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A New Dimension of Transparency: ESG Disclosure and Its Effect on Shareholder Behavior

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Abstract

This study examines the impact of Environmental, Social, and Governance Disclosure (ESGD) on a company's ownership structure in predominantly developed economies. It aims to assess whether ESGD influences the shares held by different investor types, with a focus on institutional investors. Using data from 2016 to 2022, ESGD is measured relatively and absolutely, while ownership is categorized into corporate, government, individual, and institutional types. A multivariate regression assesses the overall impact, and a univariate regression specifically examines the effect on institutional ownership. The analysis reveals a significant link between ESGD and ownership structure, suggesting that ESGD shapes ownership dynamics. In particular, institutional investors respond positively to relative ESGD, valuing how a company's ESG transparency compares to its peers. The study acknowledges limitations like the short time frame and potential biases in the database. Nevertheless, the findings suggest that companies can attract institutional investors by improving ESG transparency, even if actual ESG outcomes are modest. This research contributes to the understanding of how ESG transparency shapes investor behavior, offering valuable insights for companies, investors, and policymakers.

Keywords: corporate governance; ESG disclosure; institutional investors; ownership structure; transparency

1. Introduction

For decades, investor behavior has been portrayed as primarily driven by financial performance, with iconic figures such as Warren Buffett representing the prototypical investor focused on fundamental value metrics: key numbers about cash flows, returns, and market positioning have been central (Koller, 2020). The traditional notion of an investor conjures images of individuals or institutions making decisions based solely on the bottom line, often sidelining concerns related to non-financial factors such as environmental, social, and governance (ESG) practices (Zairis et al., 2024, p. 7). However, investment priorities shifted significantly in recent years: A growing number of investors increasingly value not only financial performance but also sustainable and responsible business practices, with ESG becoming more relevant in business and society (Zairis et al., 2024, p. 7). From individual daily habits to national and global strategic initiatives, sustainable and socially accepted behavior has emerged as a critical focus. In response to these broader societal shifts, corporates increasingly address ESG and its implications (Barnea & Rubin, 2010, p. 71). Consumers, employees, and regulators are pushing for greater corporate accountability on topics like climate change, social justice, and ethical governance. As a result, companies are under increasing pressure to demonstrate their commitment to ESG principles (Cao et al., 2019, p. 289). This, in turn, is directly connected to how firms communicate their ESG efforts to stakeholders, notably through **ESG disclosures** (ESGD). The rise of ESGD represents a new dimension of transparency, providing insights into a company's social and environmen-

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tal performance in addition to its financial health. While ESGD is still a relatively new trend, its influence on investor behavior is becoming increasingly recognizable (Cao et al., 2019, p. 287). As key recipients of ESG information, investors use these insights to assess corporate responsibility and long-term sustainability, shaping their investment decisions accordingly (Grewal et al., 2019, p. 3061). Regulatory frameworks for ESGD are still evolving, leaving companies with considerable flexibility in determining the extent and depth of their disclosures. As Cao et al. (2019, p. 288) note, "among the firms that do commit to CSR reporting, there exists enormous variance in the level of disclosures." Some companies only briefly mention ESG initiatives in annual reports, while others produce comprehensive, standalone sustainability reports (Dhaliwal et al., 2011, p. 60). This variability, coupled with the largely voluntary nature of ESGD, raises questions about the utility of this form of transparency and its impact on **investor behavior**. One concern surrounding ESGD is the potential for information overload: with the vast amounts of data companies provide in their reports and the lack of shared norms, it can be challenging for investors to identify what is material and relevant to their decision-making process (D. M. Christensen et al., 2022, p. 164). This issue becomes even more complex as different investor types may interpret ESG information differently. Professional analysts, for instance, often have the resources and expertise to evaluate ESGD critically, while retail investors may lack the capacity or knowledge to process the same information effectively (Cho et al., 2013, p. 5). As a result, the impact of ESGD on investment decisions may vary significantly depending on the investor group in question.

The **upcoming study** examines whether ESGD influences a company's ownership structure, with particular attention to institutional investors. Institutional investors, such as pension funds, mutual funds, and insurance companies, play a dominant role in global financial markets and are generally more sensitive to the long-term risks and opportunities associated with ESG factors (Bushee and Noe, 2000, p. 172; Hoq et al., 2010, p. 23). The central research question of this thesis is: Does ESG disclosure have an impact on a company's ownership structure? To explore this question, two key hypotheses will be tested: an introductory hypothesis H1, which posits that ESGD has an impact on ownership structure in general, and the main hypothesis H2, which suggests that ESGD has a positive impact on institutional ownership. Focusing on institutional investors is particularly important given their significant impact on companies and their growing interest in sustainable investing (Caselli et al., 2023, p. 3; Hirst et al., 2023, p. 977). With growing pressure to conform to ESG standards, it could be advantageous for firms to additionally focus on transparency rather than solely engaging in resource-intensive new initiatives. By ensuring transparency about existing ESG practices, companies may attract institutional investors while avoiding the costs, delays, and other hurdles associated with implementing new ESG actions (Cleveland et al., 2023, p. 44 et seq.). The findings of this study can have implications not only for investors but also for companies seeking to navigate the evolving demands of the capital markets. By understanding how ESGD affects ownership structures, particularly the behavior of institutional investors, companies may better align their reporting practices with the preferences of key investor groups. Moreover, this research contributes to the broader discussion on the role of transparency in corporate governance in an era of increasing sustainability awareness.

The remainder of this thesis is organized as follows. Section 2 examines the theoretical background, focusing on ESG transparency and ownership structure. Each part includes an overview of their economic effects to show the practical implications and emphasize feasible outcomes. The intersection of these two topics and their relationship provides the foundation for the hypothesis development. Section 3 outlines the research design, methodology, and data sources. Section 4 presents the empirical results from the analyses of the relationships between ESGD and ownership structure. Section 5 analyzes the study's results, evaluates the implications of ESGD on ownership structure, and discusses the strengths and limitations of the research. Finally, Section 6 summarizes the key findings and highlights potential avenues for future research, emphasizing the ongoing relevance of ESG disclosure and ownership structure in sustainable investing.

2. Theoretical Background and Hypothesis Development

The following section provides a comprehensive theoretical foundation for the study, focusing on the two fundamental dimensions "ESG transparency" and "ownership structure". Figure 1 illustrates the layout of this section, highlighting how the hypotheses are incorporated within a theoretical framework. Section 2.1 delves into the concept of transparency, its origins, and the evolution of ESG transparency as a new aspect of corporate disclosure. To demonstrate its practical relevance, this section also includes a brief overview of selected economic effects of ESG transparency. Similarly, Section 2.2 explores the concept of ownership structure with particular emphasis on institutional investors and presents a selection of economic implications to highlight its significance. Section 2.3 then explores the relationship between ESG transparency and ownership structure, considering how each factor influences the other. Finally, Section 2.4 narrows the focus to develop the study's hypotheses, explicitly addressing the unidirectional impact of ESGD on ownership structure.

2.1. (ESG-) Transparency

2.1.1. Concept of Transparency

Origins and Basics of Corporate Transparency

Transparency and disclosure are essential concepts to align the interests of companies and their stakeholders, especially between managers and investors. Generally, corporate transparency can be defined as "the availability of

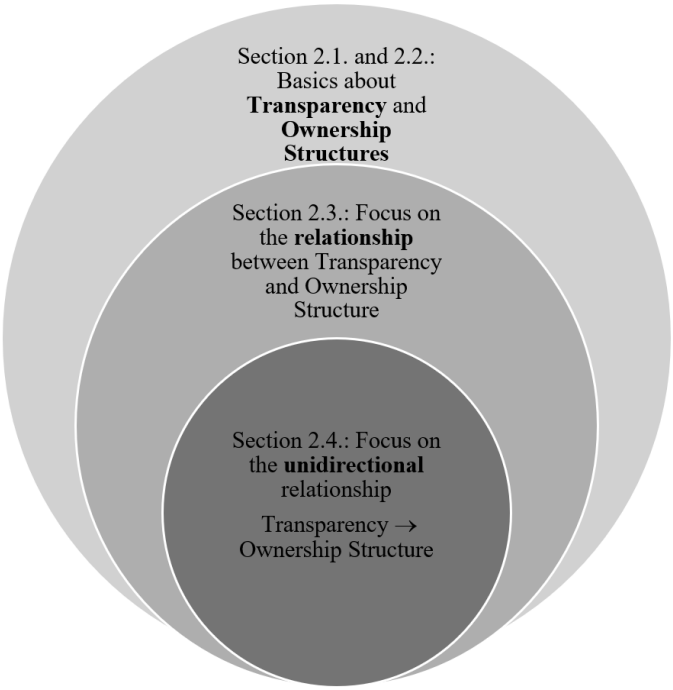

Figure 1: Visualization of the Structure in Section 2

firm-specific information to those outside publicly traded firm“ (Bushman et al., 2004, p. 207). Transparency is essential because managers possess superior insights regarding their firm's expected future performance, even in efficient capital markets (Healy & Palepu, 2001, p. 420). This informational advantage creates **information asymmetries**, where one party holds more or better information than another. Information asymmetry is a core concept in agency theory that posits an inherent conflict between the interests of a principal (e.g., owners) and the agent (e.g., managers), which can ultimately result in withholding vital information (Jensen & Meckling, 1976, p. 5 et seq.). As Healy and Palepu (2001, p. 420) explain, this agency problem arises as companies and their managers might overstate their value to attract investment. Once the investment is secured, the management may act in ways that expropriate investors' savings. The resulting information asymmetries, not only between managers and investors but also among various groups of investors (Bishara et al., 2020, p. 1581), place shareholders at a disadvantage, potentially leading to inefficient decision-making or misallocation of resources (Healy & Palepu, 2001, p. 407). Increasing transparency through enhanced disclosure can serve as an effective solution for this problem and reduce information asymmetry (Diamond & Verrecchia, 1991, p. 1325).

Historically, transparency has been predominantly linked to the disclosure of financial information, which serves as a cornerstone of corporate accountability. These disclosure practices are typically categorized into **mandatory** and **voluntary** releases. Mandatory disclosures are enforced by regulatory frameworks, while voluntary disclosures can be guided – following established standards – or non-guided individual measures, such as conference calls and presentations on websites. A widely recognized framework for **compulsory transparency** is the International Financial Reporting Standards (IFRS), which apply mainly to publicly traded companies (IFRS Foundation, 2024). Adherence to IFRS is mandatory in many countries: Under Regulation (EC) No 1606/2002, all European Union (EU) public companies must prepare their financial statements in compliance with IFRS (European Parliament and Council of the European Union, 2002). In contrast, publicly listed companies in the United States (US) must follow the Generally Accepted Accounting Principles (GAAP), the IFRS-equivalent reporting standard in the US (Code of Federal Regulations, 2023). Moreover, mandatory frameworks on a national level can require additional transparency. For example, the German Handelsgesetzbuch (HGB) regulates compulsory disclosure of both public and private companies based on size and structure (German Commercial Code, 2024). Beyond these mandatory frameworks, companies can adopt **voluntary standards** like those from the International Organization for Standardization (ISO) to enhance their credibility and reputation (International Organization for Standardization, 2024). In addition to adopting these mandatory and voluntary standards, firms can improve transparency through **individual disclosures**, such as management forecasts, analysts' presentations, conference calls, press releases, websites, and other corporate reports (Healy & Palepu, 2001, p. 406). Lang and Lundholm (1996, p. 468) note that “firms vary substantially in the amount of additional information they provide to the capital markets”, indicating that voluntary

transparency practices can differ widely even among firms operating under the same regulatory environment. This voluntary disclosure can further bridge the information gap between companies and investors as well as among different investor groups. Besides regulatory frameworks, several other factors can influence a company's disclosure practices. Haniffa and Cooke (2002, p. 317) identify critical elements such as the economy, capital markets, enforcement mechanisms, or the cultural context and emphasize that "disclosure practices do not develop in a vacuum, but rather reflect the underlying environmental influences". Consequently, the effectiveness and nature of disclosures are shaped by a broader set of conditions beyond just compliance.

Although mandatory guidelines and external pressures for disclosure require effort from companies, additional transparency and lower information asymmetries offer substantial **benefits**. For instance, higher transparency can reduce adverse selection costs and increase investors' awareness, which may help attract a larger investor base (Cahan et al., 2016, p. 581; Healy and Palepu, 2001, p. 431). Such disclosures can also reduce estimation risk for investors, thereby supporting a more stable investment environment (Cahan et al., 2016, pp. 581-582). While transparency is primarily advantageous, it may also carry certain **risks**. As H. B. Christensen et al. (2021, p. 1230) point out, "prior literature shows that corporate disclosures can induce proprietary and litigation costs". Moreover, voluntary disclosure theory suggests that firms with strong economic performance disclose more information (Cao et al., 2019, p. 290). This selective transparency can lead to biases, as recipients may overestimate the company's overall stability and potential.

The increasing focus on transparency has paved the way for a more comprehensive understanding of corporate responsibility. As the corporate governance landscape evolves, investors are placing greater emphasis on non-financial factors in assessing company performance. Consequently, there has been a notable increase in ESGD[1]. As stakeholders, including investors, consumers, and regulators, increasingly demand insights into a company's broader impacts[2], the principles of general transparency provide a vital foundation for understanding the importance of **ESG transparency**. A common definition of ESG disclosure refers to the process of companies reporting on the risks and opportunities related to environmental and social factors, along with the impacts their activities have on people and the environment (e.g. European Commission, 2024). ESGD can be seen as a natural extension of traditional financial transparency, reflecting a more holistic view of a company's performance and responsibilities. Just as financial transparency aligns the interests of managers and investors, ESGD plays a critical role in bridging the information gap regarding a company's societal and environmental responsibilities.

ESG Disclosure as a New Aspect of Corporate Transparency

As transparency widens to include a broader range of corporate impacts, ESG[3] Disclosure has emerged as a key extension of corporate reporting. The increase in ESG reports is closely tied to the growing investor interest in non-financial data (Eccles et al., 2011, p. 113). This interest can be explained by the additional informativeness of ESGD, which provides "information about the values of intangible assets – including human capital, natural capital, corporate brands, and general reputation" (Serafeim, 2015, p. 35). ESG reporting covers various long-term, non-monetary, and intangible topics, involving diverse stakeholders and making it distinct from traditional financial reporting (H. B. Christensen et al., 2021, p. 1230).

