIWC2015), a software that automatically analyzes texts based on default or customized dictionaries (Pennebaker, Booth, Boyd, and Francis 2015).

The second CSR report characteristic we collect is *Readability*. We measure readability using the *Flesch-Reading-Ease*-formula (e.g. F. Li 2008; De Franco, Hope, Vyas, and Zhou 2015). Based on sentence length and the number of polysyllabic words, this index measures the ease by which a piece of text will be understood and engaged with. In contrast to other readability measures (i.e., *Fog-Index* or *Flesch-Kincaid* Grade level), the *Flesch-Reading-Ease* is scaled from 0-100 with higher readability scores indicating higher understandability of texts. We use automated textual analysis (Python scripts) to obtain our readability scores.

Our third CSR report characteristic, *Causal Words*, measures the percentage of words indicating causal reasoning, relative to the total word count (Zhang, Aerts, and Pan 2019). Standard setters such as the IASB regard causal disclosures as contributing to disclosure quality, by providing explanations, causal context, reasons or motives (International Accounting Standards Board 2010). Consistent with this, the NFRD calls for CSR reports to include clear and reasoned explanations in cases where firms do not pursue policies in relation to environmental, social and employee matters, respect for human rights and anti-corruption and bribery matters (Art. 1 Directive 2014/95/EU).

Our fourth CSR report characteristic, *Boilerplate*, is a measure of CSR report informativeness (Lin et al. 2024). Boilerplate sentences are phrases that are so prevalent among documents (“standardized disclosures”) that they are unlikely to be informative (Lang and Stice-Lawrence 2015). Our computation of *Boilerplate* follows Lang and Stice-Lawrence (2015), who also point out that standard-setters such as the FASB are outspoken about boilerplate disclosures reducing report quality. We start by identifying 4-word-phrases (tetragrams) that occur in more than 30 percent of the CSR reports of a country or on average at least 5 times per document. Next, we eliminate tetragrams that appear in less than 60 percent of the CSR reports in a firm’s home country. Third, we exclude (1) sentences that occur in more than 80 percent of the CSR reports per country or (2) sentences occurring in more than 75 percent of the entire sample documents. We arrive at our final measure of *Boilerplate* by dividing the number of boilerplate words by total wordcount. For robustness, we also calculate the boilerplate disclosure measure from Cazier, McMullin, and Treu (2021), which identifies trigrams within industries.⁴²

For our empirical tests, we also create a compound variable, *CSR Reporting Score*, which aggregates our four CSR reporting characteristics. To create *CSR Reporting Score*, for each of our four characteristics we sort individual firm values and then for each firm-year value, assign it to one out of ten 10 percent bins. Individual values are then ranked according to the respective bin, i.e., firms within the top 10 percent are assigned a score of 10, firms within the bottom 10 percent are assigned a score of 1, etc. The final *CSR*

⁴² Specifically, we follow Cazier et al. (2021) and (1) identify commonly used trigrams as those that appear between 10 percent and 90 percent of all the firms in the same two-digit SIC industry; (2) identify standardized sentences as those that either use ten or more of these trigrams or for which 10 percent or more of the trigrams in the sentences are commonly used; (3) estimate *Boilerplate* as the ratio between the number of words in the standardized sentences divided by the total number of words in the document.) (see Lin et al. 2024).

Reporting Score is created by equally weighing and multiplying by 2.5 the four individual scores, creating a bandwidth of our comprehensive *CSR Reporting Score* from 10 to 100.

3.4.2 Main Findings

We estimate five specifications of our main DiD model using as outcome variable, respectively, our four CSR report characteristics, and the compound *CSR Reporting Score*. We include as control variables firm size, analyst following, leverage, operating cashflow, free float, asset turnover, growth opportunities, return on assets, and standalone reports (i.e., a binary variable indicating whether the CSR report is integrated into the annual report or published separately). Variables definitions are reported in Appendix 3.B, descriptives and sample characteristics in Appendix 3.C.

Table 3.3 reports our findings. For three out of four CSR report characteristics, i.e., for *Readability*, *Causal Words*, and *Boilerplate*, we obtain significant coefficients at the 1 % level. In contrast, no significant coefficient obtains for *Specificity*. These findings resonate with the positive, significant (t-stat: 2.87) coefficient of 4.684 on our compound *CSR Reporting Score*. This effect is also economically meaningful and corresponds to an average increase in the CSR reporting score for treated firms of 8.4 percent compared to the pre-period mean.

Our findings show that the enforcement change in Sweden significantly affected CSR reports for Swedish firms, relative to their control firms. Specifically, we observe an increase in the readability of CSR reports after the enforcement change, suggesting that enforcement activities reduced Swedish firms' use of complex, potentially obfuscating narratives (Hooghiemstra, Kuang, and Qin 2017). We also observe an increase in firms' use of causal words in their narratives, which suggests increased efforts by firms to provide informative narratives in their CSR report, as causal reasoning typically helps explain and understand firms' performance metrics (Zhang et al. 2019). Third, our findings reveal a reduction in boilerplate disclosures, consistent with a potential increase in CSR report informativeness, as the reports become less "bloated" by meaningless boilerplate disclosures. This result also holds when we use the Cazier et al. (2021) measure of boilerplate disclosures (yielding a coefficient estimate of -0.021 and a t-stat of -2.36).

3 Does Enforcement of Mandatory CSR Reporting Work?

Table 3.3: Effects of Enforcement on CSR Reporting

DV:	(1) Specificity	(2) Readability	(3) Causal Words	(4) Boilerplate	(5) Reporting score
Treated	-0.236 (-0.46)	2.394*** (2.83)	0.117*** (2.92)	-0.00761*** (-5.08)	4.684*** (2.87)
Size	0.679* (1.87)	-0.279 (-0.25)	-0.0315 (-0.57)	-0.00203 (-0.71)	0.816 (0.42)
Analyst Following	-0.133 (-1.29)	-0.112 (-0.79)	0.0136 (1.18)	-0.000141 (-0.61)	-0.248 (-0.97)
Leverage	-0.116 (-0.07)	-0.313 (-0.12)	0.267 (1.30)	0.00320 (0.52)	1.960 (0.26)
Operating CF	-2.210 (-1.46)	-3.662 (-0.83)	0.0768 (0.32)	0.00472 (0.63)	-5.199 (-0.73)
Free Float	-0.00419 (-0.34)	-0.0113 (-0.40)	-0.000856 (-0.54)	0.0000364 (0.69)	-0.0220 (-0.35)
Asset Turnover	-0.0969 (-0.17)	3.813** (2.49)	0.0871 (1.35)	-0.00286 (-1.11)	6.733*** (2.67)
Growth Opportunities	0.218 (0.82)	-0.568 (-0.90)	0.0366 (0.86)	-0.00201 (-1.24)	0.663 (0.50)
ROA	0.742 (0.49)	-4.372 (-1.04)	-0.316 (-1.12)	0.00849 (0.83)	-11.37 (-1.49)
Standalone	0.366 (0.63)	1.639* (1.69)	-0.0144 (-0.27)	-0.00527** (-2.15)	4.306** (2.37)
Adj. R ²	0.619	0.611	0.742	0.786	0.720
FE	Firm, Year	Firm, Year	Firm, Year	Firm, Year	Firm, Year
Clustered SE	Firm-level	Firm-level	Firm-level	Firm-level	Firm-level
Observations	1,786	1,786	1,786	1,786	1,786

This table reports results for our reporting effects sample from estimating the difference-in-differences model (Eq. (1)) with Specificity, Readability, Causal Words, Boilerplate, and our CSR reporting score as the dependent variable. All variables are defined in Appendix 3.B. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

3 Does Enforcement of Mandatory CSR Reporting Work?

Table 3.4: Effects of Enforcement on CSR Reporting – Alternative Samples

DV: CSR Reporting score	(1) Baseline sample	(2) Balanced sample	(3) PSM w/o replacement	(4) Standardized PSM	(5) German control firms
Treated	5.308*** (4.61)	4.068** (2.36)	4.832*** (3.44)	2.868* (1.70)	8.014*** (4.55)
Size	-1.458 (-0.92)	0.651 (0.29)	0.307 (0.15)	-0.422 (-0.19)	1.511 (0.54)
Analyst Following	0.282* (1.74)	0.227 (0.97)	0.193 (0.88)	0.176 (0.67)	0.173 (0.79)
Leverage	-2.664 (-0.56)	-1.268 (-0.15)	0.0755 (0.01)	-13.89* (-1.72)	-12.82 (-1.37)
Operating CF	-9.176* (-1.80)	-13.01* (-1.95)	-11.14* (-1.86)	-11.21* (-1.73)	-4.852 (-0.88)
Free Float	0.0143 (0.37)	0.0593 (0.87)	0.00212 (0.05)	-0.0887 (-1.45)	-0.0294 (-0.53)
Asset Turnover	2.963** (1.99)	5.852** (2.02)	7.123*** (2.94)	3.259 (1.33)	6.982** (2.13)
Growth Opportunities	0.525 (0.47)	0.0399 (0.03)	0.675 (0.55)	1.624 (1.44)	0.955 (0.56)
ROA	-10.06* (-1.69)	-11.22 (-1.55)	-8.058 (-1.03)	-6.432 (-0.87)	-5.404 (-0.58)
Standalone	5.505*** (3.43)	4.408** (2.06)	5.145*** (2.88)	4.662** (2.59)	9.362*** (3.76)
Adj. R ²	0.709	0.699	0.700	0.737	0.669
FE	Firm, Year	Firm, Year	Firm, Year	Firm, Year	Firm, Year
Clustered SE	Firm level	Firm level	Firm level	Firm level	Firm-level
Observations	1,708	1,332	1,268	1,665	1,571

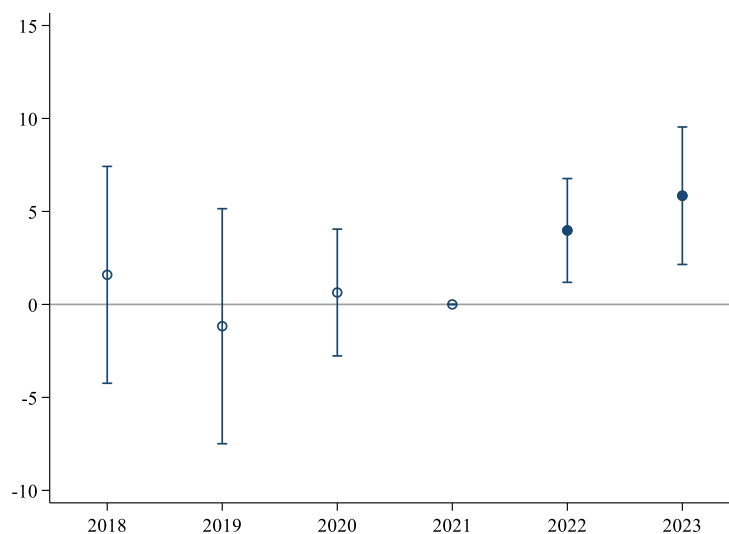
This table reports results from estimating Eq. [1] for our reporting effects sample with our CSR reporting score as the dependent variable. In column (1), we re-estimate our model for the unmatched baseline sample. In column (2), we report results for the balanced sample. In column (3), we re-estimate our model for a PSM sample without replacement. In column (4), we re-estimate our model for a standardized PSM sample with the same covariates. In column (5), we use German control firms. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

Table 3.4 reports findings from estimating our main DiD model for our alternative sample specifications, using *CSR Reporting Score* as outcome variable. As reported in Column 1, our findings hold for the unmatched baseline sample at a high level of significance (t-stat: 4.61). Column 2 shows that our findings also hold for the tightest conceivable specification (t-stat: 2.36), a balanced sample structure (Sant’Anna and Zhao 2020). Third, as documented in column 3, our main effect remains positive and significant (t-stat: 3.44) when using the PSM sample without replacement, indicating that our results are not primarily driven by the repeated inclusion of control firms. Column 4 reports significant findings (t-value: 1.70) also for the *Standardized PSM* sample which we use across all three sets of tests. Finally, we estimate our main model using an alternative control group of matched German firms. Our findings again hold at a high level of significance (t-stat: 4.55).

3.4.3 Yearly Treatment Effects

Next, we inspect yearly effects of the enforcement change in Sweden to glean insights into how our treatment effect evolves over time, and to assess a key identifying assumption of our research design, i.e., the parallel trends assumption. We estimate a modified version of our baseline DiD model with *CSR Reporting Score* as outcome variable, using yearly treatment indicators and 2021 as the baseline year. Results are reported in Appendix 3.F (including results for an alternative specification using 2018 as baseline year in Column 2). In Figure 3.1, we plot the yearly treatment point estimates with a 95% confidence interval. Graphical inspection of Figure 3.1 yields two insights. For one thing, Figure 3.1 illustrates that all coefficient estimates for the pre-period are insignificant, and that they show no signs of a time-trend (pre-trend), increasing confidence that the parallel trends assumption is not violated (Atanasov and Black 2016). Second, we observe that the treatment effect kicks in as early as 2022 and further increases in 2023. This pattern is consistent with a “sharp” effect that coincides with the first treatment period. This effect is also economically meaningful: The coefficient on $TREAT_{x2022}$ of 3.978 (t-value: 2.81) corresponds to an increase in *CSR Reporting Score* of 6.89 percent in 2022 compared to the baseline year 2021. Collectively, these findings increase confidence that the observed main effect can be causally attributed to the enforcement change in Sweden.

Figure 3.1: Yearly Treatment Effects of Enforcement on CSR Reporting



This figure plots yearly treatment point estimates together with 95% confidence intervals for our CSR reporting score (based on the regression model [1] in section 3.3.2). As we omit the indicator $Treat \times 2021$, the year 2021 serves as benchmark. Hollow circles represent insignificant effects, whereas circles indicate a significant effect of enforcement.

3.4.4 The Role of Reporting Incentives

Next, we conduct cross-sectional analyses to gauge whether our main treatment effect shows plausible variation across firms. We do so by partitioning our sample according to firms' revealed reporting incentives. The underlying idea is that the initiation of enforcement procedures should have a larger effect on CSR reports of previously low quality, i.e., on CSR reports that are more likely not to comply with the reporting requirements set out in the NFRD regulation. We use firms' revealed reporting incentives as proxies of relatively low (high) CSR reporting quality at the time of the enforcement change. We identify four choice variables (firm and reporting characteristics) to indicate these reporting incentives: reporting format, voluntary CSR reporting, reporting framework, and assurance.

Partitioning our sample based on *reporting format* follows the notion that standalone reports are more visible and comprehensive (Dhaliwal, Li, Tsang, and Yang 2011). Therefore, a firm's choice to disclose its mandatory CSR report as a standalone document potentially indicates a commitment to CSR transparency. Accordingly, we expect the effect of enforcement to be more pronounced for firms that chose not to provide a standalone report (i.e., firms that integrated their CSR report into the annual report).

Second, we expect our main effect to be larger for *voluntary reporters*, i.e., for firms that prior to the entry-into-force of the NFRD in 2018 prepared CSR reports on a voluntary basis.⁴³ We expect voluntary reporters to have a comparably high quality of CSR reporting at the time of the enforcement change (Daske, Hail, Leuz, and Verdi 2008), as these firms voluntarily chose to prepare CSR reports, e.g., to signal a high commitment to CSR, resulting in potential benefits to the firm (Dhaliwal et al. 2011). Also, these voluntary preparers developed expertise (learning effects) in the field of CSR reporting prior to the NFRD. Third, we examine whether the effect of enforcement is affected by the choice of a high-quality *reporting framework*, as the NFRD grants companies leeway in the choice of a reporting standard. We partition our sample based on the application of the standards of the *Global Reporting Initiative (GRI)* as this set of standards at the time represented the most elaborate and most widespread CSR reporting framework both globally and in the EU (ESMA 2023; Fiechter et al. 2022). As adoption of a high-quality reporting standard such as GRI potentially indicates a transparency commitment, we expect the effect of enforcement to be more pronounced for firms that did not adopt GRI. Finally, as a complimentary, particularly credible (costly) signal of firms' commitment to high-quality CSR transparency, we use the choice to have voluntary assurance of the CSR report (Simnett, Vanstraelen, and Chua 2009; Moroney, Windsor, and Aw 2012; Gipper, Ross, and Shi 2024)⁴⁴. We expect the enforcement effect to be more pronounced for firms that choose not have such voluntary assurance.

In our empirical tests, we modify our DiD model by replacing our treatment indicator with two non-overlapping treatment indicators, indicating low and high reporting incentives respectively. Table 3.5 reports our findings for our compound *CSR Reporting Score*. In line with our expectations, we obtain larger treatment coefficients for firms with low reporting incentives across all four specifications, i.e., for firms that chose not to prepare a standalone report (Column 1), for firms that did not provide voluntary CSR reports prior to the NFRD mandate (Column 2), for firms that chose not to adopt a high-quality, comparable reporting standard, i.e., GRI (Column 3), and for firms that chose not to have voluntary assurance of their CSR report (Column 4). F-tests reveal statistically significant differences in coefficient estimates for two splits ($p=0.0919$ for Voluntary

⁴³ In Denmark, prior to the NFRD, a national CSR reporting regulation has been in place. Therefore, we eliminate Danish observations from this analysis, resulting in a sample size of 1.405 observations.

⁴⁴ In Denmark assurance of CSR reports is required by law. Accordingly, we estimate this cross-section only with Finnish control firms, for a reduced sample of 977 observations.

Reporting and $p=0.0902$ for Assurance Level), and p -values of 0.2721 for the Standalone Report split and 0.1078 for the GRI Standards split, respectively.

Table 3.5: Effects of Enforcement and CSR Reporting Incentives

DV: CSR Reporting score	(1) Standalone Report	(2) Voluntary Report	(3) GRI Standards	(4) Voluntary Assurance
Treated × Low	4.776*** (2.88)	10.06*** (4.66)	6.106*** (3.24)	4.444** (2.52)
Treated × High	2.777 (1.29)	4.926** (2.31)	3.668** (2.15)	1.116 (0.50)
Size	0.967 (0.50)	0.171 (0.09)	0.749 (0.40)	1.264 (0.59)
Analyst Following	-0.165 (-0.62)	0.0377 (0.12)	-0.276 (-1.08)	0.483* (1.88)
Leverage	1.304 (0.17)	0.531 (0.07)	1.508 (0.20)	2.791 (0.41)
Operating CF	-4.792 (-0.67)	-5.024 (-0.64)	-4.859 (-0.68)	-12.81* (-1.75)
Free Float	-0.0284 (-0.45)	-0.0417 (-0.72)	-0.0213 (-0.34)	-0.0510 (-0.92)
Asset Turnover	0.805 (0.59)	0.198 (0.16)	0.501 (0.38)	0.535 (0.37)
Growth Opportunities	7.165*** (2.69)	7.551*** (3.08)	6.765*** (2.69)	11.07*** (3.83)
ROA	-11.68 (-1.52)	-6.175 (-0.77)	-11.58 (-1.51)	0.167 (0.02)
Standalone		4.715** (2.27)	4.219** (2.35)	5.355** (2.41)
F-test for differences (p-value)	0.2721	0.0019	0.1078	0.0902
Adj. R ²	0.717	0.723	0.720	0.710
FE	Firm, Year	Firm, Year	Firm, Year	Firm, Year
Clustered SE	Firm level	Firm level	Firm level	Firm level
Observations	1,786	1,405	1,786	977

This table reports results from estimating a modified version of Eq. [1] for our reporting effects sample where we partition our sample according to the following reporting incentives: format of the CSR report (integrated vs. standalone), voluntary CSR reporting prior to the NFRD, the use of GRI standards, and assurance level (existence vs. voluntary content assurance). t -statistics are provided in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. t -Statistics are provided in parentheses.

Collectively, our cross-sectional analyses provide evidence that the positive effect of the enforcement change on CSR reporting is larger for firms that had relatively low incentives to provide high-quality CSR reports at the time of the enforcement change. This evidence increases confidence in the validity of our main finding, the positive effect of enforcement on CSR reporting (CSR reporting score), because it demonstrates plausible variation in

our main effect, as we find larger effects for firms which more likely did not meet enforcers' compliance standards prior to the enforcement change. In addition, our cross-sectional findings shed some light on the mechanics of the documented enforcement effect. Specifically, as we mostly borrow our measures of reporting incentives from the financial reporting literature, our findings suggest that firm choices such as voluntary reporting or voluntary assurance are potentially useful indicators also of CSR reporting incentives.

Taken together, the findings discussed in this section indicate that the initiation of enforcement of CSR reports in Sweden substantially affected reporting practice by Swedish firms preparing CSR reports according to the NFRD. These treated firms, relative to their control firms, on average effected significant improvements in reporting characteristics of their CSR reports. Findings from our yearly DiD analyses and from our cross-sectional analyses lend plausibility to these findings. As we are not aware of any concurrent events that potentially affected (did not affect) CSR reports of treated (control) firms (see footnote 39 in section 3.2.2), our evidence speaks to a causal link between the initiation of enforcement and the observed improvements in CSR report characteristics. One way to view these findings is that affected Swedish firms ramped up compliance of their CSR reports in response to the enactment of enforcement procedures. These firm reactions can be interpreted tentatively as evidence that CSR reporting enforcement was effective in increasing various dimensions of CSR report quality, for example due to enforcement activities providing a credible threat of sanctioning erroneous CSR reports in ways meaningful to firms and managers (for example by "naming and shaming", see Hitz et al. 2012).

3.5 Economic Effects

In our second set of empirical tests, we investigate the effect of the enforcement change in Sweden on economic outcomes. Enforcement may affect economic outcomes in various ways. For one thing, we expect that higher quality CSR information accentuates economic effects of mandatory CSR reporting. Specifically, if enforcement of CSR reports increases the (perceived) quality of these reports in a meaningful way, we also expect an increase in the role of these reports for decision-making by investors, stakeholders, and affected firms themselves. Second, there are also potential direct channels for enforcement to affect economic decisions, which we discuss below.

We focus our analyses on two sets of economic effects of mandatory CSR reporting that prior literature has established: Reduction of information asymmetries in capital markets, as documented by increases in stock price liquidity (e.g. Krueger et al. 2024), and “real effects”, i.e., increases of firms’ CSR activities (e.g. Chen et al. 2018; Fiechter et al. 2022).

