

Do institutional investors care about material ESG disclosure? *

Evidence from the SASB standards

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Abstract

This paper examines the relationship between institutional ownership and SASB disclosure, by applying a linear probability model with fixed effects to our panel dataset. We find that certain groups of institutional investors demand SASB disclosure, and that their demand is sensitive to the disclosure costs faced by firms, namely information production and proprietary costs. Ownership by hedge funds is negatively associated with SASB disclosure in most regression specifications, while pensions sponsors, family offices and trusts, and insurance companies have a positive association in certain regression specifications. We attribute different demands for SASB disclosure across institution types to different ESG preferences, and discuss various motivations behind them, such as investment horizons, risk management, social norms, and universal ownership. Overall, our results provide evidence of both institutional and economic theories of disclosure, i.e. institutional investors demand SASB disclosure, but they are also sensitive to disclosure costs.

Keywords: ESG disclosure, SASB standards, institutional ownership, financial materiality, sustainable finance

JEL classification: G23, G34, D62

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List of Abbreviations

AUM	Assets under management
CDP	Carbon Disclosure Project
CSR	Corporate Social Responsibility
ESG	Environmental, Social and Governance
FE	Fixed effects
GDP	Gross domestic product
GRI	Global Reporting Initiative
HHI	Herfindahl-Hirschman index
IAG	Investor Advisory Group
IFRS	International Financial Reporting Standards Foundation
IIRC	International Integrated Reporting Council
ISIN	International Securities Identification Number
ISSB	International Sustainability Standards Board
LPM	Linear probability model
R&D	Research and Development
SASB	Sustainability Accounting Standards Board
TCFD	Task Force on Climate-Related Financial Disclosure
US	United States
VRF	Value Reporting Foundation

1 Introduction

Many institutional investors recognize that environmental, social, and governance (ESG) criteria, such as climate risk, have a financial impact on their portfolio companies, and they engage with them to mitigate this risk (Krueger et al., 2020). In fact, nearly 4,000 institutions representing around \$120 trillion in assets under management (AUM) signed the United Nations Principles for Responsible Investment Initiative (UNPRI, 2021). In addition, institutional ownership of public companies has increased rapidly over the past decade. For example, in the United States, the financial assets held by institutional holders increased by more than 50% between 2012 and 2019 and constituted about three times of the country’s GDP in 2019 (OECD, 2020). Their increasingly dominant position paired with their long-term and diversified holdings positions them as an important force in addressing relevant externalities, such as climate change and social inequality.

However, investors require accurate, timely, and material information from companies to do so. While market mechanisms for accounting metrics were refined over time, ESG reporting poses some challenges to investors. ESG disclosure is spread across different frameworks and more than half of the divergence of ESG ratings traces back to rating agencies focusing on different metrics for the same ESG dimension (Berg et al., 2022). Furthermore, firms that provide more sustainability disclosure tend to have more disagreement in their ESG ratings (Christensen et al., 2022). These findings indicate the need for more effective ESG disclosure with a common understanding and interpretation of reported metrics. The Sustainability Accounting Standards Board (SASB) aims to address this need and launched an industry-specific, financially material ESG disclosure framework, aiming to facilitate investors’ decision-making.

In light of the growing importance of institutional ownership and the emergence of SASB as a new ESG disclosure framework, our thesis examines the relationship between the two. Specifically, we investigate how different types of institutional investors influence firms’ disclosure under the SASB framework. We expect that institutional owners demand their portfolio companies to disclose according to the SASB standards, due to investors’ unique characteristics and ESG preferences. Fur-

thermore, we examine how disclosure costs impact the demand for SASB disclosure by institutional investors, anticipating that higher disclosure cost leads to lower demand for disclosure. Overall, this thesis seeks to provide an understanding of the impact of institutional ownership on SASB disclosure.

This thesis focuses on the SASB standards for three main reasons. Firstly, SASB differentiates itself from the competing reporting frameworks due to its financially material and industry-specific approach, meaning that it focuses only on topics that are relevant to corporate performance for each industry. Secondly, it received strong support from market participants, for instance BlackRock. In fact, investors, corporates, and intermediaries were engaged in the standard-setting process to identify material ESG topics. Thirdly, it was endorsed by the International Financial Reporting Standards (IFRS) and merged with other disclosure frameworks to create a global sustainability reporting framework. This integration will leverage SASB's industry-specific classification and likely increase its prominence as a standard for ESG disclosure.

To conduct our analysis, we apply a linear probability model regression with fixed effects to our panel dataset. Our data covers public companies worldwide and employs variables from multiple sources, including a novel dataset provided by SASB.

Firstly, our study does not find a positive relationship between overall institutional ownership and SASB disclosure. However, when we examine certain groups of institutional investors, we find significant positive associations between SASB disclosure and ownership by pension sponsors, family offices and trusts, and insurance companies. In addition, our results show that ownership by hedge funds is negatively associated with SASB disclosure. We attribute different demands for SASB disclosure across these groups to different ESG preferences, which can arise for multiple reasons. Our paper discusses motivations related to investment horizons, risk management, social norms, and universal ownership. For instance, we argue that hedge funds typically have short-term horizons, whereas investor groups with a significant positive association to SASB disclosure have more long-term investment horizons. It is assumed that investors with longer investment horizons have stronger ESG preferences since ESG risks take time to materialize and be fully priced in ([Starks et al.](#),

2017; Nofsinger et al., 2019), which drives them to demand ESG disclosure from portfolio companies. In general, our results might be driven by some combination of the motives mentioned above, but our analysis cannot assess their individual contributions.

We also report contradictory results for investment managers, in the context of a regression specification that focuses on companies that already disclose according to SASB and differentiates between full and partial disclosure. Investment managers have either a non-significant or negative association with SASB disclosure in all other regression specifications, but conditional on firms that already disclose, we find a positive association with full SASB disclosure. This result might imply that investment managers do not actively engage with portfolio firms to start disclosing with SASB, but they are pushing for full disclosure in firms that already disclose.

Secondly, we anticipate that the demand for SASB disclosure by institutional investors is sensitive to the disclosure costs faced by firms, in line with Christensen et al. (2021). Specifically, our paper investigates the role of information production and proprietary disclosure costs by introducing an interaction term between institutional ownership and the proxies for disclosure costs. We find that institutional investors' demand for SASB disclosure is greater in case the portfolio firm is larger, which might be attributed to lower disclosure costs due to economies of scale in information production (Wickert et al., 2016; Ilhan et al., 2022). In turn, firms in highly competitive environments have lower institutional investors' demand for SASB disclosure, which might be motivated by concerns about revealing proprietary information, thus implying higher disclosure costs (Ilhan et al., 2023). However, these results are not definite since they are based on rough proxies for disclosure costs.

Overall, these results provide evidence that certain types of institutional investors demand SASB disclosure and that their demand is sensitive to disclosure costs. Consequently, our results support both institutional and economic theories of disclosure. Based on previous research, we suggest that institutional owners have different ESG preferences that may or may not drive them to engage with their portfolio companies and demand SASB disclosure. However, our results show that institutional investors adjust their demand to the disclosure costs that their portfolio companies might face.

Our paper contributes to the underexplored field of institutional ownership's influence on ESG disclosure. We encourage future research in this area, for instance, by examining the various motivations and their contributions to institutional investors' demand for ESG disclosure, and by further analyzing the moderating effect of disclosure costs. Moreover, we recommend that standards bodies expand exemptions for disclosure of proprietary information to drive voluntary ESG reporting. Lastly, our findings highlight the importance of SASB as an ESG disclosure framework for institutional owners, thus we propose studying the role of investor coalitions in adoption and the impact of SASB disclosure on other factors, such as the cost of capital for disclosing firms.

The remainder of our thesis is organized as follows. Section 2 presents an extensive review of the related literature and the contributions of our paper. Section 3 provides an overview of the SASB standards, alternative frameworks, and relevant institutions. Section 4 describes the sample and the variables used. Section 5 outlines the results of our analysis and relates them to the existing literature. Section 6 discusses potential limitations and outlines implications from our research. Section 7 summarizes our main findings and concludes our thesis.

2 Literature review

Our thesis contributes to two strands of literature. Firstly, we expand upon existing studies on ESG disclosure, with a focus on SASB and the role of material sustainability information. We contribute to this literature by applying a novel dataset on disclosure events from SASB, and by analyzing the role of disclosure costs in the context of SASB disclosure.

Secondly, we add to the research on institutional owners and their motivations for considering ESG issues, as well as their demand for material sustainability disclosure. We contribute to this field by looking at subgroups of institutional investors in the context of ESG disclosure, and by studying the relationship between institutional ownership and SASB disclosure. In this section, we provide an overview of the current body of literature in these areas, and elaborate on how our thesis complements and builds upon this research.

2.1 ESG disclosure

SASB and the role of materiality

Despite its novelty, SASB has already attracted researchers through its focus on financial materiality and its specific categorization of material ESG topics per industry. Prior to the launch of SASB, the Global Reporting Initiative (GRI) was the single dominant ESG disclosure standard, but researchers (e.g., [Machado et al., 2021](#)) partly question the materiality of the information provided through the framework. According to [Machado et al. \(2021\)](#), even following GRI's materiality definition, 22% of companies do not fully disclose material issues in their GRI compliant reports. SASB stands out by emphasizing its adherence to the principle of financial materiality, which means that SASB topics are expected to have a significant impact on the financial performance and value of companies and thereby are specifically relevant for investors ([Busco et al., 2020](#)). In this context, researchers are interested in investigating the interaction between SASB disclosure topics and the financial market.

[Khan et al. \(2016\)](#) and [Consolandi et al. \(2022\)](#) show that in case a firm performs well along SASB material topics, the stock market shows a positive reaction, consid-

ering and pricing in ESG issues. Firms with strong ratings in material sustainability issues according to SASB outperform their peers in terms of risk-adjusted stock price performance and profit margin growth (Khan et al., 2016). Conducting the same analysis on immaterial sustainability issues according to SASB results in no significant performance deviation between companies in the same industry. Consolandi et al. (2022) extend these findings and differentiate between two dimensions of SASB disclosure topics. First, financial relevance refers to the number of disclosure topics per industry, and second, financial intensity measures to which extent companies are financially affected by the disclosure topic. The results confirm that a firm's rating on material sustainability issues has a positive impact on stock price and add that this impact is stronger for companies in industries with a high concentration of material issues. Thus, the market rewards are stronger in case an industry has fewer material issues but financially relevant ones.

Moreover, disclosure of SASB material issues has a positive impact on the stock market and is expected to resolve challenges in the ESG disclosure landscape. Grewal et al. (2021) study the impact of disclosure of sustainability metrics in line with SASB on the stock market and find that firms that disclose more material metrics have stock returns that exhibit less co-movement with both industry and market returns. That implies that more firm-specific and decision-relevant information is available to investors, which they take into consideration in their decision making. As a result, disclosing material metrics is more important than simply disclosing a higher number of metrics. Christensen et al. (2022) support this notion with their findings. According to their study, more ESG disclosures lead to greater discrepancies in ESG ratings, and it suggests that frameworks such as SASB help to resolve this discrepancy by providing a common basis for understanding and interpreting ESG metrics.

Lastly, institutional owners particularly engage in and drive their portfolio firm's performance along the SASB material topics. Chen et al. (2020) find that an increase in institutional ownership improves a firm's Corporate Social Responsibility (CSR) performance and that this effect is stronger for CSR topics considered financially material according to SASB.

These studies provide evidence on investors considering and pricing material ESG topics and their disclosure. However, their main limitation is the categorization of ESG data based on SASB standards that were published ex-post and that ESG issues that were material in the past may not be material in the future ([Christensen et al., 2021](#)). Our thesis addresses this limitation and contributes to this strand of literature by being the first to work with disclosure data from SASB directly instead of applying the framework's materiality system to historical data. Thereby, we not only investigate a new dataset, but also draw conclusions about the reception of the actual framework by institutional investors.

ESG disclosure costs

When examining the relationship between institutional ownership and SASB disclosure, our thesis also takes potential disclosure costs into account, which might impact investors' demand for ESG disclosure. This subsection refers to literature that investigates the role of disclosure cost in the context of firm size and competitive intensity.