The growing importance of ESG reporting is also visible in the regulatory landscape, where lawmakers started to integrate environmental disclosure into their guidelines in the last decade. Similar to financial reporting, sustainability reporting can be separated into **mandatory** and **voluntary** disclosures. However, the regulatory landscape for **mandatory sustainability reporting** is relatively new and less established than financial reporting: The EU has led significant developments in establishing and standardizing non-financial reporting. The 2014 Non-Financial Reporting Directive (NFRD) was an early milestone, mandating large companies to disclose key ESG information (European Parliament and Council of the European Union, 2014). As part of the European Green Deal, a more extensive framework for ESGD was introduced with the (EU) 2022/2464 regulation in 2022. This policy, also known as the Corporate Sustainability Reporting Directive (CSRD), will be partly effective from 2024 onward and aims to obligate more companies to provide more detailed sustainability reports (European Parliament and Council of the European Union, 2022), marking a significant advancement in mandatory ESG disclosure across the EU. In contrast, the US has no legal compulsory framework for ESG transparency (DataTracks, 2024). However, the SEC's Regulation S-X, Article 14, will require registrants to provide material climate-related information in their registration statements and annual reports from 2025 onwards (U.S. Securities and Exchange Commission, 2024). In addition to these mandatory frameworks, many companies engage in **voluntary disclosure**. Established frameworks like the Global Reporting Initiative (GRI)

[1] According to the Governance & Accountability Institute (2024), the percentage of S&P 500 companies that published sustainability reports or disclosures increased from 20% in 2011 to 98.6% in 2023

[2] Surveys show a growing interest among different stakeholder and shareholder groups, e.g. PwC (2023) find an strong increase (+15%) of predominantly institutional investor demand for ESG disclosure between 2021 and 2023. The Morgan Stanley Institute for Sustainable Investing (2024) finds that 65% (66%) of individual investors in America (Europe) increased their interest in sustainable investing between 2022 and 2024.

[3] It's important to note that academic literature regularly uses the term Corporate Social Responsibility (CSR) instead of ESG, often even interchangeably. While there are subtle differences between both terms, for the purposes of this thesis, CSR and ESG are considered equivalent concepts and are treated equally. Thus, this thesis only uses the term "CSR" when referring directly to quotes and academic studies. In all other cases, the term ESG is used.

and the Sustainability Accounting Standards Board (SASB) support companies aiming to go beyond compliance and proactively share their sustainability practices. While not legally binding, these standards offer companies guidance to demonstrate a deeper commitment to transparency, often improving their credibility and fostering stakeholder trust (Global Reporting Initiative, 2024; Sustainability Accounting Standards Board, 2024). Even though ESG transparency is increasingly recognized and regulated, its reporting environment remains less mature and standardized than traditional financial reporting.

The growing popularity of ESGD may also be linked to its anticipated **positive impact** on capital markets. As discussed in Section 2.1.1, increased general disclosure lowers estimation risk by reducing information asymmetries. Enhanced ESGD can further diminish these asymmetries and ultimately result in a lower cost of equity (Dhaliwal et al., 2011, p. 90; Ramdhony et al., 2024, p. 525). Additionally, Moss et al. (2024, p. 2) discover that ESGD results in significant responses in stock market prices and trading volumes, indicating that non-financial releases contain market-relevant information for investors. A more detailed overview of the economic implications of ESGD will follow in Section 2.1.2 From a company's perspective, ESGD is a strategic tool for communicating environmental performance: Voluntary disclosure theory indicates a positive association between a company's environmental performance and its level of environmental disclosure (Clarkson et al., 2008, p. 304). This suggests that well-performing firms use ESGD to signal their quality and emphasize their strong performance (Cho et al., 2013, p. 3). In contrast, socio-political theories suggest that underperforming firms employ this transparency to justify poor performance and proactively address stakeholder concerns (Patten, 2002, p. 772). Deegan (2002, pp. 290-291) further explains that ESGD serves as a mechanism for these firms to legitimize their operations, potentially benefiting the company and the broader community. The strategic use of ESGD to communicate or justify corporate performance aligns with legitimacy theory, a foundational framework in ESG research that highlights the legitimizing role of ESGD. A standard definition of **legitimacy theory** is presented by Suchman (1995, p. 574):

> *„Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions."*

While legitimacy theory broadly applies to all corporate actions, it seems particularly relevant to ESG practices due to its inherent ties to societal norms and values. Through environmental transparency, companies can demonstrate alignment with societal expectations for sustainable behavior and disclosure, fostering stakeholder acceptance and trust. At its core, legitimacy theory posits that "firms have to conform to societal norms in order to prosper" (de Villiers & van Staden, 2006, pp. 763-764). When companies meet social expectations, they uphold a "social contract" with society, whereas breaches in this contract could threaten their survival (Mathews, 1993, p. 26). This idea positions legitimacy as an essential resource for a company's existence, which must be continually monitored and managed (Dowling & Pfeffer, 1975, p. 125). In a legitimacy crisis, companies face a threat to their survival. However, companies do not necessarily need to adjust their behavior in such crises: they can strategically adapt disclosure to reshape perceptions and expectations, ultimately restoring legitimacy (Dowling & Pfeffer, 1975, pp. 126-127). Strategic disclosure – including the timing, content, and framing of ESG data – can influence stakeholder perceptions, making ESG transparency a powerful tool for maintaining legitimacy (de Villiers & van Staden, 2006, p. 764); (Woodward et al., 2001, p. 362). In contrast, even if companies adapt their actual behavior, those corrective actions might stay unnoticed without adequate transparency.

While disclosure is a critical tool for managing legitimacy, it carries inherent **risks**: Companies may limit certain disclosures if they see them as more harmful than beneficial to their legitimacy (de Villiers & van Staden, 2006, pp. 764-768). Thus, while disclosure remains vital for managing legitimacy, companies must strategically balance transparency with possible reputational harm. Further critiques exist regarding the actual informativeness of ESG transparency. Serafeim (2015, p. 35) argues that "the information provided by most sustainability reports, in addition to being less credible and timely than financial reporting data [...], is not placed in the context of a company's strategy and business model". He also asserts that investors gain only a few insights into a company's management and its plans for long-term value creation (Serafeim, 2015, p. 35). Additionally, the largely voluntary reporting landscape yields complaints from investors about the lack of comparability and verifiability of information (Bernow et al., 2019, p. 6). This raises important questions about the reliability and relevance of the information disclosed in ESG reports and underlines the importance of regulatory guidance.

Existing literature explores ESG reporting from multiple theoretical perspectives, which can be categorized into **socio-political** and **economic** approaches (Cao et al., 2019, p. 289). The economic perspective focuses on how ESGD connects to financial and market-related factors. Since this view directly aligns with the financial interests of shareholders and their investment decisions, Section 2.1.2 will specifically address the economic effects of ESG transparency. In contrast, the socio-political perspective, which is closely tied to legitimacy theory, emphasizes the role of ESGD in the interaction between companies and their broader environment. This perspective is particularly important given that a large part of a firm's environment consists of its investors, whose values and expectations significantly shape corporate behavior. Sections 2.2 through 2.4 will delve into the socio-political perspective, with Section 2.2 offering an overview of the investor landscape, and Sections 2.3 and 2.4 focusing on the connections between ESGD and investors.

2.1.2. Economic Effects of (ESG-) Transparency

Academic literature explores the economic perspective of ESGD through various approaches. One of these approaches is the relationship between disclosure and a firm's **cost of capital**. This link is especially relevant, as the cost of capital plays a critical role for companies and investors: From a company's perspective, the cost of capital impacts its financing and operational decisions (Dhaliwal et al., 2011, p. 60). For investors, the cost of capital is essential as it serves as a discount rate for evaluating investment opportunities (Berk & DeMarzo, 2023, p. 445 et seq.). By capturing associated risks and reflecting the time value of money, this concept helps investors make informed decisions about resource allocation and potential returns. As Dhaliwal et al. (2011, p. 60) note, there is a "longstanding interest" in understanding how various disclosure forms affect capital costs. The general assumption is that higher disclosure, whether financial or non-financial, is associated with a lower cost of capital: The underlying mechanism suggests that higher disclosure leads to lower information risk, which reduces the risk premium required by investors. A lower risk premium implies a decreased incremental return demanded by investors, ultimately leading to lower cost of capital (Healy & Palepu, 2001, p. 430). Prior research on the relationship between disclosure and the cost of capital focuses mainly on **financial** disclosure: The general academic viewpoint is that financial disclosure is negatively associated with the cost of capital (Dhaliwal et al., 2011, p. 62), indicating that more and better disclosure leads to a lower cost of capital. However, more recent studies focus on **non-financial** information, particularly ESGD. For example, Dhaliwal et al. (2011, p. 79) find a negative association between ESGD and the cost of equity capital for US firms with superior CSR performance, highlighting the economic benefits of transparency in non-financial reporting.

Beyond the impact on the cost of capital, transparency also influences other financial dimensions, such as the **liquidity** of a firm's securities. Diamond and Verrecchia (1991, p. 1326) show that "disclosure improves the future liquidity of a firm's securities". When information asymmetries occur, some investors are less willing to trade due to concerns about trading at unfavorable prices, which leads to illiquidity (Dhaliwal et al., 2011, p. 62). Contrarily, additional disclosure helps to reduce these information gaps. For firms with high levels of disclosure, investors can feel more confident that stock transactions occur at a "fair price," resulting in greater liquidity in the market (Healy & Palepu, 2001, p. 429). The benefits of liquidity are twofold: it ultimately lowers a firm's cost of capital (e.g. Amihud & Mendelson, 1986, p. 224); (Belkhir et al., 2020, p. 1) and can address the preferences of certain investor groups, such as institutional shareholders (see Section 2.2.1).

In addition, academic literature links ESGD to other financial benefits. For instance, both Zhong and Gao (2017, p. 20) as well as Dhaliwal et al. (2011, p. 62) report a positive relationship between ESGD and **firm value**. Furthermore, Zhong and Gao (2017, p. 20) argue that ESGD improves **investment efficiency** by providing more precise insights into a company's long-term sustainability. Another research perspective examines how ESGD influences **analysts**, who are key users of corporate disclosures and play a critical role in determining the economic effects of transparency. For example, Dhaliwal et al. (2011, p. 90) find that voluntary CSR disclosure is associated with "increased analyst coverage, improved forecast accuracy, and reduced forecast dispersion," particularly in firms with strong CSR performance. This valuation stability indirectly lowers a firm's cost of capital through its positive impact on stock liquidity and the lower risk and uncertainty associated with the forecasts (e.g. Dhaliwal et al., 2006, p. 709); (Gebhardt et al., 2001, p. 146). Furthermore, the reduced forecast dispersion shows that ESGD helps reduce information asymmetries not only between managers and shareholders but also among shareholders – in this case, analysts. Further research highlights additional benefits of ESGD, such as its positive impact on corporate **reputation** (Hasseldine et al., 2005, p. 147). Additionally, Cheng et al. (2014, p. 1) provide evidence that transparency around CSR performance helps reduce **capital constraints**, which they attribute to the reduction of information risk.

Altogether, ESGD is associated with a range of potential benefits across various economic dimensions. However, despite these benefits, research also suggests **negative** effects of ESGD in some instances. First, disclosure is inherently associated with the cost of preparation and dissemination of the information (Verrecchia, 1983, p. 179 et seq.). These **costs** can sometimes outweigh the benefits of additional disclosures, indicating that ESGD may have an unfavorable economic impact. Secondly, PwC's survey of investors reveals that 94% of respondents believe that corporate reporting on sustainability performance contains at least some unsupported claims (PwC, 2023, p. 6). This perception raises concerns about **greenwashing** and leads to decreased accuracy of the disclosed information (PwC, 2023, p. 6). Following the logic of improved analyst accuracy and its positive impact on a firm's economics, reduced precision can lead to negative consequences such as increased uncertainty, heightened risk, and higher costs of capital. Furthermore, Yu et al. (2013) discover "abnormal negative stock price reactions to the disclosure of negative sustainability information", suggesting that higher levels of ESGD do not necessarily improve financial outcomes.

Apart from the existing literature that emphasizes the **economic** implications of ESGD, a substantial body of research also explores its **socio-political** perspective. This perspective provides valuable insights into the consequences of increased ESG transparency, particularly in fostering legitimacy and aligning with shareholder expectations. The following sections focus on this socio-political perspective, examining how different investor types, ownership structures, and ESGD practices shape the relationship between companies and their environment.

2.2. Ownership Structure

2.2.1. Concept of Ownership Structure

Conceptual Foundations of Ownership Structure and Investor Classification

Exploring ownership structure is essential for understanding the socio-political aspects of ESGD, as it reveals corporate dynamics and the relationship between a company and its environment. Ownership structure in publicly traded companies is typically defined by **two primary dimensions**: the level of ownership concentration, which distinguishes between firms controlled by a few major shareholders ("concentrated") versus those held by many smaller ones (“dispersed”/”diffused”), and the type of ownership, such as individual or family investors, institutional investors, or other corporations (Thomsen & Conyon, 2012). In this context, the theory argues that if both managers and investors are driven by value maximization, the specific structure of ownership should have little impact on firm outcomes (Caselli et al., 2023, p. 2; Demsetz, 1983, p. 386). Furthermore, Serafeim (2015, p. 35) suggests that if managers act regardless of their firm’s ownership structure, investor characteristics like holding period do not matter for corporate value. However, dynamics like information asymmetries in the principal-agent relationship (Jensen & Meckling, 1976, p. 5 et seq.) contradict those assumptions: generally, ownership structures appear more complex and impactful than these theories suggest.

Due to these complexities, shareholders can be categorized by various **characteristics** influencing their behavior and impact on firms. Caselli et al. (2023, p. 1) note that companies frequently have multiple shareholders, “each with unique incentives, investment horizons, governance preferences, and regulatory constraints”. These variations lead to differing costs and benefits of ownership across different shareholder types. Moreover, they find that shareholders’ motivations for monitoring and its effectiveness can vary significantly (Caselli et al., 2023, p. 1). Consequently, ownership structure plays a crucial role in shaping corporate governance and, ultimately, influencing the firm’s performance. To understand this impact more deeply, academic literature offers various perspectives. For example, Wahl (2006, p. 95) discusses classifications of investors along dimensions such as investment horizon (short-term vs. long-term), risk tolerance (risk-averse vs. risk-tolerant), and preference for stock value versus growth potential. He also highlights a common differentiation based on investor type, differentiating between family, institutional, governmental, and corporate shareholders, each with unique implications for corporate strategy and performance. Similarly, Khlif et al. (2017, p. 379) offer a variation of this categorization, noting differences among institutional, foreign, state, and managerial ownership. They emphasize that these owners vary in power, wealth, competence, and non-ownership ties to the firm. Khlif et al. (2017, p. 379) also introduces ownership concentration with its characteristics and effects as a critical factor in analyzing another dimension of ownership structure. In general, **Institutional investors** play a particularly significant role among different investor types, as their substantial capital often drives corporate governance practices (Bishara et al., 2020, p. 1581; Hoffmann et al., 2022, p. 198 et seq.). Thus, Section 2.2.1 and the rest of this paper will focus on institutional investors as a critical investor group, examining their motivations and behaviors in greater detail.

The Special Role of Institutional Investors in Shaping Corporate Practices

Institutional investors are professional market participants, typically large legal entities that manage substantial portfolios of assets and invest their or others’ funds in stocks and other assets. These investors are distinguished from other investors by their expertise, experience, and ability to assess investment risks, and they include entities such as investment companies, pension funds, banks, insurance companies, foundations, private equity firms, or hedge funds (Hoffmann et al., 2022, p. 198 et seq.).