3.5.1 Stock Price Liquidity

First, we investigate the impact of enforcement on information asymmetries among investors. We measure information asymmetries using stock price liquidity, which has a clear theoretical link to reporting quality (Christensen et al. 2013). We estimate the effect of the enforcement change on stock price liquidity for a matched sample using a modified version of our baseline DiD model, with liquidity as our outcome variable. Control variables are included based on previous literature (Krueger et al. 2024; Daske et al. 2008). Following Krueger et al. (2024), we measure liquidity using three individual measures (*Bid-Ask-Spread*, *Price Impact*, *Zero Return Days*), and an aggregate measure using factor analysis (*Illiquidity Factor*). Appendix 3.B provides details on the measurement of these variables.

Table 3.6 reports results from estimating our liquidity DiD model. For all four specifications, we obtain negative treatment coefficients. With the exception of *Price Impact* (t-stat: -0.62), these negative coefficients are statistically significant, with t-stats of -2.11 (*Illiquidity Factor*), -1.69 (*Bid-Ask-Spread*), and -1.81 (*Zero Return Days*), respectively. These findings suggest that stock price liquidity increased for our treated Swedish firms relative to control firms as a response to the initiation of content-based enforcement of CSR reports. Our robustness tests using alternative sample specifications (Appendix 3.G) support this conclusion. Using *Illiquidity Factor* as outcome variable, these tests yield negative treatment coefficients for all five alternative samples, with two coefficient estimates obtaining significance (t-stat of -2.07 for the balanced sample, and t-stat of -2.69 for the PSM without replacement sample).

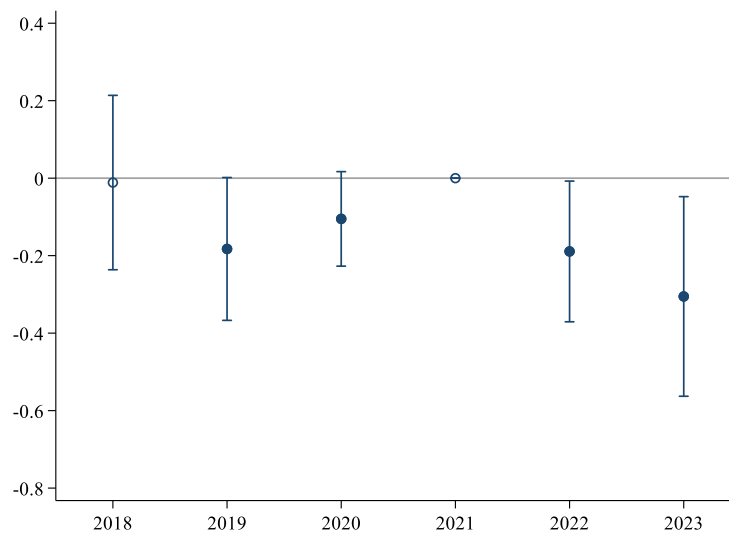
Table 3.6: Effects of Enforcement on Stock Price Liquidity

DV:	(1) Illiquidity Factor	(2) Bid-Ask- Spread	(3) Zero Return Days	(4) Price Impact
Treated	-0.173** (-2.11)	-0.000644* (-1.69)	-0.00852* (-1.81)	-0.00113 (-0.62)
Size	-0.394*** (-4.31)	-0.00178*** (-4.67)	-0.00748 (-1.62)	-0.00715*** (-3.33)
Analyst Following	-0.00304 (-0.43)	0.00000924 (0.36)	-0.000919 (-1.65)	0.000274* (1.79)
Leverage	0.810** (2.31)	0.00358** (2.21)	0.0102 (0.56)	0.0186*** (3.26)
Operating CF	-0.708** (-2.07)	-0.00316** (-2.18)	-0.0200 (-0.85)	-0.00906 (-1.12)
Free Float	-0.00491** (-2.05)	-0.0000249** (-2.22)	-0.00000150 (-0.01)	-0.000121*** (-2.77)
ROA	-1.063** (-2.08)	-0.00279 (-1.41)	-0.0412* (-1.96)	-0.0249* (-1.88)
Book-to-Market	0.285*** (2.63)	0.00125*** (3.46)	0.0111 (1.42)	0.00184 (0.94)
Loss Firm	-0.0697 (-0.74)	-0.000604 (-1.57)	0.00700 (0.63)	-0.00382** (-2.08)
Adj. R ²	0.886	0.860	0.711	0.885
FE	Firm, Year	Firm, Year	Firm, Year	Firm, Year
Clustered SE	Firm-level	Firm-level	Firm-level	Firm-level
Observations	1,540	1,540	1,540	1,540

This table reports results from estimating the difference-in-differences model (Eq. [1]) for our liquidity effects sample with Illiquidity factor, Bid-Ask-Spread, Zero Return Days, and Price Impact as the dependent variable. All variables are defined in Appendix 3.B. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

Again, we estimate a “leads-and-lag model” version of our DiD model with yearly treatment indicators, using *Illiquidity Factor* as outcome variable. It can be gleaned from Figure 3.2 (and from the regression results reported in Appendix 3.H) that no discernible pre-trends obtain in liquidity prior treatment, and that a negative, significant treatment effect kicks in for 2022, the first post year, and increases in 2023.

Figure 3.2: Yearly Treatment Effects of Enforcement on Stock Price Liquidity



This figure plots yearly treatment point estimates together with 95% confidence intervals for our Illiquidity factor (based on the regression model [1] in section 3.3.2). As we omit the indicator $Treat \times 2021$, the year 2021 serves as benchmark. Hollow circles represent insignificant effects, whereas circles indicate a significant effect of enforcement.

Taken together, our liquidity findings suggest that the strengthening of enforcement in Sweden reduced information asymmetry among investors, as reflected in the documented increase in stock price liquidity. This positive liquidity effect is consistent with at least two interpretations. The first interpretation, as previously indicated, is that the effects of the enforcement change on CSR reports (previous section 3.5) renders these reports more useful / relevant for investor decision-making, e.g., by reducing estimation risk (Lambert, Leuz, and Verrecchia 2007). A second, non-exclusive interpretation is that the observed effect represents a direct (first-order) effect of the strengthening of enforcement. Accordingly, investors, gradually learning of the strengthening of enforcement in Sweden, regarded this change as an indication of (future) higher CSR reporting quality.

3.5.2 CSR Activities

Our second set of tests of economic effects gauges whether the enforcement change in Sweden affected corporate decision making by effecting increases in firms' CSR activities. There is a growing literature documenting such real effects of CSR disclosure mandates (e.g. Chen et al. 2018; Fiechter et al. 2022). Various channels / mechanisms predict that (higher quality) mandatory CSR reporting positively affects firm's decisions to engage in CSR activities, including learning ("what gets measured gets managed") and stakeholder pressure to increase CSR, for example from corporate customers (Darendeli,

Fiechter, Hitz, and Lehmann 2022) or from retail customers (Christensen, De George, Joffre, and Macciocchi 2023).

We estimate the effect of the enforcement change on real effects for a matched sample using a modified version of our baseline DiD model, with CSR Activities as our outcome variable, and with control variables based on previous literature (Fiechter et al. 2022). We use a total of four measures of CSR Activities as alternative outcome variables. In doing so, we follow Fiechter et al. (2022) and measure CSR Activities using ESG scores provided by LSEG (previously Asset4), i.e., the environmental (*Environmental Activities*) and the social score (*Social Activities*) as well as a combination of both scores (*CSR Activities*). In addition, we use *CSR Controversies*, which measures firms' material CSR controversies as reflected in negative media coverage (e.g. Aouadi and Marsat 2018; Dorfleitner, Kreuzer, and Sparrer 2020). The idea behind using this measure is that a firm's efforts to improve its CSR performance / reduce CSR-related risks will negatively affect the likelihood of being entangled in CSR controversies.

Table 3.7 reports findings for our four measures of CSR activities. Across all four specifications, we obtain significantly positive coefficient estimates for our treatment effect. This result indicates that Swedish firms, relative to control firms, on average reacted to the enactment of enforcement activities by increasing their CSR Activities, and, consistent with such an increased CSR orientation, experienced relatively fewer CSR controversies. This interpretation receives support from our robustness tests using alternative sample specifications (Appendix 3.I). Using CSR Activities as outcome variable, we obtain positive treatment coefficients for all of our five alternative samples, with two coefficients obtaining statistical significance (t-stat of 2.63 for the balanced sample, and t-stat of 2.16 for the German control group).

Table 3.7: Effects of Enforcement on CSR Activities

DV:	(1) CSR Activities	(2) Environm. Activities	(3) Social Activities	(4) CSR Contro- versies
Treated	3.204*** (2.79)	3.742*** (2.60)	2.666* (1.93)	7.988** (2.22)
Size	1.213 (0.71)	-0.0956 (-0.05)	2.521 (1.20)	0.598 (0.23)
Analyst Following	0.371** (2.03)	0.495** (2.06)	0.247 (1.16)	-0.394 (-0.91)
Leverage	5.598 (1.08)	6.615 (1.12)	4.580 (0.73)	-33.16** (-2.00)
Operating CF	-5.044 (-0.85)	-3.450 (-0.46)	-6.638 (-0.85)	8.656 (0.41)
Free Float	-0.0566 (-1.09)	0.00408 (0.06)	-0.117* (-1.90)	-0.0149 (-0.17)
Asset Turnover	3.948** (2.05)	4.830 (1.61)	3.066 (1.51)	-4.447 (-0.96)
Growth Opportunities	-0.839 (-0.79)	-1.557 (-1.11)	-0.121 (-0.11)	-0.394 (-0.31)
ROA	-7.252 (-0.87)	-15.66 (-1.47)	1.159 (0.13)	-10.49 (-0.60)
CG Score	0.108*** (2.93)	0.0907* (1.78)	0.125*** (3.05)	0.208** (2.18)
Adj. R ²	0.930	0.925	0.885	0.445
FE	Firm, Year	Firm, Year	Firm, Year	Firm, Year
Clustered SE	Firm-level	Firm-level	Firm-level	Firm-level
Observations	1,214	1,214	1,214	1,214

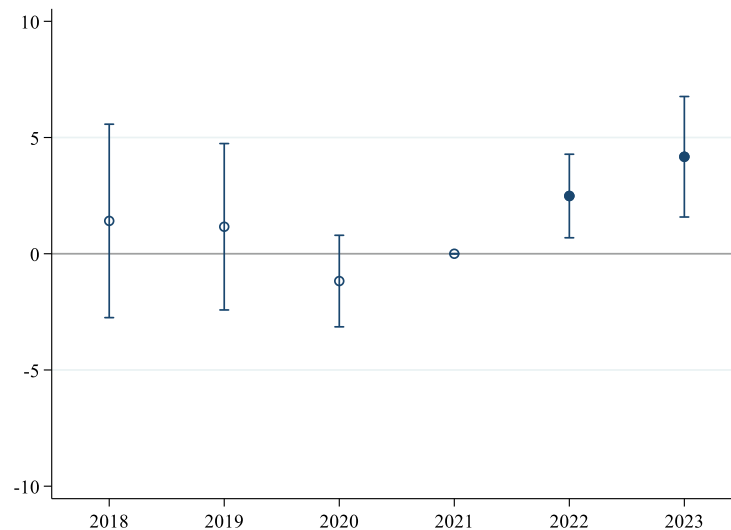
This table reports results from estimating the difference-in-differences model (Eq. [1]) for our real effects sample with CSR Activities, Environmental Activities, Social Activities and CSR Controversies as the dependent variable. All variables are defined in Appendix 3.B. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

Also, analysis of yearly treatment coefficients (Figure 3.3 & Appendix 3.J) yields no indication of pre-trends, and shows a significant, immediate positive treatment effect in 2022, which increases in 2023. These findings are consistent with a causal effect of the enforcement change on firms' CSR activities. However, we caution that our inferences hinge on the quality of LSEG's ESG scores as indicators of firms' CSR activities.⁴⁵ Also,

⁴⁵ Fiechter et al. (2022), who also use the LSEG (then Refinitiv) ESG metrics, provide a battery of robustness checks in their study. These tests, which use alternative, more direct ESG outcomes, and firms' announcements of ESG initiatives, collectively indicate that increases in LSEG ESG metrics capture real increases in firms' CSR activities.

using these scores reduced our sample size (from 1,984 observations to 1,214 observations).

Figure 3.3: Yearly Treatment Effects of Enforcement on CSR Activities



This figure plots yearly treatment point estimates together with 95% confidence intervals for CSR Activities (based on the regression model [1] in section 3.3.2). As we omit the indicator $Treat \times 2021$, the year 2021 serves as benchmark. Hollow circles represent insignificant effects, whereas circles indicate a significant effect of enforcement.

Taken together, our results provide evidence that the strengthening of enforcement in Sweden effected increases in affected firms' CSR activities. This finding, on the surface, is consistent with the idea of higher quality CSR reporting providing more useful information to firms, investors, and stakeholders, hence augmenting real effects channels such as learning, or (anticipated) stakeholder pressure. It is also consistent with a direct enforcement effect, for example if the introduction of enforcement of CSR reports is perceived by firms as an expression of regulatory intent, indicating potentially more direct regulatory interventions in the future should firms not increase their CSR activities. In response, firms may decide to pre-empt such regulatory interventions by stepping up CSR activities.

3.6 Conclusion

In this paper, we provide novel evidence on the role of enforcement of mandatory CSR reports. We exploit institutional insights gleaned from the survey of Haase (2025) to identify a setting of unbundled adoption of enforcement: In 2021, Swedish regulators initiated full-fledged enforcement of the NFRD's CSR reporting mandate that had been in force across EU member states since 2018. We show that the initiation of enforcement

reviews in Sweden significantly affected the content of CSR reports by firms under the auspices of the enforcement authorities, as reflected, e.g., by increased readability and reduced boilerplate disclosures. These CSR reporting effects are larger for firms with previously presumably low levels of CSR report quality, as indicated by low CSR reporting incentives. In ensuing analyses, we show that the enforcement change also had economic implications for capital markets and for corporate decision making, as affected Swedish firms experienced increases in stock price liquidity (reductions in information asymmetries), and stepped up their CSR activities.

Our findings are subject to various limitations. For one thing, while we glean our measures of CSR report characteristics from recent studies in the field, these measures are selective and naturally shed light only on specific aspects of CSR reports, such as readability, or boilerplate disclosures. Also, while our choice of CSR report characteristics aligns with (standard setters') notions of informational quality of CSR reports, we caution that individual perceptions of what constitutes relevant qualitative characteristics of CSR reports likely differ.⁴⁶ A second concern with our findings is external validity. Our analyses leverage a regulatory shock setting in Sweden to infer effects of enforcing mandatory CSR reporting. However, Sweden is conventionally regarded as a country with institutions and societal preferences positively geared towards CSR (Liang and Renneboog 2017). Therefore, although we employ Scandinavian firms from Denmark and Finland as controls, we cannot rule out that the specific Swedish environment facilitates positive effects of CSR-oriented policies such as enforcement of CSR reports in ways that may not / to a lesser degree obtain in other environments. Third, while we conduct a range of robustness checks, diagnostics, and media analyses that increase confidence in the validity of our findings, our claim to causality rests on the observation that we know of no concurrent factors (e.g., regulations in Sweden, or in both Finland and Denmark) that differentially affected our sample firms. Related, we caution that any regulation is endogenous in nature. Therefore, we cannot ultimately rule out that unobservable factors not acknowledged in our research design drive our findings and thus give way to alternative explanations. Finally, while this study documents reporting and economic effects of enforcement, it does not unveil the underlying indirect and direct channels at work. It is up to future studies to examine, e.g., to what extent our documented

⁴⁶ That said, we note that both our cross-sectional findings and our tests of economic outcomes do not speak against our CSR report measures reflecting specific dimensions of informational quality.

real effects reflect firms' reactions to stakeholder pressure fuelled by high-quality CSR reports, or rather firms' attempts to pre-empt potentially more costly and impactful future CSR regulations.

These limitations aside, our study, to the best of our knowledge, is among the first studies to leverage an institutional setting to infer what are plausibly causal reporting and economic effects of enforcing mandatory CSR reporting. Our findings that enforcement of CSR reporting potentially "works" speak to the nascent literature on the role of institutional factors in shaping CSR reporting, and they inform current regulatory debates on the design of such CSR reporting mandates.

3.7 Appendix

Appendix 3.A: Overview of Enforcement Decisions by the Council for Swedish Financial Reporting Supervision

	Subject of Misreporting	Enforcement Action
1	Missing description of the policies applied related to each sustainability aspect, the review procedures carried out with a clear link to each policy, and the outcome of the review process.	Provision of the missing information in a future sustainability report.
2	Missing description of the basis of which policies the group management formalizes its environmental guidance, the review procedures carried out to ensure compliance with key elements of the environmental policies, and missing information on the outcome of these environmental review procedures.	Provision of the missing information in a future sustainability report.
3	Lack of complete and relevant information regarding the operations conducted within all of the Group's subsidiaries, including information on issues relating to the environment, social conditions, personnel, respect for human rights and anti-corruption.	Provision of the missing information in a future sustainability report.
4	Lack of a description of which review procedures regarding environmental and climate issues are carried out in the company's credit granting process, and information on the outcome of the review procedures in 2020.	Provision of the missing information in a future sustainability report.
5	Lack of complete and relevant sustainability information, including information on the company's business model, significant risks affecting the sustainability aspects, applied policies, completed review procedures and the results thereof as well as applied key performance indicators.	Provision of the missing information in a future sustainability report.
6	Lack of a description of policies to govern each sustainability goal (including environmental, social, and employee issues), the review procedures that ensure compliance with the environmental, social, human resources, human rights and anti-corruption policies.	Provision of the missing information in a future sustainability report.
7	Lack of specific information about the company's policies on the environment, human rights and corruption, missing description of the review procedures carried out and an account of the outcomes of these policies in 2021.	Provision of the missing information in a future sustainability report.
8	Missing information on policies regarding the company's sustainability work, review procedures and goals regarding the environment.	Provision of the missing information in a future sustainability report.
9	Lack of a description of which policies have been adopted for each sustainability issue, the results of each policy and the review procedures that ensure compliance with each policy.	Provision of the missing information in a future sustainability report.
10	Missing description of the policies applied, the review procedures carried out during the year and the results of the policies applied.	Provision of the missing information in a future sustainability report.
11	Missing description of the policies applied, the review procedures carried out during the year and the results of the policies applied related to material social and employee-related issues.	Provision of the missing information in a future sustainability report.

This table reports information on enforcement of CSR reporting conducted by the Council for Swedish Financial Reporting Supervision, which is published anonymously on the website of the Swedish Financial Reporting Supervision.

Appendix 3.B: Definition of Variables

Variable	Description	Data source
Specificity*	Number of quantitative items divided by total words	Constructed using LIWC2015
Readability*	Flesch Reading Ease Score	Constructed using Python
Causal Words*	Number of words indicating causal reasoning divided by total words.	LIWC2015
Boilerplate*	Number of boilerplate words (tetragrams) scaled by total words.	Constructed using Python
CSR reporting score*	Aggregate CSR reporting score combining the following four dimensions: Specificity, Readability, Causal words, and Boilerplate. All dimensions are weighted equally and multiplied by 2.5.	Self-constructed based on LIWC2015 and Python
Illiquidity Factor*	Aggregate illiquidity factor constructed as the score of a single factor based on Bid-Ask-Spread, Zero Return Days and Price Impact using factor analysis.	LSEG
Bid-Ask-Spread*	Yearly median value of the daily Bid-Ask-Spreads of a firm. Bid-Ask-Spread is the difference between the daily closing bid and ask prices divided by the midpoint. Bid-Ask-Spread is calculated over the year t+1.	LSEG
Zero Return Days*	Yearly mean value of the number of trading days with zero daily stock return. Zero Return Days is calculated over the year t+1.	LSEG
Price Impact*	Yearly median value of the daily absolute stock return (in %) divided by the daily USD trading volume and multiplied by 1,000. Price Impact is calculated over the year t+1.	LSEG
CSR Activities	CSR score based on LSEG's social (SOSCORE) and environmental (ENSCORE) score.	Constructed based on LSEG
Environmental Activities	Environmental Score (ENSCORE)	LSEG
Social Activities	Social Score (SOSCORE)	
CSR Controversies	LSEG's ESG Controversies Score. The score is calculated based on 23 ESG controversy topics. Firms without controversies during the year are scored with 100, occurring scandals reduce the score.	LSEG
Controls		
Size*	Natural logarithm of total assets in USD	LSEG
Analyst Following*	Number of financial analysts following a firm	LSEG
Leverage*	Total liability to total assets in home currency	LSEG
Operating Cashflow*	Cash from operations to total assets	LSEG
Free Float*	Percentage of shares in free float	LSEG
Asset Turnover*	Net sales divided by total assets	LSEG

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3 Does Enforcement of Mandatory CSR Reporting Work?

Growth Opportunities*	Natural logarithm of market value scaled by total assets	LSEG
ROA*	Net income available to common shareholders deflated by total assets.	LSEG
Standalone (Report)	Indicates (0/1) whether a CSR report has been published as a standalone report.	Hand-collection
Voluntary	Indicates (0/1) whether a firm has published CSR reports voluntarily prior to the NFRD.	Hand-collection
GRI	Indicates (0/1) whether a firm reports according to GRI framework.	Hand-collection
Assurance	Indicates (0/1) whether a firm voluntarily chooses to have its CSR report assured.	Hand-collection
Loss firm	Indicates (0/1) whether a firm has an income before extra items / preferred dividends less than zero.	LSEG
Book to Market*	Ratio of the book value of common equity to the market value of equity at the end of the fiscal year.	LSEG
CG Score	Corporate Governance Score (CGSCORE)	LSEG

*Winsorized at a 1% (99%) level.

