

Do Foreign Institutional Investors Improve ESG Ratings and Reduce Rating Dispersion? Evidence From the US

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Abstract

The integration of Environmental, Social, and Governance (ESG) factors into firms' and investors' decision-making has gained substantial momentum over the last decade. Despite the rising importance of ESG, significant challenges persist, including controversies in ESG ratings across rating agencies undermining investor confidence and complicating ESG performance assessment of firms. This thesis investigates the role of foreign institutional investors in influencing U.S. firms' ESG performance reflected in ESG ratings and reducing rating dispersion between the two most used agencies, MSCI and Refinitiv, during the period 2013–2023.

Using a comprehensive dataset and employing an instrumental variable approach to address endogeneity concerns, we examine the impact of foreign institutional ownership in two dimensions: its effect on enhancing firms' ESG scores and its role in harmonizing ESG assessments. Additionally, we include a country-level social norm perspective to explore how the social norms of investors' home countries influence their impact in shaping firms' ESG practices. By distinguishing between short-term and long-term investors, we further provide insights into the characteristics that drive ESG ratings.

The findings reveal that foreign institutional ownership significantly improves ESG ratings while also reducing rating dispersion. Long-term investors and those from high social-norm countries are particularly effective in driving these improvements. The results highlight the importance of foreign institutional investors in promoting sustainable and standardized investment practices.

Keywords ESG Ratings, ESG Dispersion, Institutional Ownership, Sustainable Investing, Corporate Governance

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Abstrakti

Ympäristötekijöiden, yhteiskuntavastuun ja hyvän hallinnointitavan (ESG) sisällyttäminen yritysten ja sijoittajien päätöksentekoon on lisääntynyt huomattavasti viime vuosikymmenen aikana. Vaikka ESG-tekijöiden merkitys on kasvanut, haasteita tuottaa edelleen esimerkiksi eroavaisuudet ESG-luokituksissa, jotka heikentävät sijoittajien luottamusta ja vaikeuttavat yritysten kestäväen toiminnan arviointia. Tämä tutkimus tutkii ulkomaisten institutionaalisten sijoittajien roolia yhdysvaltalaisen yritysten vastuullisuuden parantamisessa, heijastuen ESG-luokitukseen, ja ESG-luokitusten hajonnan vähentämisessä kahden käytetyimmän luokituslaitoksen, MSCI:n ja Refinitivin, välillä vuosina 2013-2023.

Käyttämällä kattavaa aineistoa ja instrumentaalimuuttuja-lähestymistapaa endogeenisuusongelmien ratkaisemiseksi tutkimme ulkomaisen institutionaalisen omistuksen vaikutusta kahdella ulottuvuudella: sen vaikutusta yritysten ESG-luokituksen parantamiseen ja toisaalta roolia ESG-luokitusten yhdenmukaistamisessa. Lisäksi otamme mukaan maakohtaisen sosiaalisten normien näkökulman tutkiaksemme, miten sijoittajien kotimaan sosiaaliset normit vaikuttavat heidän kykyynsä muokata yritysten vastuullisuuskäytäntöjä. Erottelemalla lyhyen ja pitkän aikavälin sijoittajat toisistaan saamme lisätietoa ESG-luokituksiin vaikuttavista sijoittajien ominaisuuksista.

Tulokset osoittavat, että ulkomainen institutionaalinen omistus parantaa merkittävästi ESG-luokituksia vähentäen samalla luokitusten hajontaa. Pitkän aikavälin sijoittajat sekä sijoittajat korkeiden sosiaalisten normien maista edistävät näitä parannuksia erityisen tehokkaasti. Tulokset korostavat ulkomaisten institutionaalisten sijoittajien merkitystä kestävien ja standardoitujen sijoituskäytäntöjen edistämisessä.

Avainsanat ESG-luokitukset, ESG-hajonta, Institutionaalinen omistus, Kestävä sijoittaminen, Yritysten hallinnointitapa

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1. Introduction

The importance of integrating Environmental, Social, and Governance (ESG) factors into investment decisions has risen rapidly during the last two decades. The signatories to the Principles for Responsible Investment (PRI) – which commit investors to integrating ESG factors into their investment decisions – have grown to more than 5000 signatories, representing over half of the world’s institutional assets under management (PRI, 2024).

Consequently, investors rely on ESG ratings, provided by ESG rating agencies when making their investment decisions. To illustrate, Hartzmark and Sussman (2019) show how mutual funds that base their investment decisions on ESG ratings experience significant inflows. Similarly, Norge’s Bank Investment Management (NBIM), one of the largest and most influential owners in the global stock markets, integrates ESG information into its decision-making process. (NBIM, 2024). Also, academia relies on ESG ratings in their empirical studies (see e.g., Servaes and Tamayo, 2013; Flammer, 2015; Liang and Renneboog, 2017; Lins et al., 2017; Albuquerque et al., 2019).

However, recent literature has raised a major issue with ESG ratings – their reliability. Currently, ESG ratings tend to be highly dependent on the rating agency, leading to substantial variation across rating agencies (Chatterji et al., 2016; Berg et al., 2022). These divergences in ESG ratings have caused academia (e.g., Chatterji et al., 2016; Berg et al., 2022); media (e.g., Sindreu and Kent, 2018; Financial Times, 2024); and government (e.g., SEC, 2019) to question these ratings. Similarly, the divergence in ESG ratings complicates the evaluation of companies’ ESG performance, reducing their incentives to enhance their ESG performance. Ex ante, this may lead to underinvestment in ESG improvement initiatives, since the anticipated benefits are unclear. Ex post, the benefits of ESG improvements are less likely to be priced in markets, ultimately creating barriers to sustainable investment practices.

Despite the challenges associated with ESG ratings, investors have been found to drive firms’ corporate social responsibility (CSR) performance (see, e.g., Aggarwal et al., 2011; Dyck et al., 2019; Chen et al., 2020)¹, suggesting that they are – at least in some extent – beneficial to them.

¹ Mentioned reference papers study Environmental, Social and Government scores separately. Hence, we use the term CSR, instead of ESG. However, all of the studies find that institutions drive higher scores in the constituent pillars of ESG, which we assume can be applied to aggregated ESG ratings as well.

Motivated by discrepancies in the reliability of ESG ratings and the proven impact on firms' ESG performance, previous literature suggests that one key factor for investors to drive firms' ESG performance is the anticipated social returns. For instance, individual investors may maximize their utility by investing in socially responsible, even when they face a trade-off with financial performance and pay premium in ESG friendly companies (e.g., Heinkel et al., 2001; Gollier and Pouget, 2014; Riedl and Smeets, 2017).

Additionally, Dyck et al. (2019) suggest that firms in high social norm countries (e.g., Norway) may drive overinvestments in ESG even by the cost of maximizing financial returns as it moves firms' ESG performance towards its community ideal. Lastly, Norge's Bank Investment Management (NBIM) states "We aim to promote long-term value creation at the companies and minimize negative effects on the environment and society", providing evidence of social returns at the institutional level.

In this paper, we take a different approach and examine the importance of firms' ESG performance and ESG rating dispersion² to certain shareholders. More specifically, we examine whether foreign institutional investors improve firms' ESG performance and reduce ESG rating dispersion. We focus on the role of foreign institutional investors for several reasons.

First, institutional investors, in general, have characteristics that make them influential in driving changes in corporate governance. They own and vote for large amounts of the world's equity markets, have the power to influence company decisions, and generally maintain a long-term investment horizon³ (e.g., Chen et al., 2007; Cella et al., 2013; Gloßner, 2019; Erhemjamts and Huang, 2019).

Second, we are particularly motivated to study the effect of foreign institutional investors, as they are recognized for their more active role in driving changes in corporate governance and have been found to act as more effective external monitors (Gillan and Starks, 2003; Ferreira and Matos, 2008; Bena et al., 2017).

Third, previous studies (e.g., Bena et al. 2017; Dyck et al. 2019) demonstrate how institutional investors, particularly those from countries with high social norms, drive changes through mechanisms such as active monitoring. Hence, by grouping institutions into domestic and foreign categories, we can further test whether countries "export" their social norms.

² We define ESG rating dispersion as the level of disagreement in ESG ratings, measured by the absolute difference between MSCI's and Refinitiv's rating.

³ Long investment horizon is particularly important, as the anticipated benefits of ESG investments are often realized over the long term, with the potential expense of short-term trade-offs (e.g., Friede et al., 2015).

Finally, by using foreign institutional ownership as our main independent variable, we can address endogeneity concerns by employing an instrumental variable specification first introduced by Bena et al. (2017).

Furthermore, by examining foreign institutional investors, we can extend their monitoring role to the context of ESG dispersion and test whether closer monitoring can help narrow divergences in firms' ESG ratings. In general, disagreement in financial markets arises from different interpretations of the data and/or different sets of data (Cookson and Niessner, 2020). Similar findings are observed in the ESG context. For example, Christensen et al. (2022) find that voluntary disclosure increases ESG rating dispersion, suggesting that with larger sets of data, rating agencies interpret their own methodologies, resulting in higher ESG rating dispersion. Berg et al. (2022) find that harmonizing ESG disclosure and ESG reporting standards enable companies to achieve more consistent ESG ratings across agencies. Building on these findings, we hypothesize that foreign institutional investors contribute to the harmonization of firms' ESG disclosure and ESG reporting standards through closer, more effective monitoring.

Our thesis focuses on the U.S. stock market due to the mixed findings in previous research regarding the monitoring power of (foreign) institutional investors in the U.S. Moreover, U.S. institutions are likely to drive the impact of foreign institutional ownership in other countries, given their significant ownership stakes in both domestic and foreign companies⁴. Foreign institutions represent a minority fraction of total institutional ownership in the U.S., allowing us to test whether investors can influence company decisions, even when they operate as truly minority shareholders. Finally, the ownership data in the U.S. is both accessible and reliable, as it is based on the mandatory 13F filings.

We first examine whether foreign institutional investors in aggregate improve firms' ESG ratings and reduce ESG rating dispersion between two widely accepted ESG rating providers in academia – MSCI and Refinitiv. Next, we assess different motivators for investors to influence these metrics. By categorizing investors by their investment horizon i.e., long-term and short-term investors, as well as by their country level social norms, we examine the level of financial and social motivations in increasing ESG performance and reducing ESG dispersion.

⁴ Domestic institutions represent the majority of institutional ownership in the U.S, whereas in most other countries, foreign institutional ownership predominates (see e.g., Bena et al. 2017).

We find a statistically significant positive relationship between aggregated foreign institutional ownership and ESG performance, and a statistically significant negative relationship between aggregated foreign institutional ownership and ESG rating dispersion, each significant at the 1% level. Furthermore, we find that high social norm foreign institutions drive the ESG performance and ESG rating dispersion, while low social norm countries show no effect. Particularly foreign institutions with long-term investment horizons (e.g., pension funds) are driving the increase in ESG performance and decrease in ESG rating dispersion.

To combat endogeneity concerns, particularly reverse causality, we introduce multiple robustness tests including an instrumental variable (IV) methodology for foreign institutional ownership. By focusing on Foreign Institutional Ownership as our independent variable, we leverage MSCI ACWI index additions and removals as an instrumental variable, following the approach first introduced by Bena et al. (2017)⁵. To our knowledge, this is the first study to use foreign institutional ownership as the primary independent variable in analyzing ESG concerns, enabling us to apply the mentioned IV methodology in the context of ESG. The robustness checks support our findings and suggest a causal interpretation.

Our study contributes to existing literature in several ways. First, existing research has primarily focused on how corporate social responsibility (CSR) impacts institutional ownership (e.g., Hong and Kacperczyk, 2009; Chava, 2014; Starks et al., 2017) or has examined the role of institutional investors in promoting social and environmental practices as distinct metrics (e.g., Aggarwal et al., 2011; Dyck et al., 2019). By using ESG ratings as our dependent variable, we offer a comprehensive assessment of overall ESG performance. Additionally, analyzing ESG ratings from two distinct providers, MSCI and Refinitiv, enables us to assess the challenges associated with discrepancies, such as potential biases or data mining favoring a single ESG rating provider, while also highlighting the issue of ESG rating dispersion. By focusing on a recent period (2013-2023), our dataset provides new evidence from a period marked by a significant rise in the importance of ESG, while also allowing us to use reliable ESG ratings as our measure⁶.