Firstly, research highlights that company size is a relevant factor influencing disclosure cost, regardless of being measured in terms of total assets, turnover, number of employees, or market capitalization ([Hahn and Kühnen, 2013](#)). For instance, [Luo et al. \(2012\)](#) find that firms with higher market capitalization are more likely to disclose carbon emissions among the Global 500 companies, while [Kim and Lyon \(2011\)](#) observe a similar dynamic between total revenue and participation in a carbon disclosure project in the United States. There are two explanatory approaches to the results. Firstly, larger firms are more likely to be subject to public scrutiny, thus face higher social pressure to disclose and higher reputational costs in case they do not disclose. This explanation is in line with the legitimacy theory, which states that the disclosure of ESG information supports the maintenance of the social contract between a company and society ([Deegan, 2002](#)). The larger the company, the greater the visibility and consequently the greater the reputational cost in case it does not disclose. Secondly, large companies benefit from their scale in terms of monetary cost. [Wickert et al. \(2016\)](#) argue that CSR communication, namely disclosure, is less costly for larger firms, while the cost of CSR action, for instance, the implementation

of CSR initiatives, increases with firm size.

Moreover, related to the cost-benefit analysis, research suggests that firms subject to intense competition are less likely to disclose due to higher proprietary disclosure costs. According to [Christensen et al. \(2021\)](#), disclosure of climate risks might reveal proprietary information about a firm's future strategy making them reluctant to disclose voluntarily. [Ilhan et al. \(2022\)](#) provide support for this theory, showing that institutional investors are less likely to demand carbon disclosure from portfolio firms with highly concentrated competition.

Following the approach of [Ilhan et al. \(2022\)](#), we assess the role that these disclosure costs play in the demand for SASB disclosure by institutional investors. Thereby, our thesis does not only contribute to the literature on the direct link between institutional ownership and SASB disclosure, but also to the trade-off between benefits and costs of disclosure.

2.2 Institutional ownership

Our thesis also investigates the role of institutional owners. Existing literature reports the high impact of institutional investors on portfolio firms, as well as their stand on the increasing awareness of ESG risks and opportunities. [Ferreira and Matos \(2008\)](#) observe that institutional investors are heavily involved in monitoring and exerting pressure on companies worldwide. Research and professionals agree on the significant role of institutional investors in the sustainable transition. In a survey, [Stroebel and Wurgler \(2021\)](#) ask 861 finance academics, professionals, and public sector regulators questions about their views on climate finance and most of the interviewees regard the pressure from institutional investors on firms as the strongest driver for change.

Motivations for ESG preferences

Apart from their dominant position, the role as a driver for change traces back to certain characteristics and considerations of institutional investors that make them an investor group that is particularly interested in the ESG management of a portfolio company. Thus, a growing body of research examines their motivations to address and engage in ESG issues. In this section, we address four factors identified by

research to drive institutional investors' ESG preferences, namely risk management, investment horizons, universal ownership, and social norms.

Institutional owners regard ESG risks as material and aim to mitigate these by engaging with their portfolio firms. As a result, risk management plays a key role in considering ESG topics. [Solomon et al. \(2011\)](#) conduct interviews with institutional investors and discover that they engage with their portfolio companies, encouraging them to adapt their behavior to limit the company's exposure to material ESG risks. This engagement has been proven by [Hoepner et al. \(2022\)](#) to be successful. They show that it reduces firms' downside risks, measured in lower partial movements and value at risk. The extent of this risk reduction depends on the topic, whereby engagement is most effective in the case of climate change topics. Furthermore, investors tend to be risk-averse when incorporating ESG considerations into their portfolios ([Nofsinger et al., 2019](#)). The authors find that institutional investors attempt to reduce their downside risk by underweighting firms with negative Environmental and Social (ES) performance but do not correspondingly overweight companies with positive performance. They conclude that investors consider ES strengths to be a noisy and irrelevant signal, thereby causing this asymmetry.

Their findings also point to a factor that makes ESG issues particularly important to institutional owners, namely their long investment horizon. Long-horizon institutional investors penalize weak ES performance more ([Nofsinger et al., 2019](#)), but also reward strong performance more ([Starks et al., 2017](#)) than short-horizon institutional investors. The researchers suggest that climate downside risks materialize in the long run and are thereby more relevant for owners with longer investment horizons. At the same time, under the assumption that ESG profiles add value over time, long-term investors are in a position to capture future benefits and are less concerned about and more resilient toward short-term negative performance ([Nofsinger et al., 2019](#)). Thus, long-term investors have a stronger incentive to monitor and engage with a firm because they can capture positive results while avoiding long-term downsides, while short-term investors are more affected by limits-to-arbitrage and are less likely to engage in monitoring activities ([Gaspar et al., 2005](#)). Further studies confirm this reasoning, finding that long-term institutional investors engage more intensively in

portfolio companies' ESG performance than short-term investors ([Kim et al., 2019](#); [McCahery et al., 2016](#)). For instance, pension funds drive the ES performance of their portfolio companies, while hedge funds demonstrate no relation to ES performance at all ([Dyck et al., 2019](#)).

Apart from having a long investment horizon, certain institutional investors are considered to be universal owners. According to research, this characteristic makes them particularly subject to ESG risks. [Hawley and Williams \(2000\)](#) characterize universal investors as owning a cross-section of the publicly traded equity in the market, and thereby also representing the publicly traded economy. In this position, universal owners internalize negative externalities at a given point in time, which incentivizes them to address the externalities in the interest of their portfolio returns in the first place. Early research supports this theory, addressing the internalization of externalities in the case of highly diversified investors ([Hansen and Lott, 1996](#)). Particularly the largest institutional owners are concerned about this risk exposure and engage on carbon emissions of their portfolio companies worldwide, as [Azar et al. \(2021\)](#) show for the big three asset managers BlackRock, Vanguard, and State Street Global Advisors.

Lastly, another significant factor motivating institutional owners' ESG preferences is social norms. In a survey with institutional investors, reputational concerns and moral obligations are the two most selected motives to include climate risk in their investment process ([Krueger et al., 2020](#)), demonstrating ESG topics' relevance beyond financial considerations. Research by [Chava \(2014\)](#) shows that some types of institutional investors are more norm-constrained and subject to this motive than others. This study reveals that norm-constrained institutions like pension funds particularly refrain from companies with more environmental concerns. Similarly, [Hong and Kacperczyk \(2009\)](#) observe an opposite effect for mutual and hedge funds, which, unlike other institutional owner types, are not influenced by social norms to exclude sin stocks (i.e., involved in alcohol, tobacco, and gaming) from their portfolios which would result in lower financial returns, since they act as arbitrageurs.

Moreover, social norms impact institutional investors' ESG engagement which drives portfolio companies' ESG performance. [Dimson et al. \(2015\)](#) focus on CSR

engagement of institutional investors in the US, suggesting that socially conscious institutional owners are more likely to be engaged. [Hawley and Williams \(2000\)](#) extend this research and assess whether institutional owners' engagement fosters the ES performance of companies worldwide. Their results reveal that the owners only increase their portfolio firm's performance if they are subject to corresponding social norms. Driving their portfolio firms' ES performance results in social rewards and avoids social sanctions. Consequently, the investors convey their social norms to other countries.

These studies show that institutional owners have varying motives for considering and engaging with ESG issues, and that there might be differences among subgroups of investors. In our thesis, we differentiate between various types of investors. These investor types may hold varying ESG preferences, influenced by multiple motivations discussed above. Therefore, our results facilitate a cross-comparison between these institutional owner types, and thereby allow us to interpret their potential heterogeneity. Even though this differentiation has been applied in related papers (e.g., [Bolton and Kacperczyk, 2021](#)), it is unique in the context of ESG disclosure and provides categories that are observable by the market, for instance, hedge funds as category instead of "climate-conscious investors" ([Ilhan et al., 2023](#)), allowing for more tangible results and conclusions.

Institutional owners and ESG disclosure

To our knowledge, there has been limited research on the relationship between institutional ownership and ESG disclosure, despite some studies highlighting the significance of ESG information to institutional owners. [Solomon et al. \(2011\)](#) and [Krueger et al. \(2020\)](#) observe that institutional investors rely on one-on-one meetings with portfolio companies to compensate for inadequate public information and disclosure ([Solomon et al., 2011](#)), and to engage with them on potential change in behavior ([Krueger et al., 2020](#)). Moreover, during their investment process, they require and use ESG information, like carbon emission data, to apply their exclusionary screenings ([Bolton and Kacperczyk, 2021](#)).

These insights indicate a potential demand for ESG disclosure by institutional

owners that is analyzed by [Ilhan et al. \(2023\)](#). Their study establishes a link between ESG disclosure and institutional ownership and, thereby plays a key role in the formulation of our research question. They focus on how institutional owners drive carbon disclosure within the Carbon Disclosure Project (CDP) reporting framework. The results of their empirical analysis and survey show a positive association between climate-conscious investors and higher firm-level carbon disclosure, reflecting that these owners value and demand climate risk disclosure. For the study, the researchers focus on a particular group of institutional investors, pointing to the fact that institutional owner subgroups might differ in terms of their demand for disclosure due to different ESG preferences. They analyze the climate-conscious investors type, which is characterized by being based in a country with a stewardship code and environmental norms and being a universal owner, reflecting the findings previously referred to in terms of risk management and social norms driving ESG motivation. This investor type, according to [Ilhan et al. \(2023\)](#), is more likely to demand climate-related disclosure, first, due to their country's norms that support or even require environmentally conscious behavior. Second, these universal owners hold a substantial part of the economy for a lengthy period and thus are particularly vulnerable to the externalities they aim to mitigate. Their results show a strong positive relationship between climate-conscious institutional investors and carbon disclosure.

Since the research on the relationship between institutional ownership and ESG disclosure seems to be limited, we expand on it and provide new insights in the context of SASB. Most researchers focus on the analysis of carbon emissions or disclosure without taking the social or governance dimension of ESG into account. Our thesis assesses the role of the SASB as a material ESG disclosure framework. This analysis facilitates a broader perspective and enables us to draw conclusions regarding the influence of institutional owners on sustainability disclosure along all three dimensions, ultimately expanding existing research with new insights.

3 Institutional background

3.1 Overview of SASB standards

SASB developed a disclosure framework to communicate the financial impact of sustainability issues on an industry level. In 2018, it published its ESG disclosure standards, which attracted interest from investors and companies due to their unique features. Unlike previous broad and general frameworks, the SASB standards are industry-based, cover financially material topics, and were developed in cooperation with market participants (SASB, 2016).

The SASB standards identify the most relevant sustainability issues and corresponding metrics per industry, instead of applying one set of sustainability metrics to all industries. These industry-specific disclosure areas are determined based on a financial materiality definition which aligns with Regulation S-K item 105 from the US Securities and Exchange Commission (SASB, 2017b). As a result, the SASB standards focus on disclosure areas that are likely to impact a company's operating performance or financial condition. Consequently, the framework particularly targets investors, setting it apart from others with broader target audiences, as will be discussed in the section 3.2 (Busco et al., 2020).

Furthermore, SASB developed the standards in a market-informed process involving industry experts in the form of industry working groups. These industry working groups identified material sustainability topic areas for their respective industry. Over 2,800 professionals participated in this process, including 31% investors representing \$24.4 trillion in AUM, 31% corporate representing \$11 trillion in market capitalization, and the remaining 38% were intermediaries, such as consultants, non-governmental organizations, or academics (SASB, 2017a).

Overall, the SASB framework aims to be decision-useful and cost-effective for disclosing companies by limiting the number of reporting metrics and focusing on the most relevant ones (SASB, 2016).

3.2 ESG disclosure landscape

The ESG disclosure landscape includes numerous frameworks, which differ in terms of thematic focus and target group. Firstly, thematically, some frameworks focus on the disclosure of climate-related issues, such as the Task Force on Climate-Related Financial Disclosures (TCFD) or the CDP, while frameworks like the SASB standards cover a broader environmental, as well as the governance and social dimension of ESG (Gamsjäger and Ray, 2021). Secondly, the frameworks either follow financial or impact materiality (GRI, 2022). These two categories of materiality have been proposed by the European Commission (2019). Financial materiality, as previously mentioned, considers issues that affect a firm’s financial performance and value, targeting investors as main audience. Impact materiality considers companies’ externalities, addressing multiple stakeholders. SASB fills a market gap, since it is financially material and covers all ESG dimensions, as visible in Table 1. This market gap has gained particular importance with the EU Corporate Sustainability Reporting Directive. It requires large public companies from the financial year 2024 on to report on both, impact and financial material ESG topics, which is referred to as double materiality (European Commission, 2019).