Appendix 3.C: Reporting Quality Sample

Panel A: Sample distribution per year

	2018	2019	2020	2021	2022	2023	Total
Sweden	131	146	157	158	159	146	897
Denmark	58	63	63	57	62	64	367
Finland	65	90	80	94	96	97	522
Total	254	299	300	309	317	307	1,786

Panel B: Sample distribution per industry

	Sweden		Denmark		Finland	
	Obs.	(%)	Obs.	(%)	Obs.	(%)
(1) Consumer Non-Durables	48	5.35	18	4.90	29	5.56
(2) Consumer Durables	105	11.71	54	14.71	54	10.35
(3) Manufacturing	239	26.64	94	25.62	128	24.52
(4) Oil, Gas, and Coal Extraction (Energy)						
(5) Chemicals and Allied Products	4	0.45			6	1.15
(6) Business Equipment	175	19.51	64	17.44	108	20.69
(7) Telephone and Television Transmission						
(8) Utilities						
(9) Wholesale, Retail, and Some Services	70	7.80	29	7.90	53	10.15
(10) Healthcare, Medical Equipment, Drugs	67	7.47	12	3.27	54	10.34
(11) Finance	121	13.49	53	14.44	72	13.79
(12) Other (e.g., Hotels, Entertainment)	68	7.58	43	11.72	18	3.45
Total	897	100.00	367	100.00	522	100.00

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Panel C: Covariate Balance and Descriptives

Variable		Mean Value		Difference (1) vs. (2)	
		Treatment (1)	Control (2)	Diff. (absolute)	t-stat
Size	Unmatched	13.771	13.970	0.199	-0.93
	Matched	13.696	13.665	0.031	0.12
Analyst Following	Unmatched	4.485	6.511	2.026***	-2.87
	Matched	4.758	5.155	0.397	-0.47
Leverage	Unmatched	0.553	0.574	0.021	1.11
	Matched	0.562	0.566	0.004	-0.19
Operating CF	Unmatched	0.093	0.097	0.004	-0.52
	Matched	0.092	0.102	0.010	-1.07
Free Float	Unmatched	66.915	69.059	2.144	-0.94
	Matched	67.360	66.940	0.420	0.15
Asset Turnover	Unmatched	0.924	1.022	0.098	-1.45
	Matched	0.967	1.064	0.097	-1.18
Growth Opportunities	Unmatched	0.346	0.489	0.143**	-2.18
	Matched	0.379	0.386	0.007	-0.09
ROA	Unmatched	0.059	0.056	0.003	0.39
	Matched	0.057	0.060	0.003	-0.32
Numbers (in %)	Unmatched	6.214	6.070	0.144	0.45
	Matched	6.151	6.053	0.098	0.24
Flesch-Reading-Ease	Unmatched	36.482	35.460	1.022	1.42
	Matched	36.083	36.080	0.003	0.00
Causal Words	Unmatched	2.542	2.537	0.005	0.08
	Matched	2.520	2.486	0.034	0.47

This table reports descriptive statistics for our reporting effects sample. Panel A and B report sample distribution per year and industry, respectively. Panel C reports covariate balance for the unmatched and matched sample based on average pre-period values (Atanasov and Black 2016). We use Propensity Score Matching to obtain our sample. We use all covariates (except for standalone and boilerplate due to heavy pre-period differences which would have reduced matching quality significantly) and industry membership (FF12) as matching parameters. We further allow for replacement due to the smaller number of potential control firms and use a caliper of 0.1. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Appendix 3.D: Liquidity Sample

Panel A: Sample distribution per year

	2018	2019	2020	2021	2022	2023	Total
Sweden	124	125	127	130	130	129	765
Denmark	98	103	103	103	103	103	613
Finland	27	27	27	27	27	27	162
Total	249	255	257	260	260	259	1,540

Panel B: Sample distribution per industry

	Sweden		Denmark		Finland	
	Obs.	(%)	Obs.	(%)	Obs.	(%)
(1) Consumer Non-Durables	6	0.78	6	0.98		
(2) Consumer Durables	94	12.28	84	13.70	12	7.41
(3) Manufacturing	218	28.50	140	22.84	78	48.15
(4) Oil, Gas, and Coal Extraction (Energy)						
(5) Chemicals and Allied Products	12	1.57	6	0.98	6	3.70
(6) Business Equipment	177	23.14	157	25.61	18	11.11
(7) Telephone and Television Transmission	12	1.57			12	7.41
(8) Utilities						
(9) Wholesale, Retail, and Some Services	81	10.59	70	11.42	18	11.11
(10) Healthcare, Medical Equipment, Drugs	12	1.57	12	1.96		
(11) Finance	81	10.59	78	12.72	6	3.70
(12) Other (e.g., Hotels, Entertainment)	72	9.41	60	9.79	12	7.41
Total	765	100.00	613	100.00	162	100.00

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Panel C: Covariate Balance and Descriptives

Variable		Mean Value		Difference (1) vs. (2)	
		Treatment (1)	Control (2)	Diff. (absolute)	t-stat
Size	Unmatched	13.781	13.979	0.198	-0.93
	Matched	14.001	14.344	0.343	-1.13
Analyst Following	Unmatched	4.631	6.975	2.344***	-3.22
	Matched	5.780	7.033	1.253	-1.17
Leverage	Unmatched	0.554	0.576	0.022	-1.13
	Matched	0.556	0.586	0.030	-1.18
Operating CF	Unmatched	0.093	0.095	0.002	-0.30
	Matched	0.098	0.092	0.006	0.52
Free Float	Unmatched	67.572	68.797	1.225	-0.55
	Matched	69.325	71.742	2.417	-0.77
ROA	Unmatched	0.060	0.051	0.009	0.92
	Matched	0.059	0.050	0.009	1.00
Book-to-Market	Unmatched	0.503	0.573	0.070	-1.47
	Matched	0.500	0.530	0.030	-0.48
Loss firm	Unmatched	0.095	0.140	0.045*	-1.69
	Matched	0.095	0.113	0.018	-0.52
Bid-Ask-Spread	Unmatched	0.004	0.005	0.001*	-1.70
	Matched	0.003	0.003	0.000	0.24
Zero Return Days	Unmatched	0.077	0.115	0.038***	-4.15
	Matched	0.077	0.078	0.001	-0.12
Price Impact	Unmatched	0.008	0.112	0.104***	-4.93
	Matched	0.007	0.017	0.010*	-1.71

This table reports descriptive statistics for our liquidity effects sample. Panel A and B report sample distribution per year and industry, respectively. Panel C reports covariate balance for the unmatched and matched sample based on average pre-period values (Atanasov and Black 2016). We use Propensity Score Matching to obtain our sample. We use all covariates and industry membership (FF12) as matching parameters. We further allow for replacement due to the smaller number of potential control firms and use a caliper of 0.1. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Appendix 3.E: Real Effects Sample

Panel A: Sample distribution per year

	2018	2019	2020	2021	2022	2023	Total
Sweden	39	74	98	138	132	120	601
Denmark	23	32	41	53	53	47	249
Finland	32	44	48	85	81	74	364
Total	94	150	187	276	266	241	1,214

Panel B: Sample distribution per industry

	Sweden		Denmark		Finland	
	Obs.	(%)	Obs	(%)	Obs.	(%)
(1) Consumer Non-Durables	24	3.99	9	3.61	12	3.30
(2) Consumer Durables	81	13.48	65	26.10	29	7.97
(3) Manufacturing	192	31.95	42	16.87	152	41.76
(4) Oil, Gas, and Coal Extraction (Energy)						
(5) Chemicals and Allied Products	6	1.00	6	2.41		
(6) Business Equipment	93	15.48	28	11.25	62	17.03
(7) Telephone and Television Transmission	11	1.83			8	2.20
(8) Utilities						
(9) Wholesale, Retail, and Some Services	49	8.15	28	11.25	19	5.22
(10) Healthcare, Medical Equipment, Drugs	46	7.65	25	10.04	24	6.59
(11) Finance	56	9.32	34	13.65	27	7.42
(12) Other (e.g., Hotels, Entertainment)	43	7.15	12	4.82	31	8.51
Total	601	100.00	249	100.00	364	100.00

(continued on next page)

Panel C: Covariate Balance and Descriptives

Variable		Mean Value		Difference (1) vs. (2)	
		Treatment (1)	Control (2)	Diff. (absolute)	t-stat
Size	Unmatched	13.769	13.984	0.215	-1.01
	Matched	13.646	14.082	0.436	-1.63
Analyst Following	Unmatched	4.530	6.676	2.146***	-3.01
	Matched	4.730	6.589	1.859*	-2.14
Leverage	Unmatched	0.555	0.579	0.024	-1.28
	Matched	0.563	0.566	0.003	-0.15
Operating CF	Unmatched	0.092	0.096	0.004	-0.50
	Matched	0.092	0.094	0.002	-0.18
Free Float	Unmatched	67.309	68.872	1.563	-0.70
	Matched	66.307	69.469	3.162	-1.16
Asset Turnover	Unmatched	0.938	1.028	0.090	-1.35
	Matched	1.012	1.017	0.005	-0.07
Growth Opportunities	Unmatched	0.350	0.486	0.136**	-2.11
	Matched	0.414	0.424	0.010	-0.13
ROA	Unmatched	0.060	0.055	0.005	0.60
	Matched	0.054	0.053	0.001	0.11
CG Score	Unmatched	52.193	48.010	4.183*	1.87
	Matched	50.039	49.077	0.962	0.34
CSR Activities	Unmatched	47.482	50.039	2.557	1.06
	Matched	46.383	49.935	3.552	1.18

This table reports descriptive statistics for our real effects sample. Panel A and B report sample distribution per year and industry, respectively. Panel C reports covariate balance for the unmatched and matched sample based on average pre-period values (Atanasov and Black 2016). We use Propensity Score Matching to obtain our sample. We use all covariates and industry membership (FF12) as matching parameters. We further allow for replacement due to the smaller number of potential control firms and use a caliper of 0.1. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Appendix 3.F: Yearly Treatment Effects of Enforcement on CSR Reporting

DV: CSR Reporting score	(1) Baseline 2021	(2) Baseline 2018
Treat × 2018	1.592 (0.54)	
Treat × 2019	-1.171 (-0.37)	-2.763 (-1.41)
Treat × 2020	0.640 (0.37)	-0.952 (-0.47)
Treat × 2021		-1.592 (-0.54)
Treat × 2022	3.978*** (2.81)	2.387 (0.86)
Treat × 2023	5.845*** (3.12)	4.253 (1.54)
Controls	Included	Included
R ²	0.720	0.720
FE	Firm, Year	Firm, Year
Clustered SE	Firm level	Firm level
Observations	1,786	1,786

This table reports results from estimating yearly treatment effects (modified version of Eq. [1]) for our CSR reporting score. Column (1) reports results for the baseline year 2021, column (2) reports results for the baseline year 2018. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

3 Does Enforcement of Mandatory CSR Reporting Work?

Appendix 3.G: Effects of Enforcement on Liquidity – Alternative Sample Specifications

	(1)	(2)	(3)	(4)	(5)
DV: Illiquidity Factor	Baseline sample	Balanced sample	PSM w/o replacement	Standardized PSM	German control firms
Treated	-0.0885 (-1.38)	-0.175** (-2.07)	-0.171*** (-2.69)	-0.0838 (-1.30)	-0.213 (-1.55)
Size	-0.462*** (-6.22)	-0.374*** (-4.13)	-0.253*** (-3.65)	-0.432*** (-4.66)	-0.377*** (-3.30)
Analyst Following	-0.00755 (-1.16)	-0.00164 (-0.20)	-0.0133* (-1.96)	-0.00277 (-0.28)	-0.0268 (-1.21)
Leverage	0.794* (1.96)	0.886** (2.48)	0.933*** (3.40)	0.795*** (2.73)	0.393 (1.35)
Operating CF	-0.501 (-1.63)	-0.694** (-2.03)	-0.434* (-1.70)	-0.332 (-0.88)	1.238** (2.19)
Free Float	-0.00365 (-1.58)	-0.00467* (-1.81)	-0.00114 (-0.49)	-0.00227 (-0.70)	-0.000740 (-0.28)
ROA	-1.710*** (-3.24)	-1.034** (-2.04)	-0.857** (-2.06)	-1.423*** (-2.93)	-3.839*** (-3.10)
Book-to-Market	0.414*** (4.42)	0.283*** (2.63)	0.243** (1.99)	0.362*** (3.25)	0.123 (0.35)
Loss Firm	-0.0362 (-0.50)	-0.0752 (-0.79)	-0.0324 (-0.47)	-0.0173 (-0.19)	-0.123 (-0.92)
Adj. R ²	0.825	0.888	0.908	0.856	0.810
FE	Firm, Year	Firm, Year	Firm, Year	Firm, Year	Firm, Year
Clustered SE	Firm-level	Firm-level	Firm-level	Firm-level	Firm-level
Observations	1,855	1,488	698	1,814	1,515

This table reports results from estimating Eq. [1] with Illiquidity factor as the dependent variable. We re-estimate our model for the unmatched, baseline, sample (1), for the balanced sample (2), for a PSM sample without replacement (3), for a standardized PSM sample with the same covariates (4), and with German control firms (5). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

Appendix 3.H: Yearly Treatment Effects of Enforcement on Liquidity

DV: Illiquidity Factor	(1) Baseline 2021	(2) Baseline 2018
Treat × 2018	-0.0113 (-0.10)	
Treat × 2019	-0.183* (-1.96)	-0.171*** (-2.96)
Treat × 2020	-0.105* (-1.70)	-0.0938 (-0.83)
Treat × 2021		0.0113 (0.10)
Treat × 2022	-0.189** (-2.05)	-0.178 (-1.60)
Treat × 2023	-0.305** (-2.34)	-0.294** (-2.51)
Controls	Included	Included
Adj. R ²	0.887	0.887
FE	Firm, Year	Firm, Year
Clustered SE	Firm-level	Firm-level
Observations	1,540	1,540

This table reports results from estimating yearly treatment effects (modified version of Eq. [1]) with Illiquidity factor as the dependent variable. In column (1) 2021 is the baseline year, in column (2) 2018 is the baseline year. All variables are defined in Appendix 3.B. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

3 Does Enforcement of Mandatory CSR Reporting Work?

Appendix 3.I: Effects of Enforcement on CSR Activities – Alternative Sample Specifications

DV: CSR Activities	(1) Baseline sample	(2) Balanced sample	(3) PSM w/o replacement	(4) Standardized PSM	(5) German control firms
Treated	1.486 (1.53)	3.074*** (2.63)	1.139 (0.90)	1.965 (1.55)	2.941** (2.16)
Size	2.427* (1.97)	1.655 (0.90)	1.270 (0.67)	3.273** (2.45)	4.047*** (2.66)
Analyst Following	0.295* (1.82)	0.308* (1.67)	0.462** (2.19)	0.0869 (0.36)	0.125 (0.51)
Leverage	-2.149 (-0.51)	4.383 (0.82)	3.382 (0.63)	0.155 (0.03)	-5.240 (-0.99)
Operating CF	-5.386 (-0.97)	-3.465 (-0.61)	-10.58 (-1.53)	-2.495 (-0.37)	-2.168 (-0.35)
Free Float	0.0161 (0.39)	-0.0695 (-1.21)	-0.0830* (-1.71)	-0.0214 (-0.33)	-0.0506 (-0.84)
Asset Turnover	3.839** (2.06)	4.463** (2.15)	4.317 (1.60)	6.447** (2.45)	5.701** (2.09)
Growth Opportunities	-0.574 (-0.65)	-0.927 (-0.86)	-0.259 (-0.20)	-0.254 (-0.23)	-0.395 (-0.35)
ROA	-2.530 (-0.41)	-12.80* (-1.84)	0.111 (0.01)	-9.656 (-1.10)	-1.058 (-0.13)
CG Score	0.126*** (4.45)	0.108*** (2.72)	0.0942*** (2.79)	0.134*** (2.98)	0.0693 (1.63)
Adj. R ²	0.914	0.933	0.919	0.925	0.927
FE	Firm, Year	Firm, Year	Firm, Year	Firm, Year	Firm, Year
Clustered SE	Firm level	Firm level	Firm level	Firm level	Firm-level
Observations	1,338	1,151	759	1,280	1,167

This table reports results from estimating Eq. [1] with CSR activities as the dependent variable. We re-estimate our model for the baseline sample (1), for the balanced sample (2), for a PSM sample without replacement (3), for a standardized PSM sample with the same covariates (4), and with German control firms (5). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

Appendix 3.J: Yearly Treatment Effects of Enforcement on CSR Activities

DV: CSR Activities	(1) Baseline 2021	(2) Baseline 2018
Treat × 2018	1.413 (0.67)	
Treat × 2019	1.161 (0.64)	-0.251 (-0.11)
Treat × 2020	-1.175 (-1.18)	-2.588 (-1.35)
Treat × 2021		-1.413 (-0.67)
Treat × 2022	2.485*** (2.73)	1.072 (0.47)
Treat × 2023	4.173*** (3.17)	2.760 (1.11)
Controls	Included	Included
R ²	0.931	0.931
FE	Firm, Year	Firm, Year
Clustered SE	Firm level	Firm level
Observations	1,214	1,214

This table reports results from estimating yearly treatment effects (modified version of Eq. [1]) with CSR Activities as the dependent variable. In column (1) 2021 is the baseline year, in column (2) 2018 is the baseline year. All variables are defined in Appendix B. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

4 **Effects of Say on Pay Mandates on Executive Compensation: Evidence from the EU's Second Shareholder Rights Directive**

Annika Haase⁴⁷

Working Paper⁴⁸

Abstract: I investigate the effects of Say on Pay (SoP) on the level and design of executive compensation. In 2017, the EU adopted the Second Shareholder Rights Directive, which stipulates a binding shareholder vote on directors' remuneration policies. Using a difference-in-differences design with EU firms that already had binding SoP practices in place as control group, I find significant reductions in total and abnormal compensation for treated firms. These effects are largely driven by a decrease in performance-based compensation components. Exploiting treatment effect heterogeneity, I find that these effects are more pronounced for firms that for the first time introduce mandatory (advisory) shareholder votes. Moving on to the design of compensation contracts, I document a significant increase in largely unspecific metrics ("Other") and ESG-based compensation, while more reliable metrics like accounting and liquidity measures as well as the proportion of ESG metrics are unaffected or even decreased. Overall, these findings indicate that SoP mandates mainly affect relatively visible aspects of executive remuneration plans, i.e., the level of compensation, while the underlying composition of these remuneration plans remains largely unaffected.

JEL Classification: G34, G38, M12, M14.

Keywords: Say on Pay laws, Executive compensation, Shareholder Rights Directive II, Regulation, CSR compensation

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4.1 Introduction

I investigate the effects of Say on Pay (hereafter: SoP) on the level and design of executive compensation. Over the last two decades, policy makers around the world started promoting shareholder participation in determining executives' compensation contracts by introducing so-called SoP laws, i.e., regulations that prescribe a (mandatory) advisory or binding shareholder vote regarding director's remuneration (Kind et al. 2024). Taking on a pioneering role, in 2002, the UK government introduced the first SoP law –the Directors' Remuneration Report Regulation 2002– which required firms to prepare a remuneration report (Section 234B UK Companies Act) and put this report to an advisory shareholder vote (Section 241A UK Companies Act). In the wake of the global financial crisis in 2007 and the related vociferous criticism of excessive CEO compensation, SoP regulations spread to the USA, Australia, and Europe (Ferri and Göx 2018).

In 2017, the EU adopted the Second Shareholder Rights Directive (hereafter: SRD II) which harmonizes widely heterogeneous SoP practices in Europe. While some EU member states already introduced shareholder votes on executive remuneration prior to this directive, other member states did not regulate SoP at all (e.g., Correa and Lel 2016; Ferri and Göx 2018). Additionally, existing SoP laws differed in terms of the degree of obligation to have a SoP vote (voluntary vs. mandatory shareholder votes) and the nature / consequences of this vote (advisory vs. binding votes)⁴⁹. The SRD II stipulates an advisory (ex post) vote on the remuneration report (Art. 9b SRD II) and a binding (ex-ante) vote on directors' remuneration policies (Art. 9a SRD II). However, when transposing the directive into national law, member states were provided with the option to attenuate this provision by only requiring an advisory vote on the remuneration policy. Eight out of 27 EU member states (i.e., Austria, Estonia, Finland, Germany, Hungary, Ireland, Luxembourg, and Slovenia) have made use of this transposition option, while the remaining 19 EU member states introduced or maintained a binding shareholder vote.

It is (still) an open question whether (and how) the adoption of SoP laws affects remuneration practices. On the one hand, proponents of the *efficient contracting theory* argue that compensation contracts reflect a competitive equilibrium for managerial talent and the level and composition of executive pay is structured in a way that aligns interests

⁴⁹ For an overview of the development of SoP laws in Europe and around the world, see Ferri and Göx (2018) and Thomas and Van der Elst (2015).

between shareholders and managers, which leads to optimal executive pay practices (Murphy 2013; Holmström 1979). Accordingly, if the efficient contracting theory holds, SoP is not expected to change remuneration contracts. On the other hand, the *managerial power theory* suggests that in firms with weak governance structures, powerful managers are able to influence the level and structure of their remuneration, and are thereby able to extract rents (Ferri and Göx 2018; Bebchuk and Fried 2003). If the managerial power theory holds, it could be expected that shareholders use their vote to curb rent-extraction behaviour of managers which ultimately leads to changes in compensation contracts. Other non-exclusive (and interrelated) explanations for changes in executive compensation following the adoption of SoP laws relate to public pressure by the media (Core, Guay, and Larcker 2008), proxy advisory firms influencing shareholders' voting decisions (Ertimur et al. 2013), or firms anticipating negative shareholder voting (Balsam et al. 2016) / proxy advisory recommendations (Larcker et al. 2015) and reacting by adjusting remuneration policies in advance.

A large body of literature has exploited SoP regulations to investigate, for instance, its effects on compensation levels, the link between pay and performance or on firm value. These studies provide rather mixed results. While some studies point to positive effects of SoP laws by documenting reductions in executive pay levels and pay growth rates (Correa and Lel 2016; Bugeja et al. 2023), improvements in the link between pay and performance (Alissa 2015; Correa and Lel 2016; Ferri and Maber 2013; Monem and Ng 2013), or increases in firm value (Iliev and Vitanova 2019; Correa and Lel 2016; Ferri and Maber 2013; Kind et al. 2024), other studies do not find such effects or even report negative results. For instance, Kronlund and Shastri (2018), Ferri and Maber (2013), Grosse et al. (2017), and Cuñat et al. (2015) are unable to document effects of SoP votes on compensation levels. In addition, Cai and Walkling (2011), Larcker et al. (2011), Larcker et al. (2015), and Ertimur et al. (2013) do not find significant stock price reactions following events associated with the adoption of SoP laws or document even decreases in firm value, thereby questioning the effectiveness of SoP votes (see section 4.2.2 for a brief literature review).