A critical distinction between institutional investors and other investor types is their **information level** about the companies they invest in (Cho et al., 2013, p. 5). Institutional investors and analysts typically possess more information than other shareholder types. This differentiation results from their superior capacity to gather and process information, often due to their resources and expertise (Cho et al., 2013, p. 5). The higher information level of institutional investors is closely related to their behavior in the investment process: First, institutional investors are motivated to perform in-depth evaluations before possible investments. Given their typically large investment amounts, a thorough analysis is crucial to ensure informed decision-making, demanding extensive and detailed information (Hoq et al., 2010, p. 24). Second, institutional investors monitor the company’s management during the investment period (Serafeim, 2015, p. 36). A higher information level facilitates this monitoring role.

Among institutional investors, an important differentiator is their **investment horizon**. While some institutional investors may adopt shorter-term approaches, most institutional investors are associated with long-term strategies (e.g. Bushee & Noe, 2000, p. 172). This distinction significantly influences their behavior, including the types of companies they invest in, the criteria they prioritize, and how they manage their portfolios over time. **Short-term** institutional investors tend to prioritize liquidity in their investment decisions. Given the flexibility needed to trade large positions quickly, these investors favor stocks with high trading volumes (Bushee and Noe, 2000, p. 176; Diamond and Verrecchia, 1991, p. 1327). One way to attract these liquidity-focused investors is by enhancing transparency: As highlighted in Section 2.1.2, increased disclosure can improve stock liquidity, making the firm’s stock more attractive to such investors. In contrast, **long-term** institutional investors place

less emphasis on liquidity. Their extended investment horizon and significant financial commitments demand a more thorough analysis and a greater reliance on comprehensive, in-depth information about companies (e.g. Bushee & Noe, 2000, p. 172). In this context, enhanced transparency can also attract long-term investors by providing detailed information. Rather than focusing on quick trading, long-term investors are concerned with the stability and sustainable growth of the companies they invest in. As Bushee and Noe (2000, p. 200) observe, long-term investors are more likely to prioritize factors such as strong management practices, growth potential, and corporate responsibility. By attracting long-term investors, firms can establish a stable ownership base, which offers a strategic advantage by reducing stock price volatility from short-term trading activities (Bushee & Noe, 2000, p. 176).

Because of this predominantly long-term focus, institutional investors often consider factors beyond only short-term financial performance in the investment process: They have an increasing **interest in non-financial criteria**, such as a company's social performance, which can positively impact long-term economic outcomes (Hoq et al., 2010, p. 23). More generally, Qa'dan and Suwaidan (2019, p. 35) note that long-term performance can be enhanced "by good management practices such as CSR action". This suggests that many institutional investors are not solely focused on maximizing immediate financial returns but also on supporting companies with sustainable and socially responsible practices. The shift in priorities is summarized by Hirst et al. (2023, p. 977), as "investors are generally willing to forgo some monetary gains to promote social interests." This theoretical framework is supported by evidence showing that a higher focus on ESG criteria is associated with the interest of institutional investors. For example, Kim et al. (2018, p. 1190) observe that firms with better ESG performance tend to appeal to both institutional and individual investors, particularly long-term and low-stake institutional investors with a focus on sustainable investments. These findings emphasize the growing importance of ESG factors in investment decisions, along with the critical need for transparent and detailed disclosure of these ESG factors. Such disclosures are essential for long-term investors, as they provide the necessary information to assess the ESG impact of companies. Altogether, these insights reveal not only the preferences of institutional investors but also establish another link between ESG transparency and ownership structure.

Besides the unique preferences and characteristics of institutional investors, it's also crucial to understand why companies should care about the **influence** of these investors on a firm's management. Primarily because of their typically larger stakes in a company (e.g. Hoffmann et al., 2022, p. 198); (Hoq et al., 2010, p. 24), institutional investors might have a particular interest in actively guiding and shaping their portfolio companies: Investors with substantial holdings are more directly impacted by the quality of management decisions, as larger shareholders stand to benefit more from effective management and incur greater losses from poor governance (Caselli et al., 2023, p. 3; Shleifer and Vishny, 1997, p. 754). Thus, the power and impact of large institutional investors on their portfolio companies should not be underestimated and, therefore, need to be considered. These investors often impact corporate decision-making, such as investment-, executive appointment-, and disclosure decisions (Ntim & Soobaroyen, 2013, p. 472), and shape corporate governance structures (Bishara et al., 2020, p. 1581). Companies with long-term institutional backing often enjoy strategic advantages. Caselli et al. (2023, p. 3) highlight that such firms tend to have better profitability, lower risk, and more innovation while investing less and offering higher payout ratios. Section 2.2.2 will explore financial implications like these in more detail. From a management perspective, the presence of long-term institutional investors enhances not only financial performance but also alleviates short-term pressures: The investors' long-term horizon relieves management of the pressure to temporarily cut research and development (R&D) expenses to boost earnings (Bushee, 1998, p. 305; Caselli et al., 2023, p. 3). This allows managers to focus on sustainable growth rather than reacting to short-term market demands and feeling forced to meet profit requirements. Through their monitoring role, institutional investors discourage opportunistic or self-serving behavior by management and thus lead to more effective decision-making (Bishara et al., 2020, p. 1581; Cornett et al., 2007, p. 1773). Serafeim (2015, p. 36) argues that monitoring can prevent shortsighted investment behavior and earnings management, ensuring that managers prioritize corporate performance over personal interests. This is especially important for companies that face a high level of information asymmetry and thus have only a few other means to overcome interest conflicts connected to agency theory (Bishara et al., 2020, p. 1582).

Note: To stay within scope, this paper focuses primarily on institutional ownership. However, it is essential to recognize that institutional investors are just one component of a broader shareholder base. As a complement to other investor types, institutional ownership offers distinct advantages that might differ from those of other investor types. Thus, while benefitting from the advantages of increased institutional ownership, companies might not be able to fully exploit the advantages of other shareholder types. Fully capitalizing on these advantages would require a balanced mix that leverages the strengths of various investor types to maximize overall corporate performance.

2.2.2. Economic Effects of Ownership Structures

As broadly illustrated in Section 2.2.1 with the impact of institutional investors, ownership structure can be a powerful determinant of corporate performance. Even early studies such as Brush et al. (2000) identified ownership structure as a promising area for extended research, suggesting that "ownership matters to the relationship between financial decisions and growth of the firm" (Bishara et al., 2020, p. 1581). Although research on ownership structure and its impact on firm performance has produced mixed results, the growing body of evidence highlights its dynamic role in shaping fi-

nancial outcomes. Ownership structure appears to be not a fixed characteristic but a variable factor that can significantly influence a company's performance. This reinforces the need to investigate ownership structure and its dimensions as a critical element in understanding and improving a firm's financial outcomes.

One such dimension is **institutional ownership**, where the academic literature shows mixed results regarding its impact on firm performance according to Bishara et al. (2020, p. 1581). Despite this inconsistency, there is a noticeable tendency in the research suggesting that institutional ownership positively influences various performance measures. Bishara et al. (2020, p. 1586) own findings support this view, demonstrating a "positive significant effect of investment manager ownership on sales growth in high information asymmetry environments." They attribute this effect to the monitoring functions of institutional investors, which ultimately enhances operating performance. Similarly, Cao et al. (2019, p. 289) summarize the common academic viewpoint, emphasizing that large shareholders can generally have a "significant economic impact on the firm". As institutional investors are often substantial shareholders, these findings further reinforce the role of institutional ownership in shaping firm growth and performance.

While institutional investors play a critical role in shaping corporate governance and performance, the broader shareholder base – including family, individual, and transient investors – also exerts significant influence, each group bringing its own dynamics and effects on firm stability and growth. For example, the literature finds that **family or corporate shareholders** positively influence firm performance through sales growth (Thomsen & Pedersen, 2000, p. 702). Such growth is likely driven by the stability and forward-looking approach that these investors often support. Second, research on **individual shareholders** reveals differentiated impacts based on the informational environment. In low information asymmetry settings, individual ownership positively affects sales growth (Bishara et al., 2020, p. 1586). However, Bishara et al. (2020, p. 1587) also note that individual shareholders tend to avoid investing in companies with high levels of information asymmetry, as these conditions present increased uncertainty and risk. This behavior aligns with the expectation that individual investors, often lacking the resources and access to information that institutional investors possess, prefer more transparent and less risky environments (Bishara et al., 2020, p. 1582). The tendency of individual shareholders to avoid investments at high levels of information asymmetry also illustrates heterogeneous information access among different investor types. Finally, **short-term shareholders**, in literature often classified as "transients", exhibit behavior that can lead to negative long-term outcomes for firms. Serafeim (2015, p. 35) points out that managers in firms with a higher proportion of these investor types are more likely to cut R&D spending to meet short-term earnings targets. This trend highlights how the pressure from short-term investors can lead to decisions prioritizing immediate financial results at the expense of long-term innovation and growth.

2.3. The Relationship between (ESG-) Transparency and Ownership Structure

Sections 2.1 and 2.2 introduced the concepts of transparency and ownership structure and highlighted critical links between them: their relationship is shaped by several factors, including the interaction with liquidity, the role of information asymmetries, and the rising investor preferences for companies' sustainable practices. Generally, the dynamics between ESG transparency and different ownership structures are interrelated and must be examined from **both directions**.

Different ownership types play a crucial role in shaping a company's commitment to ESG initiatives and vice versa. For example, the ownership base can influence the extent of ESG activities (Barnea & Rubin, 2010, p. 84). Conversely, ESG practices can shape a company's investor structure by attracting groups that prioritize ESG criteria differently and often have preferences "beyond shareholder value maximation" (H. B. Christensen et al., 2021, p. 1178). Dynamics like this underscore the intertwined relationship between ownership structure and a company's commitment to ESG initiatives which is already studied in academic literature from many perspectives. Since ownership structure is closely tied to the concept of information asymmetry through varying information levels of different investor groups, it is essential to examine not only the connection between the shareholder base and ESG practices but also how the disclosure about these practices, ESGD, is associated with different investor types. The **impact of ownership structure on ESG transparency** is becoming increasingly important as academic literature expands beyond traditional financial performance to explore the non-financial effects of ownership structure.

Due to their substantial ownership stakes, **institutional investors** have been theorized to play a vital role in shaping corporate disclosure practices. Several studies offer **theoretical explanations** for how and why institutional ownership might influence a company's approach to ESGD: One common argument is that institutional investors, driven by profit motives, may encourage greater ESGD because of the effect on the reputation and legitimacy of companies in their portfolios. For example, Ntim and Soobaroyen (2013, p. 472) suggest that institutional owners actively lobby managers to project a more socially responsible image to win the support of influential stakeholders, ultimately enhancing the company's profitability. Another explanation for increasing ESG transparency links to short-term institutional investors' demand for stock liquidity. Haniffa and Cooke (2002, p. 329) and Diamond and Verrecchia (1991, p. 1326) hypothesize that short-term institutional investors are incentivized to reduce information asymmetries among other shareholder groups to actively increase stock liquidity. Another theory for the positive impact of institutional ownership on transparency is provided by Ntim and Soobaroyen (2013, p. 472), as long-term institutional investors require more information to conduct their monitoring role effectively. Contrary to these

theoretical expectations, **empirical findings** reveal a negative effect of institutional ownership on ESG transparency. For example, Ntim and Soobaroyen (2013, p. 481) report a weak negative association between institutional ownership and ESGD. They explain this finding to the specific characteristics of their sample from South African companies, where institutional investors often rely on direct monitoring practices rather than public disclosures. Similarly, Qa'dan and Suwaidan (2019, p. 40) identify a significant negative relationship between institutional ownership and ESGD, though this outcome remains unexplained in their study.

Government ownership is expected to have a substantial effect on ESGD, as **theory** suggests that higher public pressure plays a critical role in this relationship: Firms with significant government ownership are subject to "higher expectations and scrutiny from the public" and are therefore expected to engage in greater ESGD to meet these demands (Ramdhony et al., 2024, p. 528). However, this positive expectation might not hold in countries with weaker governance. For example, in environments characterized by high levels of corruption, government ownership might lead to lower ESGD, as strong political connections can reduce the likelihood of enforcement from corrupt regulatory bodies (Ntim & Soobaroyen, 2013, p. 472) and raise incentives to hide inefficiencies or unethical practices. **Empirical evidence** of this relationship remains mixed (Ramdhony et al., 2024, p. 528). On the one hand, studies on Chinese firms demonstrate that close political ties allow government-owned companies to escape regulatory scrutiny, leading to poor ESGD (Jia et al., 2009, p. 562; Ntim and Soobaroyen, 2013, p. 472). On the other hand, studies in countries with lower levels of corruption[4] and less entangled political ties have found a positive link between government ownership and enhanced disclosure practices. For example, Eng and Mak (2003, p. 340) observe that government ownership in Singapore can lead to higher levels of voluntary disclosure, as it helps to address issues related to moral hazard and agency problems associated with state ownership. Similarly, Tagesson et al. (2009, p. 360) find that Swedish state-owned companies tend to disclose more ESG information "to serve as good examples" for other companies. Ntim and Soobaroyen (2013, p. 472) support these findings and explain that government ownership can increase transparency, as the government's influential role as a stakeholder encourages responsible disclosure practices. These findings suggest that government ownership in well-regulated, low-corruption environments can foster greater transparency and accountability through enhanced disclosure practices.

The impact of **individual investors** – in academic literature mainly comprising managers, directors, founders, families, or similar shareholders – on ESGD is also ambiguous. The **theory** provides possible explanations for both directions: one rationale for a positive relationship is that directors might encourage greater disclosure to improve a company's reputation (Ramdhony et al., 2024, p. 529). Conversely, individual investors may reduce transparency to capitalize on informational advantages and claim a personal benefit from the resulting insider information (Ramdhony et al., 2024, p. 529). Another reason for individual inside investors to lower ESG transparency might be to avoid costs for additional disclosure, which would decrease profits and, thus, their salary. Prior studies have produced mixed **empirical results**, including positive, negative, and non-significant relationships (Ramdhony et al., 2024, p. 529; Said et al., 2009, p. 217).