Previous research finds mixed evidence of the monitoring power of institutional investors in the U.S. (e.g., Parrino et al., 2003; Gillan and Starks, 2003; Gaspar et al., 2005; Chen et al.,

⁵ For more information about our IV methodology, see section 3.8. *Methodology*.

⁶ For instance, MSCI ESG ratings are consistent from 2013 onwards, and accessible from 2007. Similarly, Refinitiv ESG ratings are consistent from 2010 onwards (MSCI; Refinitiv).

2007)⁷. By focusing on the impact of foreign institutional investors, who typically hold relatively small ownership stakes in U.S. firms, we provide valuable insights highlighting their influence. Our findings demonstrate that, despite their low ownership percentages, these investors have a significant impact on ESG, addressing the previously mixed evidence regarding the monitoring role of institutional investors in the United States.

Lastly, this thesis plays a significant role in contributing to the limited existing literature on ESG rating dispersion and addresses its critical challenge in sustainable investing. The lack of consistency between ESG rating agencies decreases reliability and makes it challenging to address the actual ESG performance of a firm. We study the monitoring role of foreign institutional investors in reducing the rating dispersion between agencies by, for example, improving transparency and standardizing reporting frameworks. While previous literature (e.g., Berg et al., 2022; Christensen et al., 2022) study the reasons and factors behind ESG disparities, to the best of our knowledge, this study is the first to study the role of foreign institutional ownership in relation to ESG rating dispersion. Furthermore, we provide additional evidence demonstrating how closer monitoring and better reporting practices demanded by foreign institutions tend to effectively reduce ESG rating dispersion.

The rest of our paper is structured as follows: Section 2 reviews existing literature and develops our hypotheses. Section 3 describes our data and methodology employed in the research. Section 4 presents the testing of our hypotheses and the resulting empirical findings. Section 5 includes robustness checks to validate and strengthen our results, and finally, Section 6 concludes the study.

⁷ For instance, Parrino et al. (2003) find that exit and selection have significant influence in the U.S., while Ferreira and Matos (2003), Gaspar et al. (2005) and Chen et al. (2007) highlight how the type of institution matters and specific investor types have some influence on specific corporate events, such as executive compensation structure.

2. Literature Review and Hypotheses Development

2.1. Motivation to Influence Firms' ESG Performance

The motivation for institutions to influence firms' ESG ratings lies in financial returns, social returns, or a combination of both. While maximizing social returns can conflict with the traditional agency theory framework introduced by Friedman (1970) – which presents that managers are hired to prioritize shareholder value maximization – recent studies suggest that the incentives for investors to engage with companies on ESG metrics have increased. For instance, Eccles (2014), Flammer (2019), and Cohen et al. (2023) find that companies with superior ESG scores tend to outperform their peers in overall value creation. Firms with higher ESG ratings are generally exposed to lower risk, and particularly environmental issues can lead to higher costs of capital (Chava, 2014; Albuquerque et al., 2019). Finally, firms with higher ESG scores tend to perform better in times of crisis, when measured by profitability, growth, and sales per employee (Lins et al., 2017).

The motivation to influence firms' ESG performance can also be understood through the concept of efficient frontier. Pedersen et al. (2021) demonstrate how responsible investors maximize their Sharpe Ratio by incorporating ESG information in their investment strategy. Similarly, Pástor et al. (2021) show that investors who invest according to their social norms i.e., ESG investors, enjoy an “investors surplus”, despite achieving lower alpha compared to investments with solely financial maximization focus. These findings suggest that if investors are ESG-aware or ESG-motivated, they will maximize their Sharpe ratio by incorporating ESG factors into their investment decisions.

Furthermore, the demand for responsibility and sustainability commitments has increased, and investors are increasingly willing to pay higher fees for such commitments (Bialkowski and Starks, 2016). Riedl and Smeets (2017) find that this increased willingness to pay boosts fund cash flows for institutions and, as a result, increases asset managers' rewards tied to assets under management. Simultaneously, large institutional investors have more influence on company management through monitoring and incentive mechanisms (Shleifer and Vishny, 1997; Gomes and Novaes, 2005). This dual effect of increased fund flows and the ability to influence company decisions combines financial incentives with ESG initiatives, further motivating institutions to influence firms' ESG performance.

Although fund flows concern all institutional investors, previous studies find that specifically foreign institutions are more active in improving firms' governance (Ferreira and Matos, 2008; Aggarwal et al., 2011). In addition, Dyck et al. (2019) argue that institutional investors consistently drive improvements in firms' environmental and social (E&S) practices, particularly when they originate from high social-norm countries, suggesting that strong social motivations can override the traditional agency theory framework proposed by Friedman (1970). Additionally, Bena et al. (2017) find a significant positive relationship between foreign institutional ownership and long-term investments, employment, innovation, and shareholder value. This indicates that foreign institutions have both the power and the incentive to oversee managerial decisions effectively. In other words, findings from previous literature suggest that particularly foreign institutions are more motivated to drive improvements in firms' ESG practices.

However, a fundamental question arises – why can investors with even a small stake in shares, i.e., foreign IOs drive these changes? Albeit owning a small percentage of firms, foreign institutions may serve as effective drivers for company decisions. Companies may face increased pressure from foreign investors to comply with their ESG standards. This pressure creates possibilities for reputational risks, particularly when institutions, that demand ESG commitments share their “bad” companies. For instance, NBIM “blacklists” companies on their website due to unfavorable actions towards ESG (NBIM, 2024). In addition, with small ownership stakes, foreign institutions are independent of local networks, enabling them to independently monitor management and promote sustainability initiatives (Gillan and Starks, 2003; Ferreira and Matos, 2008). Alternatively, socially responsible foreign institutions, even as small shareholders, may be more effective in undertaking private engagements, which could be the most effective type of activism (Becht et al., 2009; Dimson et al., 2015; Dyck et al., 2019).

In short, the existing literature suggests that the motivation to participate in improving firms' ESG performance is relevant to investors not only due to financial returns but also for social returns. As investors are a heterogeneous group and depending on factors, such as market environment and investor preferences for ESG initiatives, ESG stocks may generate positive, negative, or neutral alpha, highlighting that relying solely on financial returns may be in contradictory with a traditional agency theory framework (Friedman, 1970; Pedersen 2021). Therefore, the motivation to impact firms' ESG performance extends beyond shareholder value maximization and accounts for countries, firms, and societies' social norms and benefits (Dyck

et al., 2019). Moreover, influencing ESG practices can act as a form of insurance against event risks or other external challenges, e.g., economic crises, highlighting their multidimensional benefits (Lins et al., 2017; Hong et al., 2019; Albuquerque et al., 2019).

However, taking an activist role within a company to influence managerial decisions may not be legally possible⁸ or could lead to agency problems, particularly when there are “too many” close relations (Gillan and Starks, 2003; Ferreira and Matos, 2008). In the latter, unlike domestic institutions, foreign investors typically do not have many ties to local businesses and are therefore better positioned to act as more effective external monitors. Moreover, previous literature finds a positive association between foreign institutions’ activities and their influence on firms’ governance, long-term performance metrics, and ESG practices (Ferreira and Matos, 2008; Aggarwal et al., 2011; Bena et al., 2017; Dyck et al., 2019).

2.2. How Do Foreign Institutions Influence Managerial Decisions to Impact Firms’ ESG Performance

In order to influence firms’ ESG performance, foreign institutions must influence company decision-making. In this thesis, we refer to this as monitoring. Previous literature suggests two primary monitoring mechanisms: 1) Exit and Selection; and/or 2) Use of voice. In the exit and selection approach, institutions use positive and negative screening, wherein investors either buy shares that meet a certain ESG threshold, or consequently, exclude the shares that do not (Dyck et al., 2019; Barber et al., 2021).⁹ The exit and selection method aligns the interests of the firm’s ESG compliance with those of investors by investing in firms that comply with ESG while also actively using power by excluding poorly performing firms. Heinkel et al. (2001) demonstrate how negative screening can lead to a decline in firm value, thereby pushing non-compliant ESG firms to bear the cost of reforming to meet the required ESG threshold.

In contrast, in the use of voice mechanism, investors exercise their formal rights in the form of voting, shareholder proposals, or engaging privately with firms. In addition, investors can utilize proxy voting to influence board composition and support ESG-related resolutions, which can drive significant changes in firm policies.

Existing literature and reports from institutional investors and investor groups suggest that private engagements are the primary method of achieving changes in firms’ ESG practices

⁸ E.g., most US companies are incorporated in states where the law requires them to put shareholders first i.e., maximize the shareholder value even if it means sacrificing employees, customers, suppliers and communities.

⁹ In our study, we recognize that exit and selection causes reverse causality. However, with our granular approach and methodology, such as instrumental variable and granger causality tests, we try to exclude these concerns.

(Becht et al., 2009; McCahery et al., 2016; Amel-Zadeh and Serafeim, 2018). Moreover, Dimson et al. (2015) demonstrate that private discussions between institutions and firms are the dominant form of engagement, driving changes in corporate governance and ESG.

Additionally, shareholder proposals have been recognized as an important and efficient method for influencing board decisions and driving the ESG improvements globally (Guercio and Tran, 2012; Gibson et al., 2021). Dyck et al. (2019) highlight that shareholder proposals are primarily used as a tool to enhance the level of efficacy in private engagements, where firms may face pressure to improve transparency on sustainability initiatives. Furthermore, shareholder proposals are particularly effective in industries facing pressure to improve transparency on sustainability initiatives (Gibson et al., 2020).

Other possibilities to enhance ESG performance include influencing the managerial activity to support broader ESG contributions. Foreign institutions play a pivotal role in influencing managers as they typically do not have “too many” close relations¹⁰ to the firm they invest in, positioning them to act as more effective external monitors (Gillan and Stark, 2003; Ferreira and Matos, 2008). Foreign institutions influence managerial activity through closer monitoring and persuasion of managers who would otherwise prefer a “quiet life” i.e., avoid engaging in long-term projects (Hart, 1983; Bertrand and Mullainathan, 2003). Alternatively, Manso (2011) underscores how foreign institutions can increase managers' tolerance of failure and reduce career concerns and risks, leading to more long-term investments e.g., investments in sustainability, even if the decision might harm short-term profits.

Overall, previous literature has documented several ways in which foreign institutional owners successfully influence firm-level decisions to drive ESG policies. However, while influencing managerial decisions requires active engagement, achieving results often takes time. Consequently, the long-term benefits of better ESG performance might come with the price of short-term trade-offs (Friede et al., 2015). To bear the costs associated with short-term considerations and have an influence on firms' ESG policies, investors must have the resources and incentives to do so. Existing literature underscores this issue by categorizing investors based on the resources and motivation, in our case the investment horizon (long-term vs short-term) and social norms (high vs. low). Building on this, we argue that long-term investors and those headquartered in high social-norm countries should have the tenure, resources, and

¹⁰ Domestic institutional investors are more likely of having business ties with local companies. Previous research shows that domestic institutions are frequently affiliated to the banks that act as creditors, underwriters, advisors, and board members (Gillan and Starks, 2003, Ferreira and Matos, 2008).

incentives to bear the short-term trade-offs, resulting in the most significant ESG improvements (Bushee, 1998; Ferreira and Matos, 2008; Dyck et al., 2019; Liang and Renneboog, 2020).

2.3. The Role of Investor Types and Country-Level Social Norms

Foreign institutional investors are found to contribute to social returns, particularly when their country of origin has strong social norms. For instance, Dyck et al., (2019) find that commitment to the United Nations Principles for Responsible Investments (UN PRI) more than doubles an investor's impact on a firm's environmental and social performance when comparing them to an average investor impact. Additionally, investors with a long-term investor horizon – such as pension funds¹¹ – are positioned to drive ESG improvements due to their large investment pools, long investment periods, and strong contribution to social welfare (Ferreira and Matos, 2008; Gloßner, 2019; Erhemjamts and Huang, 2019).