I use a difference-in-differences (DiD) design to investigate whether and how the adoption of the SRD II affects executive pay levels and the design of remuneration packages. To that end, I leverage a detailed dataset from ISS Incentive Lab. ISS Incentive Lab provides granular compensation data on incentive awards, including the level,

performance metrics, performance goals, and payout structures for more than 400 European firms from 14 out of 27 EU member states⁵⁰ from 2011 onwards (ISS n.d.). Performance measures are divided into 16 categories, such as “Accounting”, “Activity-related”, “Balance Sheet-related”, “CSR”, “Cash Flow”, “Earnings / Profit-related”, “Economic Value”, “Environment”, “Financial / Investment Return ratios”, “Liquidity / Solvency-related”, “Market-related”, “Non-Financial”, “Other”, “Revenue-related”, “Social”, and “Stock Price”. Compensation data primarily relates to Chief Executive Officers (CEO), but is also available for other directors, such as the Chief Financial Officer (CFO) or the Chief Operating Officer (COO). Firms from Denmark, France, Netherlands, and Sweden serve as my control group as they established binding SoP practices prior to the SRD II. My treatment group consists of firms from Austria, Belgium, Finland, Germany, Ireland, Italy, Luxembourg, Portugal, and Spain as these countries introduced or strengthened SoP practices following the adoption of the SRD II. My sample period stretches from 2014 to 2023, with a pre period of six years (2014-2019) and a post period of four years (2020-2023) for most of my sample firms. For Spanish and Portuguese firms, the pre period extends to seven years (2014-2020), whereas the post period decreases to three years (2021-2023)⁵¹.

In my first set of analyses, I investigate the effect of the initiation of a mandatory SoP vote on executives’ compensation levels. Pay levels are relatively visible compensation information, which are easily accessible by shareholders (Kronlund and Shastri 2018) and often subject to increased media attention (Core et al. 2008). My DiD analyses reveal that for treated firms both the level of total compensation and abnormal compensation decrease significantly after the adoption of the SRD II. This finding is consistent with Correa and Lel (2016) and Bugeja et al. (2023). My findings are robust to various design choices, i.e., a model without control variables, a model with an alternative fixed effects structure⁵², and a removal of observations for 2020 and 2021 to address concerns that my results could be primarily driven by the Covid pandemic. I also re-estimate the main

⁵⁰ ISS Incentive Lab covers firms from Austria, Belgium, Croatia, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and Sweden.

⁵¹ Art. 2 of the SRD II requires EU member states to transpose the directive into national law by 10 June 2019. However, the Portuguese and Spanish implementation has been delayed by one year due to political instabilities (European Commission 2022).

⁵² In the main model, I use firm and industry*year fixed effects to control for firm and industry-specific time trends. In additional tests, I employ firm and year fixed effects to control for unobserved firm and time trends.

model for three alternative sample compositions, i.e., for a balanced sample, a sample without Portuguese and Spanish firms as these countries implemented the SRD II with a delay of one year, and a sample consisting of CEO observations only as CEOs are subject to increased public attention (Core et al. 2008). In all specifications, inferences remain unchanged.

Next, I estimate the effect of SoP on the compensation structure (i.e., salary, equity compensation, cash compensation, and other compensation) to shed light on the drivers of the reduction in total pay. My results show that all compensation components decrease, albeit not significantly at conventional levels. In contrast, the proportion of variable remuneration decreases significantly indicating that the reduction in total compensation is largely driven by a reduction in performance-based compensation elements.

To gauge whether the main effect (i.e., reduction in total and abnormal compensation) shows plausible variation across firms, I partition my treatment group into low and high treatment intensity firms. I define low treatment intensity firms as firms located in countries that already adopted an advisory SoP and strengthened shareholder participation to a binding SoP following the adoption of the SRD II (i.e., firms from Belgium, Italy, Portugal, Sweden). In contrast, high treatment intensity firms only introduced mandatory (advisory) shareholder votes on executive compensation for the first time following the adoption of the SRD II (i.e., firms from Austria, Finland, Germany, Ireland, and Luxembourg). For high treatment intensity firms, I document significant decreases in total compensation, abnormal compensation and variable compensation, while for low treatment intensity firms only equity compensation slightly significantly declines. To investigate how the effect of SoP on compensation levels evolves, I also estimate yearly treatment effects. My results show that total compensation decreases (slightly) significantly in 2019, 2021, 2022, and 2023 indicating that the treatment effect does not immediately kick in but evolve gently in the post period, and that firms anticipate potential negative effects from the first SoP votes (Larcker et al. 2015; Balsam et al. 2016).

In my second set of analyses, I examine whether SoP laws not only affect compensation levels but actually alter the design of compensation packages. Specifically, I investigate whether SoP laws provoke changes (1) in the use of more reliable performance metrics such as accounting- and liquidity-related metrics and (2) affect the implementation of

ESG-based compensation. The level of performance-based compensation components (i.e., annual bonuses and stock and option awards) directly depends on the achievement of pre-defined targets (Murphy 2013). If these targets rely on regulated metrics such as accounting or liquidity measures, they are less prone to discretion (Gomtsian 2024) or directors' manipulation, which may be favoured by shareholders and / or proxy advisory firms. With regard to the implementation of ESG-based compensation following the adoption of the SRD II, there are three non-exclusive and potentially interrelated explanations. First, shareholders exhibit an increased ESG orientation which they may express in their votes (Hartzmark and Sussman 2019; Pawliczek et al. 2024). Second, recital 29 to the SRD II requires firms to assess directors' performance using both financial and non-financial criteria, including where appropriate, environmental, social, and governance factors which could induce firms to implement ESG criteria into executives' compensation plans. Third, in 2014, the Non-Financial Reporting Directive have been adopted which requires large listed undertakings with more than 500 employees from 2017 onwards to publish a CSR report including information and key performance indicators on environmental, social and employee matters, respect for human rights, and anti-corruption and bribery matters (Art. 1 NFRD). The availability of quantifiable (and audited) ESG performance indicators can lead firms to implement such metrics into compensation contracts.

For my analyses, I aggregate ISS Incentive Lab's metric types to (1) accounting metrics, which involve metrics on "Accounting", "Balance Sheet", "Earnings", and "Revenues"; and (2) liquidity metrics, which comprise all metric types related to "Cash Flow", "Financial / Investment return ratio", and "Liquidity". My DiD analyses reveal that only the proportion of *Other* metrics, which includes highly unspecific measures like "Individual", "Other" or "Vague" increases significantly following the adoption of the SRD II, while the proportion of accounting and liquidity measures decreases. This finding suggests that SoP laws do not directly affect the design of compensation contracts by shifting the use of discretionary to regulated compensation metrics. One potential interpretation for that finding is that shareholders (or proxy advisory firms) primarily focus on visible aspects of compensation contracts, such as compensation levels, and do not / to a lesser extent deal with more complex aspects of remuneration policies (Gerner-Beuerle and Kirchmaier 2018).

Moving on to ESG compensation, my findings reveal a significant increase in firms tying their executives' remuneration to at least one ESG indicator (*ESG compensation*) following the adoption of the SRD II, while the proportion of ESG metrics is not affected. Again, these effects are more pronounced for high treatment intensity firms. These rather mixed findings prevent me from singling out the specific channel that drives ESG-based compensation. While my cross-sectional analyses provide some indications supporting the view that shareholder voting increases ESG-based compensation, the missing link between SoP and the proportion of ESG-related compensation metrics is more in line with the content requirements of the SRD II, which only vaguely require the integration of ESG targets into executive compensation but do not stipulate the use of specific ESG criteria.

Taken together, my results indicate that SoP laws mainly affect the level of total compensation and abnormal compensation, while the underlying composition / design of compensation contracts remains largely unaffected. As such, this paper contributes to the literature on SoP in two ways. First, I expand the literature on the effects of SoP on remuneration contracts by employing a cross-country setting of EU firms. Prior research largely focuses on single-country settings such as UK (e.g., Alissa 2015; Ferri and Maber 2013; Wu et al. 2020), USA (e.g., Iliev and Vitanova 2019; Kimbro and Xu 2016; Balsam et al. 2016), and Australia (e.g., Monem and Ng 2013; Grosse et al. 2017; Bugeja et al. 2023) or employs the global cross-country setting provided by Correa and Lel (2016). Compared to Correa and Lel (2016), the EU setting used in this paper offers two advantages: First, all firms are subject to the same SoP regulation and exhibit comparable legal characteristics (La Porta et al. 1998)⁵³, which reduces the risk that country-specific factors that are correlated with the adoption of SoP laws affect the results. Second, EU legislation is characterized by a strict legal enforcement, which increases confidence that the requirements of the SRD II are properly and uniformly implemented across the EU (European Commission 2017)⁵⁴. Relatedly, this setting enables me to exploit treatment effect heterogeneity to test plausible variation in the main effect, and to add to the debate on the design of SoP laws (i.e., advisory vs. binding SoP). So far, there is only little

⁵³ With the exception of Ireland, all sample firms belong to the same legal origin (civil law countries).

⁵⁴ In its official communication, the European Commission states that "The Commission promotes the general interest of the Union and ensures the application of the Treaties. As guardian of the Treaties, it has the duty to monitor the Member States' action in implementing EU law and to ensure that their legislation and practice complies with it, under the control of the Court of Justice of the European Union." (European Commission 2017, p. 4)

empirical evidence on the differential effects of advisory vs. binding shareholder votes (Correa and Lel 2016; Kind et al. 2024; Pawliczek et al. 2024). For instance, in additional tests, Correa and Lel (2016) document stronger SoP effects on compensation contracts for firms that introduced an advisory SoP law compared to firms that implement binding SoP practices. In contrast, my analysis of treatment effect heterogeneity indicates that effects are largely driven by the introduction of SoP itself and not by the enforceability.

Second, to the best of my knowledge, this is one of the first studies that have a closer look on the design of compensation packages. Prior literature largely focuses on effects of SoP on the level and composition of CEO pay (e.g., Monem and Ng 2013; Correa and Lel 2016; Cuñat et al. 2015; Bugeja et al. 2023). In contrast, by documenting that SoP laws mainly affect highly visible aspects of executive remuneration plans, while contractual features like performance measures are largely unaffected, this study provides a more nuanced view on the mechanisms and effectiveness of SoP laws. These findings may be of potential interest for regulators and policy makers in devising or revising SoP regulations.

4.2 Background

4.2.1 The EU's Second Shareholder Rights Directive

On 17 May 2017, the European Parliament and the Council of the European Union adopted Directive (EU) 2017/828 amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement. This so-called Second Shareholder Rights Directive (hereafter: SRD II) applies to all firms that have their registered offices in an EU member state and whose shares are admitted to trading on a regulated market within the EU (Art. 1 Directive 2007/37/EC). The SRD II contains specific rules regarding the identification of shareholders, transmission of information, facilitation of exercise of shareholder rights, transparency of institutional investors, asset managers and proxy advisors, remuneration of directors, and related party transactions (Art. 1 SRD II). Member states are required to transpose the directive into national law by 10 June 2019 (Art. 2 SRD II).

As for remuneration, the SRD II introduces Art. 9a (Right to vote on the remuneration policy) and Art. 9b (Information to be provided in and right to vote on the remuneration report). Art. 9a stipulates that firms establish a remuneration policy for directors which contributes to the company's business strategy, its long-term interests as well as to

sustainability. The remuneration policy shall further describe the different components of fixed and variable compensation and their relative proportion. Additionally, when awarding a variable remuneration, the policy shall set clear and comprehensive financial and non-financial criteria, which belong to corporate social responsibility (para. 6). Also, this remuneration policy is subject to a vote by shareholders (“Say on Pay”) (para. 1) on the occasion of a material change or at a minimum every four years (para. 5). In principle, Art. 9a SRD II stipulates a binding shareholder vote (para. 2). However, when transposing the directive into national law, member states were provided with the option to attenuate this provision by only requiring an advisory vote (para 3). Eight out of 27 EU member states (i.e., Austria, Estonia, Finland, Germany, Hungary, Ireland, Luxembourg, and Slovenia) resorted to this transposition option.

To standardize information on directors’ compensation, Art. 9b requires firms also to prepare a clear, comprehensive, and understandable remuneration report, which is in accordance with the remuneration policy (para 1). The European Commission shall adopt guidelines to ensure a comparable and consistent presentation of remuneration information (SRD II, recital 49). The remuneration report has to be audited, and it is also subject to a shareholder vote, which in contrast to the vote on the remuneration policy, is only advisory (Art. 9b para. 4 SRD II).

4.2.2 Effects of Say on Pay Regulation

A large body of literature has examined effects of SoP regulations (see Ferri and Göx (2018) for a comprehensive overview), i.e., laws that prescribe a periodic voluntary or mandatory shareholder vote regarding the compensation report (e.g., Ferri and Maber 2013; Gerner-Beuerle and Kirchmaier 2018), the compensation policy (e.g., Correa and Lel 2016; Balsam et al. 2016), or the level of executive pay (Wagner and Wenk 2024). This prior research can be largely divided into four streams.

The first set of studies directly investigates effects of SoP on the level of executives’ compensation contracts. Overall, these studies suggest that SoP tightens the link between pay and (poor) performance (reflected by an increase in the pay for performance sensitivity) (e.g., Alissa 2015; Ferri and Maber 2013; Correa and Lel 2016; Monem and Ng 2013), while CEO pay levels are largely unaffected by SoP (e.g., Kronlund and Shastri 2018; Ferri and Maber 2013; Grosse et al. 2017; Cuñat et al. 2015) or even increase (Iliev and Vitanova 2019). Contrary to these studies, Correa and Lel (2016) and Bugeja et al.

(2023) document reductions in (abnormal) CEO compensation for a cross-country setting of global firms and a setting of Australian firms, respectively. Relatedly, Balsam et al. (2016) and Larcker et al. (2015) show that firms anticipate potential negative shareholder votes (proxy advisory recommendations) and react by reducing executive compensation in advance to the entry into force of SoP laws.

A second stream of studies examines the association of SoP regulations with changes in firm value, mostly employing event study design to estimate market reactions around events associated with the announcement and adoption of SoP laws. These studies provide mixed results. On the one hand, the results of Ferri and Maber (2013) and Iliev and Vitanova (2019) suggest a positive impact of SoP on firm value by documenting a significant positive (negative) stock price reaction around the announcement of SoP for firms with abnormal compensation and poor performance (for exempted smaller firms). On the other hand, Cai and Walkling (2011); Larcker et al. (2015); Larcker et al. (2011), and Ertimur et al. (2013) do not find significant market reactions or document even a negative stock price reaction to compensation changes following the adoption of SoP laws. Using Tobin's Q and the market value of voting rights, respectively, Correa and Lel (2016) and Kind et al. (2024) report increases in firm value following the adoption of (binding) SoP laws.

Third, studies that analyse SoP voting outcomes and the pertinent role of institutional investors, especially proxy advisory firms. These studies show that although shareholder voting dissent is generally rather low (Conyon and Sadler 2010), shareholders do use their vote to reject (perceived) excessive compensation levels (Alissa 2015; Cai and Walkling 2011; Balsam et al. 2016). In addition, prior research documents that shareholder voting is substantially affected by proxy advisory recommendations (Gomtsian 2024; Kimbro and Xu 2016; Larcker et al. 2015; Ertimur et al. 2013; Ertimur, Ferri, and Muslu 2010).

Finally, a rather recent stream of literature investigates broader and partially unintended effects of SoP mandates. These studies show that SoP is associated with increases in insider trading profits as a substitute for a reduction in CEO pay (Bourveau et al. 2024), increases in ESG-based compensation contracts and enhanced ESG performance (Pawliczek et al. 2024) as well as reductions in employment investments and employee welfare to increase shareholder value (Jung, Shi, Zhou, and Zhu 2024).

This study contributes to the first and fourth stream of literature by investigating whether and how the adoption of the SRD II affects the level of compensation components and total executive pay as well as the design of compensation packages and in particular the implementation of ESG-based compensation.

4.3 Research Design

4.3.1 Sample Selection

I define treated firms as EU firms located in countries that introduced or strengthened their existing SoP laws in response to the SRD II and with compensation data available in ISS Incentive Lab (i.e., firms from Austria, Belgium, Finland, Germany, Ireland, Italy, Luxembourg, Portugal, and Spain). Like most regulatory settings, the adoption of the SRD II falls short of the experimental ideal of a randomized trial (Atanasov and Black 2016). Therefore, I construct a control group of EU firms which did not make significant changes to their national SoP laws following the adoption of the SRD II. Specifically, firms from Denmark, France, Netherlands, and Sweden serve as my control firms as these countries had established binding SoP practices prior to the SRD.

ISS Incentive Lab provides granular compensation data on incentive awards, including the level, performance metrics, performance goals, and payout structures for more than 400 European firms from 14 out of 27 EU member states⁵⁵ from 2011 onwards (ISS n.d.)⁵⁶. Although ISS Incentive Lab does not directly inform about the composition of the database, i.e., whether covered firms belong to a specific index (e.g., Stoxx Europe 600), a glance at the data indicates that primarily firms with the highest market capitalization are covered. Primarily CEOs are covered by ISS Incentive Lab. However, to a lesser extent, compensation data is also available for other directors, such as the CFO or COO. With regard to performance metrics, ISS Incentive Lab provides both information on absolute performance goals and an allocation of these absolute performance metrics to 16

⁵⁵ Compensation data is available for Austrian, Belgian, Croatian, Danish, Finnish, French, German, Irish, Italian, Luxembourgish, Dutch, Portuguese, Spanish, and Swedish firms. As ISS Incentive Lab only includes one Croatian firm-year observation, I exclude this observation from my analyses due to comparability reasons.

⁵⁶ By covering large and particularly visible firms, relying on ISS Incentive Lab introduces a potential selection bias, which may overstate my results. However, my results are robust to alternative sample specifications which increases confidence that a potential selection bias does not materially alter the conclusion drawn in this study. In addition, ISS Incentive Lab is widely used in academic research on executive compensation and SoP effects (e.g., Feichter, Moers, and Timmermans 2022; Lobo, Neel, and Rhodes 2018; Pawliczek et al. 2024).

overarching categories, i.e., “Accounting”, “Activity-related”, “Balance Sheet-related”, “CSR”, “Cash Flow”, “Earnings / Profit-related”, “Economic Value”, “Environment”, “Financial / Investment return ratios”, “Liquidity / Solvency-related”, “Market-related”, “Non-Financial”, “Other”, “Revenue-related”, “Social”, and “Stock Price”⁵⁷.

My sample period spans from 2014 to 2023. Art. 2 SRD II requires EU member states to comply with this directive by 10 June 2019. To identify the actual transposition dates at member state level, I checked the national implementing legislations. Based on this, I choose 2020 as the treatment year for seven out of nine treatment countries (i.e., Austria, Belgium, Finland, Germany, Ireland, Italy, and Luxembourg). In Portugal and Spain, the SRD II entered into force with a delay of one year due to political instabilities, resulting in a treatment year of 2021⁵⁸. Accordingly, for most of my sample firms, the pre period comprises six years (2014-2019) and the post period four years (2020-2023). Given the minimum requirement of the SRD II for firms to have at least one SoP every four years, this choice of a four-year post period ensures that each treatment firm had at least one SoP during the post period. For Spanish and Portuguese firms, the pre period extends to seven years (2014-2020), whereas the post period decreases to three years (2021-2023).

Table 4.1, Panel A reports details on the sample selection process. First, I select all EU firms which are covered by ISS Incentive Lab and with data available on Worldscope between 2013 and 2023, resulting in 1,424 treatment and 1,241 control firm-year observations. To conduct my DiD, I restrict my sample to firms that have at least one pre and post observation per firm⁵⁹. To that end, I drop 58 (55) treatment (control) firm observations. Next, I eliminate 196 (144) treatment (control) firm observations that do not have all required data points on my selected control variables⁶⁰. In a last step, I lag my control variables by one year which reduces my sample size by 164 (115) treatment (control) firm observations (see section 4.3.2). Accordingly, my final sample consists of 1,931 firm-year observations of which 1,006 observations belong to the treatment group

⁵⁷ For instance, the category “Accounting” includes absolute performance goals such as EBIT, EBITDA, or EBT. The category “Other” contains individual metrics such as Business Unit, Customer Satisfaction, Individual, Operational or Other (ISS Incentive Lab 2017).

⁵⁸ The delayed implementation of the SRD II in Portugal and Spain was not an individual case. According to the European Commission’s 2021 Annual Report on monitoring the application of EU law, the Commission opened 10 (17), 26 (42), 27 (21) new late transposition cases against Spain (Portugal) for failure to timely transpose directives in 2019, 2020, and 2021, respectively (European Commission 2022).

⁵⁹ In robustness checks, I also estimate the main model using a balanced sample.

⁶⁰ See section 4.3.2 for an overview of the control variables.

and 927 to the control group. Panel B, C, and D report the sample distribution per year, country, and industry. Panel E shows summary statistics for all outcome and control variables.

T-tests, comparing the mean value of all outcome variables between treatment and control firms, are reported in Appendix 4.B, Panel A. Results show that the level of total compensation and all compensation components, except other compensation, are higher for the control group, i.e., firms that already had binding SoP practices in place. These differences are significant for total compensation, equity compensation and variable compensation. In contrast, treatment firms have significant higher levels of other compensation compared to the control group. With regard to compensation metrics, t-tests show that control firms use more performance measures in executives' remuneration contracts and are more likely to have an ESG-based compensation.