Academic literature examines the effects of ownership structure not only regarding different investor types but also regarding the **concentration** of shareholdings. This consideration is especially relevant as this paper focuses on institutional investors, which are often associated with higher overall ownership levels (Diamond and Verrecchia, 1991, p. 1327; Hoq et al., 2010, p. 24). Because of this connection, examining ownership concentration becomes valuable even when the primary focus is on understanding the relationship between ESGD and institutional investors. Once again, **theory** can explain both the positive and negative impacts of ownership concentration on ESGD. A common approach for a negative link is based on information asymmetries. In firms with concentrated ownership, the need for extensive disclosure may be reduced as the major shareholders often have direct access to information and thus less information asymmetries (Ntim and Soobaroyen, 2013, p. 472; Qa'dan and Suwaidan, 2019, p. 34). In contrast, less concentrated ownership requires disclosure to reduce informational asymmetries between numerous shareholders and management (Brammer and Pavelin, 2008, p. 124; Haniffa and Cooke, 2002, p. 328). Another potential factor behind lower ESGD in concentrated ownership firms is the cost effect. Cao et al. (2019, p. 290) suggest that controlling, influential shareholders may avoid CSR disclosures to minimize additional economic costs, especially when they do not see direct benefits from such actions. Finally, from a legitimacy theory perspective, companies with concentrated ownership may feel less pressure to disclose information to ensure public accountability when outsider interest is limited and less powerful (Ntim & Soobaroyen, 2013, p. 472). Other scholars argue that ownership concentration can positively impact disclosure under certain conditions. The predominant argument is based on reputation-building, where controlling shareholders might push for more ESGD to enhance the company's reputation and ultimately increase profitability (Cao et al., 2019, p. 290; Qa'dan and Suwaidan, 2019, p. 34.) **Empirical evidence** on the link between ownership concentration and ESGD is also mixed. Brammer and Pavelin (2008, p. 131) and Cao et al. (2019, p. 288) find that higher ownership concentration is associated with significantly lower ESGD. Roberts (1992, p. 609) also reports a negative association, though not statistically significant. However, other studies report a positive relationship. For example, Haniffa and Cooke (2002, p. 340) find a significant positive relation-

[4] Corruption Perception Index in 2023 according to Transparency International (2023); China: Score 42 (Rank 76), Singapore: Score 83 (Rank 5), Sweden: Score 82 (Rank 6)

ship between ownership concentration and ESGD. Furthermore, Jiang and Habib (2009, pp. 295-298) suggest that the effect of ownership concentration on ESGD may depend on the type of investor who is holding the concentrated ownership: While institutional investors with their large shareholdings tend to push for lower disclosures as they often monitor companies through other mechanisms, government ownership concentration tends to encourage greater voluntary disclosure to legitimize the company's operations and align with societal expectations. These findings reveal an interplay between ownership types and ownership concentration and underscore the value of including ownership concentration in the analysis, even though the primary focus of this study is on ownership types.

Overall, the findings about the impact of different ownership types on ESGD are mixed and inconclusive. Furthermore, theory offers explanations for both positive and negative effects and lacks a strictly unidirectional logic. This lack of clarity diminishes the practical value of existing research. One potential reason for the inconsistency in the results is that most studies take a unidirectional approach, focusing solely on how ownership influences disclosure. However, as Healy and Palepu (2001, p. 431) note, it is "difficult to infer whether disclosure changes followed or preceded changes in variables of interest." This uncertainty makes it challenging to identify the direction of causality in the relationship between ESGD and ownership structure.

Ramdhony et al. (2024, p. 525) further suggest that focusing solely on the direct impact of ownership on disclosure may introduce endogeneity issues, potentially distorting the results. To address these concerns, they employ a Panel Vector Autoregression (PVAR) analysis and examine the **bi-directional** relationship between ESGD and ownership structure, considering simultaneous effects in both directions. Their findings offer critical insights into this connection: ESGD shows a significant negative reaction to both government ownership and concentrated shareholdings, while director ownership has a negative but insignificant effect on ESGD. Moreover, their analysis uncovers the inverse relationship, revealing that ESGD negatively impacts government ownership. This finding can be attributed to firms in poor governance environments being "less interested in indulging in good CSRD practice and reporting" (Ramdhony et al., 2024, p. 537). Similarly, ESGD significantly negatively influences director ownership, suggesting that directors may avoid governance disclosures that could constrain their potential for higher remuneration (Ramdhony et al., 2024, p. 537). Finally, they suggest an insignificant negative effect of ESGD on ownership concentration.

While Ramdhony et al. (2024) focus on the bi-directional relationship, existing literature also explores the **uni-directional impact of ESGD on ownership structure** in detail. This perspective suggests the possibility of reverse causality, where ESGD could actively shape a company's ownership structure. Theoretical explanations and studies on how disclosure shapes the investor base are discussed in Section 2.4 Examining this relationship is particularly promising because it could offer actionable insights for companies – not only into what effect their disclosures have in general but also into how these disclosures can attract particular investor types. This leads to the research question:

> "Does ESG disclosure have an impact on a company's ownership structure?"

Understanding this inverse dynamic could provide valuable guidance for companies looking to strategically manage their shareholder base. There is already substantial evidence that companies are actively trying to shape their ownership structures. For example, Kim et al. (2018, p. 1190) find that a firm can "increase its investor base by adopting proactive environmental strategies". Similarly, Serafeim (2015, p. 36) notices that many corporate managers are now actively seeking ways to attract investors with longer-term investment horizons, particularly in response to pressures from existing stakeholders and the broader market. This reflects a conscious effort to shape the firm's shareholder composition towards stability and long-term alignment. Further evidence of this trend is offered by a survey by Beyer et al. (2014), which finds that nearly all companies have a preference for long-term investors. Although these insights suggest that companies should emphasize attracting long-term investors, this approach may not apply universally. As Paul Polman, the former CEO of Unilever, clarified, "you need to attract a shareholder base that supports your strategy – not the other way around. We actively seek one that is aligned with our longer-term strategy" (Polman, 2012). This view supports the idea that companies influence their ownership structure for strategic reasons.

These examples show that companies increasingly take proactive steps to manage ownership structures. The ability to attract certain types of investors – particularly those with a long-term, stability-focused investment strategy – has become an essential element of corporate strategy. This raises the question of whether ESGD can be another tool for companies to influence their investor base.

2.4. Hypothesis Development

Building on the ambiguous insights of the previous section, this chapter shifts the focus to the unidirectional impact of ESGD on ownership structure. The interest in understanding how disclosure affects a company's shareholder base has a long history. Already in 2001, Healy and Palepu (2001, p. 411) synthesized longstanding research questions on how investors respond to corporate disclosures and if possible reactions differ between fundamental or supplemental disclosures. Without clear answers to these questions, companies were cautious about additional disclosures in the 2000s (Hoq et al., 2010, p. 24). More recent studies demonstrate that there is still insufficient understanding of how transparency, particularly within the ESG context, affects ownership structure. For example, Moss et al. (2024, p. 4) find that only "a small number of prior studies have examined how ESG information influences different classes of investors", suggesting

a need for future research to explore the overall demand for ESGD and the reaction of different investor classes (Moss et al., 2024, p. 15). Therefore, the analysis in this paper aims to address this **gap** by investigating the unidirectional influence of ESGD on ownership structures, particularly regarding institutional investors. By doing so, it seeks to enhance the predictability of investor reactions and encourage greater transparency.

Increasing predictability is crucial, particularly given the existing literature's diverse theories and aspects of ownership structure. The lack of a cohesive framework leads to ambiguity in understanding investor behavior. For example, firms that restrict their general disclosure practices may attract shareholders that prefer opacity to hide unethical behavior (Ramdhony et al., 2024, pp. 528-529). In contrast, Moss et al. (2024, p. 1) argue that companies engaging ESGD may attract investors with a "taste" for sustainability, suggesting that some shareholders are drawn explicitly to firms that align with their values. This interest often remains even when a company undertakes actions that don't directly contribute to its cash flow, as certain investors prioritize activities with value beyond financial returns (Friedman & Heinle, 2016, p. 740). Moreover, as investors differ in their capability to use disclosed information, different levels of sophistication among investors can further shape how ESGD impacts ownership structure. Kalay (2015, pp. 1005-1006) highlights that firms with higher levels of disclosure tend to attract more sophisticated investors who can effectively analyze and use the disclosed information. Additionally, Kalay (2015, p. 1005) finds a direct reaction from investors as "firms that initiate (cease) an earnings guidance policy experience an increase (decrease) in the proportion of sophisticated investors".

Considering **specific investor types**, academic literature reveals various findings about reactions to ESGD. For example, de Villiers and van Staden (2006, p. 766) find that directors are more likely to invest if their firm has a low ESGD level to avoid scrutiny of their compensation. Ramdhony et al. (2024, p. 527) support this and explain an implicit mechanism: ESGD might reveal damaging information and thus harm executive compensation. As remuneration for high-ranked employees often consists of stock options, lower compensation would mean receiving fewer stocks, resulting in lower director ownership. Regarding private investors, Moss et al. (2024, p. 2) "do not detect a retail investor response to ESG press releases". This indifference might result from private investors' relatively limited information processing capability compared to more sophisticated investors, suggesting that they may struggle to use additional ESG data (Kalay, 2015, pp. 1005-1006).

Another key factor in understanding ownership structure is the **concentration** of shareholdings. According to Ramdhony et al. (2024, p. 530), "CSRD may negatively influence investment by block owners, as CSR reporting imposes economic costs for these controlling shareholders". Even though this perspective might explain why shareholders avoid further investment, it seems more aligned with the reverse relationship, as controlling shareholders actively influence the decision to limit additional CSR reporting in order to avoid increased costs (Cao et al., 2019, p. 290). Another explanation for the negative association between ESGD and ownership concentration is that firms with greater general disclosure increase investors' awareness about their existence, resulting in a broader base of investors and, thus, lower ownership concentration (Dhaliwal et al., 2011, p. 62).

These **varying effects** of ESGD on different aspects of ownership structure highlight the complexity of this relationship. Moreover, some of the theories and explanations in this section align closely with those presented in Section 2.3, which explained a reverse impact of ownership structure on ESGD. While the literature does not reach a clear consensus on how ESGD affects each type of investor, there is evidence that ESGD might have a general impact on ownership structure: While transparency can attract certain investors, it may deter others. Given these insights, this paper proposes the following hypothesis *H1*:

> ***H1: ESGD has an impact on ownership structure in general***

To establish *H1*, the previous part discussed the connection between ESGD and different ownership dimensions, excluding the group of **institutional investors**. This exclusion is due to the evidence suggesting a stronger impact of ESGD on this investor group than other ownership types. While the prior section presented mixed outcomes regarding the overall influence of ESGD on ownership structure, the literature on possible effects of disclosure on institutional investors has shown more robust analyses. As this body of research has yielded clearer and more consistent results, it's reasonable to establish a separate hypothesis for the relationship between ESGD and institutional investors.

Theoretically, this connection is based on the frameworks already mentioned in the previous sections. The positive impact of ESGD is often driven by the typically long-term investment horizons of most institutional investors, who value additional transparency for legitimizing disclosures and a clearer common understanding of the firm's sustainability strategy (Milne & Patten, 2002, p. 16). Serafeim (2015, p. 36) argue that lower levels of ESGD deter long-term institutional investors, as the resulting information gap increases monitoring costs. Further support for a positive effect of ESGD on institutional ownership comes from research on disclosure and liquidity: As transparency increases stock liquidity, firms get more attractive to short-term institutional investors who value the ease of trading in liquid markets (Diamond & Verrecchia, 1991, p. 1327); (Healy & Palepu, 2001, p. 429).

Empirical evidence from the literature strongly aligns with these theoretical expectations, reinforcing the view that transparency positively relates to institutional investors. For example, Hoq et al. (2010, p. 22) find that CSR reporting attracts institutional ownership, mainly because institutional investors emphasize how companies manage social issues. Furthermore, Dhaliwal et al. (2011, p. 80) observe that

voluntary CSRD initiation attracts dedicated institutional investors due to their monitoring role, enabling better assessment of firm value and management control (Serafeim, 2015, p. 36). Overall, there is a strong tendency in the literature that (ESG-) disclosure positively affects institutional ownership. A detailed overview of studies about this relationship can be found in Appendix 1.

However, much of the existing literature either inherently focuses on general forms of disclosure or blurs the line to specific ESG-related transparency. As a result, it becomes difficult to draw precise conclusions about how disclosures on ESG activities influence ownership structures. Many studies also reveal methodological **weaknesses**, which reduce their reliability. For example, some studies use an unsuitable variable for ESGD, such as dummy variables for the initiation (Dhaliwal et al., 2011) or increase (Healy et al., 1999) of ESGD. Other studies like Hoq et al. (2010) use old data, which might be inappropriate for a dynamic topic such as ESGD. Of all the studies, Ramdhony et al. (2024) stand out as one of the few analyses to precisely address the research question of this paper, but show some weaknesses: On the one hand, their analysis is limited by some methodological shortcomings. As the study is set in the emerging economy of Mauritius, with only 40 listed companies and 400 firm-year observations, the generalizability of the findings is limited. Furthermore, Ramdhony et al. (2024) only apply a multivariate regression technique, which restricts the quantitative interpretability of the results due to the inherent correlation between the shareholdings of different investor types as dependent variables (Dattalo, 2013, p. 3). Additionally, the ESG variable in their study is based on content analysis, which could introduce distortions of the actual ESG transparency level across different firms. On the other hand, their study focuses primarily on the effects of ESGD on director, government, and block ownership, neglecting the critical influence on institutional ownership. This **literature gap** highlights the need for further investigation and is a crucial foundation for the contributions of this study. Given these insights, this paper proposes the following hypothesis *H2*:

> ***H2: ESGD has a positive impact on institutional ownership***

By addressing the theoretical and methodological weaknesses in prior research, this study builds on existing literature and aims to extend the understanding of ESGD's impact on ownership structures. The methodology of the upcoming analysis draws upon a broad range of related studies (see Appendix 1) while seeking to provide a more comprehensive and targeted investigation.

3. Methodology

This section outlines the research design and methodological approach used for this study. Section 3.1 describes the data collection process, focusing on the sources for ESG data and all ownership structure variables. Section 3.2 provides an overview of the variables used in the analysis. Section 3.3 explains the multivariate and univariate regression techniques employed in the study to test the hypotheses. Furthermore, the incremental development of the main regression model is presented. Section 3.4 addresses the research quality and discusses measures and robustness checks taken to ensure the accuracy and reliability of the estimated coefficients.

3.1. Data Collection

The empirical analysis is based on a **sample** from sustainabilityreportingnavigator.com with 873 companies from 27 countries, primarily in Europe and Northern America. The original data set contains ESG performance and ESG disclosure data between 2016 and 2022, sourced from the LSEG[5] and Bloomberg[6] databases. Ownership data was added from Moody's Orbis[7], and control variables were retrieved from LSEG. The integration of ownership and control data required further cleaning due to missing values, resulting in 4,733 firm-year observations for the main analysis (see Section 4.2.2). The datasets were matched primarily via the International Securities Identification Number (ISIN), a universal identification code for public companies, ensuring consistency across databases (ISIN Organization, 2024). The period between 2016 and 2022 is particularly relevant due to the substantial advancements in ESG reporting, as outlined in Section 2.1.1. To ensure data accuracy, ownership details are current as of February 2024, while ESG performance and disclosure metrics include updates from August 2024.