Long-term investors, and particularly institutional investors, are more likely to promote ESG practices, linking ESG performance to long-term financial outperformance (Friede et al., 2015; Cohen et al., 2023). Higher ESG performance can act as a form of insurance against event risks and differentiate firms' products in the markets (Lins et al., 2017; Albuquerque et al., 2019; Hong et al., 2019). Therefore, long-term investors have several financial incentives to enhance firms' ESG practices and act as more effective external monitors, despite facing potential short-term financial trade-offs from doing so (Clark et al., 2015; Bena et al., 2017).

In addition to investment horizon, countries with generally strong social norms tend to push for higher ESG standards globally, highlighting how investors' cultural and legislative environments influence the firms they invest in (Ioannou et al., 2012; Dyck et al., 2019). Supporting this, Bena et al. (2017) find a strong positive and economically significant relationship between long-term investments and institutional ownership from common-law countries, providing further evidence that foreign institutions export good governance. Moreover, institutional investors from high social norm countries tend to demand clearer, more standardized reporting and greater transparency (Dimson et al., 2015; Liang and Renneboog, 2020; Gibson et al., 2021).

Whether improvements in ESG practices are influenced solely by a long-term investment horizon and high social norms remains a subject of debate, as previous literature finds mixed evidence. Dyck et al. (2019) find that long-term investors, e.g., pension plans, strengthen firms'

¹¹ Cella et al. (2013) find that pension plans are generally long-term investors.

ESG regardless of social norms. This suggests that even without external social pressure, long-term institutions' stable capital base and focus on long-term value maximization outweigh the costs associated with such improvements.

Short-term investors focus on value maximization, as their short-term horizon doesn't benefit from active monitoring (Gloßner, 2019; Erhemjamts and Huang, 2019). Investors from high social norm economies may still need to engage with ESG factors, as they face reputational and regulatory risks that could affect their capital pool (Dyck et al., 2019; Gratcheva et al., 2024). Institutional investors from high social norm countries tend to demand more transparency in reporting and corporate responsibility, enforcing more consistent standards (Dyck et al., 2019; Liang and Renneboog 2020).

2.4. Current Concern with ESG Ratings: ESG Rating Dispersion

In recent years, one of the key challenges that has emerged in the ESG landscape is the inconsistency in ESG ratings among ESG rating agencies¹² (Chatterji et al., 2016; Berg et al., 2022; Christensen et al., 2022). To illustrate, MSCI and Refinitiv rate Apple Inc. in 2023 with (indexed) ESG scores of 45 and 76, respectively.

The primary driver of ESG disparities is the difference in the methodologies employed by rating agencies. Each rating agency deploys its own methodology and weighting within each ESG pillar, leading to uneven scores within the same companies and industries (Berg et al., 2022). These disparities tend to increase (decrease) when a firm's ESG disclosure is higher (lower), highlighting the absence of standardized ratings. When the information is merely available, rating agencies can pick data that fits best into their agenda (Bloomfield and Fischer, 2011; Christensen et al., 2022). This can result in potential conflict of interest and make agencies vulnerable to lobbying or strategic disclosure decisions at the company level (e.g., disclosing information, that is not highly relevant to each pillar to make its ESG score more appealing).

The divergences in ESG ratings not only create confusion among investors but also have significant implications for the markets. Desiree Fixler emphasizes how sustainable investing becomes unreliable when the dispersion between rating agencies is high (Financial Times, 2024). Unreliable data can lead to “catering”, where portfolio and company disclosures are designed to meet investors' demand for sustainability but do not drive improvements in ESG practices (Eurosif, 2016; Chen et al., 2020). At the firm level, unreliable ESG scores are

¹² In this study, we refer to this divergence in ESG rating as ESG rating dispersion (or dispersion).

associated with the “cheap talk” of firms’ ESG initiatives (Delmas and Burbano, 2011) and impact firms’ performance in the market. Christensen et al. (2022) find that firms with greater levels of disagreements in their ESG ratings raise less external financing and experience greater stock price volatility.

2.5. The Interrelationship Between Foreign Institutional Ownership and ESG Rating Dispersion

Previous literature suggests that harmonizing reporting methodologies and increasing transparency through clear advocacy in reporting can help reduce ESG rating dispersion (Gibson et al., 2021; Berg et al., 2022), in which foreign institutions may play a pivotal role in. Ferreira and Matos (2008), Albuquerque et al. (2019), and Liang and Renneboog (2020) find that foreign institutional investors – particularly long-term institutions – are more likely to drive changes that enhance transparency and push firms to adopt consistent reporting standards.

Institutional investors, particularly from high social norm countries actively engage in corporate governance, drive firms’ alignment with global sustainability standards, encourage firms to adopt standardized ESG frameworks (e.g., SASB), and require better (closer) ESG disclosure from firms (Berg et al., 2022; Dyck et al., 2022). The disagreements in ESG ratings are primarily driven by environmental and social disclosures (Christensen et al., 2022), in which foreign institutions are likely to have a positive effect (Dyck et al., 2022).

In short, foreign institutional investors tend to export their good governance to demand greater transparency, harmonized methodologies, and better, more standardized reporting. Additionally, they act as better external monitors, suggesting that they can more effectively oversee their requirements in reporting. Consistent with previous literature on ESG, these findings tend to be more significant for long-term investors and those from high social-norm countries (Ferreira and Matos, 2008; Albuquerque et al., 2019; Liang and Renneboog 2020; Christensen et al., 2022).

2.6. Hypothesis Development

In our first hypothesis, we seek to provide robustness and causality to prior findings on the impact of foreign institutional ownership on firms’ ESG performance. Findings from Ferreira and Matos (2008), Aggarwal et al. (2011), and Dyck et al. (2019) indicate that institutional ownership is linked to improvements in corporate governance and enhanced E, S, and G practices globally.

Our aim is to untangle the question of how particularly foreign institutional ownership impacts firms' ESG ratings. With the help of the IV methodology¹³, we can address endogeneity concerns – particularly reverse causality – and provide robustness to prior findings on the extent to which foreign institutions contribute to firms' ESG ratings.

In our first hypothesis, we argue that through closer monitoring practices, as suggested by e.g., Dimson et al. (2015), Bena et al. (2017), and Dyck et al. (2019), foreign institutions can impact firms' managerial decisions more effectively, and therefore, link their incentives to company decisions, leading to increased ESG performance.

We extend our hypotheses beyond simply examining the effect on ESG ratings to also seek clarification for ESG rating dispersion. In our hypotheses, we argue that through closer monitoring, foreign institutions can harmonize firms' ESG disclosure and reporting practices, leading to lower ESG dispersion. This is aligned with findings from Berg et al. (2022) and Christensen et al. (2022), who suggest that implementing globally recognized, standardized frameworks ensure more consistent ESG assessment for firms by reducing subjectivity in the evaluation process.

Hypothesis 1: Foreign institutional ownership improves firms' ESG ratings and reduces ESG rating dispersion

Furthermore, previous literature has found a positive relationship between country-level norms and their influence on firms' environmental (E), social (S), and government (G) scores. Bena et al. (2017), Dyck et al. (2019), and Liang and Renneboog (2020) suggest that investors from countries with high social norms – such as those signatories to the United Nations Principles for Responsible Investment (UN PRI) – tend to export good governance and push firms for enhanced E, S, and G performance. In other words, previous literature suggests that social motivations play a pivotal role in driving firms' ESG practices.

Our study aims to research this effect of social norms in ESG ratings in U.S., in which foreign institutional investors hold relatively small ownership stakes. Given the prior findings on the relation between social norms and firms' ESG practices, we hypothesize that social norms of investors contribute significantly to firms' ESG ratings and ESG rating dispersions, also in the U.S., demonstrating the powerful impact of foreign institutions exporting their social beliefs.

¹³ See section 3 Data and methodology.

Hypothesis 2: Institutional investors from countries with high social norms have a greater impact on firms' ESG ratings and ESG rating dispersion

Long-term investors are better positioned to drive increased ESG ratings due to their long-term investment horizons (Ferreira and Matos, 2008; Erhemjamts and Huang, 2019; Gloßner, 2019). Prior findings suggest that long-term investors are not dependent on the social norm of the country, but instead drive higher ESG regardless (Dyck et al., 2019). Conversely, short-term investors often prioritize immediate returns, engaging minimally in ESG due to short investment horizons and a focus on quick profit maximization. Therefore, in our third and last hypothesis, we argue that long-term investors are more active monitors. Compared to short-term investors, long-term investors are more effective in aligning their incentives to impact firms' ESG practices, leading to improved ESG ratings and reduced ESG rating dispersion.

Hypothesis 3: Long-term foreign institutional investors have a greater impact on firms' ESG ratings and ESG rating dispersion

3. Data and Methodology

3.1. Data Sources

Our main sample comprises firms listed on the Nasdaq, NYSE, and NYSE American exchanges, with headquarters located in the United States, from 2013 to 2023, as provided by FactSet's Ownership database. FactSet Ownership reports institutional investors' ownership data for U.S. companies, collected primarily from quarterly 13F filings, which are mandatory disclosures required by the SEC for all investment managers with at least \$100 million in assets under management. Additionally, FactSet collects complementary data from fund reports, fund associations, and fund management companies.

FactSet sorts institutional ownership by country and holder type, which we use as a basis for calculating the total domestic and foreign ownership. Various prior research on (foreign) institutional ownership (e.g., Ferreira and Matos, 2008; Aggarwal et al., 2011; Bena et al., 2017; Dyck et al., 2019) use FactSet as their main source of firms' ownership characteristics. To account for survivorship bias¹⁴, we include all companies listed on these exchanges at any point during the sample period.

For our ESG ratings, we employ data provided by Refinitiv (formerly known as Asset 4) and MSCI. Both of our ESG data providers gather ESG data through multiple sources e.g., corporate disclosure, media, academia, NGO, and government sources, and aggregate their scores based on hundreds of ESG-related data points (LSEG, 2024; Apiday, 2024). Additionally, Refinitiv's and MSCI's ESG ratings date consistently back throughout the entire sample period (2013-2023), enabling robust comparison for our sample. The firm-level ESG scores obtained from the MSCI scale from 0 to 10, and Refinitiv from 0 to 100. As the score metric differs, we apply a 10x multiple on MSCI's ESG score to standardize the ratings.

Furthermore, for analyzing the ESG rating dispersion, MSCI and Refinitiv databases are among the few providers accepted by previous literature (e.g., Christensen et al., 2022). To calculate the dispersion, we rely on these two providers since previous research, such as Brandon et al. (2021), find that the correlation between ESG rating agencies is relatively low (see Appendix 5). Therefore, two rating agencies capture necessary discrepancies, providing us with reliable comparison without the need for an exhaustive comparison across all rating agencies¹⁵.

¹⁴ Survivorship bias occurs from only analyzing existing stocks in the market without regarding those that have gone bust.

¹⁵ However, we later recognize this as a limitation to our study. For additional robustness, providing analyses with a third provider (e.g., Sustainalytics) is one of our suggestions for future research.

For our country-level social norm index, we employ data from the Sustainable Development Goals (SDG) index, Environmental Performance Index (EPI), as well as joint dataset from the World Value Survey (WVS) and European Value Survey (EVS). Our SDG index and EPI scores are provided in 2024, and the joint WVS and EVS dataset is conducted between 2017 and 2024.

For our instrumental variable analysis on a company's inclusion in the MSCI All Country World Index (ACWI), we use data from MSCI's quarterly index reviews (MSCI, 2024) on index additions and deletions. MSCI publishes lists of companies added or removed during each quarter. By combining current index constituents with historical quarterly reviews, we compiled a dataset of companies included in the ACWI throughout our sample period.

Finally, our firm-level control variables and firm characteristics are constructed by using data from Wharton Research Data Services (WRDS), the Center for Research in Security Prices (CRSP), and Capital IQ databases.

3.2. Differences in ESG Rating Methodologies

The ESG scores provided by MSCI and Refinitiv are among the two most widely used metrics to evaluate companies' performance with respect to Environmental, Social, and Governance issues in academic literature (Christensen et al., 2022). The methodologies of the two "overall ESG scores" between these agencies differ significantly, which often combined with inconsistent data reporting leads to a large rating dispersion, reducing the reliability and credibility of a firm's ESG rating(s).