The GRI standards are the most dominant ESG disclosure framework used around the world, even though SASB has gained traction in the past years and is the leading reporting standard in the United States of America, Canada, and Brazil (KPMG, 2022). In contrast to SASB, GRI follows impact materiality and has a broader target audience. Due to their different target groups, SASB and the GRI standards are regarded as complementary and the standard setters collaborate to align and harmonize their disclosure frameworks (Busco et al., 2020; SASB, 2020).

The TCFD follows the concept of financial materiality and outlines best-practice recommendations for climate-related financial disclosure (TCFD, 2022). Another disclosure framework, the CDP, requires companies to fill in a questionnaire related to climate risk topics, covering for instance detailed emissions through operations or along the supply chain (Gamsjäger and Ray, 2021).

As the ESG disclosure landscape has become increasingly complex, investor demand for consolidation has developed, and in 2021, SASB and the International Inte-

grated Reporting Council merged to form the Value Reporting Foundation (VRF). In 2021, the IFRS announced the creation of the ISSB, consolidating the VRF and the Carbon Disclosure Standards Board, to develop the IFRS sustainability standards (SASB, 2022). The ISSB develops the standards based on SASB’s industry-based structure as well as aligning with the CDP and TCFD’s recommendations to create an international baseline for ESG reporting, driving forward the consolidation and uniformization of standards (CDP, 2022; IFRS, 2021).

Table 1: Overview of ESG disclosure frameworks

Initiative	Theme	Materiality	Description
SASB	ESG	Financial	Industry-specific ESG disclosure framework that targets investors
GRI	ESG	Impact	Industry-agnostic ESG reporting standards that target a broad range of stakeholders
TCFD	Climate	Financial	Climate-related financial risk disclosure recommendations for companies
CDP	Climate	n.a.	Data collection through standardized questionnaire on carbon emissions

Notes: Adapted from Gamsjäger and Ray (2021)

3.3 Structure of SASB disclosure

In their Materiality Map, SASB maps 77 industries against 26 disclosure topics, displaying which disclosure topics are financially material for an industry and which reporting metrics to use per topic. SASB specifies five dimensions for analysis: environment, social capital, human capital, business model and innovation, leadership and governance. These again include up to seven general issue categories, adding up to the 26 industry-agnostic sustainability general issue categories (SASB, 2023a).

According to SASB, each company must address general issue categories that are considered material for the respective industry. Some industries have to address only two, while others must report on up to nine categories. For each general issue category, there is one industry specific disclosure topic. For instance, for the general issue

“energy management”, there is the specific disclosure topic “hardware infrastructure energy and water management” for the e-commerce industry (SASB, 2023a).

For these disclosure topics, SASB analyzed the impact on 13 financial drivers, which can be grouped into revenue (market share, new markets, pricing power), operating expenses (cost of revenue, R&D), non-operating expenses (capex, extraordinary expenses), assets and liabilities (tangible assets, intangible assets, contingent liabilities, pension and other) and cost of capital (cost of capital and industry divestment) (Busco et al., 2020). For illustrative purposes, we provide the e-commerce industry as an example in Table 2. The table shows, for instance, that data security is particularly material across all financial drivers, and consequently, investors can pay special attention to it while interpreting the disclosed information.

Table 2: Financial relevance of disclosure topics for the e-commerce industry

Disclosure Topic	Revenue	Opex	Non-Opex	Assets	Liabilities	Cost of Capital
Hardware Infrastructure Energy & Water Mgmt.	-	High	Medium	-	-	Medium
Data Privacy & Advertising Standards	High	Medium	Medium	High	Medium	-
Data Security	High	High	Medium	High	High	High
Employee Recruitment, Inclusion & Performance	Medium	High	-	Medium	-	-
Product Packaging & Distribution	Medium	High	Medium	Medium	-	Medium

Notes: Adapted from Busco et al. (2020). “High” indicates a High impact on the financial driver, “Medium” correspondingly a moderately strong impact, and “-” indicates no relevance in terms of materiality. Source: SASB

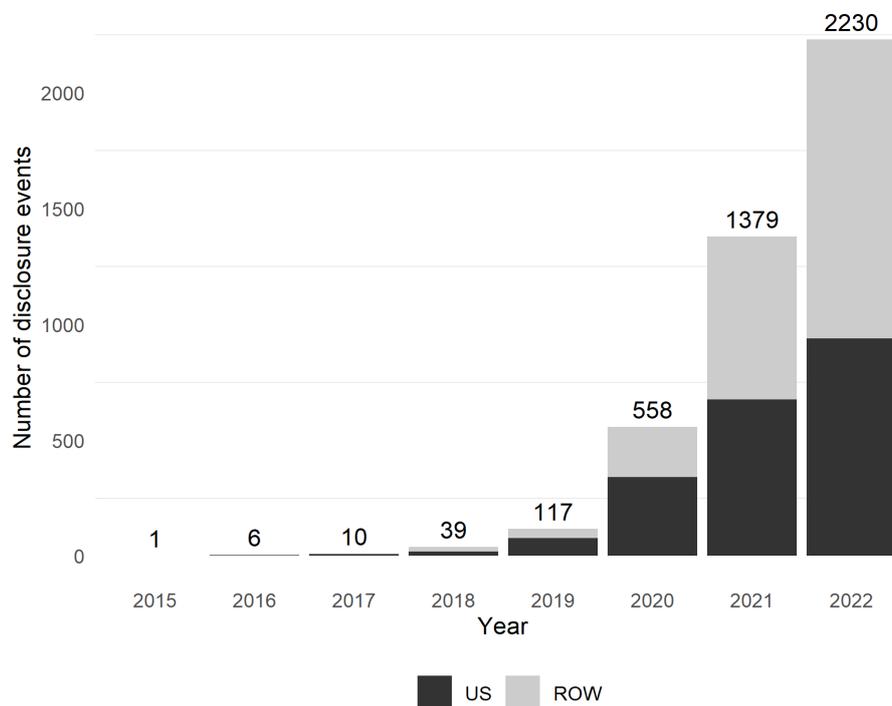
When disclosing, a company has to report several accounting metrics per disclosure topic. These are either quantitative or “discussion and analysis” metrics, the latter being more qualitative. For example, for the e-commerce industry on the disclosure topic “hardware infrastructure energy and water management”, the company has to report three accounting metrics. These include quantitative metrics like energy consumption, and discussion and analysis metrics such as “discussion of the integration of environmental considerations into strategic planning for data center needs” (SASB, 2023a).

3.4 Investor support

To promote the use of its standards, SASB formed in 2016 the Investor Advisory Group (IAG), a group of asset managers and owners. Until 2020, the IAG grew to have 55 members, representing \$41 trillion in AUM, including asset managers like Blackrock, Vanguard, and Fidelity. The IAG collectively articulates the investors' viewpoint, providing feedback on the standards, giving strategic guidance, and publicly supporting the relevance of SASB (SASB, 2017a; SASB, 2021).

Moreover, after the standard's launch in 2018, the IAG played an important role in driving forward the adoption of standards among their portfolio companies (SASB, 2019). After the consolidations in 2022, the IAG continued operating as ISSB Investor Advisory Group (SASB, 2023b). Outside of the joint efforts, major asset managers endorse the adoption, including BlackRock's CEO Larry Fink in his annual letter to chief executives (Mooney and Nauman, 2020).

Figure 1: Number of SASB disclosing firms



Notes: Number of disclosure events with SASB per year. “ROW” represents the firms in the rest of the world, excluding the US. Source: SASB

3.5 Adoption

SASB has gained strong traction among companies, particularly in North America. According to a [KPMG \(2022\)](#) report, around 75% of the 100 biggest companies in terms of revenue in the United States and Canada disclosed with SASB in 2022, surpassing the GRI standards. This share was 53% in the Americas, followed by Europe with 35%, Asia-Pacific with 23%, and Middle East and Africa with 18%.

[SASB \(2023a\)](#) records 2,579 disclosing firms during the period between 2015 and 2022. Before the launch of the codified standards, some companies already applied the provisional standards, accounting for the disclosure events before 2018. Figure 1 depicts SASB adoption over the years. While the number of disclosing companies initially increased relatively slowly after the official introduction in 2018, growth accelerated in 2020 and 2021. In 2022, 2,230 companies disclosed according to the standards, with 42% based in the US.

Table 3 lists the ten industries with the highest number of reporting companies in 2022. From 2018 to 2020, the real estate, oil and gas and electric utilities and power generators industries registered the highest number of disclosing companies. In 2021, they were surpassed by the commercial banks industry, which also held the highest position in SASB disclosing companies in 2022 ([SASB, 2023a](#)).

Table 3: Top 10 industries for SASB disclosure

SICS Industry	2022	2021	2020	2019	2018
Commercial Banks	6.1%	6.5%	5.7%	6.0%	2.6%
Real Estate	6.0%	6.0%	6.6%	7.7%	10.3%
Software & IT Services	5.4%	4.6%	4.1%	3.4%	2.6%
Chemicals	4.6%	4.1%	5.2%	0.0%	5.1%
Metals & Mining	4.4%	4.4%	5.0%	2.6%	2.6%
Electric Utilities & Power Generators	4.3%	5.2%	6.5%	8.5%	7.7%
Oil & Gas - Exploration & Production	4.0%	4.8%	7.5%	7.7%	10.3%
Industrial Machinery & Goods	3.3%	3.4%	2.3%	1.7%	0.0%
Biotechnology & Pharmaceuticals	3.2%	2.5%	2.9%	1.7%	2.6%
Multiline and Specialty Retailers & Distributors	2.8%	2.4%	2.5%	3.4%	0.0%

Notes: Ratio of disclosure events per industry in a given year to total disclosure events across all industries in that year. Values for the top 10 industries in 2022 during the period between 2018 and 2022. Source: SASB

4 Data

4.1 Sample selection

Our dataset covers all public companies with available data on Compustat from 2014 to 2021. The sample includes 27,725 firms worldwide, of which 1,837 started disclosing with SASB at some point during the sample period.

To obtain a sample universe of global firms, we merged Compustat North America and Compustat Global, as the latter does not include firms from the United States of America and Canada. We excluded private companies due to limited data availability and lower disclosure requirements. To prevent survivorship bias, we included inactive companies, which considers firms that went bankrupt, merged, or were delisted during the period under study.

For our analyses, we gathered data from multiple sources, such as disclosure events from SASB, institutional ownership from Capital IQ, and company fundamentals from Compustat. The frequency of our data is annual to match SASB’s disclosure protocol, which stipulates an annual reporting cycle.

4.2 SASB disclosure variables

The disclosure variables are based on a licensed dataset from SASB. It contains the disclosure events from 2,579 firms in 72 countries from 2015 to 2022. We matched around 71% of the firms against the sample universe from Compustat, using the ISIN provided in the data as identifier. As a robustness check, we employed name matching algorithms from [DNB \(2022\)](#) and obtained similar results.

The SASB disclosure variable equals one if a firm issued a SASB report in a year, either fully or partially, and zero otherwise. We also include an alternative specification that equals one only if the company provided a full SASB report, and zero otherwise. According to SASB, the report is considered “full” if the company has disclosed all of the metrics associated with their industry standard or provided an explanation for the omitted metrics, otherwise it is classified as a “partial” report.

SASB records the year that the report was published, rather than the respective disclosure period. As a result, we assume that the disclosure event concerns the

previous fiscal year. For instance, we consider that a disclosure event in 2022 concerns the fiscal year of 2021. Moreover, since the official standards were published in late 2018, disclosure events prior to that date are based on provisional versions of the standards.

4.3 Institutional ownership variables

The institutional ownership variables are based on the company ownership information from Capital IQ. First, we define a variable for overall institutional ownership as the percentage of shares outstanding held by institutional investors for a given firm at the end of the year.

Second, we include variables with a break-down by certain groups of institutional investors, in line with [Bolton and Kacperczyk \(2021\)](#). We consider the following categories: investment managers, hedge funds, banks and investment banks, pension sponsors (corporate, public, and union), insurance companies, and family offices and trusts. These institution types are defined by Capital IQ ([S&P Global, 2020](#)) and further details are presented in Appendix A2.

4.4 Control variables and other data

The control variables are in line with [Ilhan et al. \(2023\)](#). We control for financial characteristics and financial disclosure quality. Regarding financial characteristics, we include control variables for firm size (log of total assets), dividend payout (ratio of dividends to net income), leverage (ratio of debt to assets), return on assets (ratio of EBIT to assets), capital intensity (ratio of capital expenditures to assets), and market valuation (ratio of market to book value of equity).