Nevertheless, the data has some **weaknesses**: One limitation arises from potential data distortions in the Orbis database, which lists all publicly available ownership links[8]. This can lead to multiple counts of the same shareholding in complex ownership structures, resulting in an overestimation of ownership. For example, in cross- or chain-ownership cases, where Company *A* owns 100% of Company *B* and Company *B* owns 100% of Company *C*, both *A* and *B* might be listed as 100% shareholders in *C*, thus overestimating ownership (Bureau van Dijk, 2018, p. 810 et seq.). Another potential distortion involves differences in the timing of ESG and ownership data points. ESG data reflects the respective ratings during a period, typically over the financial year. In

[5] LSEG (formerly Refinitiv) is a leading provider of global financial data and infrastructure, offering a wide range of data products such as market pricing, economic indicators, risk data and company data, which includes ESG information. (London Stock Exchange Group, 2024)

[6] Bloomberg provides real-time financial data, news, and analytics, delivering comprehensive market information, pricing, economic indicators, and corporate data, which includes ESG information. (Bloomberg, 2024)

[7] Moody's Orbis is a comprehensive global database with in-depth information on financials, ownership structures, credit ratings, industry classifications. (Moody's Analytics, 2024)

[8] The information about ownership links in Orbis is sourced from various channels, including direct company disclosures (such as annual reports, shareholder lists, and subsidiaries), official bodies, information providers, SEC filings, stock exchanges, and direct correspondence with companies. (Bureau van Dijk, 2018, p. 830 et seq.)

contrast, ownership data refers to the latest published shareholding information at a specific point in time within that same financial year. This discrepancy could lead to misalignment between the datasets.

Additionally, this thesis has incorporated **Artificial Intelligence**, specifically ChatGPT, to assist in the coding and wording processes throughout the writing.

3.2. Variables

The main explanatory variables for testing the hypotheses from Section 2.4 are the **ESGD Score (*ESGD*)** and **ESG Performance Score (*ESG*)**. Using both measures allows for a clear separation of disclosure effects from actual ESG performance, helping to isolate the influence of ESG transparency on ownership structure (H. B. Christensen et al., 2021, p. 1231). The ESGD Score is obtained from Refinitiv ("CSR Sustainability Reporting Score") and reflects the company's transparency regarding its sustainability practices. The ESG Performance Score, also from Refinitiv, measures environmental, social, and governance performance. Both scores are relative as they measure a company's performance compared to its peers within the same industry. For further analyses and robustness checks, the Bloomberg equivalents as absolute measures of ESGD and ESG Performance are used in equivalent regression models. Unlike most existing studies, the ESGD measures from Bloomberg and Refinitiv prioritize overall ESG transparency: by concentrating on general ESG disclosure, these measures avoid the distortions that can arise from over-specifying analyses such as the focus on ESG press releases in the study by Moss et al. (2024).

Additionally, an interaction term between the ESGD Score and the ESG Performance Score ($ESGD * ESG$) is included in most regression models from Section 3.3. This term captures the notion that higher levels of disclosure could have a more substantial impact when the company's disclosed performance values are strong. This idea aligns with Dhaliwal et al. (2011, p. 80), who find a significant positive association between ESGD and institutional ownership for firms with superior ESG performance. In contrast, their findings for companies with lower ESG performance were insignificant. The **ownership data (*PctOwn*)** from Moody's Orbis database comprises all publicly available ownership links. Thus, it does not account for all shareholder types and notably excludes private and retail investors who do not disclose their shareholdings to the public. As a result, only an average of 52.37% of total ownership is captured, as described in Appendix 3. To enable a more detailed analysis that fits the existing literature's findings, the ownership data is transformed and aggregated into four main investor types: institutional investors ($PctOwnInst$), individual investors ($PctOwnInd$), government ($PctOwnGov$), and corporations ($PctOwnCorp$).

Derived from standard disclosure literature, various **control variables** are included in the analysis to account for firm characteristics and market conditions that might influence ownership besides ESGD and ESG performance. Firm size is measured by the logarithm (log) of total reported assets ($log(totAsts)$). Risk is captured by two dimensions: market beta ($Beta$) and leverage (Lev). The beta values are computed over different time horizons based on data availability. Leverage is the ratio of total debt to total capital, reflecting a company's financial risk. Profitability is measured by earnings per share (EPS), and growth is represented by the 3-year compound annual growth rate ($CAGR$) of revenues ($Grwth$). The liquidity of the stocks is captured by the logarithm of the average daily traded value over the past year ($TrdVol$), indicating how easily a company's shares can be bought and sold. Finally, firm performance is measured through two variables: return on assets (ROA) and the market-to-book ratio (MTB), offering insights into operational efficiency and market valuation.

To control for unobservable differences across industries ($Industry$), countries ($Country$), and years ($Year$), the regressions include **fixed effects** for these dimensions. In a variation of the main regression model, industry- and country-fixed effects are replaced by firm-fixed effects to account for additional firm-level characteristics that may influence the observed relationships. Appendix 2 provides a detailed overview of all variables used in the empirical analyses.

3.3. Regression Technique

The analysis employs two similar regressions to test the hypotheses: Both estimate the percentage of ownership ($PctOwn$ and $PctOwnInst$, respectively) as a function of the Refinitiv measures for $ESGD$ and ESG, their interaction term $ESGD * ESG$, as well as various control variables and fixed effects to control for other possible influences on ownership structure. Both models only differ in their treatment of ownership as the dependent variable. For $H1$, a **multivariate model** (Härdle et al., 2024, p. 443 et seq.) estimates the effects of ESGD and other explanatory variables on a set of dependent variables $PctOwn$ (representing corporate, government, individual, and institutional ownership) simultaneously. The multivariate approach allows the analysis of impacts on multiple ownership types at once, reflecting the natural interdependencies and correlations among the complementary shareholder groups. The regression model is the following:

$$\begin{aligned} PctOwn_{i,t} = {} & \alpha + \beta_1 ESGD_{i,t} + \beta_2 ESG_{i,t} + \\ & \beta_3 ESGD_{i,t} * ESG_{i,t} + \beta_4 log(TotAsts_{i,t}) + \\ & \beta_5 Beta_{i,t} + \beta_6 Lev_{i,t} + \beta_7 EPS_{i,t} + \\ & \beta_8 Grwth_{i,t} + \beta_9 TrdVol_{i,t} + \beta_{10} ROA_{i,t} + \\ & \beta_{11} MTB_{i,t} + Year_{i,t} + Industry_{i,t} + \\ & Country_{i,t} + \varepsilon_{i,t} \end{aligned}$$

The results for the multivariate model are shown in Table 3 in Section 4.2.1 In contrast, a **univariate Ordinary Least Squares (OLS) regression model** for $H2$ estimates the impact on the percentage of institutional ownership $PctOwnInst$ as the only dependent variable. The model

is built **incrementally** to address the varying approaches and methodologies used in similar studies: the initial regression model includes $ESGD$ as well as country-, industry- and year-fixed effects (Model I), followed by the addition of ESG (Model II). The interaction term $ESGD * ESG$ is then incorporated into a separate model to test whether higher levels of ESG performance amplify the effects of disclosure (Model III). Finally, control variables are added to account for firm-specific characteristics. A comparison is made between the full model (Model V) and a simplified version that excludes the interaction term (Model IV). The complete model, hereafter referred to as the "**main model**" or "**Model (V)**", can be expressed as follows:

$$\begin{aligned} PctOwnInst_{i,t} = \alpha &+ \beta_1 ESGD_{i,t} + \beta_2 ESG_{i,t} + \\ &\beta_3 ESGD_{i,t} * ESG_{i,t} + \beta_4 log(TotAsts_{i,t}) + \\ &\beta_5 Beta_{i,t} + \beta_6 Lev_{i,t} + \beta_7 EPS_{i,t} + \\ &\beta_8 Grwth_{i,t} + \beta_9 TrdVol_{i,t} + \beta_{10} ROA_{i,t} + \\ &\beta_{11} MTB_{i,t} + Year_t + Industry_i + \\ &Country_i + \varepsilon_{i,t} \end{aligned}$$

To include another common approach in similar studies such as Hoq et al. (2010) or Serafeim (2015), two further models replace the fixed effects for industry and country with firm-fixed effects to capture more nuanced firm-specific influences (Model VI and VII). However, using firm-fixed effects may not be entirely suitable given that the sample has a short period of six years, leading to a maximum of six observations per company. Additionally, the ESGD values within a company show little variance[9] over such a short time frame, particularly when considering relative changes, which can distort the estimation of the coefficients in models with firm-fixed effects (Plümper & Troeger, 2019). Figure 2 provides an overview of the incremental steps and the respective regression models. The results for Model (V) and its variations (I), (II), (III), (IV), (VI), and (VII) are shown in Table 4 in Section 4.2.2. The same procedure was repeated using absolute $ESGD$ and ESG measures from Bloomberg, with results presented in Appendix 7.

To gain a more comprehensive understanding of the relationship between ESGD and ownership dynamics, further analyses are built upon Model (V). These models examine the research question from slightly different perspectives, extending the main analysis with different variations.

One critical consideration for this analysis is the **time shift** in investor reactions to ESGD. Ramdhony et al. (2024, p. 528) emphasize that CSR reporting typically does not lead to immediate rewards, as investors naturally react over time. Such reactions are often delayed, as investors need time to assess the disclosed information before adjusting their ownership stakes. Therefore, accounting for this time gap in the regression model is crucial to ensure the model's validity in accurately testing $H2$. The main model already integrates a lag through the inherent definition of the variables: As explained in Section 3.1, the inconsistent timing results as ESG ratings reflect a whole period, while ownership data captures a specific point in time. However, the length of this implied lag is not standardized across companies, introducing uncertainty into the analysis. To address this, a variation of Model (V) tests for delayed investor reactions by estimating $PctOwnInst$ between $t+1$ and $t+5$ relative to $ESGD$ at $t = 0$. This allows for a more detailed understanding of how the timing of disclosures affects ownership changes. Given the ambiguous theories and findings in existing research, additional adaptions of Model (V) are conducted to explore patterns and relationships more thoroughly. One variation involves modeling **changes** in ESGD ($\Delta ESGD$) against changes in institutional ownership ($\Delta PctOwnInst$). This approach seeks to determine if adjustments in disclosure practices lead to portfolio adjustments of institutional investors. Model (V) is further applied to **subgroups** based on the bottom and top quartiles of stock liquidity to examine differences in the association between ESGD and institutional ownership. This approach is motivated by the idea that institutional investors, especially those with a short-term horizon, are particularly interested in companies with high stock liquidity. Moreover, a **PVAR model** is employed as an alternative to traditional linear regression to address potential endogeneity issues and reduce the risk of biased estimates. This model, as suggested by Ramdhony et al. (2024, p. 526) and Jouida (2019, pp. 301-302), captures dynamic relationships between variables and thereby addresses potential issues of simultaneity and reversed causality. Additionally, a **Difference-in-Difference approach** is applied to compare changes in institutional ownership between two groups: a treatment group consisting of companies with a significant increase in ESGD during the observation period and a control group of companies with stable ESGD levels. To add another dimension of ownership discussed in the literature, an alternative model includes **ownership concentration** as the dependent variable. This approach provides a way to examine another characteristic of institutional ownership, as these investor groups are frequently associated with higher total ownership levels and, thus, with eventually more concentrated ownership. An overview of all additional regression models, their formulas, and their results is shown in Appendix 8. The main results are summarized in Section 4.2.3.

3.4. Research Quality

Given the inconsistent results in existing literature and concerns about endogeneity, it is essential to confirm the robustness and credibility of Model (V). Therefore, a selection of common robustness checks should assess validity, reliability, and objectivity as the fundamental quality criteria in quantitative research (O'Dwyer & Bernauer, 2014, p. 277 et seq.). Additionally, these tests will address key OLS assumptions, including linearity, exogeneity, homoscedasticity, independence, and normality of residuals (Wooldridge, 2020, p. 117 et seq.). This approach ensures that the ESGD coefficient

[9] Mean standard deviation of $ESGD$ within companies between 2016 and 2022: 5.6; Median value: 2.1

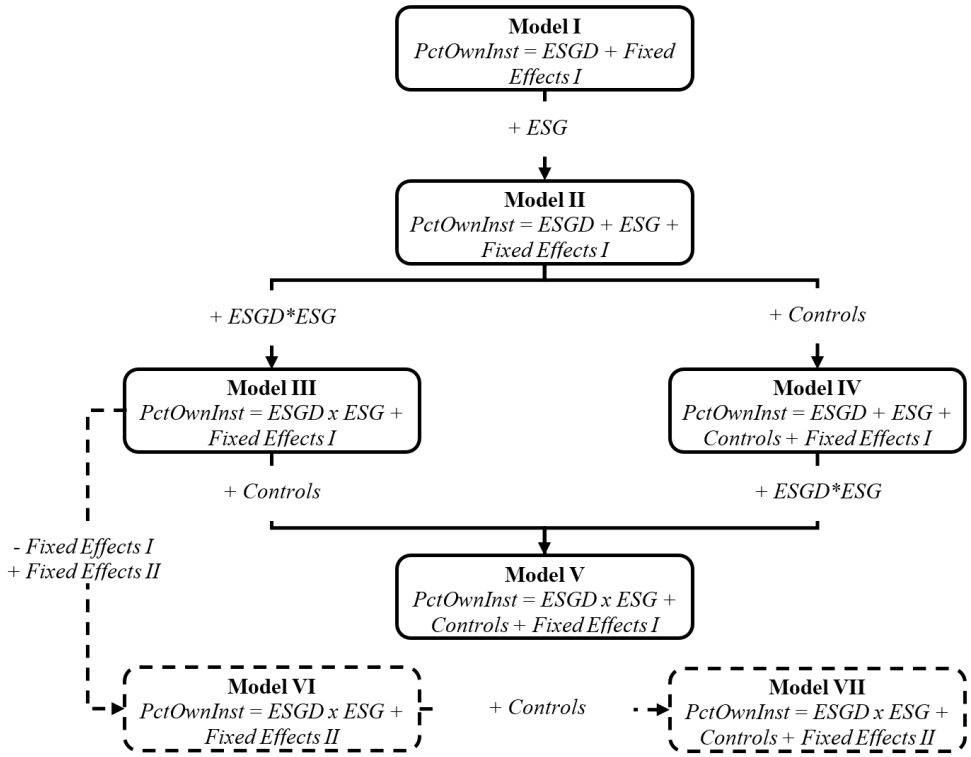

Figure 2: Incremental Development of the Main Regression Model

Illustration of the stepwise development of the univariate regression models to analyze the association between "ESGD" and "PctOwnInst". **Model I** examines the isolated impact of ESGD on institutional ownership, only controlling for Fixed Effects I (country-, industry-, and year-fixed effects). Each subsequent model builds upon this foundation by incorporating additional variables and interactions. The main model, **Model V**, is the culmination of this development and serves as the basis for all further analyses. To ensure robustness, **Model VI** and **Model VII** replace Fixed Effects I with Fixed Effects II by switching from country- and industry-fixed effects to firm-fixed effects.

is accurately estimated and its suggested effects are isolated from other influencing variables. This separation is especially relevant in ESGD research, where "disclosure changes [...] are likely to coincide with changes in firm economics and governance" (Healy & Palepu, 2001, pp. 430-431). Such corporate shifts might directly imply changes in ownership structure, making it vital to isolate the effects of ESGD from additional control variables.