Refinitiv's ESG scoring methodology uses over 630 measures per company, structured around three main pillars, Environmental, Social, and Governance, which are further divided into ten categories to capture various dimensions of a company's performance. The weighting of Environmental and Social scores is industry-specific, while the Governance score is based on country of incorporation. The scoring model acknowledges that some ESG issues are more critical in certain sectors than others and transparency in company reporting significantly influences the scores. Companies are penalized heavily for failing to disclose data on highly material issues, although missing information for less relevant metrics has a smaller impact on their overall ESG score. Refinitiv aligns its updates with companies' own annual ESG disclosure but also refreshes the data weekly if new information is available on media. The scores older than five years are "locked in" allowing only the last five years to be adjusted if

needed, which preserves historical consistency while also adapting to changes in data over time. (Refinitiv, 2022)

MSCI's ESG rating methodology analyses over 1,000 data points from diverse sources which are further organized into 33 key ESG issues grouped under the three pillars. The issues are weighted based on a materiality framework tailored to each industry. The ratings use both exposure metrics, which assess how exposed a company is to material ESG risks based on its operations and geography, as well as management metrics, which evaluate how well these risks are managed. The scores are generally reviewed annually but also updated continuously with real-time monitoring of controversies and media reports. Compared to Refinitiv's rating MSCI is less reliant on company self-reported data, placing significant emphasis on external verification and alternative data such as NGOs and government databases. MSCI's management metrics consider how the issues are managed, e.g. carbon emissions reduction policies, while Refinitiv's score promotes transparency in corporate reporting and disclosure quality. Refinitiv's methodology can lead to more standardized data, but it may also make the rating less reflective of actual ESG performance and more influenced by the quality of companies' reporting. MSCI focuses on emphasizing financial relevance and real-time responsiveness. (MSCI ESG Research LLC, 2024)

3.3. Sample Selection

Our final dataset consists of 10,829 firm-year observations and covers 1,726 unique U.S. firms. The sample excludes all firm-year observations with missing values on institutional ownership or either one of the ESG ratings, to observe the ESG rating dispersion. Following Bena et al. (2017), we exclude utilities (SIC codes 4000-4999) and financial firms (SIC codes 6000-6799) as firms operating in these industries tend to be highly regulated, and thus, may introduce potential biases in our sample.

Table 1 presents summary statistics of institutional ownership and ESG ratings by year and industry. Appendix 1 provides state-level statistics. Panel A of Table 1 shows that both the mean and median institutional ownership increased over the sample period. In 2013, the mean institutional ownership was 71.9% and the median was 73.4%. Institutional ownership peaked in 2018-2019, with a mean of 77.7% and a median of 82.1%. By the end of our sample period in 2023, the median and mean institutional ownership levels were 74.7% and 81.7%, respectively.

Domestic institutional ownership remained relatively stable throughout the sample period, with both the mean and median showing little fluctuation, although the median experienced a slight increase. In contrast, foreign institutional ownership increased more relatively until 2019, surpassing the 10% level when measured by both mean and median. However, this trend reversed after 2019. At the end of our sample in 2023 the mean and median foreign institutional ownership had dropped to 8.7% and 6.8%, respectively.

Refinitiv's average ESG ratings experienced a decline in 2015-2016 but have gradually recovered to the 2013 levels. Conversely, MSCI's average ratings were relatively stable until 2020, after which they have increased significantly over the past three years.

Panel B presents the distribution of total, foreign, and domestic institutional ownership percentages, along with ESG ratings, segmented by industries. Industries are classified based on SIC codes. The highest average levels of foreign institutional ownership are observed in *Wholesale Trade* and *Services* industries. Meanwhile, *Manufacturing* and *Non-classifiable* industries show the highest average ESG rating, with mean scores exceeding 45 for both providers. In addition, *Manufacturing* has the smallest mean dispersion (1.35), whereas *Construction* shows the highest dispersion (7.72). Panel B also shows that foreign institutional ownership remains relatively stable across industries and does not largely exceed 10% or fall below 8%. In contrast, ESG ratings and rating dispersion vary significantly across industries.

Finally, Figure 1 illustrates the overall increasing trend in both average institutional ownership and average ESG ratings for a constant panel of firms over the sample period (2013-2023). The mean absolute rating dispersion was relatively stable between 16 and 19 for the constant panel of firms until 2020 but has since sharply declined by over four units, falling below 15 in 2023.

Table 1: Summary Statistics for Institutional Ownership and ESG Ratings

Summary statistics of ESG ratings and institutional ownership. The table shows mean and median statistics for the sample of 1,726 US companies listed on NYSE, NASDAQ, and AMEX. The sample includes a total of 10,829 firm-year values between 2013-2023. Panel A summarizes the observations by year and panel B by the industry using SIC codes. All variables are winsorized at the 1st and 99th percentiles.

Panel A: Summary Statistics by Year

Year	Institutional Ownership [Mean, (Median)]			ESG Ratings [Mean, (Median)]		No. of Firms	No. of firm-year obs.
	Total (%)	Domestic (%)	Foreign (%)	Refinitiv	MSCI		
2013	71.89 (73.41)	63.34 (64.87)	8.55 (8.64)	47.01 (45.67)	44.78 (45.00)	399	399
2014	73.10 (74.77)	63.96 (65.18)	9.14 (8.97)	46.89 (45.88)	46.28 (46.00)	409	409
2015	74.19 (76.64)	65.24 (66.66)	8.91 (8.71)	42.28 (39.85)	44.49 (44.00)	653	653
2016	74.91 (78.84)	65.59 (68.55)	9.28 (9.14)	40.15 (36.06)	44.38 (44.00)	884	884
2017	76.45 (80.26)	66.47 (68.49)	9.97 (9.99)	42.20 (38.78)	44.80 (45.00)	920	920
2018	77.72 (81.81)	67.27 (70.11)	10.41 (10.18)	42.55 (38.86)	46.54 (46.00)	981	981
2019	77.58 (82.11)	67.10 (70.26)	10.42 (10.26)	44.16 (41.31)	46.47 (46.00)	1073	1073
2020	76.63 (81.34)	66.20 (68.78)	10.38 (9.88)	47.30 (45.87)	46.86 (47.00)	1203	1203
2021	75.30 (81.10)	64.93 (68.37)	10.28 (9.43)	47.41 (47.07)	47.66 (48.00)	1357	1357
2022	74.35 (81.21)	65.77 (70.31)	8.47 (6.88)	47.24 (47.02)	49.85 (50.00)	1488	1488
2023	74.72 (81.70)	65.92 (70.31)	8.70 (6.82)	45.61 (44.66)	49.96 (50.00)	1462	1462
Total	75.47 (80.10)	65.86 (68.69)	9.56 (9.11)	44.99 (42.95)	47.10 (47.00)	1726	10829

Panel B: Summary Statistics by Industry

Industry (SIC)	Institutional Ownership [Mean, (Median)]			ESG Ratings [Mean, (Median)]		No. of Firms	No. of firm-year obs.
	Total (%)	Domestic (%)	Foreign (%)	Refinitiv	MSCI		
Agriculture, Forestry and Fishing (0100-0999)	64.70 (72.07)	57.22 (61.77)	7.48 (7.53)	41.76 (48.82)	43.22 (44.00)	3	18
Mining (1000-1499)	72.09 (78.60)	63.12 (67.59)	8.91 (8.97)	46.66 (46.28)	41.86 (41.00)	74	465
Construction (1500-1799)	82.82 (84.65)	72.91 (72.86)	9.89 (9.96)	36.91 (34.28)	44.63 (44.00)	35	261
Manufacturing (2000-3999)	75.77 (80.19)	66.27 (68.82)	9.45 (8.92)	46.27 (44.58)	47.62 (48.00)	899	5700
Transportation, Communications, Electric, Gas and Sanitary service (4000-4999)	71.36 (74.16)	62.56 (64.43)	8.75 (8.58)	41.88 (39.86)	45.83 (46.00)	94	672
Wholesale Trade (5000-5199)	77.84 (81.70)	67.35 (69.38)	10.36 (10.37)	40.79 (41.34)	49.64 (49.00)	67	461
Retail Trade (5200-5999)	75.19 (79.63)	65.43 (68.43)	9.73 (9.32)	47.99 (45.92)	43.87 (44.00)	136	810
Finance, Insurance and Real Estate (6000-6799)	-	-	-	-	-	0	0
Services (7000-8999)	75.75 (81.27)	65.71 (69.23)	9.97 (9.31)	43.03 (40.78)	48.14 (48.00)	413	2404
Public Administration (9100-9729)	-	-	-	-	-	0	0
Non-classifiable (9900-9999)	59.59 (66.71)	52.18 (54.25)	7.34 (8.48)	55.42 (73.26)	47.79 (50.00)	5	38
Total	75.47 (80.10)	65.86 (68.69)	9.56 (9.11)	44.99 (42.96)	47.10 (47.00)	1726	10829



Figure 1. Refinitiv's and MSCI's ESG ratings, ESG rating dispersion, and institutional investors' ownership percentage over time. The figure shows mean ESG ratings, mean absolute rating dispersion, and institutional investors' ownership for constant panel of 326 firms between years 2013 and 2023.

3.4. Country Level Social Norms

To test our hypothesis regarding the effect of social norms, we employ data on ESG-related social norms at the country level. Social norms can be observed in collective policies and societal outcomes, as well as in the values expressed by individuals within a society (Ostrom, 2000). Hence, to capture a comprehensive measure of country-level social norms, we use both approaches. For measuring ESG social norms at the collective level, we use the Sustainable Development Goals (SDG) index provided by the SDG Transformation Center and the Environmental Performance Index (EPI) provided by the Yale Center for Environmental Law (Yale University), both for the year 2024. To capture the individual-level social norms, we use

a joint dataset from the World Value Survey (WVS) and the European Value Survey (EVS), conducted between 2017 and 2024.

The SDG index ranks countries based on their commitment to the United Nations Sustainable Development Goals, which includes 17 integrated goals related to e.g., gender equality, climate action, responsible consumption, and production. The integration of the goals recognizes that progress in one area impacts results in other areas and that development must balance social, economic, and environmental sustainability, providing a robust measurement towards country-level ESG social score (United Nations Development Programme, 2024). The EPI is a comprehensive, country-level measure of climate change performance, environmental health, and ecosystem vitality, which uses 58 performance indicators across 11 issue categories (Block et al., 2024). In total, EPI scores 180 countries, offering policymakers a granular view and comparative perspective to help refine policy decisions and act as an effective measure of country-level social norms.

In addition, we acknowledge that country-level ESG outcomes and policies may differ from individual beliefs. To construct an aggregate ESG social score, we obtain individual-level ESG social norm opinions from the WVS and EVS joint dataset. Obtaining data from WVS and EVS is consistent with prior studies measuring social norms (e.g., La Porta et al., 1997; Glaeser et al., 2000; Guiso et al., 2003; Dyck et al., 2019). The data in the surveys are constructed through 156,658 individual interviews from 92 countries and territories worldwide, and collected in waves over the years (EVS, 2022; Haerpfer et al., 2022). The questions cover respondents' values and beliefs on topics related to the environment, social welfare, governmental involvement, gender equality, and many other ESG-related social norm factors. Our World Value ESG index consists of 17 questions from the joint WVS and EVS dataset, assessing respondents' beliefs and values regarding community and social trust, civic responsibility, institutional trust and governance, inclusivity, and public voice. To construct a country-level assessment, we aggregate individual responses by country and standardize the results on a 0-100 scale, following the methodology of Welzel (2013) and Dyck et al. (2019)¹⁶.

Table 2 presents summary statistics of country-level ESG social norms, sorted by the average score across the three indexes (SDG, EPI, and WVS). European countries rank the highest among the continents, having the 16 highest ranks measured by the average social scores. In

¹⁶ Welzel (2013) and Dyck et al. (2019) use data from EVS and WVS separately. However, since WVS and EVS formed a joint dataset covering the years 2017-2022, we are able to use this joint dataset to obtain the widest possible geographical coverage.

contrast, countries from Asia, Africa, and the Middle East are positioned at the bottom, categorizing them as low social norm countries.