We also construct a variable for financial disclosure quality, according to [Chen et al. \(2015\)](#). This measure counts the number of non-missing data items in the income statement, as reported in Compustat. Then, it is scaled by the total number of items in the income statement, such that the values range from 0 to 1. All control variables were calculated with data from Compustat, except the book-to-market ratio obtained from Capital IQ.

We winsorize the institutional ownership and control variables at the 1% level to reduce the impact of outliers on regression results¹. This adjustment is specially relevant for the institutional ownership variables, which exhibit some values above 100%. These values exceed the expected maximum value due to delays in updates of ownership data or short-selling between institutional investors (Lewellen, 2011; S&P Global, 2021). However, they occur in rare instances and can be fully mitigated with winsorization.

Moreover, we employ a text-based Herfindahl-Hirschman Index (HHI) measure from Hoberg and Phillips (2016) to proxy for industry concentration.² This variable is only available for US firms and we use this measure to test for the role of proprietary disclosure costs. Detailed variable definitions are provided in Appendix A3.

4.5 Summary statistics

We present the summary statistics of our variables in Table 4. Around 2% of firm-year observations correspond to disclosure events over the full sample period, and only half of those are full SASB reports. Regarding institutional ownership, investment managers have, on average, the largest holdings across firms in our sample, and insurance companies and family offices have relatively small positions. Furthermore, the relationship between mean and median suggests high positive skewness for institutional ownership variables, even after winsorization.

Next, we look at the percentage of disclosing firms relative to all the firms in our sample over time, which is shown in Figure 2. The adoption of SASB standards increased significantly during the sample period. Around 9% of companies in our sample issued a SASB report in 2021, up from approximately 0.5% in 2018. This time series plot also shows the geographical heterogeneity in the sample. Europe and North America have similar adoption rates, at around 18% in 2021 relative to the

¹Winsorization corresponds to a statistical technique that replaces extreme values in a dataset by less extreme ones, which are equal to a specified percentile of the data (Wooldridge, 2018).

²This measure is based on alternative industry classifications that use firm pairwise similarity scores from text analysis of firm 10K product descriptions. Competitors are firm centric, meaning that each firm has its own distinct set of competitors. These industry classifications are updated annually, and are more informative than fixed-industry classifications, such as the SIC codes (Hoberg and Phillips, 2010). As a result, HHI values are customized to each firm and are superior to conventional measures of HHI, such as in Stigler (1964).

Table 4: Summary statistics

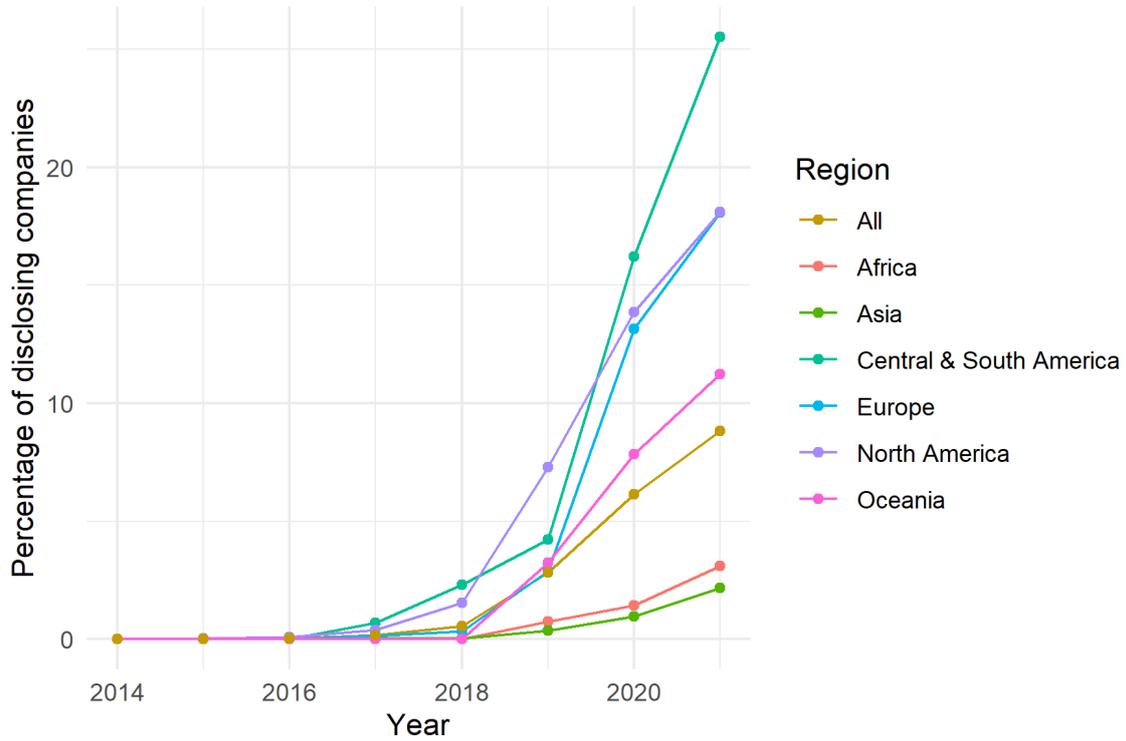
	Mean	Median	Std. Dev.	Obs.
Overall disclosure	0.024	0.000	0.152	135,076
Full disclosure	0.014	0.000	0.116	135,076
IO Overall	0.252	0.137	0.288	135,076
IO IM	0.199	0.095	0.246	135,076
IO HF	0.027	0.000	0.062	135,076
IO Banks	0.011	0.000	0.019	135,076
IO Pension	0.011	0.000	0.022	135,076
IO Insurance	0.002	0.000	0.009	135,076
IO Family	0.002	0.000	0.006	135,076
Log Assets	10.353	9.914	4.624	135,076
Div/Ni	0.353	0.250	0.622	135,076
Debt/Assets	0.190	0.148	0.180	135,076
EBIT/Assets	0.019	0.051	0.202	135,076
Capex/Assets	0.040	0.025	0.047	135,076
Book/Market	0.819	0.578	0.816	135,076
FDQ	0.293	0.323	0.053	135,076
HHI	0.260	0.142	0.269	28,223

Notes: Overall disclosure equals one if a firm issued a SASB report in a year, either full or partial, and zero otherwise. Full disclosure equals one only if the firm provided a full SASB report, and zero otherwise. IO stands for institutional ownership, IM for investment managers, HF for hedge funds, and FDQ for financial disclosure quality.

total number of firms in those regions. Central and South America is the region with the highest adoption rate in 2020 and 2021, but the number of disclosing and total firms is lower compared to other regions.

Lastly, we analyze the correlation coefficients in Table 5. SASB disclosure is positively correlated with institutional ownership, and this result holds for both specifications of the disclosure variable. Moreover, most measures of institutional ownership show a low to moderate positive correlation among themselves. Lastly, overall institutional ownership is negatively correlated with firm size. This result is mostly driven by investment managers and hedge funds, and the coefficient is positive for most other institution types.

Figure 2: Percentage of disclosing companies per region



Note: Time series of the percentage of disclosing companies between 2014 and 2021, both for all regions and per geographical region. The numerator for this ratio corresponds to the number of firms that have a SASB report (either full or partial) in a given year and region, while the denominator is equal to the number of firms in that year and region.

Table 5: Correlation table

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Overall disclosure	1.00																
2 Full disclosure	0.76	1.00															
3 IO Overall	0.21	0.16	1.00														
4 IO IM	0.21	0.16	0.98	1.00													
5 IO HF	0.05	0.03	0.43	0.37	1.00												
6 IO Banks	0.08	0.06	0.37	0.31	0.13	1.00											
7 IO Pension	0.12	0.10	0.44	0.38	0.08	0.12	1.00										
8 IO Insurance	-0.01	-0.00	0.05	0.01	-0.05	0.07	0.04	1.00									
9 IO Family	0.11	0.08	0.38	0.34	0.21	0.13	0.10	-0.04	1.00								
10 Log Assets	0.01	0.01	-0.12	-0.12	-0.29	0.07	0.16	0.16	-0.16	1.00							
11 Div/NI	0.01	0.00	-0.02	-0.01	-0.13	-0.00	0.04	0.02	-0.01	0.07	1.00						
12 Debt/Assets	0.10	0.07	0.18	0.17	0.08	0.10	0.10	0.01	0.09	0.07	0.03	1.00					
13 EBIT/Assets	0.04	0.03	0.09	0.10	-0.14	0.06	0.11	0.05	0.00	0.37	0.16	0.03	1.00				
14 Capex/Assets	-0.01	-0.01	-0.06	-0.05	-0.06	-0.05	-0.02	0.00	-0.03	0.03	-0.03	0.10	0.03	1.00			
15 Book/Market	-0.04	-0.04	-0.17	-0.17	-0.07	0.03	-0.04	0.03	-0.07	0.13	-0.06	0.02	-0.08	-0.06	1.00		
16 FDQ	-0.09	-0.06	-0.29	-0.27	-0.41	-0.02	-0.03	0.12	-0.25	0.55	0.15	-0.03	0.36	0.08	-0.03	1.00	
17 HHI	-0.00	0.01	-0.09	-0.06	-0.07	-0.06	-0.08	-0.04	-0.00	-0.25	-0.06	-0.04	0.06	0.03	-0.01	0.12	1.00

Notes: Overall disclosure equals one if a firm issued a SASB report in a year, either full or partial, and zero otherwise. Full disclosure equals one only if the firm provided a full SASB report, and zero otherwise. IO stands for institutional ownership, IM for investment managers, HF for hedge funds, and FDQ for financial disclosure quality.

5 Methodology

5.1 Empirical framework

We employ a linear probability model (LPM) regression with fixed effects to study the relationship between SASB disclosure and institutional ownership in our panel dataset. We use this model because the dependent variable is binary. We choose the LPM over the logistic regression (logit) model because the coefficient interpretation is more straightforward³, even though the fitted probabilities might be outside the unit interval.

We provide a robustness check in Appendix A4, showing that results from the logit model are similar, after performing transformations to the coefficient estimates. Furthermore, there is evidence that LPM outperforms logit regression in rare events data (Timoneda, 2021), which corresponds to our case, i.e. less than 25% of firm-year observations correspond to disclosure events.

Furthermore, we include firm and year fixed effects to account for unobserved heterogeneity across firms or over time that may affect the dependent variable. Fixed effects at country or industry level do not seem to impact the regression estimates. Additionally, standard errors are also clustered at both firm and year level to account for correlation between groups (Petersen, 2009).

5.2 Baseline model

The baseline model in equation (1) estimates the impact of institutional ownership on the likelihood of a given firm to disclose with SASB in that year, where $Disclosure_{i,t}$ is a dummy variable for SASB disclosure, $IO_{i,t}$ is a measure of institutional ownership, $X_{i,t}$ is the set of control variables presented in section 4.4, FE corresponds to the firm and year fixed effects, and $\epsilon_{i,t}$ is the error term.

$$Disclosure_{i,t} = \beta * IO_{i,t} + \lambda * X_{i,t} + FE + \epsilon_{i,t} \quad (1)$$

³The logistic regression does not have a straightforward interpretation in terms of the change in the probability of the dependent variable, as in the case of the LPM. Instead, the coefficients represent changes in the log-odds ratio, and must be transformed to reflect the marginal effect on the probability of the outcome (Wooldridge, 2018).

Note that the constant term in the regression model is omitted because it is absorbed by the fixed effects. We expect $\beta > 0$ as institutional owners demand their portfolio companies to disclose according to the SASB standards. This paper not only estimates the effect for overall institutional ownership, but also for the ownership by certain institution types. We estimate these effects individually due to concerns of collinearity among institution types (i.e., correlation between independent variables). However, we also estimate these effects controlling for all institution types simultaneously as an additional robustness check.