To ensure the **validity** of the model, several steps are taken. The incremental development of the main regression model by adding explanatory variables and incorporating fixed effects supports the exogeneity. This approach controls for unobserved factors and reduces omitted variable bias. Furthermore, a regression model without outliers is calculated to maintain the accuracy of the estimated relationships, thereby supporting internal validity. Outliers regarding the dependent and the independent variables are identified using Cook's distance (with a threshold of $>4/n$) and removed from the estimation process to prevent distortions of the results. More support for validity is provided by a Lasso regression, which is employed to refine the model by identifying and eliminating unnecessary variables, thereby enhancing interpretability and reducing omitted variable bias. This helps to ensure that the model specification aligns closely with the theoretical constructs of interest. Furthermore, a Box-Cox transformation is applied to determine the optimal transformation for the dependent variable, improving the linearity and residuals' normality. A log transformation for the leading independent and dependent variables further addresses the linearity assumption of OLS.

To reinforce the **reliability** of the findings, further checks of the main regression model are conducted. The Variance Inflation Factor (VIF) values are calculated to assess multicollinearity among the independent variables. Additionally, Bootstrapping is applied to evaluate the robustness of the estimated coefficients by constructing confidence intervals for the estimations. This method provides insights into the precision of the model. The Durbin-Watson test is employed to assess the independence of errors by testing for autocorrelation in the residuals. This check is critical for ensuring the OLS assumption that the residuals are uncorrelated across observations. The Breusch-Pagan test examines homoscedasticity across all levels of the independent variables. This test addresses the OLS assumption of constant error term variance, making it an essential check for reliability. To further account for potential heteroscedasticity, robust standard errors were used in another coefficient test. This adjustment provides more reliable inference from the model estimates,

allowing for unbiased interpretation of coefficients.

Automated techniques like Lasso regression and bootstrapping ensure **objectivity** and minimize biases related to model assumptions.

An overview of all robustness tests and their results is shown in Appendix 15. These comprehensive robustness checks and their consistency with the main regression results help to confirm the credibility of the findings, ensuring that the impact of ESGD is accurately estimated.

4. Empirical Results

The following section presents the findings of the empirical analysis conducted in this study. Section 4.1 provides descriptive statistics and correlation analyses of the variables used in the regression models, offering an initial overview of the data and relationships between key variables. Section 4.2 summarizes the regression results, divided into three parts. Section 4.2.1 presents the findings from the multivariate analysis, examining the impact of ESGD on various ownership types simultaneously. Section 4.2.2 focuses on the univariate regression results, explicitly addressing the relationship between ESGD and institutional ownership. Section 4.2.3 covers the findings of additional analyses to further explore and validate the results of Section 4.2.2.

4.1. Descriptive Statistics and Correlation Analysis

The **descriptive statistics** in Table 1 provide an overview of the variables used in Model (V). The mean ESGD score of 58.8 suggests that the companies in the sample exhibit slightly higher transparency on average than their peers. Furthermore, they tend to act more ESG-friendly than comparable organizations due to their average relative ESG Performance score of 66.72. The mean beta value of 0.97 indicates that the average systematic risk of the companies in the sample is aligned with the overall market. The leverage ratio in the data sample has a mean of 40.74%, implying a moderate level of leverage across the companies. Institutional investors have an average share of 33.25%. The maximum value of 253.59% can be explained by the limitations of the Orbis dataset, as potential multiple counting of shareholdings can result in values above the natural limit of 100% (see Section 3.1).

Figure 3 illustrates the recent **development** of ESGD and the ownership distribution across different shareholder groups. Over the time horizon of this study, ESG transparency was continuously rising, resulting in an overall increase in the average ESGD level of 18.43% between 2016 and 2022. While average ownership of individuals, corporations, and government remains almost constant, institutional ownership declined from 2018 to 2022. This indicates a shift where institutional investors divested from the sample companies, transferring respective shares to "free float" owners like private investors who are not captured by the Orbis data set.

Figure 4 offers additional insights into the industries and countries in the sample and the respective levels of ESGD and institutional ownership. No discernible **pattern** emerges for ESGD, which remains consistent across sectors and regions. However, Western Europe stands out for having slightly lower ESGD scores across most industries despite the more advanced and often mandatory ESGD standards in developed Western European countries (see Section 2.1.1). In contrast, institutional ownership exhibits a clear geographic pattern: higher institutional shares in the sample companies are observed in Northern Europe and Northern America. At the same time, Western and Southern Europe show lower levels of institutional investment across industries. Overall, companies in the sample are primarily headquartered in Northern and Western Europe as well as in North America, as indicated by the high numbers of data points.

Table 2 **displays** the correlations between the explanatory variables and helps to identify potential multicollinearity issues in the dataset. The data show moderate correlations, with the highest absolute value of 0.45. These relatively low correlations, combined with the low VIF values shown in Appendix 20, minimize immediate multicollinearity concerns in the database. A positive correlation of 0.32 is observed between $ESGD$ and ESG, which is expected since ESGD is a component of the overall ESG score and directly influences it. Academic literature also explains this relationship through voluntary disclosure theory, as companies with better ESG performance tend to disclose more information (see Section 2.1.1). In contrast, companies with poor ESG performance appear more hesitant to disclose this information. With a correlation coefficient of 0.45 between ESG and $TotAsts$, larger companies tend to outperform smaller peers in ESG practices. Additionally, a 0.36 correlation coefficient between $TotAsts$ and Lev indicates that larger firms rely more on debt capital. A similar relationship exists between $TotAsts$ and $TrdVol$, with a correlation of 0.38. Lastly, a moderate positive correlation of 0.38 between MTB and ROA exists. This is reasonable since the regression model uses both variables as controls for firm performance from different perspectives.

4.2. Regression Results

4.2.1. Regression Results: Multivariate Analysis

Table 3 presents the results of the **multivariate regression** analysis, estimating the effects of $ESGD$ and ESG on multiple ownership types (corporate, government, individual, and institutional ownership) simultaneously. The ESGD and ESG scores used in the analysis are derived from Refinitiv and represent relative measures. Given the complexity of the multivariate regression and hypothesis $H1$ focusing on the impact of ESGD on ownership structure overall, the analysis is limited to a qualitative summary of the direction and significance of possible effects. The findings indicate the significance of nearly all variables in the model. Notably, $ESGD$, ESG, and $ESG * ESGD$ all suggest highly significant effects at the 0.1% level. The same model with Bloomberg's absolute equivalents is included in Appendix 4 and reveals some differences: While $ESGD$ remains significant, the coefficient

Table 1: Descriptive Statistics

	N	*Mean*	*Median*	*SD*	*Min*	*Max*
Refinitiv ESGD	4,733	58.80	57.76	14.68	0	90.80
Refinitiv ESG	4,733	66.72	69.85	16.44	3.91	95.74
TotAsts (mio)	4,733	133,897	16,218	436,815	56	7,967,699
Beta	4,733	0.97	0.94	0.44	-0.45	3.31
Lev	4,733	40.74	40.04	21.24	0	99.49
EPS	4,733	6.30	2.30	39.29	-257.20	1,595
Grwth	4,733	7.39	4.87	20.17	-80.83	613.63
TrdVol (mio)	4,733	817	68	2,632	0	30,172
ROA	4,733	7.52	5.87	12.35	-38.18	292.58
MTB	4,733	5.37	2.34	22.80	0.16	801.50
PctOwnInst	4,733	33.25	29.08	20.51	0	253.59

Summary statistics for the dataset after the data cleaning process, covering all observations and variables included in Model (V). TotAsts and TrdVol are transformed and presented in millions (mio). All variables are defined in Appendix 2. Summary statistics for all variables and the whole sample before cleaning can be found in Appendix 3.

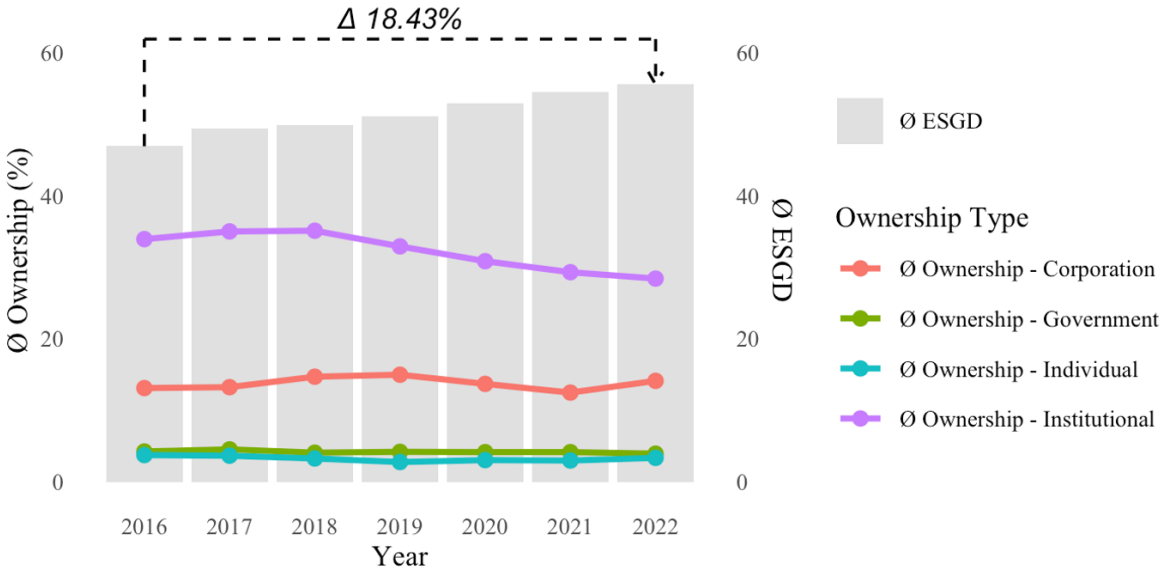

Figure 3: Development of Ownership and ESGD between 2016 and 2022

Development of ownership and ESGD over time. Ownership is aggregated as average ownership percentages for the different investor groups for each year. ESGD comprises the average absolute Bloomberg ESGD score for all companies annually (from 0 to 100). The absolute Bloomberg measure was selected to provide actual absolute levels and prevent distortions of the relative measure due to balancing effects within individual countries and industries.

is weaker with significance only at the 5% level. ESG remains significant at the 0.1% level, but $ESGD * ESG$ shows no significant connection. Furthermore, the equivalent with firm-fixed effects instead of country- and industry-fixed effects results in significant estimations (at 0.1% level) for the relative and absolute versions (see Appendix 5 and Appendix 6).

4.2.2. Regression Results: Univariate Analysis

Table 4 presents the results of the **univariate regression** analysis testing $H2$, which estimates the effect of ESGD on institutional ownership specifically. As explained in Section 3.3, this analysis is based on Model (V) and several variations that introduce incremental adjustments.

Furthermore, this approach includes the **relative ESG measures** from Refinitiv for disclosure and performance scores. For $ESGD$, Model (V) reveals a positive coefficient of

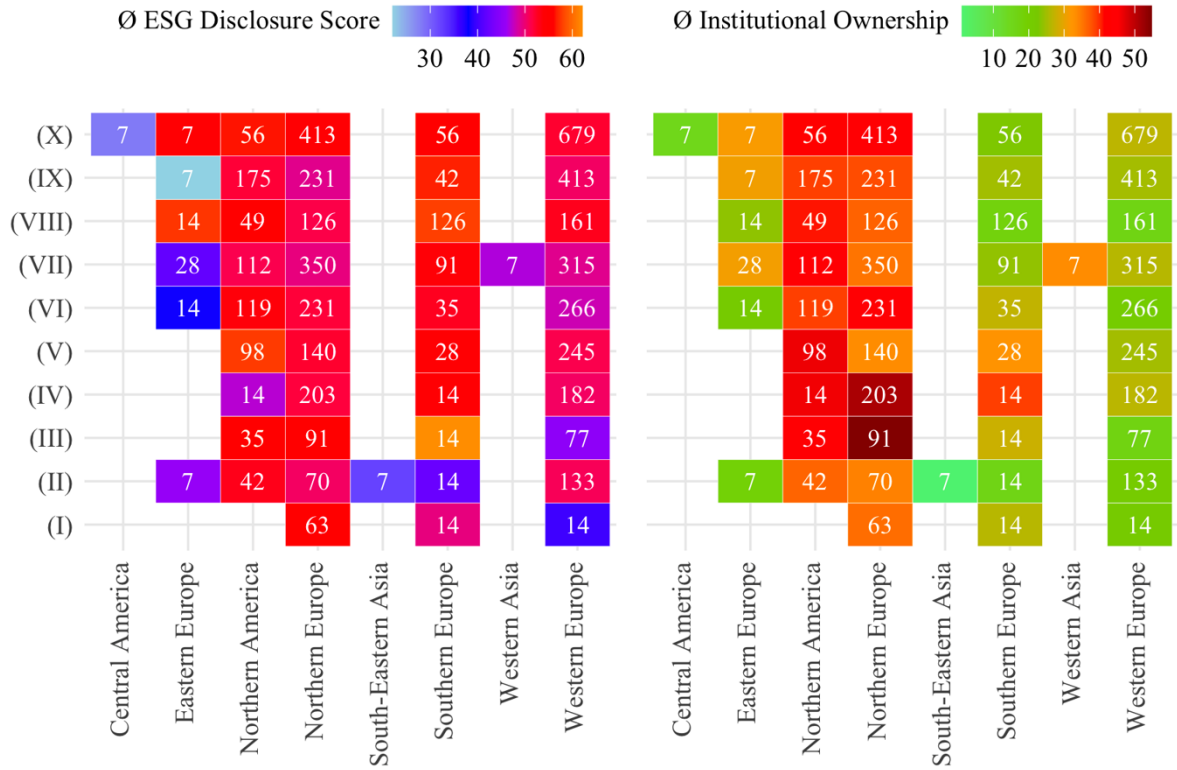

Figure 4: Region-Industry-Matrix for ESGD and Institutional Ownership

Region-Industry-Matrix that visualizes the average Bloomberg ESGD score on the left and the average institutional ownership on the right for all Region-Industry combinations. The Bloomberg measure was selected to provide actual absolute levels and prevent distortions of the relative measure due to balancing effects within individual countries and industries. This aggregation of countries and industries from more detailed values serves two purposes: a) for illustration and b) to identify more general and reliable patterns, as the original dataset contains limited observations for some combinations. The Roman numbers assigned to each industry are as follows: (I) Containers & Packaging, (II) Transportation & Logistics, (III) Hospitality & Entertainment, (IV) Real Estate & Construction, (V) Healthcare & Pharmaceuticals, (VI) Consumer Goods & Retail, (VII) Financials, (VIII) Energy & Utilities, (IX) Technology, Media, and Telecommunications (TMT), and (X) Industrial & Manufacturing. The numbers within each field represent the number of observations included in that specific combination, while white fields indicate combinations with no observations.