Finally, although our social norm scores are mainly constructed by using the 2024 index scores¹⁷, we argue that the social norm scores are robust across our data period due to the persistence of social norms over time. To illustrate, a comparison of country rankings for the SDG index and EPI from 2014 and 2024 yields correlations of 0.98 and 0.75, respectively. Additionally, previous studies (e.g., Tabellini 2008 and Dyck et al. 2019) find strong evidence of the persistence of CSR-related social norms over time.

Table 2: Measures of Country-Level ESG Social Norms

Summary statistics of three performance indexes used to calculate the average social norm of a country towards ESG. The countries in which institutional investors hold less than 0.001% of US firms are not reported in this table but are included in the analysis. Social Development Goals Index is obtained from SDG Transformation Center, Environmental Performance Index from Yale Center for Environmental Law, and World Value ESG Index from World Value Survey (WVS) and European Value Survey (EVS) joint dataset. The Average is the average score of these three factors (or available factors if some of them are missing) which is used to determine countries' social norms towards ESG. Above median countries are classified as "high" social norm group and respectively below the median as "low" social norm group.

Country	Sustainable Development Goals Index	Environmental Performance Index	World Value ESG Index	Average
Luxembourg	76,81	75,10	na	76,0
Finland	86,35	73,80	63,3	74,5
Germany	83,45	74,50	65,1	74,3
Estonia	80,46	75,70	64,8	73,7
Belgium	80,04	66,80	na	73,4
Great Britain	82,16	72,60	64,5	73,1
Sweden	85,7	70,30	62,6	72,9
Denmark	85	67,70	65,9	72,9
Ireland	78,72	65,80	na	72,3
France	82,76	67,00	66,9	72,2
Austria	82,55	68,90	63,0	71,5
Norway	82,23	69,90	61,2	71,1
Spain	80,7	64,00	66,6	70,4
Switzerland	79,3	67,80	64,0	70,4
Greece	78,71	67,30	64,2	70,1
Czech Republic	81,26	65,50	63,3	70,0
Canada	78,83	61,60	69,5	70,0
Poland	81,69	64,20	63,6	69,8
Australia	76,88	63,10	65,4	68,5
Netherlands	79,21	66,90	58,3	68,1
Italy	79,29	60,30	64,2	67,9
Portugal	80,22	61,90	58,9	67,0
United States	74,43	57,10	66,0	65,8
Japan	79,87	61,40	55,2	65,5
South Korea	77,33	50,60	63,7	63,9
Brazil	73,78	53,00	60,3	62,4
Singapore	71,41	53,00	61,8	62,1
New Zealand	78,81	57,30	46,5	60,9
Israel	73,53	48,00	na	60,8
Bahamas	63,73	55,90	na	59,8
Mexico	69,28	44,20	63,0	58,8
Taiwan	na	50,10	66,7	58,4
China	70,85	35,40	54,7	53,6
South Africa	63,44	42,70	na	53,1

¹⁷ The SDG and EPI scores are based on the 2024 report, while WVS Index is constructed using data collected between 2017 and 2024.

3.5. Investor Type

Prior literature has generally classified investment horizon using institutions' portfolio turnover (churn rate) and legal type (e.g., hedge funds, pension funds) (Erhemjamts and Huang, 2019). For our tests, we categorize investors' horizon according to their legal type, following Ferreira and Matos (2008), Dyck et al. (2019), among many others. Using this approach, we can categorize our sample to truly short-term investors i.e., Hedge Funds and truly long-term investors i.e., Pension Funds.

For the analysis of institutional investor type, we use FactSet's classification. Five categories – Investment Adviser (67.8%), Mutual Fund Manager (16.4%), Private Banking/Wealth Mgmt (2.8%), Hedge Fund Manager (9.5%), and Pension Fund Manager (1.6%) – account for 98.1% of the institutional ownership in our sample. We group investment advisers, mutual funds, and private banking/wealth management under the group of independent institutional investors. Meanwhile, Hedge Funds and Pension Funds are treated as distinct subgroups, representing short-term and long-term investors, respectively.

Legal types outside Pension Funds and Hedge Funds, i.e. Investment Advisers, Mutual Funds, and Private Banking/ Wealth Managers, present certain classification challenges for our study. Most notably, Gloßner (2019) demonstrates that investment advisory companies are approximately evenly split between long-term and short-term investors when categorized by their churn rate. This makes it impossible for us to categorize them to distinct categories solely based on their legal type.

3.6. Variables of Interest

In our analysis, we use the ESG ratings provided by MSCI and Refinitiv, as well as the rating dispersion (the absolute difference) between these ratings as our dependent variables. *MSCI* and *Refinitiv* represent a firm's ESG ratings as provided by MSCI and Refinitiv, respectively. *Dispersion* is the absolute change in the difference between MSCI's and Refinitiv's ESG ratings for firm *x* in year *t*. Additionally, in *Section 5: Robustness Tests and Additional Analyses*, we use *Environmental*, *Social*, and *Governmental* pillar scores separately as our dependent variables, which are the multivariate constituents of our ESG ratings and represent the score within each pillar. To find more detailed discussion and definition for each variable, please see Appendix 1.

Our independent variables represent the percentages of domestic and foreign institutional ownership, as well as investor type and the social norms associated with foreign institutional owners. *Domestic IO* and *Foreign IO* denote the percentage of a firm's ownership held by domestic and foreign institutional investors, respectively, in each year. *Independent investors*, *Long-term* and *Short-term* are subcategories derived from institutional ownership. Similarly, the *High social norm group* and the *Low social norm group* categorize foreign institutional investors based on the social norms of their home country, as shown in Table 5. These subcategories measure the ownership percentage of the corresponding foreign institutional ownership type, for example, the percentage owned by long-term foreign institutional investors.

3.7. Control Variables

To alleviate the risk that our regression results are influenced by potential omitted variables, reflecting firm-specific characteristics associated with fundamentals (e.g., size) and financials (e.g., profitability), we incorporate control variables following previous literature on institutional ownership and ESG characteristics (e.g., Dyck et al., 2019).

First, given that larger firms face more external pressure and firm size has been shown as a predictor for institutional ownership, we include *Size* as the natural logarithm of total assets (Shleifer and Vishny, 1986; Ferreira and Matos, 2008; Aggarwal et al., 2011). Second, Hong et al. (2012) find that financial slack predicts the adoption of improved E&S practices. Therefore, we include *leverage* as total debt divided by total assets. Third, since tangible assets serve as better collateral, we include *tangibility*, measured as property, plant, and equipment (PPE) divided by total assets. Lastly, as performance can be a key driver of major changes within a firm (see e.g., Smith and Watts, 1992; Demsetz and Villalonga, 2001), we include *Tobin's Q* as the market capitalization plus total debt divided by total assets and *profitability* as the net income plus after-tax interest expenses divided by total assets. Additionally, to account for potential unobserved heterogeneity that may cause significant variations across states, industries, and years, we include fixed effects to control for most of these factors. Summary statistics for each variable are presented in Table 3.

Finally, Appendix 3 presents the correlation table for all variables used, which limits our concerns about multicollinearity. While the size measured by the log of total assets tends to be highly correlated with *Refinitiv ESG rating* and *Foreign IO* (as expected), the overall correlation matrix shows low correlations with many variables, suggesting a low likelihood of multicollinearity in our regression models.

Table 3: Summary Statistics

Summary statistics for the sample of 1,726 US companies listed on NYSE, NASDAQ, and AMEX. The sample includes a total of 10,829 firm-year values between 2013–2023. Foreign IO is total institutional ownership of institutions headquartered outside the US. Domestic IO is total institutional ownership of institutions headquartered in the US. LN Assets Total is the natural logarithm of a firm's total assets. Tangibility is gross PP&E to total assets, Leverage is total debt to total assets, Tobin's Q is market value of total equity plus total debt to total assets, and Profitability is net income (loss) to total assets. All variables are winsorized at the 1st and 99th percentiles.

Variable	Mean	Median	25 th Percentile	75 th Percentile	Standard Deviation
Foreign IO	0.096	0.091	0.056	0.126	0.053
Domestic IO	0.659	0.687	0.578	0.78	0.168
Assets Total	12480.903	2872	1013.641	9342	29315.031
LN (Assets Total)	8.087	7.963	6.921	9.142	1.606
Tangibility	0.238	0.159	0.080	0.339	0.216
Leverage	0.569	0.563	0.406	0.716	0.251
Tobin's Q	2.612	1.92	1.350	3.064	2.022
Profitability	0.015	0.047	-0.002	0.09	0.155

3.8. Methodology

Following previous studies on institutional ownership's impact on firms (e.g., Ferreira and Matos, 2008; Bena et al., 2017; Dyck et al., 2019), we use a fixed-effect ordinary least squares (OLS) specification for our panel data. This allows us to test whether higher (lagged) foreign institutional ownership contributes to increased ESG ratings and decreased rating dispersion. In addition, we use OLS to assess whether country-level social norms and/or investment horizon influence these outcomes further. As our baseline model, we use the following regression:

$$y_{it} = \alpha + \beta_1 * FOREIGN_IO_{it-1} + \beta_2 * DOMESTIC_IO_{it-1} + \gamma * Controls_{it-1} + \Lambda + \varepsilon_{it}, (1)$$

where y is the outcome variable of interest (ESG rating or ESG rating dispersion), indexed by firm (i) and time (t)-level. Our primary independent variables are *FOREIGN_IO* and *DOMESTIC_IO*, which represent the percentage of *foreign institutional ownership* and *domestic institutional ownership*, respectively, in year $t-1$. β is the coefficient for our independent variables, measuring their respective effects on y . *Controls* include *Size*, *Tangibility*, *Leverage*, *Tobin's Q* and *Profitability*, as defined in section 3.7. and Appendix 1. Λ denotes industry, year, and state fixed effects, to capture time-invariant characteristics and broader economic factors that may affect firm outcomes and ownership structures. Finally, ε is the error term, accounting for unobserved factors that may influence y .

For the variable of interest $(Log)ESG_{rating}$ represents a firm's ESG rating, and $ESG_{dispersion}$ is the absolute difference between MSCI's and Refinitiv's ESG ratings for firm i in year t .¹⁸ Following Dyck et al. (2019), we use log scores for better distributional properties and to reduce the impact of outliers. All the right-hand side variables are lagged for one year, as we argue that improvements in ESG performance take time to be reflected in the ratings.

However, the endogenous determination of foreign institutional ownership is an important concern. A firm with an already higher ESG rating and a more standardized reporting framework may attract foreign institutional ownership, leading to results with high correlation but low causality. To address these endogeneity concerns, especially reverse causality, we use an instrumental variable to capture the plausible exogenous variation in foreign institutional ownership. We conduct a two-stage least squares (2SLS) regression by using instrumented foreign institutional ownership. Following Bena et al. (2017) methodology, we exploit the fact that foreign investors are more likely to invest in companies included in MSCI indexes (Aggarwal et al, 2011). As foreign institutional investors are typically benchmarked against MSCI indexes, they are more likely to invest in stocks added to them (Cremers et al., 2016).

Furthermore, Bena et al. (2017) find that MSCI ACWI index additions increase foreign institutional ownership, but domestic institutional ownership remains unaffected. Building on this, we exploit the exogenous variation for foreign institutional investors around the threshold in which stocks are added or removed from the MSCI ACWI index for US firms. The index covers approximately 85% of the U.S. free float-adjusted market capitalization (MSCI, 2024), with stocks added to the index in descending order based on their market capitalization until the ~85% free-float mark is reached. Since stock additions are based on their market capitalization, we argue that these additions do not directly influence ESG ratings or ESG rating dispersion, and the variation in foreign institutional ownership around the threshold is exogenous.

Following Bena et al. (2017), we use a dummy variable that takes the value of 1 if the firm is included in the index in a given year and 0 otherwise. For the IV methodology, we first test the relevance of our condition, by conducting a first-stage regression introduced in Equation (2). After confirming the relevance, we conduct our IV regression, as introduced in Equation (3).