Table 4.1: Sample Description

Panel A: Sample Selection Process

	<u>Treatment</u>	<u>Control</u>
Start: EU firms covered by ISS Incentive Lab and Worldscope from 2013-2023	1,424	1,241
<i>Exclude:</i> Firms without at least one pre and post observation	(58)	(55)
<i>Exclude:</i> Missing data on control variables	(196)	(144)
<i>Exclude:</i> Lagging control variables by one year	(164)	(115)
Final Sample	1,006	927

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4 Effects of Say on Pay Mandates on Executive Compensation

Panel B: Sample Distribution per Year

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Treatment	64	60	84	94	106	116	121	118	121	122	1,006
Control	71	74	91	91	91	99	105	105	100	100	927
Total	135	134	175	185	197	215	226	223	221	222	1,933

Panel C: Sample Distribution per Country

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Austria	1	2	3	4	4	4	4	4	4	4	34
Belgium	8	10	12	13	14	17	17	15	15	16	137
Denmark	2	3	5	6	8	8	9	9	9	9	68
Finland	11	9	10	12	11	11	12	12	11	11	110
France	43	46	50	50	47	50	52	51	50	49	488
Germany	24	18	39	41	46	47	49	49	54	54	421
Ireland	5	4	2	2	4	4	5	6	6	5	43
Italy	9	12	11	11	11	13	13	12	11	12	115
Luxembourg	0	0	0	0	1	2	3	3	2	2	13
Netherlands	13	10	17	17	17	21	22	22	20	21	180
Portugal	1	1	2	2	3	3	3	3	3	3	24
Spain	5	4	5	9	12	15	15	14	15	15	109
Sweden	13	15	19	18	19	20	22	23	21	21	191
Total	135	134	175	185	197	215	226	223	221	222	1,933

(continued on next page)

Panel D: Industry Distribution According to Fama-French Code (12 Industries)

	Treatment		Control		Total	
	Obs.	(%)	Obs.	(%)	Obs.	(%)
(1) Consumer Non-Durables	42	4.17	78	8.41	120	6.21
(2) Consumer Durables	79	7.85	152	16.40	231	11.95
(3) Manufacturing	177	17.59	171	18.45	348	18.00
(4) Oil, Gas, and Coal Extraction (Energy)	36	3.58	20	2.16	56	2.90
(5) Chemicals and Allied Products	93	9.24	46	4.96	139	7.19
(6) Business Equipment	77	7.65	90	9.71	167	8.64
(7) Telephone and Television Transmission	72	7.16	30	3.24	102	5.28
(8) Utilities	101	10.04	10	1.08	111	5.74
(9) Wholesale, Retail, and Some Services	45	4.47	80	8.63	125	6.47
(10) Healthcare, Medical Equipment, Drugs	54	5.37	57	6.15	111	5.74
(11) Finance	199	19.78	115	12.41	314	16.24
(12) Other (e.g., Hotels, Entertainment)	31	3.08	78	8.41	109	5.64
Total	1,006	100.00	927	100.00	1,933	100.00

(continued on next page)

4 Effects of Say on Pay Mandates on Executive Compensation

Panel E: Summary Statistics

	<u>N</u>	<u>Mean</u>	<u>Min</u>	<u>Max</u>	<u>Std. dev.</u>
Compensation Components and Metrics					
Total Compensation	1,920	4,435,089.38	0.00	116,573,704.00	4,643,565.81
Salary	1,917	1,283,879.53	0.00	13,518,092.99	692,218.43
Equity Compensation	1,259	1,467,254.21	-252,921.59	113,731,960.00	3,881,437.28
Cash Compensation	1,741	1,246,903.49	0.00	25,402,988.00	1,283,150.69
Other Compensation	1,619	438,380.53	-3,217,162.25	18,404,436.00	860,333.79
Abnormal Compensation	1,933	0.51	0.00	1.00	0.50
Variable Compensation	1,920	0.56	-0.14	1.00	0.22
Number of Metrics	1,933	7.24	1.00	39.00	4.93
Accounting Metrics	1,933	0.77	0.00	5.00	0.80
Liquidity Metrics	1,933	0.42	0.00	4.00	0.58
Other Metrics	1,933	0.74	0.00	6.00	0.89
ESG Compensation	1,933	0.68	0.00	1.00	0.47
Firm and Country Characteristics					
Total Assets (LN)	1,933	17.01	11.44	21.83	1.69
Loss Firm	1,933	0.10	0.00	1.00	0.30
Closely Held Shares (%)	1,933	24.41	0.00	99.62	21.37
Book-to-Market (industry-adjusted)	1,933	0.10	-3.26	4.86	0.47
ROA (industry-adjusted)	1,933	0.01	-3.02	3.46	0.12
Independent Board Members	1,933	62.13	0.00	100.00	24.05
Dual CEO	1,933	0.19	0.00	1.00	0.39
Price Volatility	1,933	22.21	8.86	49.81	6.16
Corporate Governance Score	1,933	63.85	5.07	98.30	20.41
Annual GDP Growth	1,933	1.62	-10.94	24.62	3.34
Regulatory Quality	1,933	1.43	0.49	2.04	0.37

This table describes the sample. Panel A summarizes the sample selection process. Panel B and C provide a breakdown of the sample to the sample years and countries. Panel D contains firm-year observations at the Fama-French 12 industry level. Panel E shows summary statistics. All variables are defined in Appendix 4.A.

4.3.2 Difference-in-Differences Model

In my empirical tests, I investigate the effects of SoP on the level and design of remuneration contracts following the adoption of the SRD II. To that end, I estimate variations of the following DiD model using OLS regressions and heteroscedasticity-robust standard errors clustered at the firm-level (Petersen 2009; Conley, Gonçalves, and Hansen 2018):

$$OUTCOME_{i,t} = \beta_0 + \beta_1 TREATED_i + \beta_2 CONTROLS_{i,t-1} + \beta_3 FIXED\ EFFECTS_i + \varepsilon_{i,t} \quad (2)$$

The dependent variable *OUTCOME* serves as a dummy for two sets of outcome variables which capture the level of directors' total compensation and its components (i.e., salary, equity compensation, cash compensation, and other compensation) (section 4.4) and the nature of (ESG-related) performance measures used in executives' remuneration plans (i.e., accounting metrics, liquidity metrics, other metrics, and ESG compensation) (section 4.5). Due to the left-skewed distribution of total compensation and its components, I log-transform all compensation variables. *TREATED* is an indicator variable that takes the value of 1 for all treated firms in the post period, and zero otherwise. *CONTROLS* is a vector of control variables selected based on prior literature on SoP (Correa and Leil 2016; Kind et al. 2024; Pawliczek et al. 2024). Specifically, I control for firm-specific factors that are expected to influence compensation contracts such as size (natural logarithm of total assets), loss firms (i.e., whether a firm has a negative net income before extra items / preferred dividends), the percentage of closely held shares, industry-adjusted firm performance (ROA), industry-adjusted growth opportunities (Book-to-Market), the number of independent board members, dual CEO (i.e., whether the CEO is also the chairperson of the board of directors), the firm's corporate governance score⁶¹, and price volatility. As my treatment date falls within the Corona period, I further control for (macroeconomic) country-specific conditions. To that end, I include annual GDP growth and Kaufmann et al. (2010)'s regulatory quality index in my regressions. All control variables are obtained from Worldscope and The World Bank Governance Indicators and lagged by one year to control for effects that occurred in the previous year which are expected to affect compensation contracts in the current year (e.g., Correa and Leil 2016). As *FIXED EFFECTS*, I implement a set of firm and

⁶¹ In section 4.5.2, the corporate governance score is replaced by LSEG's overall ESG score to control for a firm's ESG performance.

industry*year fixed effects to account for time-invariant unobservable changes in firm characteristics and industry-specific time trends (i.e., Corona effects)⁶². All continuous variables are winsorized at the 1% (99%) level. All variables are defined in Appendix 4.A.

4.4 Effects of Say on Pay on Executive Pay Levels

4.4.1 Main Effect

In my first set of empirical tests, I investigate whether, similar to prior findings, the harmonized SoP rules stipulated by the SRD II affect executives' level of compensation. Table 4.2, Panel A, columns (1) to (4) report results for estimating the effect of SoP on total compensation using four different specifications. In column (1), I report results without using control variables. In column (2), I estimate Eq. [2] with control variables and firm and industry*year fixed effects (main model). In column (3), I modify my fixed effects structure by introducing firm and year fixed effects. Finally, in column (4), I return to my initial model (column (2)) but exclude observations for 2020 and 2021 to eliminate effects on compensation driven by the Covid pandemic. Over all four specifications, I document a (highly) significant negative effect of SoP on total compensation for my treatment firms in the post period. In the main specification (column (2)), I observe a negative treatment effect of -0.139 (t-stat: -2.44), suggesting that directors of firms introducing or strengthening their SoP laws following the adoption of the SRD II experience on average decreases in total compensation of 14.9% which translates into a reduction in total pay of \$638,788 compared to the pre period mean of total compensation. This finding is in line with Correa and Lel (2016), albeit larger in economic magnitude⁶³. Potential (and non-exclusive) explanations for this deviation relate to (1) risen CEO pay levels in the last decade (Willis Tower Watson 2023)⁶⁴ and (2) differences in the sample composition. Specifically, Correa and Lel (2016) analyse SoP effects for 17,614 unique firms from 38 countries between 2001 and 2012 employing data from S&P Capital IQ,

⁶² In robustness checks, I replace my fixed effects structure by firm and year fixed effects to control for time-invariant differences between treatment and control firms and common time trends that have a similar effect on the treatment and control group.

⁶³ Correa and Lel (2016) observe reductions in total CEO pay of -0.060. However, they did not translate this effect into an amount of compensation.

⁶⁴ A recent report by Willis Tower Watson (2023) reveals an increase in median target total direct compensation for CEOs of 328 firms listed in the top indices of nine European countries (i.e., Belgium, France, Germany, Ireland, Italy, Netherlands, Spain, Switzerland, and UK) of 15% between 2017 and 2022.

thereby covering a higher proportion of smaller firms compared to other studies (i.e., Burns, Minnick, and Starks 2017; Fernandes, Ferreira, Matos, and Murphy 2012). In contrast, my sample comprises 400 large European firms covered by ISS Incentive Lab (see section 4.3.1). By covering larger firms, it could be expected that my sample firms award on average higher pay levels. Descriptive findings show that the mean total CEO pay in the study of Correa and Lel (2016) accounts for only one quarter of the total compensation in my sample (\$1,091,843 vs. \$4,435,089.38).

In a next step, I investigate whether decreases in total pay also resonate with changes in abnormal compensation. Abnormal compensation is the part of (total) compensation which is not justified by firm and director characteristics (Correa and Lel 2016). By exceeding the “optimal” level of pay, abnormal compensation is indicative of poor governance (Core, Holthausen, and Larcker 1999), which may be addressed by shareholders, the media, or proxy advisory firms (Core et al. 2008)⁶⁵. Following Cohen, Kadach, Ormazabal, and Reichelstein (2023), I construct abnormal compensation as total compensation minus the median compensation among industry peers in the same size quintile, where industry peers are classified according to Fama and French (2025). Again, I estimate four models with abnormal compensation as the dependent variable. The results in Table 4.2, Panel A, columns (5) to (8) show (highly) significant negative treatment effects for all specifications (i.e., for a specification without control variables, for my main specification with control variables and firm and industry*year fixed effects, for a specification with firm and year fixed effects, and when excluding observations for 2020 and 2021). The coefficient of -0.123 (t-stat: -2.59) in the main model (column (6)) indicates that treated firms experience on average reductions in the probability of setting an abnormal compensation by 12.3%. This finding can be interpreted tentatively as evidence that (the anticipation of) SoP votes constrain self-serving executive pay practices (Ertimur et al. 2010; Bugeja et al. 2023).

⁶⁵ Abnormal compensation is thereby related to managerial power or entrenchment.

4 *Effects of Say on Pay Mandates on Executive Compensation*

Table 4.2: Effects of SoP on Compensation Level

Panel A: Main Effect								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable:	Total Compensation				Abnormal Compensation			
Treat × Post	-0.223*** (-4.13)	-0.139** (-2.44)	-0.107* (-1.95)	-0.182*** (-2.73)	-0.195*** (-4.54)	-0.123** (-2.59)	-0.105** (-2.23)	-0.127** (-2.18)
Size		0.072 (0.87)	0.058 (1.24)	0.069 (0.77)		-0.120** (-2.07)	-0.085* (-1.89)	-0.125* (-1.73)
Loss Firm		-0.032 (-0.49)	-0.055 (-0.80)	-0.050 (-0.57)		-0.039 (-0.75)	-0.059 (-1.16)	-0.055 (-0.87)
Closely Held Shares (%)		-0.004* (-1.75)	-0.004 (-1.60)	-0.006** (-2.30)		-0.003 (-1.44)	-0.002 (-1.40)	-0.004* (-1.78)
Book-to-Market		-0.235*** (-3.27)	-0.229*** (-3.28)	-0.238*** (-2.99)		-0.107** (-1.98)	-0.106** (-2.14)	-0.084 (-1.29)
ROA		0.493 (1.37)	0.425 (1.28)	0.646 (1.32)		0.139 (0.39)	0.140 (0.41)	0.550 (1.27)
Ind. Board Members		-0.003* (-1.84)	-0.003* (-1.80)	-0.004* (-1.93)		-0.002 (-1.19)	-0.001 (-0.91)	-0.002 (-1.30)
Dual CEO		0.138 (1.35)	0.130 (1.32)	0.062 (0.60)		0.001 (0.02)	-0.000 (-0.00)	-0.047 (-0.58)
Price Volatility		0.004 (0.63)	0.005 (0.78)	0.009 (1.28)		0.004 (0.88)	0.007 (1.44)	0.008 (1.42)
CG Score		0.001 (0.73)	0.001 (1.01)	0.000 (0.28)		-0.001 (-0.50)	-0.000 (-0.27)	-0.001 (-0.59)
GDP Growth		0.007 (0.72)	0.012 (1.29)	0.001 (0.08)		0.006 (0.71)	0.011 (1.43)	0.011 (0.83)
Regulatory Quality		0.411*** (2.78)	0.417*** (2.77)	0.619*** (3.73)		0.304** (2.40)	0.307** (2.44)	0.494*** (3.09)

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4 *Effects of Say on Pay Mandates on Executive Compensation*

Adj. R ²	0.627	0.652	0.648	0.641	0.333	0.367	0.363	0.359
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	No	No	No	Yes	No
Industry × Year FE	Yes	Yes	No	Yes	Yes	Yes	No	Yes
Covid Years excluded	No	No	No	Yes	No	No	No	Yes
Clustered SE	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level
Observations	2,515	1,917	1,917	1,467	2,476	1,931	1,931	1,478

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4 *Effects of Say on Pay Mandates on Executive Compensation*

Panel B: Robustness Checks

	(1)	(2)	(3)	(4)	(5)	(6)
	Total Compensation			Abnormal Compensation		
	Balanced	w/o PT and ES	CEO	Balanced	w/o PT and ES	CEO
Treat × Post	-0.169** (-2.49)	-0.136** (-2.19)	-0.145** (-2.41)	-0.121** (-2.07)	-0.118** (-2.30)	-0.129** (-2.54)
Size	0.135 (1.37)	0.097 (1.13)	0.067 (0.76)	-0.095 (-1.28)	-0.110* (-1.81)	-0.121* (-1.97)
Loss Firm	-0.014 (-0.19)	-0.012 (-0.18)	-0.034 (-0.52)	-0.003 (-0.05)	-0.024 (-0.45)	-0.035 (-0.65)
Closely Held Shares (%)	-0.006*** (-2.61)	-0.005* (-1.92)	-0.005 (-1.64)	-0.004** (-1.99)	-0.002 (-1.29)	-0.003 (-1.56)
Book-to-Market	-0.173** (-2.32)	-0.241*** (-3.26)	-0.220*** (-3.00)	-0.085 (-1.45)	-0.100* (-1.83)	-0.100* (-1.85)
ROA	0.767* (1.84)	0.614* (1.72)	0.448 (1.23)	0.461 (1.05)	0.265 (0.72)	0.153 (0.41)
Ind. Board Members	-0.003 (-1.48)	-0.003* (-1.82)	-0.003 (-1.44)	-0.002 (-1.41)	-0.002 (-1.42)	-0.001 (-0.95)
Dual CEO	0.241*** (2.74)	0.134 (1.18)	0.129 (1.22)	0.082 (0.94)	0.006 (0.08)	-0.005 (-0.07)
Price Volatility	0.002 (0.40)	0.004 (0.60)	0.004 (0.73)	-0.000 (-0.02)	0.003 (0.73)	0.005 (1.13)
CG Score	-0.000 (-0.14)	0.001 (0.55)	0.001 (0.78)	0.000 (0.03)	-0.001 (-0.83)	-0.000 (-0.43)
GDP Growth	0.007 (0.64)	0.011 (1.06)	0.009 (0.82)	0.007 (0.59)	0.009 (1.04)	0.002 (0.29)
Regulatory Quality	0.438** (2.51)	0.414*** (2.80)	0.398*** (2.76)	0.272* (1.84)	0.276** (2.15)	0.263** (2.04)

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Adj. R ²	0.649	0.641	0.641	0.349	0.365	0.359
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level
Observations	1,405	1,784	1,822	1,408	1,798	1,834

This table reports results from estimating Eq. [2] with total and abnormal compensation as the dependent variable. Total compensation is log-transformed due to the left-skewed distribution. Panel A reports results for the main sample. In columns (1) and (5), I re-estimate Eq. [2] without using control variables. In columns (2) and (6), I estimate Eq. [2] using firm and industry*year fixed effects. In columns (3) and (7), I re-estimate Eq. [2] using firm and year fixed effects. In columns (4) and (8), I estimate the main model but exclude observations for 2020 and 2021. In Panel B, I re-estimate the main model using alternative sample specifications. In columns (1) and (4), I re-estimate the main model using a balanced sample structure. In columns (2) and (5), I re-estimate the main model, but exclude Portuguese and Spanish firms. In columns (3) and (6), I estimate the main model only for observations belonging to the CEO of a firm. All variables are defined in Appendix 4.A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

I further estimate Eq. [2] with total and abnormal compensation as the dependent variable for three different sample specifications. Results of these robustness checks are reported in Table 4.2, Panel B. As documented in columns (1) and (4), total and abnormal compensation also significantly decrease following the adoption of the SRD II when applying a balanced sample structure (t-stat: -2.49, -2.07, respectively). To address concerns that the delayed implementation of the SRD II in Portugal and Spain affects the results, I re-estimate the main model without Portuguese and Spanish firms. As reported in columns (2) and (5), results remain unchanged (t-stat: -2.19, -2.30, respectively). Finally, in columns (3) and (6), I re-estimate the main model using CEO observations only as CEO compensation is subject to increased public attention (Core et al. 2008). All effects remain statistically significant (t-stat: -2.41, -2.54, respectively).

4.4.2 Compensation Structure

I further investigate the effect of SoP on the compensation structure to shed light on the drivers of the reduction in total compensation. Table 4.3 reports results for estimating Eq. [2] with salary, equity compensation, cash compensation, other compensation, and the share of variable compensation components in total compensation as the dependent variable, each with and without control variables. I directly extract the amount of salary and other compensation from ISS Incentive Lab, while equity and cash compensation are constructed as the sum of stock and option awards, and bonus and non-equity compensation, respectively. In the main model, i.e., in the specification with control variables and firm and industry*year fixed effects, I document a negative treatment effect for all compensation elements, albeit not significant at conventional levels. In contrast, the share of variable compensation in total compensation decreases significantly (coefficient: -0.062, t-stat: -3.43) following the adoption / strengthening of SoP laws. This finding indicates that the reduction in total compensation is mainly driven by performance-based compensation elements, while fixed components such as salary are not affected by SoP. In this regard, I do not observe an effect of SoP on salary (coefficient: -0.013, t-stat: -0.37). In the model specification without control variables, equity compensation (column (3)), cash compensation (column (5)), and variable compensation (column (9)) show (highly) significant negative coefficients.

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Table 4.3: Effect of SoP on Compensation Structure

Dependent variable	(1) Salary (LN)	(2)	(3) Equity Comp. (LN)	(4)	(5) Cash Comp. (LN)	(6)	(7) Other Comp. (LN)	(8)	(9) Variable Comp. (%)	(10)
Treat × Post	-0.036 (-1.08)	-0.013 (-0.37)	-0.294** (-2.41)	-0.163 (-1.32)	-0.136** (-2.00)	-0.110 (-1.54)	-0.237 (-1.61)	-0.104 (-0.64)	-0.085*** (-5.01)	-0.062*** (-3.43)
Size		0.060 (0.97)		0.132 (0.69)		0.047 (0.44)		-0.236 (-1.04)		0.007 (0.31)
Loss Firm		-0.028 (-0.75)		-0.213* (-1.73)		-0.071 (-1.01)		0.110 (0.88)		-0.020 (-0.97)
Closely Hd. Shares		-0.002 (-1.10)		-0.004 (-0.97)		-0.001 (-0.31)		-0.009* (-1.71)		-0.001 (-1.01)
Book-to-Market		-0.074* (-1.79)		-0.544*** (-3.05)		-0.242*** (-2.72)		0.001 (0.00)		-0.050** (-2.12)
ROA		0.039 (0.15)		1.150 (1.39)		-0.076 (-0.12)		-1.236 (-1.02)		0.150 (1.06)
Ind. Board Members		0.000 (0.05)		-0.008 (-1.56)		-0.001 (-0.36)		0.005 (1.16)		-0.001 (-1.60)
Dual CEO		0.073 (1.25)		0.279 (1.62)		0.045 (0.38)		0.375 (1.44)		0.026 (0.95)
Price Volatility		-0.002 (-0.58)		-0.004 (-0.25)		0.002 (0.22)		-0.001 (-0.06)		0.003 (1.59)
CG Score		0.000 (0.33)		0.002 (0.63)		0.001 (0.50)		0.001 (0.26)		0.000 (0.61)
GDP Growth		0.004 (0.63)		0.002 (0.10)		0.019* (1.69)		0.031 (1.06)		0.002 (0.66)
Regulatory Quality		0.107 (1.15)		0.390 (1.46)		0.036 (0.20)		1.032** (2.52)		0.073* (1.66)

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Adj. R ²	0.679	0.662	0.606	0.610	0.631	0.647	0.575	0.571	0.550	0.573
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Observations	2,510	1,914	1,592	1,239	2,271	1,736	1,961	1,607	2,515	1,917

This table reports results from estimating Eq. [2] with salary, equity compensation, cash compensation, other compensation, and the proportion of variable compensation in total compensation as the dependent variable. All variables, except variable compensation, are log-transformed due to the left-skewed distribution. All variables are defined in Appendix 4.A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

4.4.3 Cross-Sectional Analysis: Treatment Effect Heterogeneity

To gauge whether the main effect (i.e., reduction in total and abnormal compensation) shows plausible variation across firms, I further estimate total effect models. To that end, I modify Eq. [2] by replacing *Treated* with two non-overlapping subsamples of the treatment group: low vs. high treatment intensity firms. I define low treatment intensity firms as firms that already had advisory SoP laws in place but strengthened shareholder participation following the adoption of the SRD II (i.e., firms from Belgium, Italy, Portugal, and Spain). Firms that only introduced mandatory SoP regulations for the first time following the implementation of the SRD II are classified as high treatment intensity firms (i.e., firms from Austria, Finland, Germany, Ireland, and Luxembourg). The underlying idea is that firms that have already been subject to SoP (low treatment intensity firms) may have reduced executives' remuneration in the course of previous votes, resulting in lower baseline levels of compensation⁶⁶. In addition, firms conducting the first (mandatory) SoP votes may be subject to stronger attention by the media (Core et al. 2008) and / or proxy advisory firms (Larcker et al. 2015), thereby being more strongly affected by SoP.