5.3 Extended model

In equation (2), we extend the baseline model to estimate how disclosure costs affect institutional investors' demand for SASB disclosure, where $Z_{i,t}$ is a proxy for disclosure costs, and the coefficient on the interaction term between $Z_{i,t}$ and $IO_{i,t}$ provides an estimate of that effect.

$$Disclosure_{i,t} = \beta_1 * IO_{i,t} * Z_{i,t} + \beta_2 * IO_{i,t} + \beta_3 * Z_{i,t} + \lambda * X_{i,t} + FE + \epsilon_{i,t} \quad (2)$$

To test for the role of production information costs, we use the natural logarithm of total assets to proxy for firm size. Since information production costs have a significant fixed cost component, they should be less relevant for large firms, and thus, increasing demand from institutional investors. To test for the role of proprietary disclosure costs, we use the text-based HHI measure from [Hoberg and Phillips \(2016\)](#) to proxy for industry concentration, which is inversely related to industry competition. We assume that firms in highly competitive environments (low HHI) are more concerned about disclosing SASB metrics that reveal proprietary information. Therefore, the demand for SASB disclosure by institutional investors should be greater for firms with larger HHI. As a result, we expect $\beta_1 > 0$ in both cases.

6 Results

6.1 Institutional investors' demand for SASB disclosure

First of all, we assess the impact of institutional ownership on SASB disclosure. The regression results of the baseline model in Table 6 show that the metric for overall institutional ownership is not significant. This means that institutional ownership has no significant effect on SASB disclosure, contrary to what we expected.

However, the breakdown by groups of institutional owners reveals heterogeneity among institution types, which provides a more nuanced understanding of the overall effect. Firms with higher ownership shares from insurance companies are more likely to disclose, and the coefficient is significant at the 5% level. On average, a one percentage point increase in ownership from insurance companies is associated with an increase in the probability of disclosure by 0.52 percentage points, all else equal. Inversely, firms with higher ownership from hedge funds are less likely to disclose. The coefficient has a lower magnitude in absolute terms, and it is significant at the 10% level. Most groups have no significant coefficient, and it seems that the effects from insurance companies and hedge funds cancel each other out. Nonetheless, insurance companies hold small ownership positions relative to other institution types. Additionally, the results hold when controlling for all institution types simultaneously, meaning that our results are robust.

Moreover, we limit the sample to the period after 2018 inclusive. The official standards were published in late 2018, thus SASB's adoption surged in the financial year of 2018, given that most reports were published in early to mid-2019. Disclosure events prior to that date are based on provisional versions of the standards and correspond to a low number of first movers. The regression output in Table 7 supports the results from the previous table for hedge funds and insurance companies, even though the significance level of the estimates is inverted here. Furthermore, ownership by family offices and trusts has a positive effect on disclosure, and the coefficient is significant at the 10% level. Again, this group also has relatively small ownership positions in our sample. However, the result for family offices and trusts does not hold when controlling for all institution types simultaneously.

Table 6: Regression results for full sample

	Dependent variable: Overall disclosure							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IO Overall	-0.014 (0.012)							
IO IM		-0.014 (0.013)						-0.021 (0.015)
IO HF			-0.117* (0.056)					-0.124* (0.059)
IO Banks				0.068 (0.085)				0.088 (0.091)
IO Pension					-0.045 (0.170)			-0.032 (0.172)
IO Insurance						0.517** (0.184)		0.519** (0.185)
IO Family							0.297 (0.217)	0.290 (0.214)
Log Assets	-0.001 (0.003)	-0.001 (0.003)	-0.001 (0.003)	-0.002 (0.003)	-0.002 (0.003)	-0.002 (0.003)	-0.002 (0.003)	-0.001 (0.003)
Div/NI	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)
Debt/Assets	0.023 (0.013)	0.023 (0.013)	0.024 (0.013)	0.024 (0.013)	0.024 (0.013)	0.024 (0.013)	0.024 (0.013)	0.023 (0.013)
EBIT/Assets	-0.006 (0.011)	-0.006 (0.011)	-0.005 (0.011)	-0.006 (0.011)	-0.006 (0.011)	-0.006 (0.011)	-0.006 (0.011)	-0.005 (0.011)
Capex/Assets	-0.044 (0.025)	-0.044 (0.026)	-0.045 (0.026)	-0.045 (0.026)	-0.045 (0.026)	-0.045 (0.026)	-0.045 (0.026)	-0.044 (0.025)
Book/Market	-0.007* (0.003)	-0.007* (0.003)	-0.007* (0.003)	-0.007* (0.003)	-0.007* (0.003)	-0.007* (0.003)	-0.007* (0.003)	-0.007* (0.003)
FDQ	-0.561 (0.351)	-0.561 (0.350)	-0.560 (0.351)	-0.558 (0.350)	-0.558 (0.350)	-0.557 (0.349)	-0.557 (0.349)	-0.561 (0.349)
Observations	135,076	135,076	135,076	135,076	135,076	135,076	135,076	135,076
Adjusted R ²	0.190	0.190	0.191	0.190	0.190	0.190	0.190	0.191

*Notes: Regression for all firms during the period from 2014 to 2021. Employs firm and year fixed effects, and standard errors (in parentheses) are also clustered at both levels. The dependent variable equals one if a firm issued a SASB report in a year, either full or partial, and zero otherwise. IO stands for institutional ownership, IM for investment managers, HF for hedge funds, and FDQ for financial disclosure quality. All variables are defined in Appendix A3. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.*

Table 7: Regression results for post-2018 period

	Dependent variable: Overall disclosure							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IO Overall	-0.030 (0.015)							
IO IM		-0.026 (0.016)						-0.038 (0.017)
IO HF			-0.188** (0.038)					-0.201** (0.040)
IO Banks				0.209 (0.194)				0.252 (0.201)
IO Pension					-0.322 (0.338)			-0.297 (0.336)
IO Insurance						0.677* (0.242)		0.700* (0.228)
IO Family							0.869* (0.366)	0.846 (0.363)
Log Assets	-0.003 (0.003)	-0.003 (0.003)	-0.004 (0.003)	-0.004 (0.003)	-0.004 (0.003)	-0.004 (0.003)	-0.005 (0.003)	-0.003 (0.003)
Div/Ni	-0.004* (0.002)	-0.004* (0.002)	-0.004* (0.002)	-0.004* (0.002)	-0.004* (0.002)	-0.004* (0.002)	-0.004* (0.002)	-0.004* (0.002)
Debt/Assets	0.003 (0.024)	0.004 (0.024)	0.003 (0.024)	0.004 (0.024)	0.004 (0.024)	0.004 (0.024)	0.004 (0.024)	0.001 (0.024)
EBIT/Assets	-0.019 (0.016)	-0.019 (0.016)	-0.019 (0.016)	-0.019 (0.016)	-0.019 (0.016)	-0.019 (0.016)	-0.019 (0.016)	-0.019 (0.016)
Capex/Assets	-0.053** (0.015)	-0.054** (0.015)	-0.055** (0.015)	-0.056** (0.015)	-0.055** (0.015)	-0.056** (0.015)	-0.056** (0.015)	-0.052** (0.015)
Book/Market	-0.005 (0.003)	-0.005 (0.003)	-0.005 (0.003)	-0.005 (0.003)	-0.005 (0.003)	-0.005 (0.003)	-0.005 (0.003)	-0.006 (0.003)
FDQ	-0.366 (0.362)	-0.365 (0.362)	-0.363 (0.362)	-0.362 (0.361)	-0.362 (0.361)	-0.360 (0.361)	-0.358 (0.361)	-0.368 (0.362)
Observations	68,055	68,055	68,055	68,055	68,055	68,055	68,055	68,055
Adjusted R ²	0.355	0.355	0.355	0.355	0.355	0.355	0.355	0.355

*Notes: Regression for all firms during the period from 2018 to 2021. Employs firm and year fixed effects, and standard errors (in parentheses) are also clustered at both levels. The dependent variable equals one if a firm issued a SASB report in a year, either full or partial, and zero otherwise. All variables are defined in Appendix A3. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.*

Table 8: Regression results for US sample

	Dependent variable: Overall disclosure							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IO Overall	-0.060** (0.023)							
IO IM		-0.044* (0.019)						-0.069** (0.024)
IO HF			-0.173** (0.062)					-0.190** (0.067)
IO Banks				-0.271 (0.173)				-0.180 (0.165)
IO Pension					0.385* (0.187)			0.467* (0.200)
IO Insurance						0.724 (0.494)		0.844 (0.517)
IO Family							-0.230 (0.228)	-0.246 (0.224)
Log Assets	-0.004 (0.006)	-0.006 (0.006)	-0.009 (0.005)	-0.009 (0.005)	-0.011* (0.005)	-0.010 (0.005)	-0.009 (0.005)	-0.004 (0.006)
Div/Ni	0.001 (0.004)	0.001 (0.004)	-0.001 (0.004)	0.001 (0.004)	0.001 (0.004)	0.001 (0.004)	0.001 (0.004)	0.001 (0.004)
Debt/Assets	-0.005 (0.020)	-0.004 (0.020)	-0.002 (0.020)	-0.001 (0.020)	-0.001 (0.020)	-0.002 (0.020)	-0.002 (0.020)	-0.004 (0.020)
EBIT/Assets	-0.036 (0.019)	-0.035 (0.019)	-0.034 (0.019)	-0.035 (0.019)	-0.034 (0.019)	-0.034 (0.019)	-0.034 (0.019)	-0.035 (0.019)
Capex/Assets	-0.058 (0.063)	-0.061 (0.065)	-0.074 (0.066)	-0.067 (0.066)	-0.072 (0.066)	-0.069 (0.066)	-0.068 (0.065)	-0.064 (0.065)
Book/Market	-0.008 (0.005)	-0.008 (0.004)	-0.007 (0.004)	-0.006 (0.004)	-0.006 (0.004)	-0.007 (0.004)	-0.007 (0.004)	-0.009* (0.004)
FDQ	-0.356 (0.264)	-0.354 (0.263)	-0.337 (0.260)	-0.348 (0.265)	-0.347 (0.265)	-0.347 (0.263)	-0.347 (0.264)	-0.346 (0.262)
Observations	32,738	32,738	32,738	32,738	32,738	32,738	32,738	32,738
Adjusted R ²	0.250	0.250	0.251	0.250	0.250	0.250	0.250	0.252

Notes: Regression for US firms during the period from 2014 to 2021. Employs firm and year fixed effects, and standard errors (in parentheses) are also clustered at both levels. The dependent variable equals one if a firm issued a SASB report in a year, either full or partial, and zero otherwise. IO stands for institutional ownership, IM for investment managers, HF for hedge funds, and FDQ for financial disclosure quality. All variables are defined in Appendix A3. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Next, we look at the full sample period but limit the sample to US firms, where the adoption of the SASB standards is most prevalent. In this context, overall institutional ownership has a negative effect on disclosure, as shown in Table 8. The coefficient is significant at the 5% level, but it is rather small. On average, a one percentage point increase in ownership from institutional investors is associated with a decrease in the probability of disclosure by 0.06 percentage points, all else equal. This effect is mainly driven by hedge funds, followed by investment managers. On the other hand, firms with higher ownership from pension sponsors are more likely to disclose, and the coefficient is significant at the 10% level. Note that these results are robust when controlling for all institution types simultaneously.

These findings suggest some degree of geographical heterogeneity, as they differ from the results with the full global sample in terms of the institution types that have a significant association with SASB disclosure. For instance, pension sponsors have a positive significant association in the US sample, but a non-significant association in the full global sample. This result might be driven by the fact that pension sponsors have a more relevant role as institutional investors in the US than in the rest of the world.

In summary, we find that certain groups of institutional investors demand SASB disclosure, even though the share of overall institutional ownership does not predict SASB disclosure in most regression specifications. Table 9 summarizes the results from the previous tables, highlighting the sign of the coefficient for each institution type.

Ownership by hedge funds is negatively associated with SASB disclosure in all regression specifications. Pension sponsors, family offices and trusts, and insurance companies have a positive association with SASB disclosure under certain regression specifications. We propose that the varying demands for SASB disclosure between institution types are due to different ESG preferences, which can arise from multiple reasons. As a result, we assume that if investors have strong ESG preferences and integrate ESG in their investment process, they need more information about portfolio firms, thus having a higher propensity to demand SASB disclosure.

Firstly, ESG preferences might be related to investment horizons. Hedge funds

Table 9: Summary of regression results

Institution type	Full sample (Table 6)	Post-2018 sample (Table 7)	US sample (Table 8)
Investment managers	n.s.	n.s.	-
Hedge funds	-	-	-
Banks	n.s.	n.s.	n.s.
Pension sponsors	n.s.	n.s.	+
Insurance companies	+	+	n.s.
Family offices and trusts	n.s.	+	n.s.