¹⁸ To illustrate, if MSCI gives the firm a standardized ESG rating of 20 and Refinitiv a rating of 25, the ESG dispersion is 5.

$$FOREIGN_IO = \alpha + \beta_1 * DOMESTIC_IO_{it} + \beta_2 * MSCI_{it} + \gamma * Controls_{it} + \Lambda + \varepsilon_{it}, (2)$$

$$y_{it} = \alpha + \beta_1 * \widehat{FOREIGN_IO}_{it-1} + \beta_2 * DOMESTIC_IO_{it-1} + \gamma * Controls_{it-1} + \Lambda + \varepsilon_{it}, (3)$$

where *FOREIGN_IO* measures the percentage of foreign institutional ownership, *DOMESTIC_IO* is the percentage of domestic institutional ownership, *MSCI* is a dummy variable that takes the value 1 if the firm is listed in the index in a given year and 0 otherwise, *Controls* include *Size*, *Tangibility*, *Leverage*, *Tobin's Q*, and *Profitability*, Λ captures fixed effects, and ε is the error term. In Equation 3, y_{it} represents the outcome variable and $\widehat{FOREIGN_IO}$ is the instrumented foreign institutional ownership.

To test our second hypothesis on country-level social norms, we use the following OLS specification:

$$y_{it} = \alpha + \beta_1 * FOREIGN_IO_HSN_{it-1} + \beta_2 * FOREIGN_IO_LSN_{it-1} + \beta_3 * DOMESTIC_IO_{it-1} + \gamma * Controls_{it-1} + \Lambda + \varepsilon_{it}, (4)$$

where y_{it} represents the outcome variable, *FOREIGN_IO_HSN* is the percentage of ownership held by high social norm foreign institutions in year $t-1$ and *FOREIGN_IO_LSN* is the percentage of ownership held by low social norm foreign institutions in year $t-1$, as detailed in Table 5. Other variables are as in equation 1 and defined in Appendix 1.

To test our third hypothesis on how institutional investors' investment horizon impacts ESG ratings and rating dispersion, we use the following OLS regression:

$$y_{it} = \alpha + \beta_1 * FOREIGN_IO_Long_{it-1} + \beta_2 * FOREIGN_IO_Short_{it-1} + \beta_3 * FOREIGN_IO_Ind_{it-1} + \beta_4 * DOMESTIC_IO_{it-1} + \gamma * Controls_{it-1} + \Lambda + \varepsilon_{it}, (5)$$

where y_{it} represents the outcome variable, *FOREIGN_IO_Long*, *FOREIGN_IO_Short*, and *FOREIGN_IO_Ind*, represent long-term, short-term and independent foreign institutional ownership in year t-1, respectively. All other variables are as in equation 1 and defined in Appendix 1.

4. Empirical Results and Hypothesis Testing

In this section, we use an OLS specification, as outlined in *section* 3.8, to test our main hypotheses. Each regression includes only firm-year observations for which all variables are available. We control for year, industry and state fixed effects, with standard errors clustered at the firm level.¹⁹ After presenting the results for each specification, we continue the analysis by discussing the implications of our findings and the potential underlying rationales.

4.1. Foreign Institutional Ownership and ESG Performance

The results for our baseline OLS specification, as defined in Equation 1, are presented in Table 4, where we examine the impact of aggregated foreign institutional ownership on firms' ESG ratings and ESG rating dispersion. When all controls are included in Column 7 and lagged right-hand side variables are used, the sample consists of 8,789 firm-year observations.

Panels A and B of Table 4 show the results for firms' ESG performance, when measured by Refinitiv's and MSCI's ESG ratings, respectively. Column 7 of Panel A and B reveal that the coefficient for *Foreign IO* is positive and statistically significant, at the 1% level for both panels. This indicates a positive relationship between (lagged) foreign institutional ownership and the firm's ESG rating for both rating providers. To illustrate, one standard deviation increase in foreign institutional ownership is associated with a 4.9% and 1.6% increase in Refinitiv's and MSCI's ESG scores (calculated as 0.053×0.926 and 0.053×0.303), respectively.

Although both panels show consistent positive and statistically significant results, a comparison between Panel A and Panel B reveals that the coefficient for *Foreign IO* in Panel A is approximately three times higher than in Panel B. We don't find the difference surprising as it primarily reflects the methodological differences between ESG rating agencies (see e.g., *Section* 3.2. and Berg et al., 2022). Overall, we conclude that the consistent statistical significance of the results gives us confidence that the relationship between *Foreign IO* and firms' ESG performance is not dependent on the choice of ESG rating agency.

¹⁹ Alternative standard error clustering by industry and by year levels are shown in Appendix 4 and leads higher (industry) and lower (year) standard errors, respectively. However, statistical significance is not dependent of the clusters used.

Table 4: OLS Regression for ESG Ratings and Rating Dispersion

Table 4 presents regressions for the total sample of 10,829 firm-year observations in the US between 2013-2023. The dependent variables are the natural logarithms of Refinitiv's ESG rating, MSCI's ESG rating, and the dispersion between the two which is the absolute value of the difference between the two ratings. Foreign IO is total institutional ownership of institutions headquartered outside the US. Domestic IO is total institutional ownership of institutions headquartered in the US. Ln Assets Total is the natural logarithm of firm's total assets. Tangibility is gross PP&E to total assets, Leverage is total debt to total assets, Tobin's Q is market value of total equity plus total debt to total assets, and Profitability is net income (loss) to total assets. Industry, State, and Year fixed effects are applied. All right-hand side variables are lagged by one year. All variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the firm level and shown in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. Panel A uses Refinitiv's ESG rating as the dependent variable, Panel B uses MSCI's ESG rating, and lastly, Panel C uses the dispersion of ratings.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A	ESG Refinitiv	ESG Refinitiv	ESG Refinitiv	ESG Refinitiv	ESG Refinitiv	ESG Refinitiv	ESG Refinitiv
Foreign IO	3.220*** (0.194)	3.070*** (0.190)	0.941*** (0.157)	0.939*** (0.156)	0.955*** (0.157)	0.943*** (0.157)	0.926*** (0.156)
Domestic IO		0.312*** (0.0667)	0.376*** (0.0529)	0.381*** (0.0529)	0.381*** (0.0527)	0.384*** (0.0529)	0.375*** (0.0534)
Ln Assets Total			0.189*** (0.00588)	0.189*** (0.00587)	0.185*** (0.00604)	0.185*** (0.00613)	0.182*** (0.00649)
Tangibility				0.107 (0.0690)	0.0999 (0.0691)	0.103 (0.0689)	0.105 (0.0688)
Leverage					0.0914** (0.0360)	0.0894** (0.0362)	0.0980*** (0.0363)
Tobin's Q						-0.000202 (0.00393)	-0.00173 (0.00397)
Profitability							0.102* (0.0524)
Constant	3.489*** (0.233)	3.265*** (0.231)	1.484*** (0.184)	1.468*** (0.183)	1.483*** (0.181)	1.479*** (0.181)	1.517*** (0.184)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,849	8,849	8,849	8,848	8,826	8,798	8,789
R-squared	0.363	0.371	0.570	0.571	0.572	0.572	0.573
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel B	ESG MSCI	ESG MSCI	ESG MSCI	ESG MSCI	ESG MSCI	ESG MSCI	ESG MSCI
Foreign IO	0.613*** (0.0690)	0.565*** (0.0680)	0.323*** (0.0674)	0.323*** (0.0674)	0.330*** (0.0672)	0.304*** (0.0667)	0.303*** (0.0667)
Domestic IO		0.100*** (0.0228)	0.107*** (0.0221)	0.103*** (0.0221)	0.104*** (0.0220)	0.103*** (0.0220)	0.102*** (0.0222)
Ln Assets Total			0.0215*** (0.00315)	0.0215*** (0.00314)	0.0199*** (0.00324)	0.0216*** (0.00325)	0.0215*** (0.00343)
Tangibility				-0.0911*** (0.0306)	-0.0957*** (0.0305)	-0.0926*** (0.0303)	-0.0887*** (0.0302)
Leverage					0.0323** (0.0155)	0.0294* (0.0156)	0.0287* (0.0160)
Tobin's Q						0.00511*** (0.00162)	0.00508*** (0.00161)
Profitability							0.00528 (0.0233)
Constant	3.695*** (0.0839)	3.623*** (0.0863)	3.420*** (0.0941)	3.434*** (0.0933)	3.443*** (0.0929)	3.423*** (0.0937)	3.426*** (0.0948)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,849	8,849	8,849	8,848	8,826	8,798	8,789
R-squared	0.432	0.437	0.452	0.455	0.455	0.457	0.458

Table 4 continues

Table 4 continues

Panel C	(1) Dispersion	(2) Dispersion	(3) Dispersion	(4) Dispersion	(5) Dispersion	(6) Dispersion	(7) Dispersion
Foreign IO	-9.725** (3.828)	-5.138 (3.777)	-16.66*** (3.949)	-16.61*** (3.947)	-16.34*** (3.956)	-16.39*** (3.940)	-15.65*** (3.918)
Domestic IO		-9.560*** (1.303)	-9.215*** (1.313)	-9.177*** (1.317)	-9.175*** (1.320)	-9.153*** (1.321)	-8.753*** (1.329)
Ln Assets Total			1.022*** (0.186)	1.022*** (0.186)	0.981*** (0.192)	0.997*** (0.192)	1.163*** (0.198)
Tangibility				0.941 (1.702)	0.778 (1.715)	0.658 (1.723)	0.946 (1.738)
Leverage					0.858 (0.895)	0.809 (0.899)	0.230 (0.913)
Tobin's Q						0.104 (0.107)	0.169 (0.108)
Profitability							-5.541*** (1.330)
Constant	7.823* (4.617)	14.70*** (4.514)	5.066 (5.007)	4.920 (5.029)	5.149 (5.026)	5.062 (5.058)	3.050 (5.148)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,849	8,849	8,849	8,848	8,826	8,798	8,789
R-squared	0.211	0.228	0.241	0.242	0.242	0.241	0.244

Panel C of Table 4 reports the results for ESG rating dispersion. As shown in Column 7 of Panel C, the coefficient for *Foreign IO* is clearly negative and statistically significant at the 1% level. This indicates that higher foreign institutional ownership is associated with lower ESG rating dispersion within a firm when measured by the absolute difference between Refinitiv's and MSCI's ESG ratings. For illustration, a one standard deviation increase in foreign institutional ownership is associated with a 0.83-point absolute decrease in ESG rating dispersion (calculated as 0.053×-15.65).

In order to assess whether the results in Panel A and Panel B mechanically drive the findings in Panel C, it is important to understand whether MSCI's or Refinitiv's ratings are consistently lower for individual firms. The coefficient for *Foreign IO* in Panel A, where Refinitiv's rating is the dependent variable, is approximately three times larger than in Panel B, where MSCI's rating is used. This suggests that if Refinitiv's ratings are typically lower than MSCI's, the increases observed in Panels A and B could mechanically reduce the absolute dispersion between the two ratings. As a result, the absolute difference between the two ratings (i.e., dispersion in Panel C) would mechanically decrease, independent of any direct effect on ESG rating convergence. The mean and median ESG ratings in Table 1 support this possibility, indicating that the results in Panels A and B could contribute to the reduced absolute dispersion observed in Panel C.

Given the results from Panel A, Panel B, and Panel C, we can confirm our *Hypothesis 1: Foreign institutional ownership improves firms' ESG ratings and reduces ESG rating dispersion*.

However, it is important to note that Table 4 suggests that also domestic (U.S.) institutions are positively associated with ESG ratings and negatively associated with ESG rating dispersion, each statistically significant at the 1% level. When comparing the coefficients for *Foreign* and *Domestic IO*, we find that the coefficient for *Foreign IO* is approximately three times higher for both ESG ratings, and two times higher for ESG rating dispersion. However, the standard deviation for *Domestic IO* is also around three times larger compared to *Foreign IO* (see Table 2), meaning that when comparing one standard deviation change, the economic impact on ESG ratings is similar between domestic and foreign institutions.

Nevertheless, our findings of the positive effect of foreign institutional ownership on firms' ESG ratings and the negative effect on firms' ESG rating dispersion are consistent with the idea that foreign institutions act as “better” external monitors. These investors own relatively small fractions of U.S. companies but seem successful in pushing ESG performance and narrowing dispersion. If foreign institutional ownership substantially increases, it is predicted to have a significant impact on firms' ESG performance and ESG rating dispersion.