Table 4.4 reports findings for estimating the total effects model. Two insights emerge from my results. First, for the low treatment intensity group, I only observe a slightly significant reduction in equity compensation (column (4)) (coefficient: -0.295, t-stat: -1.75), while coefficients for all other compensation variables are insignificant. In contrast, and in line with my expectations, for the high treatment intensity group, I document decreases in all compensation components, except for salary, which resonates with a (highly) significant reduction in total compensation (column (1)), abnormal compensation (column (2)), and variable compensation (column (7)). Second, F-tests reveal a significant difference between high and low treatment intensity firms for other compensation (p-value 0.046), which is driven by a negative coefficient for high treatment intensity firms and a positive coefficient for low treatment intensity firms. As other compensation includes largely unpopular perquisites such as private jets (Yermack 2006), chauffeurs or tax gross-ups, increases in other compensation are largely opposed by shareholders (Balsam et al. 2016).

⁶⁶ Descriptive findings in Appendix 4.B, Panel B show that high treatment intensity firms exhibit significantly higher levels of total compensation compared to low treatment intensity firms (difference: 0.34, t-stat: 5.76).

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Table 4.4: Treatment Effect Heterogeneity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	Total Comp. (LN)	Abnormal Comp.	Salary (LN)	Equity Comp. (LN)	Cash Comp. (LN)	Other Comp. (LN)	Variable Comp. (%)
Treat × Post × High	-0.168** (-2.51)	-0.144** (-2.51)	0.008 (0.18)	-0.081 (-0.55)	-0.122 (-1.46)	-0.322 (-1.65)	-0.080*** (-3.65)
Treat × Post × Low	-0.093 (-1.29)	-0.088 (-1.51)	-0.046 (-0.99)	-0.295* (-1.75)	-0.094 (-0.96)	0.179 (0.85)	-0.035 (-1.48)
Size	0.076 (0.90)	-0.118** (-2.04)	0.057 (0.93)	0.123 (0.65)	0.048 (0.44)	-0.214 (-0.98)	0.009 (0.39)
Loss Firm	-0.032 (-0.50)	-0.038 (-0.74)	-0.028 (-0.74)	-0.216* (-1.75)	-0.071 (-1.01)	0.106 (0.84)	-0.020 (-0.98)
Closely Held Shares (%)	-0.004* (-1.71)	-0.002 (-1.41)	-0.002 (-1.16)	-0.004 (-1.04)	-0.001 (-0.30)	-0.008 (-1.54)	-0.001 (-0.93)
Book-to-Market	-0.230*** (-3.23)	-0.103* (-1.94)	-0.078* (-1.89)	-0.550*** (-3.09)	-0.240*** (-2.73)	0.030 (0.16)	-0.047** (-2.01)
ROA	0.490 (1.37)	0.138 (0.39)	0.041 (0.16)	1.139 (1.37)	-0.077 (-0.12)	-1.329 (-1.11)	0.149 (1.05)
Ind. Board Members	-0.003* (-1.81)	-0.002 (-1.16)	-0.000 (-0.02)	-0.009 (-1.60)	-0.001 (-0.34)	0.006 (1.29)	-0.001 (-1.51)
Dual CEO	0.135 (1.33)	-0.000 (-0.01)	0.074 (1.28)	0.276 (1.60)	0.045 (0.38)	0.337 (1.31)	0.024 (0.92)
Price Volatility	0.004 (0.63)	0.004 (0.89)	-0.002 (-0.59)	-0.004 (-0.24)	0.002 (0.23)	-0.001 (-0.05)	0.003 (1.64)
CG Score	0.001 (0.82)	-0.000 (-0.43)	0.000 (0.22)	0.001 (0.54)	0.001 (0.53)	0.001 (0.46)	0.000 (0.80)
GDP Growth	0.006 (0.59)	0.005 (0.57)	0.005 (0.79)	0.005 (0.27)	0.018* (1.73)	0.020 (0.72)	0.001 (0.35)
Regulatory Quality	0.396*** (2.70)	0.293** (2.30)	0.118 (1.28)	0.427 (1.55)	0.030 (0.17)	0.857** (2.01)	0.064 (1.43)

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F-Test (p-value)	0.357	0.417	0.313	0.284	0.796	0.046	0.110
Adj. R ²	0.652	0.367	0.662	0.611	0.646	0.573	0.574
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level
Observations	1,917	1,931	1,914	1,239	1,736	1,607	1,917

This table reports results from estimating Eq. [2] with total compensation, abnormal compensation, salary, equity compensation, cash compensation, other compensation, and the proportion of variable compensation in total compensation as the dependent variable. All variables, except abnormal compensation and variable compensation, are log-transformed due to the left-skewed distribution. The treatment group is partitioned based on the treatment intensity. Firms from Austria, Finland, Germany, Ireland, and Luxembourg are classified as high treatment intensity firms, as they introduced mandatory SoP votes for the first time following the adoption of the SRD II. Firms from Belgium, Italy, Portugal, and Spain form the low treatment intensity group as they had advisory SoP practices prior to the SRD II in place. All variables are defined in Appendix 4.A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

Robustness checks using total and abnormal compensation as the dependent variable are reported in Appendix 4.C. The results remain largely unchanged when using a balanced sample, when excluding Portuguese and Spanish firms, and when employing a sample of CEO observations only.

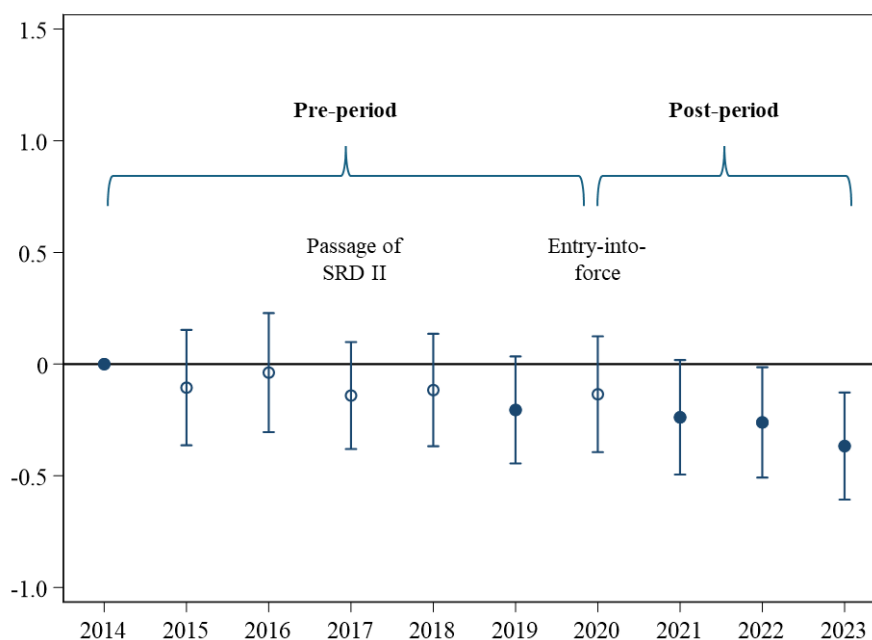
These cross-sectional findings lend support to the notion that the documented decrease in executive compensation reflects a SoP effect and is not largely driven by other provisions of the SRD II. Specifically, the bundled requirement to prepare a remuneration report and put this report to an advisory shareholder vote stipulated by Art. 9b SRD II applies uniformly to all treatment and control firms which contradicts with stronger effects for firms that introduced mandatory SoP votes for the first time following the adoption of the SRD II. To further increase confidence that my results represent a SoP and not a transparency effect induced by the provisions concerning the publication of a remuneration report, I reviewed the national member state laws regarding the presentation of compensation information prior to the SRD II and also manually checked whether compensation data included in ISS Incentive Lab has been publicly available already before the SRD II has been adopted. Both analyses do not support the notion that the SRD II mainly increased transparency as compensation data throughout my sample period has been publicly available already before the SRD II entered into force.

4.4.4 Yearly Treatment Effects

Next, I estimate yearly treatment effects to shed further light on how the effect of SoP on total compensation evolves and to assess the parallel trend assumption. In Figure 4.1, I plot the yearly treatment point estimates with a 95% confidence interval based on Eq. [2] with total compensation as dependent variable. 2014, the first year of the sample period, serves as the benchmark year. Results are also reported in Appendix 4.D, Panel A. Graphical inspection of Figure 4.1 yields three insights. First, apart from 2019, the year just before the SRD II entered into force, all coefficient estimates for the pre-period are insignificant and also show no signs of a time-trend (Atanasov and Black 2016). This increases confidence that the parallel trend assumption is not violated and that the observed effects are attributable to the introduction / strengthening of SoP laws. Second, total compensation decreases significantly in 2019, 2021, 2022, and 2023 with effects in 2022 (coefficient: -0.261, t-stat: -2.08) and 2023 (coefficient: -0.367, t-stat: -3.01) being most pronounced. This finding indicates that the effect of SoP on executives'

remuneration does not kick in immediately but evolves gently in the post period. One reason for that might be that the SRD II does not require firms to carry out shareholder votes immediately after the entry into force of the directive but only when material changes to the remuneration policy take place or at least every four years (Art. 9a SRD II). The insignificant coefficient for 2020 could also be partly explained by the delayed adoption of the SRD II in Portugal and Spain. Third, the slightly significant treatment effect in 2019 (coefficient: -0.205, t-stat: -1.69) suggests that firms started reducing total compensation directly before the SRD II entered into force in an attempt to avoid negative shareholder voting results (Balsam et al. 2016), negative proxy recommendations (Larcker et al. 2015), and / or public outrage (Bebchuk 2007).

Figure 4.1: Yearly Treatment Effects of SoP on Total Compensation

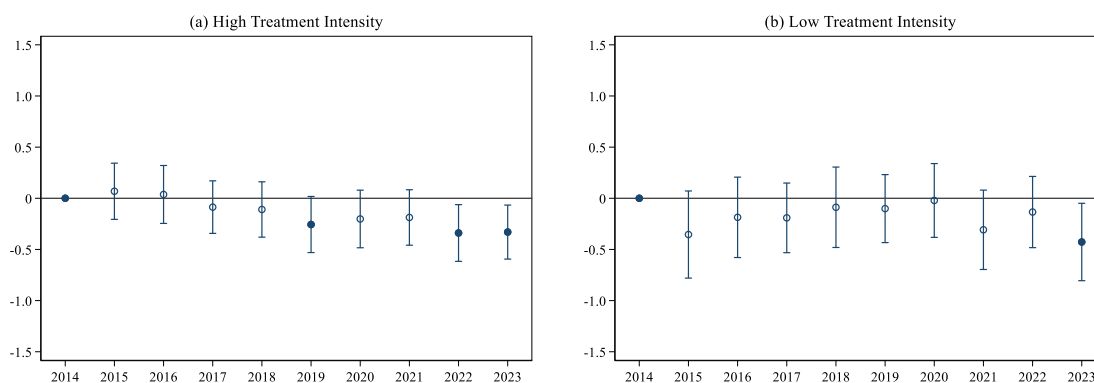


This figure plots yearly treatment point estimates together with 95% confidence intervals for total compensation. As I omit the indicator $Treat \times 2014$, the year 2014 serves as benchmark. Hollow circles represent insignificant effects, whereas circles indicate a significant effect of SoP.

I also estimate yearly treatment effects for high and low treatment intensity firms separately. Results are plotted in Figure 4.2 and also reported in Appendix 4.D, Panel B. Graphical inspection in Figure 4.2 shows that firms that introduced mandatory shareholder participation for the first time (high treatment intensity group) reduced executives' total compensation already in 2019 and continued to do so in 2022 and 2023. In contrast, firms that already had SoP votes in place but strengthened shareholder participation following the SRD II (low treatment intensity group) only experienced

significant reductions in total pay in 2023. This finding supports the notion that firms that introduced mandatory shareholder votes for the first time (high treatment intensity firms) are more strongly affected by the SRD II. In addition, these results contradict again a transparency effect caused by the disclosure of standardized remuneration information and thus provide further support for the notion that the introduction (strengthening) of SoP votes affected compensation practices. Specifically, if the provisions regarding the remuneration report drive my results, I would expect the treatment effect to kick in immediately in 2020 as the transparency shock induced by standardized remuneration information should be the strongest in the year when the first reports have been published. In addition, as the requirements concerning the remuneration report apply uniformly to all firms, I would not expect treatment effect heterogeneity as documented in Figure 4.2.

Figure 4.2: Yearly Treatment Effects – Treatment Effect Heterogeneity



This figure plots yearly treatment point estimates together with 95% confidence intervals for total compensation. I estimate a modified version of Eq. [2], where I partition my treatment group according to the treatment intensity. Figure (a) plots results for the high treatment intensity group (i.e., firms from Austria, Finland, Germany, Ireland, and Luxembourg), Figure (b) plots results for the low treatment intensity group (i.e., firms from Belgium, Italy, Portugal, and Spain). As I omit the indicator $Treat \times 2014$, the year 2014 serves as benchmark. Hollow circles represent insignificant effects, whereas circles indicate a significant effect of SoP.

Taken together, the findings discussed in this section suggest that SoP reduced both the level of total compensation and abnormal compensation practices, and this more so in firms that introduced mandatory (advisory) shareholder votes for the first time. These effects can be caused by shareholders casting their vote directly against a specific remuneration policy (e.g., Alissa 2015), induced by proxy advisory recommendations (e.g., Kimbro and Xu 2016; Ertimur et al. 2013) or increased press coverage of firms with high total pay (Core et al. 2008). A further, non-exclusive and potential interrelated explanation is that firms anticipate potential negative voting outcomes and adjust

(controversial) pay policies in advance to avoid shareholder outrage (e.g., Larcker et al. 2015; Balsam et al. 2016). In line with this explanation, Conyon and Sadler (2010) document for UK firms rather low shareholder voting dissent. While it is out of the scope of this paper to unveil the specific channel(s) of these effects, my plausibility checks (i.e., yearly DiD analyses and cross-sectional analyses) increase confidence that my results are driven by the introduction / strengthening of SoP and not bundled provisions of the SRD II. Relatedly, I am unable to identify whether total (variable) compensation decreases due to more ambitious compensation targets that have not been achieved by executives or direct restrictions of the level of target compensation.

4.5 Effects of Say on Pay on the Design of Compensation Contracts

In my second set of empirical tests, I investigate how impactful the SRD II actually is. To that end, I dive deeper into the design of remuneration contracts and examine whether SoP mandates not only affect the level of compensation but also provoke changes in the choice of metrics used in executives' compensation plans. My analyses are twofold. First, I investigate whether SoP promotes the integration of more reliable metrics such as accounting or liquidity-related metrics. Accounting and liquidity-related metrics rely on highly regulated figures which are less prone to discretion (Gomtsian 2024) and harder to manipulate when attempting to increase the level of compensation. Second, I investigate whether firms (started) to implement ESG-based compensation following the adoption of the SRD II. In recent years, ESG issues have gained growing attention by firms, investors, and other stakeholders (Pawliczek et al. 2024). For instance, Hartzmark and Sussman (2019) show that investors substantially demand funds with superior CSR performance, and thereby pointing to an increased ESG orientation by shareholders. One means of shareholders to express their ESG orientation is to directly cast their vote in favour of remuneration policies that include ESG targets.

4.5.1 Compensation Metrics

To investigate the effect of SoP on compensation metrics, and in particular on highly regulated and thus more reliable compensation metrics, I aggregate ISS Incentive Lab's metric types to accounting metrics and liquidity metrics. While accounting measures involve metrics on "Accounting", "Balance Sheet", "Earnings", and "Revenues", liquidity measures comprise all metric types related to "Cash Flow", "Financial / Investment return ratio", and "Liquidity". As a next step and in line with Pawliczek et al.

(2024), I calculate the proportion of accounting and liquidity-related metrics by dividing the number of awards tied to accounting and liquidity metrics, respectively, by the total number of unique awards in a given firm and year.

Table 4.5 reports results for estimating the effect of SoP on compensation metrics. My findings in Panel A reveal that SoP does not affect the number of metrics used in executives' remuneration contracts (t-stat: 0.33). As for the type of performance measures, I document decreases in the proportion of accounting and liquidity measures albeit not significantly at conventional levels (t-stat: -1.44, -1.46, respectively). In contrast, the proportion of *Other* which encompasses highly unspecific measures such as "Individual", "Other", or "Vague" increases significantly following the adoption of the SRD II (coefficient: 0.303, t-stat: 3.09)⁶⁷.

These findings indicate that SoP mandates do not improve the underlying design of remuneration policies. Specifically, I find no indication that the use of discretionary versus regulated compensation metrics changes after the adoption of SoP regulation⁶⁸. This finding is somewhat counter-intuitive as Gomtsian (2024) shows that institutional investors prefer the use of "tangible" and "quantifiable" financial targets, which are harder to manipulate. One potential interpretation for this finding relate to high information processing costs, especially for (small individual) shareholders (Blankespoor, deHaan, and Marinovic 2020). In contrast to compensation levels, performance measures are less visible and require a more in-depth examination of the remuneration policy. In this regard, Ferri and Göx (2018) point out that the effectiveness of SoP critically depends on the incentives and the information environment of the parties involved. Relatedly, for UK firms, Gerner-Beuerle and Kirchmaier (2018) show that shareholders are less concerned about structural features of compensation packages, while compensation levels are subject to greater shareholder scrutiny. Exploiting treatment effect heterogeneity (Panel B), I find significant increases in the use of *Other* metrics for both high and low treatment intensity firms consistent with shareholders not targeting the underlying design of executive compensation contracts. This conclusion is

⁶⁷ 1,230 out of my 1,931 firm-year observations (63%) have at least one performance metric classified as "Other".

⁶⁸ I caution not to interpret these results in a way that the reduction in accounting and liquidity-related targets is directly offset by an increase in "Other" measures. The reduction in the proportion of accounting and liquidity-related metrics could also be due to increases in the remaining ISS Incentive Lab's metrics types (i.e., "Activity-related", "CSR", "Economic Value", "Environment", "Market-related", "Non-Financial", "Social", and "Stock Price").

also supported by my robustness checks using three alternative sample specifications (i.e., a balanced sample, a sample excluding Portuguese and Spanish firms, and a sample including CEO observations only). Results are reported in Appendix 4.E.

Table 4.5: Effects of SoP on Compensation Metrics

Panel A: Main Effect				
Metric Type	(1) Number	(2) Accounting	(3) Liquidity	(4) Other
Treat × Post	0.162 (0.33)	-0.093 (-1.44)	-0.076 (-1.46)	0.303*** (3.09)
Size	-0.666 (-1.15)	-0.171* (-1.80)	-0.097 (-1.53)	-0.063 (-0.57)
Loss Firm	0.458 (0.93)	-0.097* (-1.77)	-0.019 (-0.44)	-0.048 (-0.63)
Closely Held Shares	-0.032** (-2.21)	-0.002 (-1.01)	-0.000 (-0.14)	-0.001 (-0.45)
Book-to-Market	0.169 (0.30)	-0.032 (-0.46)	0.023 (0.41)	0.091 (1.00)
ROA	3.017 (1.21)	-0.355 (-0.90)	0.082 (0.31)	-0.129 (-0.28)
Ind. Board Members	-0.016 (-1.30)	-0.003* (-1.85)	-0.002 (-1.44)	-0.000 (-0.09)
Dual CEO	-1.463** (-2.07)	-0.017 (-0.17)	-0.109* (-1.78)	0.024 (0.19)
Price Volatility	0.008 (0.15)	-0.000 (-0.01)	-0.001 (-0.15)	-0.019* (-1.87)
CG Score	0.000 (0.04)	-0.002 (-1.13)	-0.000 (-0.38)	0.001 (0.44)
GDP Growth	0.101* (1.67)	0.020*** (2.60)	0.013** (2.32)	0.001 (0.11)
Regulatory Quality	1.121 (0.87)	-0.080 (-0.52)	0.170 (1.43)	-0.001 (-0.01)
Adj. R ²	0.624	0.685	0.634	0.505
Firm FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm
Observations	1,931	1,931	1,931	1,931

(continued on next page)

Panel B: Treatment Effect Heterogeneity

Metric Type	(1) Number	(2) Accounting	(3) Liquidity	(4) Other
Treat × Post × High	-0.128 (-0.24)	-0.147* (-1.95)	-0.136** (-2.29)	0.257** (2.58)
Treat × Post × Low	0.627 (0.72)	-0.004 (-0.04)	0.020 (0.26)	0.379** (2.58)
Size	-0.639 (-1.10)	-0.166* (-1.72)	-0.091 (-1.49)	-0.059 (-0.52)
Loss Firm	0.459 (0.93)	-0.096* (-1.79)	-0.018 (-0.44)	-0.048 (-0.62)
Closely Held Shares	-0.031** (-2.13)	-0.002 (-0.93)	-0.000 (-0.01)	-0.001 (-0.41)
Book-to-Market	0.215 (0.38)	-0.023 (-0.35)	0.033 (0.58)	0.099 (1.10)
ROA	2.998 (1.21)	-0.359 (-0.91)	0.078 (0.29)	-0.133 (-0.29)
Ind. Board Members	-0.015 (-1.23)	-0.003* (-1.76)	-0.001 (-1.28)	-0.000 (-0.01)
Dual CEO	-1.490** (-2.08)	-0.022 (-0.22)	-0.114* (-1.81)	0.019 (0.16)
Price Volatility	0.009 (0.15)	-0.000 (-0.00)	-0.001 (-0.15)	-0.019* (-1.85)
CG Score	0.001 (0.16)	-0.001 (-1.00)	-0.000 (-0.18)	0.001 (0.53)
GDP Growth	0.087 (1.58)	0.018** (2.44)	0.011* (1.90)	-0.001 (-0.07)
Regulatory Quality	0.976 (0.75)	-0.107 (-0.69)	0.140 (1.16)	-0.025 (-0.10)
Adj. R ²	0.448	0.235	0.068	0.388
Firm FE	0.625	0.685	0.636	0.505
Industry × Year FE	Yes	Yes	Yes	Yes
Clustered SE	Yes	Yes	Yes	Yes
Observations	Firm 1,931	Firm 1,931	Firm 1,931	Firm 1,931

This table reports results from estimating Eq. [2] with number of metrics used, proportion of accounting metrics, proportion of liquidity metrics, and proportion of other metrics as the dependent variable. In Panel B, I partition my treatment group according to the treatment intensity. Firms from Austria, Finland, Germany, Ireland, and Luxembourg are classified as high treatment intensity firms, as they introduced mandatory SoP votes for the first time following the adoption of the SRD II. Firms from Belgium, Italy, Portugal, and Spain form the low treatment intensity group as they had advisory SoP practices prior to the SRD II in place. All variables are defined in Appendix 4.A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

4.5.2 ESG-Based Compensation

To investigate the effect of SoP (the adoption of the SRD II) on ESG-based compensation, I construct an indicator variable that takes the value of 1 if firms use at least one CSR-

related, environmental-related or social-related performance measure, and 0 otherwise. Non-Financial targets are not included in *ESG Compensation* as they contain metrics such as “Customer Satisfaction”, “Operational” or “Other” (Pawliczek et al. 2024). In addition, I calculate the proportion of CSR, environmental, social, and non-financial targets by dividing the number of awards tied to these metrics by the total number of unique awards in a given firm and year (Pawliczek et al. 2024).