Table 2: Correlation Matrix

	ESGD	*ESG*	*TotAsts*	*Beta*	*Lev*	*EPS*	*Grwth*	*TrdVol*	*ROA*	*MTB*
ESGD	1.00									
ESG	0.32	1.00								
TotAsts	0.22	0.45	1.00							
Beta	0.05	0.12	0.18	1.00						
Lev	0.13	0.20	0.36	0.08	1.00					
EPS	0	0	0.10	0.02	-0.03	1.00				
Grwth	-0.12	-0.20	-0.12	-0.09	-0.13	0.02	1.00			
TrdVol	0.23	0.27	0.38	0.11	0.07	0.03	-0.04	1.00		
ROA	0.05	-0.08	-0.26	-0.09	-0.24	0.06	0.10	0.09	1.00	
MTB	0.08	-0.03	-0.09	-0.02	0.11	0	0.06	0.06	0.38	1.00

Matrix for Pearson correlations of the independent variables in the main model. All variables are defined in Appendix 2.

Table 3: Multivariate Regression Results

	DF	*Pillai*	*approx F*	*num Df*	*den Df*	*Pr(>F)*	
Refinitiv ESGD	1	0.055	67.193	4	4636	0.000	***
Refinitiv ESG	1	0.026	31.271	4	4636	0.000	***
*Refinitiv ESGD*ESG*	1	0.006	7.382	4	4636	0.000	***
Log(TotAsts)	1	0.067	82.773	4	4636	0.000	***
Beta	1	0.004	4.919	4	4636	0.001	***
Lev	1	0.011	12.781	4	4636	0.000	***
EPS	1	0.008	9.383	4	4636	0.000	***
Grwth	1	0.002	2.543	4	4636	0.038	*
Log(TRVOL)	1	0.369	678.653	4	4636	0.000	***
ROA	1	0.007	8.238	4	4636	0.000	***
MTB	1	0.001	1.675	4	4636	0.153	
Fixed effect: Year	6	0.034	6.571	24	18556	0.000	***
Fixed effect: Industry	52	0.284	6.822	208	18556	0.000	***
Fixed effect: Country	24	0.406	21.833	96	18556	0.000	***

*, **, *** Indicate statistical significance at the 5%, 1%, and 0.1% level, respectively
This table presents the results of the multivariate regression analysis (multivariate analysis of variance; „MANOVA“) on PctOwnInst, PctOwnCorp. PctOwnGov and PctOwnInd, as introduced in Section 3.3. All variables are defined in Appendix 2.

0.072, which is statistically significant at the 5% level. This finding indicates that a one-unit increase in the ESGD score is associated with a 0.072 percentage point increase in institutional ownership. Furthermore, the analysis demonstrates a positive association between $ESGD$ and $PctOwnInst$ across six of the seven model variations, with four suggesting statistically significant relationships. Additionally, institutional ownership is found to mostly react significantly positively to ESG, with a coefficient of 0.242 in Model (V). This positive significance is consistent across all models that include country, year, and industry as fixed effects. However, a negative response is observed in the models that incorporate firm-fixed effects instead. The mainly positive coefficients of $ESGD$ and ESG are at least partially offset by their interaction term $ESGD * ESG$, which is significantly negative in Model (V). The adjusted R-squared values range from 0.460 in the simplest Model (I), which includes only $ESGD$ and fixed effects, to 0.826 in Model (VII) with firm fixed effects and all control variables included.

The equivalent analysis with **absolute ESG measures** from Bloomberg is presented in Appendix 7. Table 5 **compares** the coefficients for the main variables $ESGD$, ESG, and $ESGD * ESG$ between Bloomberg's absolute measures and Refinitiv's relative measures across all regression models (I) to (VII). In Model (V), the coefficients exhibit notable differences for the absolute Bloomberg measures: Contrary to the anticipated positive association, the $ESGD$ variable reveals a non-significant negative impact on institutional ownership. ESG demonstrates a positive effect that lacks statistical significance, in contrast to the significant findings noted earlier for the Refinitiv measure. The interaction term, though positive, does not reach significance. Overall, the effects derived from the absolute ESG measures are less consistent and weaker across the various models than those observed with relative ESG data.

Due to the heterogeneous results obtained from the Bloomberg measures and to maintain the study's scope, the focus of further analyses will be on Refinitiv measures. This decision is driven by the need for consistency and clarity, given the robust findings of the Refinitiv data. Focusing on these relative measures offers a clearer narrative and potentially more actionable insights into the impact of ESGD. As explained in Section 3.3, further analyses are built on the initial findings and should examine $H2$ from different perspectives. Their results, presented in the subsequent section, will also provide a basis to test the robustness of the main model. This progression will ensure that the interpretations in Section 5 are well-supported and offer a more comprehensive understanding of the impact of ESGD on ownership dynamics.

4.2.3. Regression Results: Further Analyses

The results of the further analysis provide several important insights into the relationship between ESGD, ESG performance, and institutional ownership. First, **lagged** variations of Model (V) examine institutional ownership levels over the five years after the observations of $ESGD$ and ESG performance. Across all observed years, the signs of the relationships remain consistent: $ESGD$ and ESG consistently show a positive association, and the coefficient for the interaction

Table 4: Univariate Regression Results

	(I)	*(II)*	*(III)*	*(IV)*	*(V)*	*(VI)*	*(VII)*
Refinitiv ESGD	0.068***	0.042**	0.164***	-0.003	0.072*	0.027	0.001
Refinitiv ESG		0.061***	0.230***	0.143***	0.242***	-0.006	-0.083*
*Refinitiv ESGD*ESG*			-0.003***		-0.002**	-0.0002	0.0004
Log(TotAsts)				-3.757***	-3.749***		0.440
Beta				-0.882	-0.909		0.044
Lev				0.048***	0.050***		-0.009
EPS				0.001	0.001		0.002
Grwth				-0.025**	-0.025*		0.009
Log(TRVOL)				1.408***	1.409***		
ROA				-0.035*	-0.034*		0.020
MTB				-0.009	-0.009		-0.006
Fixed Effects	Y, I, C	Y, I, C	Y, I, C	Y, I, C	Y, I, C	Y, F	Y, F
Constant	25.719***	23.269***	15.820***	82.073***	77.278***		
Observations	*5,229*	*5,229*	*5,229*	*4,733*	*4,733*	*5,229*	*4,770*
R^2	*0.469*	*0.470*	*0.471*	*0.541*	*0.541*	*0.819*	*0.855*
Adjusted R^2	*0.460*	*0.461*	*0.463*	*0.531*	*0.532*	*0.786*	*0.826*
Residual Std. Error	*15.466*	*15.444*	*15.427*	*14.041*	*14.036*	*9.735*	*8.557*
F Statistic	*53.983***	*53.681***	*53.323***	*59.346***	*58.795***		
df	*5,144*	*5,143*	*5,142*	*4,640*	*4,639*	*4,420*	*3,978*

*, **, *** Indicate statistical significance at the 5%, 1%, and 0.1% level, respectively

Coefficients for different univariate regressions on PctOwnInst as dependent variable: (I) includes only ESGD and fixed effects; (II) adds ESG performance; (III) adds the interaction term ESG*ESGD; (IV) adds controls, leaves out the interaction term ESG*ESGD; (V) adds the interaction term ESG*ESGD and controls; (VI) and (VII) add firm-fixed effects, with (VI) including the interaction term, and (VII) adding controls but excluding share volatility (treated as a quasi-fixed effect, as measured once per firm for the whole sample period; thus included in firm-fixed effects). Fixed effects abbreviations: Y = Year, I = Industry, C = Country of Headquarters, F = Firm. All variables are defined in Appendix 2.

Table 5: Comparison of Estimated Effects for Refinitiv and Bloomberg Measures

	ESGD		*ESG*		*ESGD * ESG*	
Model	*Refinitiv*	*Bloomberg*	*Refinitiv*	*Bloomberg*	*Refinitiv*	*Bloomberg*
(I)	+0.068***	+0.018				
(II)	+0.042**	+0.011	+0.061***	+0.436**		
(III)	+0.164***	+0.085**	+0.230***	+1.580***	-0.003***	-0.022**
(IV)	-0.003	-0.00003	+0.143***	+0.569***		
(V)	+0.072*	-0.015	+0.242***	+0.337	-0.002**	+0.004
(VI)	+0.027	+0.120**	-0.006	-0.047	-0.0002	-0.009
(VII)	+0.001	+0.060	-0.083*	-1.043	+0.0004	+0.003

*, **, *** Indicate statistical significance at the 5%, 1%, and 0.1% level, respectively

Summary of the coefficients for the main independent variables (ESGD, ESG, and ESGD*ESGD) across all seven univariate regressions of PctOwnInst, as presented in Section 3.3. Comparison of the results using Refinitiv versus Bloomberg measures. The detailed regression results are shown in Table 3 (Refinitiv) and Appendix 7 (Bloomberg). All variables are defined in Appendix 2.

term $ESGD * ESG$ is negative. In contrast, while ESG maintains its significance throughout the entire period, significance for $ESGD$ and $ESGD*ESG$ varies as it is only identified in the fourth year. The adjusted R-squared values range between 0.547 and 0.576 across the models.

The transformation of ESG, $ESGD$, and $PctOwnInst$ into Year-over-Year (YoY) **percentage changes** provides a different analytical perspective. However, regression models incorporating either same-year or lagged deltas[10] reveal no significant associations: The estimators for $\Delta ESGD$, ΔESG, and their interaction term $\Delta ESGD * \Delta ESG$ predict positive but insignificant effects on institutional ownership changes. The adjusted R-squared value dropped to 0.002 and 0.004, respectively.

Splitting the data sample into groups with low and high stock trading volumes provides further differentiation. In firms with low stock turnover, negative coefficients are estimated for $ESGD$ (significant) and ESG (insignificant), while $ESGD*ESG$ is positive but insignificant. Conversely, in firms with high trading volumes, both $ESGD$ and ESG exhibit significant positive impacts on institutional ownership, whereas $ESGD * ESG$ becomes significantly negative. The adjusted R-squared values show a noticeable difference between the two groups, with 0.295 for the low liquidity group and 0.629 for the high liquidity group.

The **PVAR model** reveals a unidirectional relationship between ESGD and institutional ownership. While institutional ownership is not predicted to significantly influence subsequent $ESGD$, $ESGD$ is assumed to exert a statistically significant positive effect on subsequent institutional ownership levels (coefficient of 0.0478, significant at the 5% level). In addition, $ESGD$ is also significantly connected to its own future levels (positive) and future ESG performance (negative). However, the findings suggest no significant reaction of $ESGD$ to earlier institutional ownership levels or ESG performance.

The **Difference-in-Difference** approach sheds light on the impact of substantial increases in ESGD on institutional ownership. Companies in the treatment group, which encountered a notable rise in ESGD during the sample period, experienced a smaller decline in institutional ownership compared to the control group with stable ESGD levels: The average institutional ownership in the treatment group decreased by -5.0 percentage points (pp) from 24.5% in 2016 to 19.5% in 2022, while the control group faced a decline from 25.5% to 17.0% (-8.5pp).

Lastly, the analysis of **ownership concentration** shows no significant association between ESGD and ownership structure. While the estimation predicts a positive but insignificant effect of $ESGD$, the coefficients of ESG and $ESGD*ESG$ have a negative insignificant sign. The adjusted R-squared for this model is 0.092.

[10] The variation with one-year lagged deltas compares changes in $ESGD$ and ESG (between year t-1 and t=0) with ownership changes in the subsequent year (between t=0 and t+1). In contrast, the model with same-year deltas calculates all delta values between t-1 and t=0. The detailed models can be found in Appendix 7.

These results underscore the complexity of the relationships between ESGD, ESG performance, and institutional ownership and emphasize the importance of considering various dimensions in the analysis. The models for further analyses are summarized in Appendix 8, with detailed results presented starting from Appendix 9.

5. Discussion and Implications

The upcoming section analyzes the results from Section 4 and explores their broader implications. Section 5.1 interprets the results, discussing how the findings relate to the initial hypotheses and existing literature. Section 5.2 evaluates the strengths and limitations of the study. It highlights the robustness of the findings while also acknowledging potential constraints. Section 5.3 explores the implications of the findings for various stakeholders, including companies, investors, and policymakers. It also suggests possible directions for future research in this area.

5.1. Interpretation of Findings

The findings from the multivariate regression in Section 4.2.1 largely support **hypothesis** $H1$, suggesting that ESGD influences ownership structure in general. Across most model variations, the results were consistent, indicating a statistically **significant effect of ESGD** on the distribution of a firm's shares. Only Bloomberg's absolute ESGD measure, in combination with country- and industry-fixed effects, appears to have a less significant impact on ownership structure. The overall trend aligns with the theoretical rationale. Prior research suggests that ESGD serves two primary functions: On the one hand, it reduces information asymmetries, offering investors additional insights into the company (Dhaliwal et al., 2011, p. 90). On the other hand, it acts as a legitimizing tool, helping firms align with societal expectations and investor preferences (de Villiers & van Staden, 2006, pp. 763-764). The significant differences in ownership structures for varying ESGD levels in Section 4.2.1 suggest that shareholders respond differently to the additional information and legitimacy ESGD provides. This differential response among investors is consistent with the findings of Cho et al. (2013, p. 5), who emphasize that investors are not homogeneous in their degree of informedness. ESGD contributes to bridging this informational gap, but not all investors process and value this information uniformly. Some investors, particularly those with greater resources and expertise, are better equipped to gather and utilize ESG data in their decision-making processes (Cho et al., 2013, p. 5). Even if different investor types would perceive the additional information identically, they might differ in how much importance they attribute to non-financial data. For instance, long-term investors may prioritize long-term sustainability practices (Qa'dan & Suwaidan, 2019, p. 35) and thus react more heavily by adjusting their shareholdings in reaction to new information about those practices. Consequently, the distinct characteristics among investor groups

(see Section 2.2.1) lead to disparate responses to ESGD, which creates unique ownership structures and distributions of shareholdings. The more robust results observed for **relative** ESGD measures highlight that investors may be more concerned with how much a company discloses compared to its peers rather than the absolute volume of ESG information disclosed. This could suggest that ESGD is particularly influential during investment decision-making, where investors select between competing firms. Firms that disclose more ESG information relative to their industry peers may be viewed as more transparent, which fosters investors' confidence and, thus, stock liquidity (Healy & Palepu, 2001, p. 429). This greater liquidity leads to higher stock- and investor turnover, which potentially shifts the composition of the investor base.

However, it is essential to acknowledge that the multivariate regression approach does not allow for a deeper quantitative exploration of the association. While it indicates whether ESGD has an impact in general, it does not provide insight into the direction and the actual strength, **limiting the interpretability** of the results. As a direct consequence, it remains unclear to what extent the significant interaction term might offset the potential effect of ESGD. While significance is observed, the specific direction or magnitude remains ambiguous. Moreover, the model offers no information about the impact of ESGD on the particular ownership types, leaving unanswered questions about how ESGD might influence the distribution of shares to explicit investor groups. As a result, it is not possible to connect these findings to the literature on specific ownership types and address the theory and empirical evidence presented in Section 2.4. Nonetheless, these limitations do not oppose the primary goal of $H1$, as this hypothesis was intended to explore the broader relevance of ESGD for ownership structure. This investigation lays the groundwork for a more detailed analysis of institutional ownership and its specific relationship with ESGD.