One rationale for foreign institutions to impact firms' ESG performance and ESG reporting practices lies in their underlying motivations. As discussed earlier (see e.g., *section 2.1.*), foreign institutional investors can be motivated by financial and/or social incentives. To evaluate the magnitude of such incentives, we next divide foreign institutional ownership into subsamples based on social norms and investment types.

4.2. Country-Level Social Norms and ESG Performance

Institutional investors from countries with high social norms have social incentives to drive firms' ESG performance and ESG reporting practices. (see e.g., Ioannou et al., 2012; Dyck et al., 2019; Liang and Renneboog 2020). To evaluate the social incentives, we divided our sample into groups with high social norm countries and low social norm countries toward ESG. We measure country-level social norms using a novel construction of ESG-related social norms (see *Section 3.3.*) and divide our sample into high and low social norm groups based on the median rank of average score, as presented in Table 2. The results are reported in Panel A of Table 5.

Panel A of Table 5 reports positive and statistically significant coefficients for *High Social Norm Foreign IO* in Columns 1 and 2, both statistically significant at the 1% level. In contrast, coefficients for *Low Social Norm Foreign IO* in Columns 1 and 2 are also positive but smaller and statistically insignificant. This suggests that only foreign institutions from high social norm countries are associated with improved ESG ratings, while low social norm countries show no impact.

Furthermore, Panel A of Table 5 suggests that among all Foreign IOs, particularly *High Social Norm Foreign IOs* are driving the decreased ESG dispersion. As reflected in Column 3 of Panel A, *High Social Norm Foreign IOs* have clearly negative and significant coefficient at the 1% level, while *Low Social Norm Foreign IOs* have negative but not statistically significant coefficient.

Based on these results, we conclude that social motivations play a pivotal role in foreign institutional investors' decision to monitor managerial decision-making, as reflected in firms' ESG performance and ESG rating dispersion. Therefore, we can confirm our *Hypothesis 2: Institutional investors from countries with high social norms have a greater impact on firms' ESG ratings and ESG rating dispersion.*

4.3. Investor Type and ESG Performance

An alternative approach to examining the motivations behind ESG activism is to classify foreign institutional investors by investor type. *Long-Term* investors (e.g., Pension Funds) may view ESG investments as value-enhancing as a form of insurance or as a market differentiator (Albuquerque et al., 2019; Lins et al., 2017; Hong et al., 2019; NBIM, 2024). Their long-term investment horizon enables them to absorb short-term ESG costs in anticipation of long-term benefits. On the other hand, *Short-Term* investors (e.g., Hedge Funds) lack financial incentives to advocate for ESG-related costs, as they focus on maximizing short-term profits.

Independent Investors (e.g., Mutual Funds) compete for investor capital and must deliver consistent returns for investors, or else investors may withdraw their money from the funds. However, investors may also be socially motivated to invest in funds that invest according to their social values, leading to increased fund inflows for such mutual funds (see e.g., Hartzmark and Sussman, 2019). Therefore, *Independent Investors* may be driven by a combination of financial and social motivations when impacting firms' ESG practices.

Table 5: Institutional Investors' Geographical Location and Type

This table reports regression results on Refinitiv's and MSCI's ESG ratings on institutional ownership split into "high" and "low" social norm countries in panel A, by investor type in panel B. The "high social norm group" includes all countries in which the social norms towards ESG issues are above the median based on the criteria and average score calculated in Table 4. Below median countries form the "low social norm group". Long-term investors include FactSet's category pension funds, short-term investors include FactSet's category hedge funds and finally individual investors are FactSet's categories investment advisers and mutual funds. Regressions are done for the total sample of 10,829 firm-year observations in the US between 2013-2023. The dependent variables are the natural logarithms of Refinitiv's ESG rating, MSCI's ESG rating, and the dispersion between the two which is the absolute value of the difference between the two ratings. Foreign IO is total institutional ownership of institutions headquartered outside the US. Domestic IO is total institutional ownership of institutions headquartered in the US. The same set of control variables are used disrobed in more detail in Table 2 and Appendix 1. Industry, State, and Year fixed effects are applied. All dependent variables are lagged by one year. All variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the firm level and shown in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively

Panel A	(1) ESG_Refinitiv	(2) ESG_MSCI	(3) Dispersion
Foreign IO			
High Social Norm	0.854*** (0.160)	0.351*** (0.0689)	-14.02*** (4.016)
Low Social Norm	0.111 (0.953)	0.240 (0.371)	-10.89 (25.35)
Domestic IO	0.378*** (0.0535)	0.100*** (0.0222)	-8.820*** (1.331)
Control Variables	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	8,789	8,789	8,789
R-squared	0.572	0.459	0.244
Panel B	(1) ESG_Refinitiv	(2) ESG_MSCI	(3) Dispersion
Foreign IO			
Long-Term	3.800*** (0.887)	0.830** (0.407)	-47.98* (26.59)
Short-Term	0.710 (0.809)	-0.469 (0.350)	-12.15 (18.16)
Independent Investors	0.782*** (0.178)	0.330*** (0.0769)	-13.96*** (4.490)
Domestic IO	0.378*** (0.0535)	0.101*** (0.0223)	-8.769*** (1.334)
Control Variables	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	8,789	8,789	8,789
R-squared	0.574	0.459	0.245

Results to test our third Hypothesis are presented in Panel B of Table 5. The results in columns 1 and 2 suggest that *long-term foreign IO* is positively associated with higher ESG ratings. This association is statistically significant at the 1% level for Refinitiv's and at the 5% level for MSCI's ESG ratings. Similarly, column 3 of Panel B suggests a negative relationship between *long-term foreign IO* and ESG rating dispersion. This negative association is statistically significant at the 10% level. In addition, Columns 1, 2, and 3 of Panel B reveal no statistically significant relation between *short-term foreign IO* and ESG ratings. Similarly, there is no statistically significant relationship between *short-term foreign IO* and ESG rating dispersion.

Based on these findings, we can confirm our *Hypothesis 3: Long-term foreign institutional investors have a greater impact on firms' ESG ratings and ESG rating dispersion.*

Our third coefficient of interest, *Independent Investors*, consistently yields positive and statistically significant results in columns 1 and 2, both significant at the 1% level. This indicates that *Independent Investors* are positively associated with ESG performance. Column 3 reports a clearly negative coefficient for *Independent Investors*, suggesting a negative relationship between *Independent Investors* and ESG rating dispersion. This association is statistically significant at the 1% level.

These findings imply that Independent Investors do care about ESG matters, suggesting that either investors for such funds value ESG commitments (evidence for social motivation), ESG commitments provide financial gains for such funds (evidence for financial motivations), or commitments are driven by a combination of both motivations.

Overall, based on our results from Table 5, we conclude that institutions with long investment horizons and those from high social norm countries are more effective in driving improvements in ESG ratings. Our findings also suggest that these investors not only enhance ESG performance but also successfully reduce ESG rating dispersion. This highlights the ability of foreign institutional investors to effectively engage with company management and align their interests with corporate decisions.

5. Robustness Tests and Additional Analyses

One potential rationale for our findings in *Section 4* is that foreign institutions prefer to invest in companies with stronger ESG performance and reporting. Under this theory, foreign institutional investors monitor managerial decisions through an exit and selection approach. Rather than actively driving changes within firms, they would selectively invest in firms that already have strong ESG performance or exit those that fail to meet their criteria. To address these concerns, we conduct several robustness tests in this section to provide causal evidence for our findings.

5.1. Instrumental Variable and Firm Fixed Effects Analysis

A potential concern is that the findings may be influenced by foreign institutional investors selecting to invest in firms with better ESG prospects or by firms' ESG performance being shaped by inherent firm attributes. Incorporating firm-level controls, along with industry, year, and state fixed effects in the main model, helps mitigate concerns that the results are driven by observable firm characteristics. Hence, we introduce a firm fixed effects model to control time-invariant unobserved firm heterogeneity. In addition, we use an instrumental variable, MSCI ACWI index additions and removals, to instrument the potentially endogenous variable of foreign institutional ownership.

Following Bena et al. (2017), we use stock additions and deletions to Morgan Stanley Capital International (MSCI) All Country World Index (ACWI) as an instrument for foreign institutional ownership. This method addresses reverse causality and omitted variable concerns by isolating potentially exogenous variation in foreign institutional ownership. Cremers et. al. (2016) points out that foreign institutions are more likely to invest in stocks included in MSCI indexes, as their portfolios are commonly benchmarked against these world indexes.

First stage regression results in Column 1 of Table 6 indicate that foreign institutions increase their holdings by 3.7% of firm's market capitalisation when the share is added to the MSCI ACWI. The coefficient for MSCI ACWI is significant at a 1% level and the F-statistic for the first stage regression is 15.44, well over the conventional weak instrument threshold of 10 for a single instrument. Therefore, our first stage regression satisfies the relevance condition, suggesting that the stock addition to the index is associated with an increase in foreign institutional ownership. The exclusion restriction, meaning that the outcome variables are not affected other than through the impact of foreign institutional ownership on the outcome

variables, appears reasonable, as there is no clear rationale for a stock's inclusion in the ACWI to directly affect the ESG ratings or dispersion once we control for the factors influencing the index membership. Additionally, inclusion in the MSCI ACWI does not add any regulatory requirements on CSR strategy or reporting. (Bena et al., 2017)

Columns 2, 4, and 6 of Table 6 use a similar setting to Table 2 in OLS regression but include firm fixed effects to control for potential endogenous selection bias of foreign institutions investing in firms with better ESG standards, which could explain the positive relationship between Foreign IO, ESG ratings and ESG rating dispersion. The coefficients for *Foreign IO* are considerably smaller and less significant which is to be expected as the estimates rely on time-series variation within a firm instead of cross-sectional variation. Consistent with Table 2 having Refinitiv's ESG rating as the dependent variable, the coefficient for *Foreign IO* is clearly positive and significant at 5%-level, and when using the Dispersion as the dependent variable, the coefficient for *Foreign IO* is also clearly negative and significant at 5%-level. These results suggest that higher foreign institutional ownership increases a firm's ESG rating (Refinitiv) and reduces dispersion, independent of only the endogenous selection of firms with high ESG norms. In contrast to Table 4, when we use MSCI's ESG rating as the dependent variable, the coefficient for Foreign IO is close to zero and insignificant, which raises some concern about the magnitude of selection bias driving the results.

When looking at the instrumental variable regressions (IV) in columns 3, 5, and 7 of Table 6, the results show that instrumented foreign institutional ownership is positively and significantly, at 1%-level, associated with Refinitiv's ESG rating and negatively and significantly, at 10% level, associated with rating dispersion, further suggesting causality. Moreover, these findings suggest that the results are not driven by selection bias. Instead, foreign institutions drive ESG improvements and enhance reporting standards, to improve ESG ratings and decrease ESG rating dispersion. These results suggest a strong economic impact. IV results in columns 3 and 7 indicate that the OLS regression underestimates the positive impact of foreign institutional ownership on Refinitiv's ESG rating and the negative impact on rating dispersion by treating institutional ownership as exogenous (Bena et al., 2017).

Similar to the OLS regression including firm fixed effects, when using MSCI's ESG rating as the dependent variable, the coefficient for instrumented *Foreign IO* is close to zero and statistically insignificant. This slightly weakens the robustness of our results, as the causal effect of foreign institutional ownership on ESG ratings through IV regression is only evident for one of the two rating agencies used.