Notes: “+” denotes a positive significant effect, “-” denotes a negative significant effect, and “n.s.” denotes a non-significant effect of the respective institutional ownership variable on SASB disclosure. The significant positive association of family offices and trusts in the post-2018 sample is not robust when controlling for all institution types simultaneously.

typically have short-term horizons, whereas investor groups with a significant positive association to SASB disclosure have more long-term investment horizons. Long-term institutional investors have significantly stronger preference for firms with high ESG scores, both tilting their portfolios toward such stocks (Starks et al., 2017), but also monitoring and engaging with these firms (Gaspar et al., 2005; Nofsinger et al., 2019).

Secondly, downside risks related to ESG are important for certain institutional investors. Concerns regarding downside risk might explain the demand for SASB disclosure for pension sponsors and insurance companies. For instance, pension funds must match their assets to the liabilities towards beneficiaries, otherwise incurring significant penalties (Ang et al., 2013). Additionally, insurance companies want to limit regulatory capital requirements, which are based on downside risk measures. Nofsinger et al. (2019) find that institutional investors are averse to Environmental and Social (ES) weaknesses, which are related to downside risks, but are ambivalent to ES strengths. Hoepner et al. (2022) show that engagement by institutional investors on ESG issues can reduce firms’ downside risks. In turn, firms with large downside risk reductions exhibit a decrease in environmental incidents after the engagement.

Thirdly, social norms can also explain differences in ESG preferences between our groups of institutional investors. According to Hong and Kacperczyk (2009), sin stocks are held less by norm-constrained institutions, such as pension funds,

when compared to mutual funds or hedge funds, which act as natural arbitrageurs. Moreover, [Chava \(2014\)](#) finds that firms excluded by environmental screens have lower institutional ownership, mainly due to norm-constrained institutional investors. This explanation can justify the wedge between pension sponsors and hedge funds in their demand for SASB disclosure.

Lastly, institution types with significant positive association to SASB disclosure might proxy for universal owners. [Hawley and Williams \(2000\)](#) define them as large institutional investors that own a broad cross-section of the economy, hold shares for the long term, and do not trade often, thus exposing them to the firms' externalities. [Ilhan et al. \(2023\)](#) establish a positive significant association between ownership by universal owners and CDP-based measures of climate risk disclosure. The authors use universal ownership as one of their proxies for climate-conscious ownership groups, and this specification is the one that yields the strongest effect in their results.

Overall, our results might be driven by some combination of the explanations mentioned above (such as investment horizons, downside risk, social norms, and universal ownership) but our analysis cannot disentangle their individual contributions.

6.2 Full versus partial SASB disclosure

Furthermore, we want to understand the role of institutional investors in promoting full disclosure for companies that already disclose SASB metrics, thus conditioning on SASB disclosure. As a result, we limit the sample to firms that have at least one full or partial disclosure event after 2018 inclusive, and change the specification of the dependent variable. The dummy variable for SASB disclosure is now equal to one if the disclosure event corresponds to a full SASB report, and zero otherwise (i.e., partial report or no disclosure event in a given year).

According to the regression results in Table 10, the coefficient for overall institutional ownership is not significant but two groups of institutional investors have opposite effects. There is a negative effect of hedge funds and a positive effect of investment managers, both significant at the 10% level. However, the result for hedge funds is not robust when controlling for all institution types simultaneously.

In turn, the result for investment managers is particularly interesting. In pre-

Table 10: Regression results for full sample conditional on SASB disclosure

	Dependent variable: Full disclosure							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IO Overall	0.119 (0.062)							
IO IM		0.207* (0.066)						0.167* (0.055)
IO HF			-0.496* (0.183)					-0.377 (0.163)
IO Banks				-1.509 (0.665)				-1.427 (0.626)
IO Pension					0.635 (0.511)			0.587 (0.512)
IO Insurance						-0.985 (2.177)		-1.273 (2.211)
IO Family							-1.611 (1.312)	-1.985 (1.312)
Log Assets	-0.003 (0.025)	-0.005 (0.024)	-0.003 (0.025)	-0.002 (0.024)	-0.002 (0.025)	-0.001 (0.025)	-0.0003 (0.025)	-0.006 (0.025)
Div/Ni	-0.012 (0.010)	-0.013 (0.010)	-0.012 (0.010)	-0.012 (0.010)	-0.012 (0.010)	-0.012 (0.010)	-0.012 (0.010)	-0.013 (0.010)
Debt/Assets	-0.020 (0.074)	-0.019 (0.074)	-0.027 (0.076)	-0.021 (0.071)	-0.019 (0.074)	-0.024 (0.073)	-0.023 (0.072)	-0.010 (0.075)
EBIT/Assets	-0.094 (0.061)	-0.096 (0.063)	-0.093 (0.067)	-0.076 (0.066)	-0.089 (0.064)	-0.086 (0.066)	-0.084 (0.066)	-0.095 (0.062)
Capex/Assets	0.287 (0.255)	0.271 (0.253)	0.326 (0.256)	0.317 (0.252)	0.306 (0.256)	0.315 (0.253)	0.318 (0.253)	0.296 (0.254)
Book/Market	-0.002 (0.015)	-0.002 (0.015)	-0.004 (0.015)	-0.003 (0.016)	-0.004 (0.015)	-0.004 (0.015)	-0.004 (0.015)	-0.001 (0.016)
FDQ	-0.383 (0.309)	-0.368 (0.306)	-0.369 (0.311)	-0.369 (0.303)	-0.386 (0.311)	-0.391 (0.311)	-0.400 (0.308)	-0.340 (0.299)
Observations	6,796	6,796	6,796	6,796	6,796	6,796	6,796	6,796
Adjusted R ²	0.356	0.356	0.356	0.356	0.355	0.355	0.356	0.357

*Notes: Regression for SASB firms during the period from 2018 to 2021. Employs firm and year fixed effects, and standard errors (in parentheses) are also clustered at both levels. The dependent variable equals one if a firm issued a full SASB report in a year, and zero otherwise. All variables are defined in Appendix A3. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.*

vious regressions regarding whether a firm discloses or not, the coefficient for this group was either insignificant or negative. But conditional on disclosing with SASB, a higher ownership share from investment managers is associated with a higher probability of full disclosure. This result suggests that while investment managers do not significantly influence the decision to disclose with SASB, they might be effectively pushing for full disclosure in firms that already disclose.

Alternatively, these contradicting results might be driven by the metric used for investment managers, which represents a large and diverse group of institutional investors. According to [S&P Global \(2020\)](#), the definition from Capital IQ includes “firms managing traditional portfolios of stocks and bonds on behalf of either their individual investors or large asset owners, such as pension funds, foundations, or endowments.” As a result, it forms the largest group of institutional investors, and includes asset managers with different investment strategies, customer mandates, among other factors.

6.3 Disclosure costs

Lastly, we want to evaluate the effect of disclosure costs on the institutional investors’ demand for SASB disclosure. The coefficient on the interaction term between the proxy for disclosure costs and the metric for institutional ownership provides an estimate of that effect. Regression results are presented in Table 11.

Demand from institutional investors for SASB disclosure increases with firm size since the coefficient for the interaction term is positive and significant at the 10% level. We suggest that this result might be attributed to economies of scale in information production for sustainability reporting since this activity has a significant fixed cost component. Therefore, disclosure costs related to information production are less relevant for large firms, which increases demand from institutional investors. This result is in line with research from [Wickert et al. \(2016\)](#) and [Ilhan et al. \(2022\)](#).

Moreover, demand also increases with HHI since the coefficient is positive and significant at the 5% level. HHI proxies for industry concentration, which is inversely related to competition. Our result shows that firms in highly competitive environments (low HHI) might be more concerned about disclosing SASB metrics that reveal

proprietary information, implying higher proprietary disclosure costs. As a result, demand from institutional investors is greater for firms with larger HHI. This result is aligned with [Ilhan et al. \(2023\)](#).

Overall, our findings are in line with [Christensen et al. \(2021\)](#), who state that some firms do not disclose voluntarily because of counterbalancing considerations. Our results provide evidence in favor of both institutional and economic theories of disclosure. These two factors interact with each other since institutional investors drive SASB disclosure, but they are also sensitive to disclosure costs.

Table 11: Regression results for disclosure costs

	Dependent variable: Overall disclosure	
	(1)	(2)
	Information production	Proprietary disclosure
IO Overall	−0.406** (0.159)	−0.102** (0.033)
IO Overall x Log Assets	0.050* (0.022)	
IO Overall x HHI		0.165** (0.054)
HHI		−0.066** (0.025)
Log Assets	−0.025* (0.013)	−0.003 (0.007)
Controls	Yes	Yes
Observations	28,223	28,223
Adjusted R ²	0.278	0.278

*Notes: Regression for US firms during the period from 2018 to 2021. Employs firm and year fixed effects, and standard errors (in parentheses) are also clustered at both levels. The dependent variable equals one if a firm issued a SASB report in a year, either full or partial, and zero otherwise. All variables are defined in Appendix A3. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.*

7 Discussion

7.1 Limitations

Before formulating implications that stem from our research, we reflect upon potential limitations in our analysis. Firstly, our empirical methods do not allow us to address endogeneity problems, such as reverse causality and omitted variable bias. Reverse causality is a major concern in the related literature (Ilhan et al., 2023; Flammer et al., 2021). On the one hand, institutional investors may actively engage firms to demand that they voluntarily disclose a SASB report (influence effect). On the other hand, institutional investors could have a propensity to invest in firms that are more likely to provide these disclosures (selection effect).

To our knowledge, there is no quasi-natural experiment that can be applied in the context of SASB disclosure. However, Ilhan et al. (2023) examine a shock to the climate risk disclosure demand of French institutional investors based on the CDP disclosure framework, and establish causality in support of the influence effect, which is in line with our hypothesis. Even if the alternative interpretation under reverse causality holds, that would mean, for example, that hedge funds are selecting firms that disclose less. That would be relevant because it could signal that they invest in companies with bad ESG performance.

Furthermore, we cannot fully address the omitted variable bias problem, even though our regression model controls for an extensive set of variables, which is in line with Ilhan et al. (2023). In particular, we do not control for disclosure under alternative competing frameworks, such as GRI. For example, firms disclosing with SASB in our sample may have previously disclosed information under the GRI framework, and then adopted SASB to comply with guidelines on double materiality. As a result, this could lead to the overestimation of the demand for SASB disclosure by certain institution types. Nonetheless, this problem is not so relevant for the US sample since SASB is the dominant framework there.

Secondly, the institutional ownership variables do not allow to separate the effect of different motivations that might drive demand for SASB disclosure. Alternatively, we could specify our variables to proxy for these particular motives. For instance,

Ilhan et al. (2023) classify universal owners as the top 1% of institutional investors in terms of the number of stocks in the portfolio in a year. Based on this classification, we could then calculate the universal ownership for all firms over time. Moreover, we could define a variable that considers the investment horizon. For example, Starks et al. (2017) specify both firm-level turnover and churn ratio by taking the weighted average of the respective metrics across institutional investors, where the weighting is based on the number of shares held in a given firm. We do not have access to the required datasets to build such variables. However, we argue that our characterization is more observable by the market than the alternative metrics proposed i.e., easier to pinpoint to the institutional investors targeted.

Thirdly, our results regarding disclosure costs are informative but not definitive since they are based on rough proxies, mainly the disclosure costs regarding information production. This variable is based on firm size, which is quite generic and could lead to alternative interpretations. For instance, larger firms are more likely to disclose because they face greater scrutiny (Stanny, 2013). However, we argue that our results are still robust since they are based on the interaction term with institutional ownership.

Lastly, the data on SASB disclosure covers a limited sample period and a low number of firms due to the novelty of the standards. As a result, the number of disclosing firms relative to all firms in the sample universe is quite small. Going forward, we expect adoption of SASB standards to further increase following the incorporation in ISSB, which might alter the results as the sample of disclosing firms becomes more representative.

7.2 Implications

To conclude, we outline some implications from our research. For institutional investors, we establish that certain institution types demand SASB disclosure from portfolio firms. Firstly, this result suggests that SASB fills a market gap in the ESG disclosure offering for institutional investors, given its focus on financial materiality. Secondly, it also implies that institutional investors have the ability to engage with management to elicit material ESG disclosure through the SASB framework. We

caution that more ESG disclosure is not necessarily always better, since firms that provide more ESG disclosure tend to have more disagreement (i.e., variation) in their ESG ratings (Christensen et al., 2022). This fact calls for more effective ESG disclosure and SASB provides a reasonable baseline for reporting standards, given its industry focus and link to financial materiality (Kotsantonis and Serafeim, 2019).