Following this foundation, the primary analysis in Section 4.2.2 examines the impact of ESGD on institutional ownership and reveals mostly consistent support for **hypothesis** $H2$: For the **relative ESGD measure**, the univariate regression models indicate a **significant positive** effect of ESGD on institutional ownership levels in most model versions. This result suggests that institutional investors, known to play a pivotal role in corporate governance and monitoring (Serafeim, 2015, p. 36), are responsive to ESGD. The positive impact of ESGD appears to be particularly strong for firms that are typically more attractive to short-term institutional investors: Applied to a subgroup of companies with high trading volumes, the regression model shows an even stronger association between ESGD and institutional ownership than on the entire data sample.

The general positive effect aligns with the expectations of the academic literature. As discussed in Section 2.4, there are multiple explanations for this relationship. Dhaliwal et al. (2011, p. 80) argue that ESGD attracts long-term institutional investors by facilitating their monitoring and governance role. Another rationale might be the reduced information asymmetries among investors because of increased transparency, resulting in higher stock liquidity. This liquidity is a critical factor for institutional investors with short-term horizons, who prefer to invest in markets where they can trade easily and efficiently (Diamond and Verrecchia, 1991, pp. 1326-1327; Healy and Palepu, 2001, p. 429). Legitimacy theory provides another perspective: by disclosing ESG performance, companies demonstrate alignment with societal values, which builds stakeholder trust and appeals to investors who prioritize social responsibility. This transparency signals a commitment to sustainable practices, making the company more attractive to socially conscious institutional investors (de Villiers and van Staden, 2006, p. 764; Suchman, 1995, p. 574). Even though the analysis gives no insights into the causes of this relationship, those arguments could explain the behavior of institutional investors.

While the results from Section 4.2.2 indicate a positive impact of ESGD on institutional ownership, they also suggest this influence may not stem from entirely new information for institutional investors: The **negative interaction term** between ESGD and ESG performance indicates that the effect of ESGD weakens as firms' ESG performance improves. This finding contradicts the result from Dhaliwal et al. (2011, p. 80) that higher transparency has a stronger impact on institutional ownership at higher levels of ESG performance. Instead, it may reflect that institutional investors, already possessing a high level of information about the firms' ESG profiles, are less surprised by the content of the disclosed information. This is likely due to their naturally superior information level (Cho et al., 2013, p. 5). Moreover, the negative interaction term suggests that institutional investors might view the disclosure act itself, rather than its specific ESG content, as valuable. An alternative explanation for the negative interaction might be that institutional investors exploit reduced information asymmetries in other investor groups to their advantage: As more information becomes available to other, less informed market participants, the demand for shares of the good-performing firms increases. This higher demand is driven by the growing preference for companies with strong ESG performance (Morgan Stanley Institute for Sustainable Investing, 2024) and higher stock liquidity, which results from greater transparency (Healy & Palepu, 2001, p. 429). According to the principles of supply and demand, the higher interest in good-performing companies would enable institutional investors to sell the respective shares at higher prices (Marshall, 2013, p. 290 et seq.). This strategic behavior would explain the weaker association between ESGD and institutional ownership in firms with better ESG performance. Generally, the negative interaction term could imply that firms with strong ESG performance may not need to disclose as aggressively to attract institutional investors. For these firms, a targeted, strategic disclosure approach focusing on aspects less visible or quantifiable to external investors may be more effective. In contrast, firms with weaker ESG performance might use additional disclosures to legitimize their practices and address concerns about sustainability. Therefore, these firms might

still attract institutional investors, even if their ESG performance remains relatively low.

Overall, the robustness checks (see Appendix 15) indicate a strong and consistent trend, further validating the findings on the impact of ESGD and its interaction term with ESG performance. However, the previous findings are inconsistent when using the **absolute ESGD** measures from Bloomberg, where the coefficients are weaker and less robust. This difference may indicate that institutional investors take a relative view of ESGD, evaluating a firm's disclosure performance by comparing it to similar firms in its industry rather than focusing solely on absolute ESGD levels. By placing ESGD in context, investors may prioritize investment opportunities that stand out positively within their sector rather than those meeting an absolute standard across industries. This approach allows institutional investors to assess a firm's ESG transparency compared to its peers, making the evaluation more relevant to the company's competitive position. Alternatively, the inconsistent results may indicate that the effect of ESGD on institutional ownership is less reliable than initially suggested.

Questions about the **reliability** are also raised by the mixed results of the additional analyses in Section 4.2.3. The difference-in-difference approach supports a positive impact of ESGD on institutional ownership by showing that ESGD diminishes the decline in institutional ownership between 2016 and 2022. In contrast, the results for lagged ownership levels and percentage changes in ownership were primarily positive but not significant. This insignificance suggests that ESGD does not lead to an immediate or measurable reaction from institutional investors in the form of portfolio adjustments, challenging the assumption that ESGD drives active changes in ownership structures. Instead, ESG transparency tends to influence only the long-term orientation of institutional investors rather than triggering immediate buy or sell decisions. This lack of visible short-term reallocation weakens the overall suggested impact of ESGD on institutional ownership, indicating that the increased transparency may not be as influential as some literature suggests. These findings are supported by the analysis of ownership concentration, which is often linked to institutional investors as they are associated with higher total ownership stakes and concentrated ownership (Diamond and Verrecchia, 1991, p. 1327; Hoq et al., 2010, p. 24). The results show an insignificant positive coefficient for ESGD and encourage that the immediate impact of ESG transparency on ownership structure is limited.

The mixed findings also raise questions about the **bi-directional relationship** between ESGD and institutional ownership. Ntim and Soobaroyen (2013, p. 472) suggest that institutional shareholders support higher disclosure to project a socially responsible image. Furthermore, they might push for ESGD to reduce information asymmetries between the company and other shareholders (Ntim & Soobaroyen, 2013, p. 472). Therefore, the direction of causality remains ambiguous, with theoretical explanations supporting both possibilities (Healy & Palepu, 2001, p. 431). A PVAR analysis was conducted to address this, and possible relationships in both directions were examined. The results indicate an effect of ESGD on ownership but no significant impact of ownership on ESGD, which contradicts literature such as Ramdhony et al. (2024, p. 531). The discrepancy with Ramdhony et al. (2024, p. 531) might stem from the different investor types analyzed, as their study focused on government-, director-, and block ownership rather than institutional investors. Additionally, their model was applied to a sample of Mauritian firms in an emerging economy context, whereas this study examines companies from primarily developed countries.

In summary, while evidence supports the positive impact of ESGD on institutional ownership, the findings are complex and not fully robust across different perspectives and measurements.

5.2. Strengths and Limitations

In contrast to the ambiguity in the further analyses of Section 4.2.3, the main model in Section 4.2.2 demonstrates strong **robustness** and meets various **quality criteria** (see Appendix 15). Firstly, several models and methods support the main model's validity and findings: The model without outliers, Lasso Regression, and models with Box-Cox and log transformations show mostly consistent signs and significance of the coefficients compared to Model (V). For the reliability of the main regression, a VIF test for multicollinearity, the Breusch-Pagan test for homoscedasticity, and the Durbin-Watson test for autocorrelation provide valid results. Furthermore, techniques such as bootstrapping and coefficient tests using robust standard errors enhance the reliability of the results and minimize uncertainty: The confidence interval is predominantly positive, and the robust coefficient for $ESGD$ is identical to the estimate in Model (V). Additionally, objectivity is supported by automated techniques like Lasso regression and bootstrapping, which help to eliminate subjective model assumptions that could be introduced by the author. The main model's performance is further confirmed by a high R-squared value, particularly in comparison to similar studies, and indicates a strong explanatory power. The analysis benefits from a large sample size that spans an extensive, more recent period, primarily within the context of a developed economy. This more recent time frame is particularly relevant to the current dynamics of ESG transparency, enabling a more comprehensive investigation than existing studies. Multiple models account for different perspectives, striving to develop a well-rounded understanding of the relationship between ESGD and institutional ownership. However, this comprehensive picture is not entirely achieved because of the inconsistency in the results of further analyses, representing a significant **limitation** for the overall meaningfulness of the findings. In addition, even with an extended time frame compared to existing literature, the study may still fall short in capturing the reactions of investors with long-term horizons, such as institutional investors. The sample period of six years, from 2016 to 2022, might not be long enough to fully observe delayed or gradual responses.

Because of those longer investment horizons, investors may not adjust their portfolios quickly in response to increased ESGD but react slower than the six years covered in this study. Moreover, while the univariate regression examines the effect of ESGD on institutional ownership in isolation, its design ignores the interrelated nature of ownership dynamics. Any change in institutional ownership is inherently linked to shifts in the shares held by other investor types, which may lead to positive or negative consequences depending on their unique characteristics. Thus, while insights can be drawn regarding institutional ownership, it is crucial to consider the simultaneous changes occurring among other shareholder groups. This interrelation also includes the treatment of the free float, particularly shares held by private or retail investors who are not captured in the Orbis database and, therefore, not included in any analysis. This exclusion is justified, as including estimations of these shares could introduce distortions due to the potential double counting of shareholding links within Orbis, making the shareholdings not additive to 100%. Double counting generally poses a significant weakness in the ownership data, potentially leading to inaccurate results. In contrast to the potential ambiguities regarding the design of ownership variables, the construction of the ESGD measures used in this study is precise and incorporates different perspectives (absolute vs. relative). However, a notable gap in those measures is the failure to differentiate between mandatory and voluntary disclosures. This distinction could offer further insights for companies, particularly in determining whether to enhance their disclosures beyond the levels required by existing regulatory frameworks.

5.3. Implications and Outlook

The evidence from this study suggests that ESGD impacts a company's ownership structure, though it is limited to relative ESGD and reflects some inconsistencies in the results. The findings indicate that companies can enhance their appeal to institutional investors through increased ESGD. This idea is particularly relevant for firms with historically poor ESG performance that have been reluctant to share such information. By increasing transparency, these companies may attract institutional investors even though the disclosed information reveals negative facts about the company. While the results in this paper suggest a positive connection to institutional ownership, it is essential to recognize that the relationship is not universally applicable. Future research could benefit from differentiating between various types of institutional investors, such as hedge funds, pension funds, and banks, as their investment objectives and strategies may differ significantly. Additionally, considering the varying time horizons among these investors could provide more nuanced insights into how ESGD influences institutional ownership. Moreover, as highlighted by Paul Polman, the former CEO of Unilever, companies should aim to attract a shareholder base that aligns with their strategic goals. This perspective underlines that institutional investors should not be regarded as the ultimate solution for a company's success. Thus, expanding the focus beyond institutional investors to examine how ESGD influences other types of investors or investor characteristics might help companies shape a shareholder base that is more aligned with their strategy. One promising avenue would be to examine the distinctions between mandatory and voluntary disclosures, particularly regarding regulatory frameworks and how they shape corporate behavior. In environments with strict mandatory disclosure requirements, companies have less flexibility to adapt their practices strategically. In contrast, voluntary disclosure settings offer more freedom, allowing companies to shape their transparency and influence ownership dynamics to attract various types of investors (Lang & Lundholm, 1996, p. 468). Those findings could provide more practical guidance for companies and insights for regulators about the different effects of mandatory and voluntary disclosure of ESG information. Additionally, extending the analysis to encompass a longer time horizon may help capture the long-term reactions of investors to ESGD. Furthermore, future studies could explore possible connected effects of ESGD and institutional ownership on a company's financials. As the theory assumes a positive economic impact for increased disclosure and institutional ownership (see Section 2.1.2 and 2.2.2), a potential interaction effect between both factors might further lever those financial benefits.

A similar approach is already taken by Ntim and Soobaroyen (2013, p. 484), who investigate the moderating effect of CSR disclosure on corporate performance through ownership variables. They suggest a negative but insignificant impact of institutional ownership on corporate performance for increasing CSR levels. Expanding this approach could provide insights into how companies can capitalize on the indirect effect of increased institutional ownership through higher ESG transparency.

6. Conclusion

This paper investigates if ESGD impacts a company's ownership structure. Essential insights are drawn from a comprehensive examination of the relationship between ESGD and ownership dynamics, contributing to the growing body of literature on sustainable investing. The findings indicate a significant effect of ESGD on ownership structure in general, suggesting that the nature and extent of ESG transparency influence ownership dynamics. Further quantitative interpretation is limited due to the multivariate research design employed. However, the results suggest that the general impact of ESGD on ownership structure is meaningful and warrants deeper investigation in future research endeavors. One of the most critical areas identified and examined in this study is the role of institutional investors and their reaction to ESGD. The analysis conducted in this paper reveals that, while not entirely consistent, the estimated effect of ESGD on institutional ownership is significantly positive, accompanied by a significant negative interaction term with ESG performance. This

finding suggests that institutional investors place considerable importance on ESG transparency, even when the actual content of those disclosures may not reflect high ESG performance. Theory often explains such trends with the monitoring responsibilities of institutional investors, who require comprehensive information to assess potential risks. Interestingly, the results imply that additional disclosure of negative ESG performance is not less attractive to institutional investors than information about positive ESG performance. Given their existing information advantage, institutional investors may already possess insights into ESG performance that diminish the surprising effect of damaging disclosures. Furthermore, the analysis highlights differences between absolute and relative measures of ESGD. Institutional investors appear to prioritize relative ESG transparency – evaluating a company's disclosures in relation to its peers – over absolute disclosure levels. This finding indicates that relative comparisons of disclosure levels among similar companies provide a more consistent and precise understanding of how ESG transparency is perceived in the context of industry standards. Despite these valuable insights, the study has its limitations. The results reveal some inconsistencies or contradictions, indicating a need for further investigation. Additionally, the time horizon of the study, spanning a maximum of six years, may not be long enough to capture investors' comprehensive reaction to changes in ESG disclosures. Potential distortions arising from the variable construction, such as double counting of ownership links and the lack of differentiation between mandatory and voluntary ESGD, further complicate the analysis.

To build on the findings of this research, future studies should focus on several key areas. First, a deeper examination of the distinctions between voluntary and mandatory disclosures, particularly in the context of regulatory frameworks, could provide valuable insights into how different disclosure types affect ownership structures. Furthermore, future research could differentiate institutional ownership and examine the impact of ESGD on specific types of institutional investors, such as hedge funds, pension funds, and banks, while also considering their varying investment horizons. Additionally, exploring other ownership types, such as individual or government investors, and concentration levels may yield a more nuanced understanding of the interaction between ESG transparency and ownership dynamics. Finally, investigating the interaction effect between ESGD and institutional ownership on company performance would be beneficial, adding further depth to this critical area of research.

In conclusion, this thesis offers a foundational exploration of a contemporary topic with the potential for valuable insights for companies, legislators, and investors. The interplay between ESGD and ownership structure is increasingly relevant as the demand for transparency and accountability in corporate governance rises. This study opens avenues for further research that can enhance understanding and inform practices in sustainable investing.

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