Besides increased ESG orientation by shareholders (e.g., Hartzmark and Sussman 2019; Pawliczek et al. 2024), there are other non-exclusive and potentially interrelated explanations in favour of firms tying executive compensation to ESG metrics following the adoption of the SRD II. First, recital 29 SRD II states that “The remuneration policy should contribute to the business strategy, long-term interests and sustainability of the company and should not be linked entirely or mainly to short-term objectives. Directors’ performance should be assessed using both financial and non-financial performance criteria, including, where appropriate, environmental, social, and governance factors.” Accordingly, recital 29 SRD II points to a requirement for firms to integrate at least one performance measure related to environmental, social or governance factors into executives’ compensation contracts. Second, proxy advisory firms may recommend to vote for compensation policies that include ESG targets (Cohen et al. 2023)⁶⁹. Third, in 2014, the EU adopted the so-called Non-Financial Reporting Directive which requires large listed firms with more than 500 employees to report on environmental, social, and employee issues as well as human rights and anti-corruption and bribery matters and provide non-financial key performance indicators (Art. 1 NFRD). It could be expected that the availability of quantifiable and often audited CSR data points induced real effects (Fiechter et al. 2022) such as the integration of these ESG targets into executive compensation⁷⁰.

Table 4.6 reports results for estimating the effect of SoP on ESG-based compensation. In Panel A, I observe a significant increase in firms tying their executives’ remuneration to at least one ESG indicator following the adoption of the SRD II. The positive coefficient of 0.098 (t-stat: 2.36) in column (1) translates into an increase in the probability of

⁶⁹ In their global study on ESG-based compensation, Cohen et al. (2023) show that the probability of implementing ESG pay is significantly positively associated with ISS voting recommendations.

⁷⁰ Cohen et al. (2023) show that in countries with ESG disclosure mandates firms are more likely to implement ESG pay.

implementing ESG compensation of 18.9% compared to the pre period mean value. This finding is consistent with Pawliczek et al. (2024), albeit larger in economical magnitude. Specifically, Pawliczek et al. (2024) document increases in ESG contracting of 10.4% for their global cross-country setting between 2002 and 2019 following the adoption of country-specific SoP laws which they directly assign to (increased) shareholders' ESG preferences. The larger effect size in my study could be explained by (1) differences in the sample composition and (2) divergent sample periods. Contrary to Pawliczek et al. (2024), my analyses are based on European firms only that are expected to have a comparable high CSR orientation (Liang and Renneboog 2017). Moreover, my sample period starts in 2014 and extends to 2023, thereby comprising years with increased ESG attention (Willis Tower Watson 2024).

Again, I conduct robustness checks using alternative sample specifications (i.e., a balanced sample, a sample that excludes observations for Portuguese and Spanish firms, and a sample consisting of CEO observations only). Results are reported in Appendix 4.F, columns (1) to (3). In addition, I re-estimate the main model using LSEG's variable CGCPDP0013, which captures whether a firm has an executive policy tied to ESG performance (see Appendix 4.F, columns (4) to (6)). With the exception of the balanced sample specification in columns (1) (t-stat: 1.64) and (4) (t-stat: 1.43), I obtain significantly positive treatment coefficients in all specifications (see Appendix 4.F).

In addition, I estimate whether treated firms also increased the proportion of ESG-related metrics. My results in column (2) to (5) show that CSR-related (t-stat: 0.71), environmental-related (t-stat: -1.04), and non-financial (t-stat: -0.96) metrics are unaffected by the adoption of the SRD II. In contrast, the proportion of social targets decreases significantly (coefficient: -0.145, t-stat: -2.26). Overall, these findings indicate that firms (started to) implement ESG-based compensation following the adoption of the SRD II but did so in a rather superficial way.

In my cross-sectional analyses (Panel B), I observe a highly significant treatment effect for high treatment intensity firms (coefficient: 0.129, t-stat: 2.79), while no such effect is apparent for the low treatment intensity group of firms (coefficient: 0.048, t-stat: 0.86). Albeit not statistically significant at conventional levels, F-tests on the joint significance of high and low treatment intensity firms slightly support the notion that firms that

introduced mandatory (advisory) shareholder votes for the first time are on average more likely to implement an ESG-based compensation (p-value: 0.183).

Table 4.6: Effects of SoP on ESG-Based Compensation

Panel A: Main Effect					
Metric Type	(1) ESG Comp.	(2) CSR	(3) Environ- mental	(4) Social	(5) Non- Financial
Treat × Post	0.098** (2.36)	0.023 (0.71)	-0.049 (-1.04)	-0.145** (-2.26)	-0.106 (-0.96)
Size	-0.105** (-2.24)	-0.073** (-2.05)	0.004 (0.07)	-0.037 (-0.46)	-0.251* (-1.88)
Loss Firm	-0.050 (-1.39)	-0.043* (-1.67)	0.002 (0.04)	0.011 (0.19)	-0.053 (-0.50)
Closely Held Shares	0.001 (0.91)	0.001 (0.74)	0.000 (0.05)	-0.001 (-0.31)	-0.002 (-0.75)
Book-to-Market	0.032 (0.92)	-0.058 (-1.47)	-0.060 (-1.25)	0.084 (1.36)	0.212* (1.76)
ROA	0.085 (0.36)	-0.132 (-0.84)	-0.001 (-0.01)	0.469 (1.22)	-0.201 (-0.37)
Ind. Board Members	-0.002*** (-2.89)	-0.001** (-2.00)	-0.002** (-2.03)	-0.000 (-0.13)	-0.004 (-1.41)
Dual CEO	-0.028 (-0.73)	-0.054 (-1.04)	0.012 (0.20)	0.071 (0.96)	-0.131 (-1.00)
Price Volatility	0.013*** (3.18)	0.007* (1.87)	0.003 (0.67)	0.007 (1.02)	-0.016 (-1.24)
ESG Score	-0.002 (-0.96)	0.001 (0.58)	-0.003* (-1.66)	-0.003 (-1.31)	-0.003 (-0.81)
GDP Growth	-0.003 (-0.59)	0.002 (0.45)	-0.001 (-0.10)	0.020** (2.27)	-0.016 (-1.09)
Regulatory Quality	0.384*** (3.71)	0.257*** (3.14)	0.261** (2.38)	0.108 (0.63)	0.207 (0.80)
Adj. R ²	0.660	0.424	0.494	0.425	0.528
Firm FE	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Observations	1,931	1,931	1,931	1,931	1,931

(continued on next page)

Panel B: Treatment Effect Heterogeneity

Metric Type	(1) ESG Comp.	(2) CSR	(3) Environ- mental	(4) Social	(5) Non- Financial
Treat × Post × High	0.129*** (2.79)	-0.006 (-0.20)	-0.048 (-0.95)	-0.182** (-2.44)	-0.108 (-0.86)
Treat × Post × Low	0.048 (0.86)	0.069 (1.36)	-0.052 (-0.72)	-0.087 (-0.97)	-0.103 (-0.66)
Size	-0.108** (-2.32)	-0.070* (-1.93)	0.004 (0.06)	-0.033 (-0.42)	-0.251* (-1.86)
Loss Firm	-0.050 (-1.39)	-0.043* (-1.65)	0.002 (0.04)	0.011 (0.19)	-0.053 (-0.50)
Closely Held Shares	0.001 (0.82)	0.001 (0.80)	0.000 (0.05)	-0.000 (-0.25)	-0.002 (-0.75)
Book-to-Market	0.027 (0.79)	-0.054 (-1.38)	-0.060 (-1.25)	0.090 (1.45)	0.213* (1.77)
ROA	0.086 (0.37)	-0.133 (-0.85)	-0.001 (-0.01)	0.468 (1.22)	-0.201 (-0.37)
Ind. Board Members	-0.002*** (-3.07)	-0.001* (-1.87)	-0.002** (-1.99)	-0.000 (-0.02)	-0.003 (-1.45)
Dual CEO	-0.025 (-0.64)	-0.057 (-1.09)	0.012 (0.20)	0.068 (0.91)	-0.131 (-1.00)
Price Volatility	0.013*** (3.18)	0.007* (1.90)	0.003 (0.67)	0.007 (1.02)	-0.016 (-1.24)
ESG Score	-0.002 (-0.95)	0.001 (0.55)	-0.003* (-1.66)	-0.003 (-1.33)	-0.003 (-0.81)
GDP Growth	-0.002 (-0.32)	0.000 (0.12)	-0.001 (-0.09)	0.018** (2.16)	-0.016 (-1.13)
Regulatory Quality	0.400*** (3.88)	0.242*** (2.93)	0.262** (2.38)	0.089 (0.51)	0.206 (0.81)
F-Test (p-value)	0.183	0.138	0.954	0.335	0.978
Adj. R ²	0.661	0.426	0.494	0.426	0.528
Firm FE	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm
Observations	1,931	1,931	1,931	1,931	1,931

This table reports results from estimating Eq. [2] with ESG-based compensation, proportion of CSR metrics, proportion of environmental metrics, proportion of social metrics, and proportion of non-financial metrics as the dependent variable. In Panel B, I partition my treatment group according to the treatment intensity. Firms from Austria, Finland, Germany, Ireland, and Luxembourg are classified as high treatment intensity firms, as they introduced mandatory SoP votes for the first time following the adoption of the SRD II. Firms from Belgium, Italy, Portugal, and Spain form the low treatment intensity group as they had advisory SoP practices prior to the SRD II in place. All variables are defined in Appendix 4.A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

Overall, these rather mixed findings prevent me from singling out the specific channel that drives ESG-based compensation. On the one hand, my cross-sectional tests provide some indications supporting the view that shareholder voting increases ESG-based pay

as the effect is more pronounced for high treatment intensity firms. However, in case that the implementation of ESG targets into executive compensation is correlated with country-level characteristics inherent in my high treatment firms (i.e., Austria, Finland, Germany, Ireland, and Luxembourg), my results may be flawed (omitted variable bias). On the other hand, the missing link between SoP / the adoption of the SRD II and the proportion of ESG-related compensation metrics could be tentatively attributed to the wording of the 29th recital to the SRD II, which only vaguely requires the integration of ESG targets into executive compensation but does not stipulate the use of specific ESG criteria. Taken together, the findings in this section suggest that SoP regulations only marginally affect the design of executives' compensation contracts.

4.6 Conclusion

In this paper, I provide empirical evidence on the effects of SoP on the level and design of executives' remuneration contracts by exploiting the staggered implementation of the SRD II. The SRD II requires firms to prepare a remuneration policy and put this policy to a mandatory binding shareholder vote. Member states were provided with the option to attenuate this provision by requiring only an advisory shareholder vote. I document decreases in both the level of total compensation and abnormal compensation, which is largely driven by reductions in performance-based compensation components. Exploiting treatment effect heterogeneity, my results show that the effects are more pronounced for firms that introduce mandatory advisory SoP votes for the first time. Moving on to compensation design choices, I do not observe a shift from discretionary to regulated metrics, indicating that SoP largely affects highly visible elements of remuneration policies. Finally, my findings show that treatment firms (started to) implement ESG-based compensation following the adoption of the SRD II.

My findings are subject to various limitations. First, my analyses are based on granular compensation data provided by ISS Incentive Lab which results in a potential selection bias. Specifically, covered firms are large and particularly visible, which may limit the generalizability of my findings to smaller European firms. Second, the SRD II bundles provisions regarding the remuneration policy (preparation and mandatory binding vote) and the remuneration report (preparation and advisory vote), which may impede the identification of SoP effects. However, both my additional analyses (cross-sectional analysis and analysis of yearly treatment effects) and an examination of the availability

of compensation data prior to the SRD II, increase confidence that the observed effects are driven by SoP regulation. Third, it is beyond the scope of this paper to single out the specific channel(s) (shareholder votes itself, proxy advisory recommendations, public pressure or anticipation of these effects by firms) that drive(s) my results. I leave it to further research to analyse shareholder proposals or proxy advisory recommendations to unveil the underlying indirect and direct channels at work. Fourth, my treatment date falls within the peaking of the Corona crisis, which largely affected firm performance and following from that performance-based compensation levels. Although my research design controls for various factors associated with Corona (i.e., using industry*year fixed effects, including control variables such as GDP growth, loss firm and ROA, and excluding observations for the years 2020 and 2021), I cannot ultimately rule out the possibility that my effects are biased by Covid. Finally, I caution that any regulation is endogenous in nature. In addition, in case the exercise of the member state option to attenuate SoP is correlated with other country-specific factors which are not acknowledged in my research design, my results may be biased.

These limitations aside, this study provides empirical evidence on effects of SoP for a setting of firms subject to the same SoP regulation and operating in an environment characterised by a strict legal enforcement. By showing that SoP laws mainly affect highly visible aspects of compensation contracts while comprehensive remuneration structures are largely unaffected, my results may be of potential interest to policy makers in devising or revising SoP laws.

4.7 Appendix

Appendix 4.A: Variable Definition

Variable	Description	Data source
Dependent variables		
Total compensation*	Natural logarithm of the sum of salary, bonus, stock awards, option awards, non-equity incentive plan compensation, change in pension value, and non-qualified deferred compensation earnings	ISS Incentive Lab
Abnormal compensation	CEO's total compensation minus the median CEO compensation among industry peers in the same size quintile, where industry peers are classified according to Fama-French 12 industries	ISS Incentive Lab
Salary*	Natural logarithm of salary	ISS Incentive Lab
Equity compensation*	Natural logarithm of the sum of stock and option awards	ISS Incentive Lab
Cash compensation*	Natural logarithm of the sum of bonus and non-equity incentive plan compensation	ISS Incentive Lab
Other compensation*	Natural logarithm of other compensation	ISS Incentive Lab
Variable compensation*	Sum of bonus, stock awards, option awards, non-equity incentive plan compensation divided by total compensation	ISS Incentive Lab
Number of metrics used*	Number of metrics used in a CEO's compensation plan	ISS Incentive Lab
Accounting metrics*	Sum of accounting metrics, balance sheet metrics, earnings metrics, and revenues metrics divided by the number of unique grants per firm and year	ISS Incentive Lab
Liquidity metrics*	Sum of cash flow metrics, financial / investment returns ratio metrics, and liquidity metrics divided by the number of unique grants per firm and year	ISS Incentive Lab
Other metrics*	Number of other metrics divided by the number of unique grants per firm and year	ISS Incentive Lab
ESG compensation	Dummy variable that takes the value of 1 if firms use at least one CSR-related, environmental-related or social-related performance metric, and 0 otherwise	ISS Incentive Lab
CSR metrics*	Number of CSR metrics, environmental metrics, and social metrics divided by the number of unique grants per firm and year	ISS Incentive Lab
Environmental metrics*	Number of environmental metrics divided by the number of unique grants per firm and year	ISS Incentive Lab
Social metrics*	Number of social metrics divided by the number of unique grants per firm and year	ISS Incentive Lab
Non-Financial metrics*	Number of non-financial metrics divided by the number of unique grants per firm and year	ISS Incentive Lab

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Control variables

Size*	Natural logarithm of total assets	LSEG
Loss firm	Dummy variables that takes the value of 1 if a firm has a negative net income before extra items / preferred dividends, and 0 otherwise	LSEG
Closely Held Shares*	Percentage of closely held shares	LSEG
Book-to-Market*	Global industry median value in a given year of firms' market-to-book ratios at the FF12 industries level, where market-to-book is defined as the ratio of the market value of equity to its book value	LSEG
ROA*	The return on assets of the firm in excess of its corresponding global industry median value in a given year at the FF12 industries level, where return on asset is defined as net income available to common shareholder deflated by total assets	LSEG
Ind. Board Members*	Number of independent board members	LSEG
Dual CEO	Dummy variable that takes the value of 1 if the CEO is also the chairperson of the board of directors, and 0 otherwise	LSEG
Price Volatility*	Stock performance ratio	LSEG
CG Score	Corporate Governance score	LSEG
ESG Score	Overall ESG score	LSEG
Annual GDP Growth*	Growth of the annual gross domestic product	The World Bank Governance Indicators
Regulatory Quality	Regulatory quality index provided by Kaufmann et al. (2010)	The World Bank Governance Indicators

*Winsorized at a 1% (99%) level.

Appendix 4.B: t-Tests

Panel A: Full Sample

	Treatment		Control		t-test	
	N	Mean	N	Mean	Diff.	t-value
Total Compensation (LN)	996	14.96	924	15.06	0.10**	-2.55
Abnormal Compensation	1,006	0.51	927	0.51	0.00	0.07
Salary (LN)	995	13.91	922	13.96	0.05	-1.74
Equity Compensation (LN)	609	13.88	650	14.07	0.19***	-2.80
Cash Compensation (LN)	898	13.76	843	13.81	0.05	-1.15
Other Compensation (LN)	831	10.85	788	10.17	0.68***	8.75
Variable Compensation	996	0.54	924	0.58	0.04***	-4.13
Number of Metrics used	1,006	6.95	927	7.56	0.61***	-2.70
Accounting Metrics	1,006	0.74	927	0.81	0.07*	-1.85
Liquidity Metrics	1,006	0.42	927	0.42	0.00	0.01
Other Metrics	1,006	0.83	927	0.64	0.19***	4.74
ESG Compensation	1,006	0.63	927	0.74	0.11***	-5.20

Panel B: Treatment Intensity

	High Intensity		Low Intensity		t-test	
	N	Mean	N	Mean	Diff.	t-value
Total Compensation (LN)	612	15.09	384	14.75	0.34***	5.76
Abnormal Compensation	621	0.53	385	0.48	0.05*	1.83
Salary (LN)	612	13.97	383	13.82	0.15***	3.59
Equity Compensation (LN)	396	14.07	213	13.53	0.54***	5.22
Cash Compensation (LN)	540	13.91	358	13.54	0.37***	5.51
Other Compensation (LN)	501	10.76	330	10.98	0.22**	-2.14
Variable Compensation	612	0.56	384	0.51	0.05***	3.65
Number of Metrics used	621	5.97	385	8.53	2.56***	-7.90
Accounting Metrics	621	0.65	385	0.87	0.22***	-4.12
Liquidity Metrics	621	0.34	385	0.56	0.22***	-6.15
Other Metrics	621	0.69	385	1.05	0.36***	-6.00
ESG Compensation	621	0.59	385	0.69	0.10***	-2.98

This table reports two-sided t-tests for all outcome variables. In Panel A, t-tests are conducted between the treatment and control group. In Panel B, I split the treatment group into high and low treatment intensity. All variables are defined in Appendix 4.A.