For standard-setting bodies, such as the ISSB, we argue that they should promote disclosure exemptions for proprietary information. Our analysis establishes that the release of proprietary information increases the disclosure costs, which ultimately harms the voluntary adoption of the standards. We welcome ISSB’s effort to promote exemptions on commercially sensitive information about sustainability-related opportunities (IFRS, 2023c). When applying for the exemption, the reporting firm would be required to motivate the exemption and reassess its reasoning at each future reporting date. However, this proposal excludes all other reported metrics besides sustainability-related opportunities. As a result, we recommend that the scope of the proposal is increased to account for all relevant SASB metrics.

Lastly, for future research, we propose extending the variables used for institutional ownership, as explained in the limitations, and conducting a more in-depth analysis regarding the role of disclosure costs in the demand for disclosure by institutional investors. Moreover, we suggest analyzing the role of investor coalitions (for instance, the IAG) in driving SASB adoption, as well as the impact of SASB disclosure on different factors e.g., the effect on cost of capital given SASB’s focus on financial materiality.

8 Conclusion

Our thesis examines the relationship between institutional ownership and firms' ESG disclosure according to the SASB standards. In addition, we investigate the impact of disclosure costs on institutional investors' demand for disclosure.

First, we find that overall institutional ownership does not seem to drive SASB disclosure, but we uncover a positive association for certain institution types in some regression specifications, namely pension sponsors, family offices and trusts, and insurance companies. Conversely, there is a negative relationship between hedge fund ownership and SASB disclosure. We attribute these findings to different ESG preferences among institution types, resulting in diverging demands for SASB disclosure. While our empirical analysis cannot pinpoint the specific motives behind these different preferences, we suggest that investment horizons, exposure to social norms, risk management profiles, and universal ownership may play a role.

Second, our research reveals a negative association between the level of disclosure costs faced by firms and the demand for SASB disclosure by institutional investors. Specifically, their demand for SASB disclosure is higher for larger firms, which might be due to the benefits of economies of scale in information production cost, and lower for firms subject to intense competition, due to higher proprietary disclosure costs. Nonetheless, these results are not definite since they are based on rough proxies. Overall, our study provides evidence for both institutional and economic theories of disclosure, suggesting that certain institutional owners drive SASB disclosure, but they are also sensitive to the firms' disclosure costs.

Based on our findings, we recommend that standard-setting bodies, such as the ISSB, further promote exemptions for proprietary information to encourage voluntary disclosure. Furthermore, our study contributes to the literature on institutional ownership's influence on ESG disclosure and points out numerous future research directions. In our thesis, we establish a positive relationship between the two, however, we cannot draw definite conclusions about the investors' motives or the influence of disclosure costs. Therefore, we encourage future research to expand on these aspects. Lastly, given SASB's increasing relevance, we propose to analyze the impact of disclosure on different factors, for instance, the cost of capital for disclosing firms.

References

- Ang, A., Chen, B., and Sundaresan, S. (2013). Liability-driven investment with downside risk. *Journal of Portfolio Management*, 40(1):71–87.
- Azar, J., Duro, M., Kadach, I., and Ormazabal, G. (2021). The big three and corporate carbon emissions around the world. *Journal of Financial Economics*, 142(2):674–696.
- Berg, F., Kölbel, J. F., and Rigobon, R. (2022). Aggregate confusion: the divergence of ESG ratings. *Review of Finance*, 26(6):1315–1344.
- Bolton, P. and Kacperczyk, M. (2021). Do investors care about carbon risk? *Journal of Financial Economics*, 142(2):517–549.
- Busco, C., Consolandi, C., Eccles, R. G., and Sofra, E. (2020). A preliminary analysis of SASB reporting: Disclosure topics, financial relevance, and the financial intensity of ESG materiality. *Journal of Applied Corporate Finance*, 32(2):117–125.
- Carbon Disclosure Project (2022). CDP to incorporate ISSB climate-related disclosure standard into global environmental disclosure platform. <https://www.cdp.net/en/articles/companies/cdp-to-incorporate-issb-climate-related-disclosure-standard>.
- Chava, S. (2014). Environmental externalities and cost of capital. *Management Science*, 60(9):2223–2247.
- Chen, S., Miao, B., and Shevlin, T. (2015). A new measure of disclosure quality: The level of disaggregation of accounting data in annual reports. *Journal of Accounting Research*, 53(5):1017–1054.
- Chen, T., Dong, H., and Lin, C. (2020). Institutional shareholders and corporate social responsibility. *Journal of Financial Economics*, 135(2):483–504.
- Christensen, D. M., Serafeim, G., and Sikochi, A. (2022). Why is corporate virtue in the eye of the beholder? The case of ESG ratings. *The Accounting Review*, 97(1):147–175.
- Christensen, H. B., Hail, L., and Leuz, C. (2021). Mandatory CSR and sustainability reporting: economic analysis and literature review. *Review of Accounting Studies*, 26(3):1176–1248.
- Consolandi, C., Eccles, R. G., and Gabbi, G. (2022). How material is a material issue? Stock returns and the financial relevance and financial intensity of ESG materiality. *Journal of Sustainable Finance & Investment*, 12(4):1045–1068.
- De Nederlandsche Bank (2022). Company name matching. GitHub repository, https://github.com/DeNederlandscheBank/name_matching.

- Deegan, C. (2002). Introduction: The legitimising effect of social and environmental disclosures – a theoretical foundation. *Accounting, Auditing, & Accountability*, 15(3):282–311.
- Dimson, E., Karakaş, O., and Li, X. (2015). Active ownership. *The Review of Financial Studies*, 28(12):3225–3268.
- Dyck, A., Lins, K. V., Roth, L., and Wagner, H. F. (2019). Do institutional investors drive corporate social responsibility? International evidence. *Journal of Financial Economics*, 131(3):693–714.
- European Commission (2019). Political agreement on Corporate Sustainability Reporting Directive will improve the way firms report sustainability information. <https://ec.europa.eu/newsroom/fisma/items/754701/en>.
- Ferreira, M. A. and Matos, P. (2008). The colors of investors’ money: The role of institutional investors around the world. *Journal of Financial Economics*, 88(3):499–533.
- Flammer, C., Toffel, M. W., and Viswanathan, K. (2021). Shareholder activism and firms’ voluntary disclosure of climate change risks. *Strategic Management Journal*, 42(10):1850–1879.
- Gamsjäger, L. and Ray, D. (2021). GRI, SASB, CDP: Making sense of overlapping sustainability and climate disclosures. Nordea, <https://www.nordea.com/en/news/gri-sasb-cdp-making-sense-of-overlapping-sustainability-and-climate-disclosures>.
- Gaspar, J.-M., Massa, M., and Matos, P. (2005). Shareholder investment horizons and the market for corporate control. *Journal of Financial Economics*, 76(1):135–165.
- Global Reporting Initiative (2020). A practical guide to sustainability reporting: using GRI and SASB standards. <https://www.globalreporting.org/media/mlkjpni/gri-sasb-joint-publication-april-2021.pdf>.
- Global Reporting Initiative (2022). The materiality madness: why definitions matter. <https://www.globalreporting.org/media/r2oojx53/gri-perspective-the-materiality-madness.pdf>.
- Grewal, J., Hauptmann, C., and Serafeim, G. (2021). Material sustainability information and stock price informativeness. *Journal of Business Ethics*, 171(3):513–544.
- Hahn, R. and Kühnen, M. (2013). Determinants of sustainability reporting: a review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production*, 59(1):5–21.

- Hansen, R. G. and Lott, J. R. (1996). Externalities and corporate objectives in a world with diversified shareholder/consumers. *Journal of Financial and Quantitative Analysis*, 31(1):43–68.
- Hawley, J. and Williams, A. (2000). The emergence of universal owners: Some implications of institutional equity ownership. *Challenge (White Plains)*, 43(4):43–61.
- Hoberg, G. and Phillips, G. (2010). Product market synergies and competition in mergers and acquisitions: a text-based analysis. *The Review of Financial Studies*, 23(10):3773–3811.
- Hoberg, G. and Phillips, G. (2016). Text-based network industries and endogenous product differentiation. *The Journal of Political Economy*, 124(5):1423–1465.
- Hoepner, A. G. F., Oikonomou, I., Sautner, Z., Starks, L. T., and Zhou, X. (2022). ESG shareholder engagement and downside risk. *ECGI Working Paper Series in Finance*, N.^o 671.
- Hong, H. and Kacperczyk, M. (2009). The price of sin: The effects of social norms on markets. *Journal of Financial Economics*, 93(1):15–36.
- Ilhan, E., Krueger, P., Sautner, Z., and Starks, L. T. (2022). Climate risk disclosure and institutional investors. *ECGI Working Paper Series in Finance*, N.^o 661.
- Ilhan, E., Krueger, P., Sautner, Z., and Starks, L. T. (2023). Climate risk disclosure and institutional investors. *The Review of Financial Studies*.
- International Financial Reporting Standards (2023a). IFRS Sustainability Alliance. <https://www.ifrssustainabilityalliance.org/>.
- International Financial Reporting Standards (2023b). International Sustainability Standards Board. <https://www.ifrs.org/groups/international-sustainability-standards-board/#members>.
- International Financial Reporting Standards (2023c). ISSB Update January 2023. <https://www.ifrs.org/news-and-events/updates/issb/2023/issb-update-january-2023/>.
- International Financial Reporting Standards Foundation (2021). IFRS Foundation announces International Sustainability Standards Board, consolidation with CDSB and VRF, and publication of prototype disclosure requirements. <https://www.ifrs.org/news-and-events/news/2021/11/ifrs-foundation-announces-issb-consolidation-with-cdsb-vrf-publication-of-prototypes/>.
- Khan, M., Serafeim, G., and Yoon, A. (2016). Corporate sustainability: First evidence on materiality. *The Accounting Review*, 91(6):1697–1724.

- Kim, E.-H. and Lyon, T. P. (2011). Strategic environmental disclosure: Evidence from the DOE's voluntary greenhouse gas registry. *Journal of Environmental Economics and Management*, 61(3):311–326.
- Kim, H.-D., Kim, T., Kim, Y., and Park, K. (2019). Do long-term institutional investors promote corporate social responsibility activities? *Journal of Banking & Finance*, 101:256–269.
- Kotsantonis, S. and Serafeim, G. (2019). Four things no one will tell you about ESG data. *Journal of Applied Corporate Finance*, 31(2):50–58.
- KPMG (2022). Big shifts, small steps - survey of sustainability reporting 2022. <https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2022/10/ssr-small-steps-big-shifts.pdf>.
- Krueger, P., Sautner, Z., and Starks, L. T. (2020). The importance of climate risks for institutional investors. *The Review of Financial Studies*, 33(3):1067–1111.
- Lewellen, J. (2011). Institutional investors and the limits of arbitrage. *Journal of Financial Economics*, 102(1):62–80.
- Luo, L., Lan, Y.-C., and Tang, Q. (2012). Corporate incentives to disclose carbon information: Evidence from the CDP Global 500 report. *Journal of International Financial Management & Accounting*, 23(2):93–120.
- Lydenberg, S., Rogers, J., and Wood, D. (2010). From transparency to performance: Industry - based sustainability reporting on key issues. *Harvard Initiative for Responsible Investing*.
- Machado, B., Pinto, L., and Fonseca, A. (2021). Transparency of materiality analysis in GRI-based sustainability reports. *Corporate Social Responsibility and Environmental Management*, 28(2):570–580.
- McCahery, J. A., Sautner, Z. A., and Starks, L. T. (2016). Behind the scenes: the corporate governance preferences of institutional investors. *The Journal of Finance*, 71(6):2905–2932.
- Mooney, A. and Nauman, B. (2020). Larry Fink rules on the best global standards for climate risk reporting. *Financial Times*, <https://www.ft.com/content/fc51227b-9d64-4e5a-b1e2-f6c07f4caa58>.
- Nofsinger, J. R., Sulaeman, J., and Varma, A. (2019). Institutional investors and corporate social responsibility. *Journal of Corporate Finance*, 58:700–725.
- Organization for Economic Cooperation and Development (2020). OECD institutional investors statistics 2020. <https://www.oecd-ilibrary.org/content/publication/9a827fb7-en>.

- Petersen, M. A. (2009). Estimating standard errors in finance panel data sets: comparing approaches. *The Review of Financial Studies*, 22(1):435–480.
- Solomon, J. F., Solomon, A., Norton, S. D., and Joseph, N. L. (2011). Private climate change reporting: an emerging discourse of risk and opportunity? *Accounting, Auditing & Accountability*, 24(8):1119–1148.
- S&P Global (2020). Definitions for investment firm types in screening on CIQ. <https://spglobal.my.site.com/s/article/Investment-Firm-Types-Definitions-for-CIQ-Screening>.
- S&P Global (2021). Institutional holdings or ownership percentages exceed 100%. <https://spglobal.my.site.com/s/article/4361>.
- Stanny, E. (2013). Voluntary disclosures of emissions by US firms. *Business Strategy and the Environment*, 22(3):145–158.
- Starks, L., Venkat, P., and Zhu, Q. (2017). Corporate ESG profiles and investor horizons. *Working paper*.
- Stigler, G. J. (1964). A theory of oligopoly. *The Journal of Political Economy*, 72(1):44–61.
- Stroebel, J. and Wurgler, J. (2021). What do you think about climate finance? *Journal of Financial Economics*, 142(2):487–498.
- Sustainability Accounting Standards Board (2015). Annual Report 2014. <https://www.sasb.org/knowledge-hub/annual-report-2014/>.
- Sustainability Accounting Standards Board (2016). Annual Report 2015. <https://www.sasb.org/knowledge-hub/annual-report-2015/>.
- Sustainability Accounting Standards Board (2017a). Annual Report 2016. <https://www.sasb.org/knowledge-hub/annual-report-2016/>.
- Sustainability Accounting Standards Board (2017b). SASB 2017 Technical Agenda. <https://www.sasb.org/wp-content/uploads/2017/07/SASB-2017-Technical-Agenda-072817.pdf>.
- Sustainability Accounting Standards Board (2018). Annual Report 2017. <https://www.sasb.org/knowledge-hub/annual-report-2017/>.
- Sustainability Accounting Standards Board (2019). Annual Report 2018. <https://www.sasb.org/knowledge-hub/annual-report-2018/>.
- Sustainability Accounting Standards Board (2020). Annual Report 2019. <https://www.sasb.org/knowledge-hub/annual-report-2019/>.

- Sustainability Accounting Standards Board (2021). Annual Report 2020. <https://www.sasb.org/knowledge-hub/sasb-2020-annual-report/>.
- Sustainability Accounting Standards Board (2022). About us. <https://www.sasb.org/about/>.
- Sustainability Accounting Standards Board (2023a). SASB Navigator. <https://navigator.sasb.org/>.
- Sustainability Accounting Standards Board (2023b). Support from investors. <https://www.sasb.org/investor-use/supporters/>.
- Task Force on Climate-Related Financial Disclosures (2022). About. <https://www.fsb-tcfd.org/about/>.
- Timoneda, J. C. (2021). Estimating group fixed effects in panel data with a binary dependent variable: How the LPM outperforms logistic regression in rare events data. *Social Science Research*, 93:102486.
- United Nations Principles for Responsible Investment (2021). PRI Brochure 2021. <https://www.unpri.org/download?ac=10948>.
- Wickert, C., Scherer, A. G., and Spence, L. J. (2016). Walking and talking corporate social responsibility: Implications of firm size and organizational cost. *Journal of Management Studies*, 53(7):1169–1196.
- Wooldridge, J. M. (2018). *Introductory econometrics: a modern approach*. Cengage, 7th edition.

Appendices

A1 Additional background on SASB

Timeline

2010: Jean Rogers along with two other researchers publish a paper proposing a method for identifying ESG key performance indicators for specific industries in the context of the Harvard Responsible Investing Initiative ([Lydenberg et al., 2010](#)).

2011: Jean Rogers founds the Sustainability Accounting Standards Board as non-profit organization in San Francisco. SASB formulated five goals at inception, including the development and maintenance of sustainability accounting standards, the promotion of application and use of these standards, while aligning with international efforts and transitioning to a sustainable business model. As a result, SASB operates in three major areas: research and standards development, market strategy and adoption, and product offerings ([SASB, 2015](#)).

2013: First set of provisional standards for six industries are published ([SASB, 2015](#)).

2016: Provisional standards for 71 industries have been published. Investor Advisory Group (IAG), a group of asset managers and owners, is created to promote the use and adoption of the standards ([SASB, 2017a](#)).

2018: SASB releases its codified standards for 77 industries ([SASB, 2020](#)).

2020: SASB and the International Integrated Reporting Council (IIRC) announce their intention to merge and form the Value Reporting Foundation (VRF) ([SASB, 2022](#)).

2021: VRF is formed. At the UN Climate Change Conference 2021, the International Financial Reporting Standards Foundation (IFRS) announces the creation of the International Sustainability Standards Board (ISSB), consolidating the VRF and

the Carbon Disclosure Standards Board, to develop an international baseline of sustainability standards (SASB, 2022).

2022: The consolidation is completed. The ISSB is committed to enhancing and working on the SASB standards and encourages companies to disclose accordingly until the IFRS Sustainability Disclosure standards are released, which will be developed based on SASB's structure (SASB, 2022).

Governance and financing

At its inception, SASB operated under a simple one-tier governance structure that got expanded to a two-tier structure in April 2017, separating fiduciary duty and standards-setting activities. The SASB Foundation Board oversaw strategy, finance, and governance as well as appointed members to the SASB Standards Board, which was in charge of the technical standards-setting (SASB, 2018). Under the VRF, the SASB Foundation Board merged with IIRC's board while the SASB Standards Board still operated independently. The structure was dissolved as part of the IFRS foundation, while a few former SASB board members joined the ISSB (IFRS, 2023b).

Before the consolidations, SASB was largely financed by philanthropic gifts and partially by income from products and licensing (SASB, 2015). The first and continuing largest donor was Bloomberg Philanthropies, also represented by Michael Bloomberg as Chair of the SASB Foundation Board from 2014-2018, followed by Deloitte and Ernst and Young (SASB, 2021). Companies disclosing according to the SASB standards do not face any cost, however, SASB generates income through different offerings. For instance, it offers the Fundamentals of Sustainability Accounting (FSA) Credential, educating professionals on the link between corporate performance and material ESG information (SASB, 2021). Furthermore, it established the SASB Alliance, a membership program, charging a membership fee, which has been integrated into the IFRS Sustainability Alliance after consolidation (IFRS, 2023a). Additionally, income is generated through licensing and the organization of events. In 2020, before the two rounds of consolidation, the revenues from these activities made up 37.2% of SASB'S total income (SASB, 2021).

A2 Break-down by institution types

Our data follows the definitions for the break-down by institution types from Capital IQ. For the case of hedge funds, Capital IQ considers that a position above 5% qualifies that holder as a strategic owner, and it will not be counted as institutional owner. Below, we provide the definitions from [S&P Global \(2020\)](#).

Investment managers: firms managing traditional portfolios of stocks and bonds on behalf of either their individual investors or large "asset owners" such as pension funds, foundations, or endowments. These firms manage assets either through mutual funds, or through separately managed investment accounts, or a combination of both. Excludes hedge fund managers, private equity/venture capital managers, and other "non-traditional" portfolios managers, such as commodities, currencies, etc.

Hedge funds: entities that raise funds from qualified investors (high net worth individuals/entities) with a common financial goal, and invest in various securities such as stocks, bonds, commodities, currencies, and derivatives. They have more flexibility to incorporate different strategies and techniques that may include: short-selling, arbitrage, hedging, and leverage.

Banks and investment banks: banks or investment banks that make non-strategic investments in its own capacity and have no legal investment firm subsidiary. Capital IQ creates an 'Asset Management Arm' record as an investment firm to capture its investment criteria and investment activities.

Corporate pension sponsors: entities that design, negotiate, and help to administer occupational pension plans to pay the pension benefits to their retired/ existing workers/management. These firms include employee stock ownership plans, employee benefit trusts, 401K plans, profit sharing Plans, retirement plans, etc.

Government pension sponsors: entities that design, negotiate, and help to administer occupational pension plans to pay the pension benefits to its retired/ existing

workers/general public. Includes firms managing their investments for the said objective, regulated under public sector law, with a structure as above wherein the parent is a Government Institution or has the sponsorship of a government institution.

Union pension sponsors: entities that design, negotiate, and help to administer occupational pension plans to pay the pension benefits to their members. Includes firms managing their investments with a structure as above wherein the parent is a Labor Union or Trade Association.

Insurance companies: insurance companies that make non-strategic investments in its own capacity and have no legal Investment Firm subsidiary. Capital IQ creates an 'Asset Management Arm' record as an Investment Firm to capture its investment criteria and investment activities.

Family offices and trusts: wealth management firms that serve ultra-high net worth investors. They provide personal services and access to alternative investments. In addition to wealth management services, they also assist in tax planning, estate planning, charitable giving, foundation, and budget issues.

A3 Variable definitions

Variable	Definition	Source
SASB disclosure	Equals one if a firm issued a SASB report in a year, either full or partial, and zero otherwise. Includes an alternative specification that equals one only if the company provided a full SASB report, and zero otherwise. The SASB report is considered “full” if the company has disclosed all of the metrics associated with their industry standard or provided an explanation for the omitted metrics, otherwise it is considered as a “partial” report.	SASB
Institutional ownership	Percentage of shares outstanding held by institutional investors for a given firm at the end of the year. Includes metric for overall institutional ownership and break-down by certain groups of individual investors: investment managers, banks and investment banks, hedge funds, pension sponsors (corporate, public, and union), insurance companies, and family offices and trusts. All variables winsorized at 1%.	Capital IQ
HHI	Herfindahl-Hirschman Index (HHI) based on text-based measure from Hoberg and Phillips (2016) . Measures industry concentration for a firm in a year. Only available for US firms.	Hoberg and Phillips (2016)
Log of assets	Control variable for firm size. Logarithm of total assets (data item AT) at the end of the year. Winsorized at 1%.	Compustat
Dividends/net income	Control variable for dividend payout. Common dividends paid (data item DVC), divided by net income/loss (data item NI for Compustat North America, NICON for Compustat Global) in a year. Winsorized at 1%.	Compustat

Debt/assets	Control variable for leverage. Sum of current debt (data item DLC) and long-term debt (data item DLTT), divided by total assets (data item AT) at the end of the year. Winsorized at 1%.	Compustat
EBIT/assets	Control variable for return on assets. Earnings before interest and taxes (data item EBIT) in a year, divided by total assets (data item AT) at the end of the year. Winsorized at 1%.	Compustat
Capex/assets	Control variable for capital intensity. Capital expenditures (data item CAPX) incurred in a given year, divided by total assets (data item AT) at the end of the year. Winsorized at 1%.	Compustat
Book-to-market ratio	Control variable for market valuation. Inverse of the price-to-book value multiple at the end of the year (data item IQ_PBV). Winsorized at 1%.	Capital IQ
Financial disclosure quality	Control variable defined as the percentage of non-missing data items in the income statement in a year, as reported in Compustat. The construction of this measure follows Chen et al. (2015) .	Compustat

A4 Robustness check on LPM model

The coefficients from the logit model correspond to the average partial effect, which results from averaging the individual partial effects across the sample (Wooldridge, 2018). Moreover, the standard errors are based on Z-values instead of t-values, given that the underlying distribution is different.

	Dependent variable: Overall disclosure	
	(1) LPM	(2) Logit
IO Overall	-0.014 (0.012)	0.006 (0.005)
Log Assets	-0.001 (0.003)	0.001 (0.001)
Div/Ni	-0.002 (0.001)	-0.001 (0.001)
Debt/Assets	0.023 (0.013)	-0.123*** (0.005)
EBIT/Assets	-0.006 (0.011)	-0.008** (0.004)
Capex/Assets	-0.044 (0.025)	0.014 (0.016)
Book/Market	-0.007* (0.003)	-0.002* (0.001)
FDQ	-0.561 (0.351)	-0.027 (0.017)
Observations	135,076	135,076
Adjusted R ²	0.190	0.258

*Notes: Regression for all firms during the period from 2014 to 2021. Employs firm and year fixed effects, and standard errors (in parentheses) are also clustered at both levels. The dependent variable equals one if a firm issued a SASB report in a year, either full or partial, and zero otherwise. IO stands for institutional ownership, IM for investment managers, HF for hedge funds, and FDQ for financial disclosure quality. All variables are defined in Appendix A3. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.*