4 Effects of Say on Pay Mandates on Executive Compensation

Appendix 4.C: Treatment Effect Heterogeneity – Alternative Sample Specifications

	(1)	(2)	(3)	(4)	(5)	(6)
	Total Compensation			Abnormal Compensation		
	Balanced	w/o PT and ES	CEO	Balanced	w/o PT and ES	CEO
Treat × Post × High	-0.161** (-2.13)	-0.163** (-2.39)	-0.165** (-2.38)	-0.132* (-1.89)	-0.140** (-2.41)	-0.148** (-2.45)
Treat × Post × Low	-0.186* (-1.92)	-0.075 (-0.81)	-0.112 (-1.42)	-0.095 (-1.26)	-0.064 (-0.92)	-0.095 (-1.48)
Size	0.134 (1.37)	0.099 (1.14)	0.068 (0.77)	-0.095 (-1.27)	-0.109* (-1.79)	-0.120* (-1.95)
Loss Firm	-0.014 (-0.18)	-0.012 (-0.18)	-0.035 (-0.52)	-0.004 (-0.06)	-0.024 (-0.44)	-0.036 (-0.65)
Closely Held Shares (%)	-0.006** (-2.60)	-0.005* (-1.90)	-0.004 (-1.61)	-0.004** (-1.99)	-0.002 (-1.27)	-0.003 (-1.53)
Book-to-Market	-0.174** (-2.35)	-0.236*** (-3.21)	-0.217*** (-2.97)	-0.084 (-1.43)	-0.096* (-1.76)	-0.097* (-1.81)
ROA	0.769* (1.84)	0.604* (1.70)	0.444 (1.23)	0.458 (1.04)	0.256 (0.70)	0.148 (0.40)
Ind. Board Members	-0.003 (-1.51)	-0.003* (-1.78)	-0.003 (-1.43)	-0.002 (-1.38)	-0.002 (-1.37)	-0.001 (-0.93)
Dual CEO	0.244*** (2.75)	0.127 (1.11)	0.127 (1.20)	0.078 (0.88)	0.000 (0.00)	-0.008 (-0.10)
Price Volatility	0.002 (0.38)	0.004 (0.59)	0.005 (0.74)	0.000 (0.00)	0.003 (0.73)	0.006 (1.15)
CG Score	-0.000 (-0.16)	0.001 (0.62)	0.001 (0.83)	0.000 (0.06)	-0.001 (-0.77)	-0.000 (-0.37)
GDP Growth	0.008 (0.69)	0.009 (0.87)	0.008 (0.73)	0.006 (0.49)	0.007 (0.82)	0.001 (0.16)
Regulatory Quality	0.444** (2.58)	0.395*** (2.70)	0.386*** (2.73)	0.263* (1.77)	0.260** (2.01)	0.252* (1.94)

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4 *Effects of Say on Pay Mandates on Executive Compensation*

F-Test (p-value)	0.807	0.358	0.540	0.684	0.317	0.472
Adj. R ²	0.649	0.641	0.641	0.349	0.365	0.358
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level
Observations	1,405	1,784	1,822	1,408	1,798	1,834

This table reports results from estimating Eq. [2] with total compensation and abnormal compensation as the dependent variable. In columns (1) and (4), I re-estimate the main model using a balanced sample structure. In columns (2) and (5), I re-estimate the main model but exclude Portuguese and Spanish firms. In columns (3) and (6), I estimate the main model only for observations belonging to the CEO of a firm. Total compensation is log-transformed due to the left-skewed distribution. All variables are defined in Appendix 4.A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

Appendix 4.D: Yearly Treatment Effects

Panel A: Main Effect		
DV: Total Compensation (LN)	(1) Baseline 2014	(2) Baseline 2019
2014 × Treat		0.205*
		(1.69)
2015 × Treat	-0.105	0.100
	(-0.80)	(0.80)
2016 × Treat	-0.038	0.167
	(-0.28)	(1.51)
2017 × Treat	Adoption of SRD II	0.065
	(-1.16)	(0.62)
2018 × Treat	-0.116	0.089
	(-0.91)	(0.96)
2019 × Treat	-0.205*	
	(-1.69)	
2020 × Treat	Entry-into-force ⁷¹	0.070
	(-1.02)	(0.83)
2021 × Treat	-0.238*	-0.033
	(-1.83)	(-0.39)
2022 × Treat	-0.261**	-0.056
	(-2.08)	(-0.58)
2023 × Treat	-0.367***	-0.162*
	(-3.01)	(-1.84)
Controls	Yes	Yes
Adj. R ²	0.652	0.652
Firm FE	Yes	Yes
Industry × Year FE	Yes	Yes
Clustered SE	Firm level	Firm level
Observations	1,917	1,917

(continued on next page)

⁷¹ In Portugal and Spain, the SRD II entered only in 2021 into force.

Panel B: Treatment Effect Heterogeneity

DV: Total Compensation (LN)

	(1)
2015 × Treat × High	0.069 (0.49)
2015 × Treat × Low	-0.354 (-1.63)
2016 × Treat × High	0.037 (0.26)
2016 × Treat × Low	-0.186 (-0.93)
2017 × Treat × High	Adoption of SRD II -0.086 (-0.66)
2017 × Treat × Low	-0.191 (-1.10)
2018 × Treat × High	-0.110 (-0.79)
2018 × Treat × Low	-0.088 (-0.44)
2019 × Treat × High	-0.256* (-1.83)
2019 × Treat × Low	-0.101 (-0.60)
2020 × Treat × High	Entry-into-force -0.202 (-1.41)
2020 × Treat × Low	-0.021 (-0.12)
2021 × Treat × High	-0.188 (-1.36)
2021 × Treat × Low	-0.308 (-1.56)
2022 × Treat × High	-0.339** (-2.40)
2022 × Treat × Low	-0.135 (-0.76)
2023 × Treat × High	-0.330** (-2.45)
2023 × Treat × Low	-0.427** (-2.21)
Controls	Yes
Adj. R ²	0.656
Firm FE	Yes
Industry × Year FE	Yes
Clustered SE	Firm level
Observations	1,917

This table reports results from estimating yearly treatment effects. In Panel A, I report results for the main sample. Baseline year is 2014 (column (1)), and 2019 (column (2)), respectively. In Panel B, I split my treatment group into high and low treatment intensity firms. In Panel B, baseline year is 2014. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

4 Effects of Say on Pay Mandates on Executive Compensation

Appendix 4.E: Effect of SoP on Compensation Metrics – Alternative Sample Specifications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Accounting			Liquidity			Other		
Treat × Post	-0.018 (-0.22)	-0.095 (-1.34)	-0.105 (-1.58)	-0.083 (-1.28)	-0.074 (-1.32)	-0.064 (-1.18)	0.265** (2.19)	0.330*** (3.08)	0.291*** (2.89)
Size	-0.181 (-1.52)	-0.148 (-1.50)	-0.179** (-1.99)	-0.117 (-1.52)	-0.092 (-1.41)	-0.086 (-1.35)	-0.120 (-0.84)	-0.003 (-0.03)	-0.073 (-0.65)
Loss Firm	-0.041 (-0.62)	-0.095* (-1.68)	-0.089 (-1.56)	0.007 (0.15)	-0.031 (-0.72)	-0.028 (-0.62)	-0.120 (-1.40)	-0.072 (-0.94)	-0.071 (-0.88)
Closely Hd. Shares	-0.002 (-0.89)	-0.003 (-1.22)	-0.005** (-2.24)	-0.001 (-0.34)	-0.000 (-0.27)	-0.001 (-0.72)	-0.002 (-0.38)	-0.003 (-0.96)	-0.001 (-0.19)
Book-to-Market	-0.080 (-1.04)	-0.023 (-0.33)	-0.034 (-0.50)	0.035 (0.56)	0.021 (0.37)	0.022 (0.40)	0.133 (1.28)	0.056 (0.62)	0.096 (1.12)
ROA	-0.707 (-1.43)	-0.421 (-1.05)	-0.392 (-0.95)	-0.059 (-0.22)	0.169 (0.62)	0.100 (0.36)	-0.442 (-0.88)	-0.211 (-0.44)	-0.261 (-0.55)
Ind. Board Members	-0.003* (-1.70)	-0.003 (-1.56)	-0.004* (-1.96)	-0.002 (-1.51)	-0.001 (-1.13)	-0.002* (-1.67)	-0.001 (-0.29)	0.000 (0.16)	0.000 (0.20)
Dual CEO	0.000 (0.00)	0.054 (0.53)	-0.026 (-0.25)	-0.136* (-1.85)	-0.146** (-2.25)	-0.119* (-1.82)	0.100 (0.64)	0.101 (0.98)	0.070 (0.65)
Price Volatility	-0.001 (-0.09)	-0.001 (-0.11)	0.000 (0.03)	-0.000 (-0.00)	0.001 (0.11)	-0.002 (-0.26)	-0.019* (-1.72)	-0.015 (-1.59)	-0.014 (-1.37)
CG Score	0.000 (0.08)	-0.001 (-0.68)	-0.002 (-1.17)	-0.001 (-0.83)	-0.000 (-0.34)	-0.001 (-0.48)	0.001 (0.42)	0.002 (0.88)	0.002 (0.94)
GDP Growth	0.030*** (3.26)	0.018** (2.24)	0.021*** (2.72)	0.023*** (3.02)	0.021*** (3.53)	0.014** (2.36)	-0.005 (-0.31)	0.000 (0.02)	-0.001 (-0.05)
Regulatory Quality	-0.011 (-0.06)	-0.073 (-0.45)	-0.089 (-0.54)	0.247* (1.72)	0.199* (1.66)	0.193 (1.56)	-0.079 (-0.25)	-0.099 (-0.39)	-0.074 (-0.29)

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4 *Effects of Say on Pay Mandates on Executive Compensation*

Adj. R ²	0.676	0.688	0.687	0.623	0.638	0.634	0.477	0.524	0.514
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Observations	1,408	1,798	1,834	1,408	1,798	1,834	1,408	1,798	1,834

This table reports results from estimating Eq. [2] with proportion of accounting, liquidity, and other performance metrics as the dependent variable. In columns (1), (4) and (7), I re-estimate the main model using a balanced sample structure. In columns (2), (5) and (8), I re-estimate the main model but exclude Portuguese and Spanish firms. In columns (3), (6) and (9), I re-estimate the main model only for observations belonging to the CEO of a firm. All variables are defined in Appendix 4.A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

4 Effects of Say on Pay Mandates on Executive Compensation

Appendix 4.F: Effect of SoP on ESG Compensation – Alternative Sample Specifications

	(1)	(2)	(3)	(4)	(5)	(6)
	Balanced	w/o PT and ES	CEO	Balanced	w/o PT and ES	CEO
ESG Compensation						
Treat × Post	0.081 (1.64)	0.093** (2.07)	0.105** (2.43)	0.094 (1.43)	0.109* (1.92)	0.125** (2.41)
Size	-0.079 (-1.38)	-0.091* (-1.89)	-0.116** (-2.39)	0.139* (1.66)	0.094 (1.31)	0.079 (1.12)
Loss Firm	-0.085** (-2.10)	-0.060 (-1.59)	-0.057 (-1.49)	-0.011 (-0.25)	-0.011 (-0.28)	0.007 (0.18)
Closely Held Shares (%)	0.000 (0.30)	0.001 (0.92)	0.001 (0.67)	0.000 (0.02)	0.003 (1.63)	0.002 (1.20)
Book-to-Market	0.032 (0.89)	0.037 (1.05)	0.040 (1.15)	-0.038 (-0.69)	-0.059 (-1.16)	-0.056 (-1.14)
ROA	-0.153 (-0.63)	0.080 (0.33)	0.071 (0.29)	0.261 (0.75)	0.197 (0.61)	0.158 (0.50)
Ind. Board Members	-0.003*** (-2.83)	-0.002*** (-2.77)	-0.002** (-2.54)	-0.002 (-1.28)	-0.001 (-0.94)	-0.002 (-1.30)
Dual CEO	-0.043 (-0.94)	-0.027 (-0.64)	-0.024 (-0.61)	-0.069 (-0.99)	-0.081 (-1.32)	-0.077 (-1.28)
Price Volatility	0.019*** (3.64)	0.013*** (3.15)	0.012*** (2.80)	0.008 (1.06)	0.011 (1.60)	0.007 (1.06)
ESG Score	-0.003 (-1.45)	-0.002 (-1.31)	-0.002 (-1.34)	0.004 (1.49)	0.004* (1.90)	0.004** (2.17)
GDP Growth	-0.007 (-1.05)	-0.004 (-0.79)	-0.004 (-0.64)	-0.010** (-2.00)	-0.008* (-1.67)	-0.004 (-0.99)
Regulatory Quality	0.336*** (2.87)	0.399*** (3.76)	0.368*** (3.42)	0.003 (0.02)	0.072 (0.59)	0.054 (0.44)

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4 *Effects of Say on Pay Mandates on Executive Compensation*

Adj. R ²	0.666	0.656	0.656	0.608	0.617	0.621
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm level	Firm level	Firm level	Firm level	Firm level	Firm level
Observations	1,408	1,798	1,834	1,408	1,798	1,834

This table reports results from estimating Eq. [2] with ESG-based compensation as the dependent variable. In columns (1) – (3), ESG-based compensation is estimated using granular information of ISS Incentive Lab. In columns (4) – (6), ESG-based compensation is based on LSEG’s item CGCPDP0013 (Policy Executive Compensation ESG Performance). In columns (1) and (4), I re-estimate the main model using a balanced sample structure. In columns (2) and (5), I re-estimate the main model but exclude Portuguese and Spanish firms. In columns (3) and (6), I re-estimate the main model only for observations belonging to the CEO of a firm. All variables are defined in Appendix 4.A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests and heteroscedasticity-robust standard errors clustered at the firm level. *t*-Statistics are provided in parentheses.

5 Conclusion

5.1 Summary of Major Findings and Implications

This thesis explores first- and second-order effects of CSR disclosure and corporate governance regulations, namely the Non-Financial Reporting Directive and the Second Shareholder Rights Directive. Specifically, this thesis provides evidence regarding two questions: (1) How is CSR reporting enforced, and does enforcement work? And (2) does shareholder voting on remuneration policies affect executives' compensation contracts, especially also with respect to CSR-based components? On the basis of three papers, this thesis contributes to two streams of literature: First, the stream on the role of institutional factors in shaping CSR reporting (Tietmeyer 2023; Krueger et al. 2024), and second, the stream on the relation between shareholder influence and executive compensation (e.g., Correa and Le1 2016; Ferri and Maber 2013; Bugeja et al. 2023).

Contributing to the first literature stream, the first and second study of this thesis examine the role of enforcement in the context of mandatory CSR reporting. Based on a survey conducted with European enforcement bodies over several rounds between 2021 and 2022, the *first study* provides explorative insights into the institutional foundations of CSR reporting enforcement in EU member states. Findings speak to two main insights: First, the study documents in a systematic fashion country-level heterogeneity in the scope of enforcement, the related enforcement activities, in the institution(s) assigned with the task to carry out enforcement, in the audit of CSR reporting, and in the endowment with human resources. In contrast, (potential) enforcement actions are quite comparable between EU member states. Second, depending on the country-specific implementation of CSR reporting enforcement mechanisms, financial and CSR reporting enforcement differ considerably. Specifically, responses to the survey point to differences in the scope of enforcement, alignment with auditing practices, and the responsibility to carry out enforcement.

The *second study* investigates whether enforcement shapes CSR reporting (quality) and has economic effects. Results show that Swedish firms increased causal reasoning, improved report readability, and decreased boilerplate disclosures following the initiation of enforcement procedures. These findings suggest that (the threat of) enforcement induced affected Swedish firms to improve their CSR reporting. Cross-sectional tests further reveal that increases in CSR reporting quality are consistently more pronounced

for firms with presumably low CSR reporting incentives. Moving on to economic effects, evidence presented in the study suggests that the initiation of CSR reporting enforcement procedures reduced information asymmetries among investors and induced firms to increase CSR activities.

Taken together, the findings of the first two studies indicate that CSR reporting enforcement works. However, enforcement procedures need to be implemented in a meaningful way to work properly and to achieve a deterrent effect. Currently, enforcement practices are quite heterogeneous between EU member states and still deviate from financial reporting.

The *third study* contributes to the literature stream on the relation between shareholder influence and executive compensation by investigating whether the introduction of mandatory SoP practices caused by the SRD II affects executive pay and the design of remuneration contracts. The EU's SRD II offers a framework to observe SoP effects in a cross-country setting of firms subject to the same SoP regulation and more importantly which operate in an environment characterized by a strict legal enforcement. These features reduce the risk that country-specific factors that are correlated with the adoption of SoP drive the results and more so, that firms implemented the SRD II differently.

Results show that treatment firms significantly reduced total and abnormal compensation, largely driven by a reduction in performance-based compensation components. These effects are more pronounced for firms that for the first time introduced (mandatory) SoP votes. In contrast, the design of remuneration packages is only partially affected by SoP. While my results point to an increase in ESG-based compensation following the adoption of the SRD II, no such effect is apparent for the use of regulated and thus more reliable compensation metrics (i.e., accounting or liquidity measures). These findings indicate that SoP mainly affects particularly visible elements of remuneration policies (i.e., level of compensation), while the underlying design of remuneration plans is not targeted by SoP votes. Overall, these findings suggest that shareholders tend to take a rather superficial approach when exercising their voting rights, and thereby at least partly call into question the effectiveness of SoP mandates.

5.2 Limitations

The findings of this thesis are subject to several limitations as outlined in the respective chapters. First, the results of the survey (paper one) and detailed information on the

Swedish setting (paper two) are based on direct communications with national competent authorities. Accordingly, both studies are subject to a response bias (de Jong et al. 2014), particularly in the form of socially desirable responding (SDR). SDR describes a respondent's tendency to give predominantly positive self-descriptions or answers which conform to the interviewer's expectations (Bogner and Landrock 2017). Accordingly, enforcement bodies may provide particular positive answers to the survey questions to gloss over insufficient enforcement practices. Relatedly, the accuracy of information provided depends highly on the quality of responses obtained during the individual conversations. To mitigate concerns that information disclosed in the first study is incorrect or outdated, national competent authorities were provided with preliminary results of the first study and asked for brief feedback.

Second, in paper two, textual analysis is employed to measure reporting characteristics such as readability, causal reasoning or boilerplate disclosures, and to ultimately operationalize reporting quality. These reporting characteristics are gleaned from recent studies in the field (e.g., Zhang et al. 2019; Lin et al. 2024; De Franco et al. 2015). That said, the choice of these measures is inherently selective and sheds light only on specific aspects of CSR reports. Therefore, this study does not purport to measure CSR reporting quality. Very likely, individual perceptions on what constitutes relevant characteristics of CSR reports and how these shape quality likely differ.

Third, an inherent limitation of the second and third study refers to external validity. The second paper leverages a regulatory shock setting in Sweden to infer reporting and economic effects of CSR reporting enforcement. However, Scandinavian firms have a particular high CSR orientation (Liang and Renneboog 2017), which may facilitate positive effects of CSR reporting enforcement. In the third paper, analyses are based on granular data of ISS Incentive Lab. This database covers only around 400 firms from 14 EU member states with a focus on large and particularly visible firms located in central, northern, and western European countries. Accordingly, findings of the second and third study may not / to a lesser extent generalize to other settings.

Fourth, while paper two and three document effects of EU regulations, the purpose of these studied is not to unveil the underlying direct and indirect channels at work. For instance, the second study demonstrates reporting and economic effects of CSR reporting enforcement which can be induced by stakeholder pressure fueled by high-quality CSR

reports or firms' anticipation of (more costly and impactful) future CSR regulations. The third study reports reductions in executive compensation and increases in ESG-based compensation following the adoption of the SRD II. These findings can be assigned to shareholder votes rejecting (favoring) abnormal compensation (ESG-based compensation) or driven by firms' anticipation of potential shareholder ballots (Balsam et al. 2016), proxy advisory recommendations (Larcker et al. 2015) or public pressure by the media (Core et al. 2008).

Finally, the second and third study of this thesis are subject to endogeneity concerns. Specifically, both studies empirically investigate effects of EU regulations by exploiting member states' transposition options. However, every regulation is endogenous in nature. If unobserved factors that are not acknowledged in the research designs drive my results, the claim of causality is biased. To increase confidence that the results reflect enforcement and SoP effects, respectively, both studies employ comprehensive statistical methods (difference-in-differences design, comprehensive fixed effects structure, broad range of control variables) and include a set of robustness checks and diagnostics (cross-sectional tests, analysis of yearly treatment effects). The second study further comprises a media analysis to rule out the possibility that concurrent factors that differentially affect sample firms (e.g., regulations in Sweden, or in both Finland and Denmark) drive the results. These robustness checks and inspections of identifying assumptions aside, these studies, by their very design, cannot ultimately rule out endogeneity driving the main findings.

5.3 Outlook

The findings of this thesis point to several important research opportunities. With regard to CSR reporting enforcement, there is still a lack of broad-scope evidence of the functioning of such enforcement mechanisms. The second paper of this thesis is one of the first studies documenting reporting and economic effects and thereby suggesting that CSR reporting enforcement works. However, these effects are observed in a particular setting of Scandinavian firms, which may not / to a lesser degree generalize to other samples. Accordingly, more evidence on the role of CSR reporting enforcement is needed. In addition, while demonstrating positive effects of CSR reporting enforcement, the second study of this thesis does not single out the underlying indirect and direct channels at work. It is up to future studies to shed light on the drivers of the documented effects.

Also, current regulatory developments in the field of CSR reporting (enforcement) offer valuable research opportunities. For instance, in 2025, the first CSRD-based sustainability reports have been published. With regard to enforcement, the EU regulator aimed at raising CSR reporting enforcement to a standardized level (CSRD, recital 79), which speaks to the implementation of full-fledged content reviews in all EU member states. In addition, on 29th April 2025, the EU's securities regulator, ESMA, published Guidelines on Enforcement of Sustainability Information to further harmonize enforcement practices in EU member states (ESMA 2025). From an exploratory perspective, future research can examine whether enforcement practices have effectively been standardized across EU member states. In addition, the implementation of full-fledged enforcement regimes across Europe can be exploited to investigate the role of enforcement in shaping reporting quality and facilitating economic effects for a broad set of firms.

Also, the SRD II provides researchers with various research opportunities. First, the third study of this thesis documents decreases in the level of executives' compensation and an increase in ESG-based compensation following the implementation of the SRD II. Apart from direct shareholder voting, these results can be also driven by firms' anticipation of (negative) shareholder votes / proxy advisory recommendations or public pressure by the media. Future research can unveil the specific channel(s) at work. Second, the SRD II includes a member state option to attenuate shareholder voting by only requiring an advisory SoP. Combined with existing SoP practices, this particular feature enables researchers to exploit treatment effect heterogeneity. Specifically, there are three potential treatment groups. First, firms that did not regulate shareholder participation prior to the SRD II and are now subject to a binding SoP (i.e., firms from Bulgaria, Croatia, Cyprus, Greece, Latvia, Lithuania, Malta, and Slovakia). Second, firms that did not require a mandatory shareholder vote prior to the SRD II and are now subject to an advisory SoP (i.e., firms from Austria, Finland, Germany, Ireland, and Luxembourg). Third, firms from countries that already had an advisory shareholder vote in place but strengthened their national SoP laws to a binding vote (i.e., firms from Belgium, Italy, Portugal, and Spain). Due to data availability, the third study of this thesis only investigates treatment effect heterogeneity for the last two groups of firms and documents stronger effects for firms that introduced mandatory (advisory) shareholder votes for the first time. To provide a

more nuanced view on the role of the enforceability of shareholder votes, future research can also investigate the effect of SoP laws for the first group of firms.

Taken together, empirical research on the effects of CSR reporting enforcement and shareholder influence in determining (ESG-linked) executive compensation can inform regulatory debates on the design of CSR reporting and corporate governance regulations. This is of particular relevance in the light of current regulatory developments in the field of CSR reporting, such as the looming Omnibus Directive which is intended to reduce administrative and compliance burdens by aligning existing CSR reporting practices. In addition, using empirical research to revise or devise CSR reporting and corporate governance regulations is also in line with evidence-based policymaking (Leuz 2018).

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