Table 6: OLS and IV Regressions with Firm Fixed Effects

This table shows the results of OLS and IV firm-level panel regressions of the ESG ratings and rating dispersion on institutional ownership using the sample of US firms between 2013-2023. Firm and year fixed effects are used in all regressions to control for time-invariant unobserved firm characteristics. In the IV regressions foreign institutional ownership is instrumented with MSCI ACWI, a dummy variable if a firm is included in the MSCI's All Country World Index in a given year. All variables are winsorized at the 1st and 99th percentiles and all dependent variables are lagged by one year. Foreign IO is total institutional ownership of institutions headquartered outside the US. Domestic IO is total institutional ownership of institutions headquartered in the US. Control variables are described in Table 2 and Appendix 1. White heteroscedastic-consistent standard errors are shown in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	First stage	OLS	IV	OLS	IV	OLS	IV
	Foreign IO	Refinitiv	Refinitiv	ESG MSCI	ESG MSCI	Dispersion	Dispersion
Foreign IO		0.168** (0.0848)	1.351*** (0.304)	0.0427 (0.0454)	-0.0538 (0.203)	-6.703** (2.977)	-24.10* (12.55)
Domestic IO	-0.0398*** (0.00713)	0.109** (0.0423)	0.168*** (0.0406)	0.0342* (0.0205)	0.0293 (0.0211)	-2.196 (1.396)	-3.067** (1.416)
Ln Assets Total	0.0113*** (0.00151)	0.0795*** (0.00943)	0.0589*** (0.0103)	-0.00741 (0.00527)	-0.00573 (0.00581)	-0.826** (0.330)	-0.523 (0.363)
Tangibility	0.0129 (0.00850)	0.0315 (0.0527)	0.0158 (0.0484)	0.00706 (0.0323)	0.00833 (0.0293)	-5.535*** (1.946)	-5.305*** (1.766)
Leverage	-0.00154 (0.00391)	-0.0367 (0.0244)	-0.0299 (0.0224)	-0.0480*** (0.0139)	-0.0486*** (0.0126)	0.475 (0.889)	0.376 (0.807)
Tobin's Q	-0.000495 (0.000364)	-0.00269 (0.00228)	-0.00371* (0.00212)	0.00146 (0.00119)	0.00155 (0.00107)	-0.260*** (0.0787)	-0.245*** (0.0716)
Profitability	0.000572 (0.00468)	0.00525 (0.0300)	0.000865 (0.0274)	0.0369** (0.0179)	0.0372** (0.0162)	-2.925*** (1.045)	-2.860*** (0.948)
MSCI ACWI	0.0367*** (0.00213)						
Constant	-0.0216* (0.0124)	2.653*** (0.144)	3.038*** (0.138)	4.054*** (0.0541)	4.213*** (0.0512)	38.66*** (6.603)	37.57*** (6.091)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,789	8,789	8,789	8,789	8,789	8,789	8,789
R-squared	0.777	0.894	0.890	0.785	0.785	0.663	0.661

5.2. ESG-pillar breakdown

To further explore the robustness of the results and impact of foreign institutions on ESG ratings, we look at the pillar scores, which are the underlying (three) scores driving the overall ESG score, for both providers all of which are scaled to range from 0 to 100. The results in Table 7 illustrate that foreign institutions have the largest impact on Environmental Pillar for both, Refinitiv's and MSCI's, ESG scores. This finding further suggests that exit and selection, meaning the positive screening for firms above certain ESG thresholds and negative screening for poor performers (Dyck et al. 2019), based on the overall ESG rating is not explaining our results. Instead, our results suggest active involvement and improvement with regard to

environmental issues, as foreign institutional ownership has much more impact on firms' environmental performance compared to the other pillars.

In columns 1 and 2 of Table 7, when using *Environmental Pillar Scores* as dependent variables, the coefficients for *Foreign IO* are 2.6 and 0.6 for Refinitiv and MSCI scores, respectively, both being statistically significant at the 1% level. To illustrate, one standard deviation increase in foreign institutional ownership would lead to an increase of 13.8% and 3.4% increase in Refinitiv's and MSCI's *Environmental Pillar Scores*, respectively (calculated as 0.053×2.604 and 0.053×0.648). Interestingly the coefficient for *Domestic IO* is insignificant in both settings, suggesting no relationship between *the Environmental Pillar Scores* and domestic institutional ownership.

The coefficient for foreign institutional ownership stays positive and significant at the 1% level throughout the regressions in Table 7. However, for both rating providers, the coefficient is 2 to 3 times smaller when using *Social Pillar Scores* and *Governance Pillar Scores* as the dependent variable compared to *Environmental Pillar Scores*. The coefficient for domestic institutional ownership is also positive and statistically significant when using *Social-* and *Governance Pillar Scores* as dependent variables. *Domestic IO* has the highest coefficients for both providers when using *Governance Pillar Scores* as the dependent variable, whilst *Foreign IO* has the lowest coefficient for Refinitiv's *Social Pillar Score* and MSCI's *Governance Pillar Score*. However, the findings in governance scores are not surprising, as previous literature suggests that domestic institutions are the main drivers of governance improvements in common-law countries, such as the United States (Aggarwal et al., 2011).

Overall, these results further support our hypothesis that foreign institutions impact firms' ESG ratings not only through investing in firms with better ESG scores to begin with but also by actively improving firms' underlying actions that contribute to those ratings. The fact that *Foreign IO* has by far the largest impact on the *Environmental Pillar Scores* might reflect that sustainability issues are the easiest among the three to improve for the sample of US firms, and/or them being the most important for foreign institutions.

Table 7: E, S, and G Pillars Separately

Regressions are done for the total sample of 10,829 firm-year observations in the US between 2013-2023. The dependent variables are the natural logarithms of Refinitiv's and MSCI's Environmental, Social, and Governmental pillar scores. Foreign IO is total institutional ownership of institutions headquartered outside the US. Domestic IO is total institutional ownership of institutions headquartered in the US. Control variables are as in Table 4 and described in more detail there. Industry, State, and Year fixed effects are applied. All dependent variables are lagged by one year. All variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the firm level and shown in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Environmental Pillar Scores		Social Pillar Scores		Governance Pillar Scores	
	(1) Refinitiv	(2) MSCI	(3) Refinitiv	(4) MSCI	(5) Refinitiv	(6) MSCI
Foreign IO	2.604*** (0.459)	0.648*** (0.141)	0.808*** (0.209)	0.443*** (0.148)	1.069*** (0.261)	0.262*** (0.0935)
Domestic IO	0.227 (0.163)	-0.0631 (0.0472)	0.211*** (0.0686)	0.0920** (0.0438)	0.372*** (0.0850)	0.267*** (0.0310)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,192	8,746	6,282	8,740	6,282	8,782
R-squared	0.517	0.620	0.563	0.348	0.391	0.333

5.3. Granger Causality Test

Lastly, following Dyck et al. (2019), we conduct Granger causality tests, which are widely applied in economic research, to further explore the causality between foreign institutional ownership and ESG rating improvement, as well as the importance of exit and selection as an influencing mechanism. In panel data analysis, where the time series are typically short but cover a large number of cross-sectional units, parameter estimation is conducted by pooling the data. Accounting for variations in individual effects is achieved by incorporating fixed effects (Holtz-Eakin et al., 1988). In line with this approach, we include firm fixed effects in our analysis. We estimate two symmetric sets of regressions in Table 8.

The results do not suggest that foreign institutional investors' selection of better-performing firms, as measured by the two ESG ratings or dispersion, is a significant factor in explaining our findings. In columns 4, 5, and 6 of Table 8, we control for lagged foreign institutional ownership. The dependent variable *Foreign IO* is not dependent on lagged ESG ratings or rating dispersion when controlling for lagged foreign institutional ownership. Instead, after controlling for lagged rating performance and control variables as in earlier specification, columns 1, 2, and 3 show that ESG ratings and dispersion significantly depend on lagged *Foreign IO*, which further supports our hypothesis that foreign institutional investors drive firms' ESG performance and reduce rating dispersion.

Table 8: Granger Causality Tests

The table reports results from Granger Causality tests. In columns 1, 2, and 3 the dependent variables are the natural logarithm of the Refinitiv's and MSCI's ESG score, as well as the (absolute) Dispersion. In columns 4, 5, and 6 the dependent variable is foreign institutional ownership. One-year lagged foreign institutional ownership is used as a control variable in all regressions. Other control variables are as in Table 2 and described in more detail there. All right-hand side variables are lagged by one year and all variables are winsorized at the 1st and 99th percentiles. Firm fixed effects are used throughout all regressions. White heteroscedastic-consistent standard errors are shown in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	ESG Refinitiv	ESG MSCI	Dispersion	Foreign IO		
Foreign IO (t-1)	0.381*** (0.0634)	0.168*** (0.0371)	-4.701* (2.565)	0.622*** (0.0138)	0.622*** (0.0138)	0.622*** (0.0139)
ESG Refinitiv (t-1)	0.593*** (0.0125)			-0.000468 (0.00144)		
ESG MSCI (t-1)		0.538*** (0.0134)			0.00313 (0.00256)	
Dispersion (t-1)			0.413*** (0.0120)			2.65e-05 (3.72e-05)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,789	8,789	8,789	8,789	8,789	8,789
R-squared	0.926	0.823	0.727	0.858	0.858	0.858

6. Conclusion

6.1. Research Summary

We study the role of foreign institutional ownership in shaping firms' ESG ratings and reducing ESG rating dispersion with a comprehensive dataset of publicly traded companies in the US. The findings underscore the significant influence of foreign investors, especially long-term and socially motivated, in improving corporate ESG performance and promoting the quality of reporting. By using the exogenous increase in foreign institutional ownership after a stock is added to the MSCI All Country World Index, the study addresses endogeneity concerns, providing causal evidence that foreign institutional ownership positively impacts higher ESG ratings and lower rating disparities across agencies.

Additionally, we identify the importance of country-level social norms and investors' investment horizon in driving ESG improvements. Investors from high social norm countries, often less encumbered by local ties, serve as effective external monitors, pushing firms to adopt better governance and sustainability practices. In contrast, institutional investors from low social-norm countries do not significantly impact firms' ESG rating or the rating dispersion between agencies. As expected, similar findings are present for short-term investors, suggesting that they prioritize short-term profits over potential long-term growth through improving ESG performance.

Finally, a notable contribution of this study is its focus on ESG rating dispersion, a growing concern among investors and stakeholders that has been the subject of very limited academic research. Disparities in ESG ratings across agencies can undermine investor trust and distort market perceptions of firms' sustainability performance. This study demonstrates that higher foreign institutional ownership is associated with a significant reduction in these discrepancies, suggesting foreign institutions play active role as external monitors, enhancing the quality of reporting. This finding is particularly relevant in the current landscape of increased interest in sustainable investing, where inconsistencies in ESG evaluations have become a critical barrier to the reliability of sustainable investment practices.

6.2. Limitations of the Study

Our dataset focuses solely on US firms for which ESG ratings and ownership structure, collected from 13F filings, are available. The geographic focus presents a notable limitation, as

the regulatory environment and social norms around ESG in the US potentially differ significantly from those in other countries. For instance, countries in Europe or Asia often have different reporting requirements, investor behaviors, and cultural attitudes toward sustainability and governance. As a result, the general applicability of our findings may be limited beyond North America.

While Refinitiv's and MSCI's ESG ratings are the two most used scores in academic research, the reliance on only two providers may not fully capture all ESG scoring practices, leading to potential underestimation or overestimation of the rating dispersion. As the correlation between ESG rating agencies is relatively low (Chatterji et al., 2016; Berg et al., 2022; Christensen et al., 2022) even with two different agencies (see Appendix 5), due to the underlying individual analyst dispersions being high, we argue that using only two agencies still produces reliable results on rating dispersion. Despite that, including more agencies' scores in the analysis could potentially lead to more robust results.

The ownership percentages are low especially for institutional investors from low-social norm countries, making it challenging to reliably further divide the group into subcategories, such as by investor type as shown in Table 5. This limitation prevents the study from for example meaningfully identifying whether specific subgroups within the otherwise insignificant low-social norm group, such as long-term pension funds, significantly impact ESG ratings.

6.3. Suggestions for Future Research

Our findings provide interesting avenues for future research, particularly regarding ESG rating dispersion. First, as noted in the limitations, it would be interesting to study the dispersion across multiple ESG rating providers. Second, as demonstrated in this thesis, social norms of a country play a pivotal role in decreasing the ESG rating dispersion. However, our results also reveal a negative and statistically significant relation between domestic institutions and ESG rating dispersion. Expanding the sample to a global scale could provide more compelling evidence on the relationship between ESG rating dispersion and social norms, assuming the United States to be a low-social-norm country, as identified by Dyck et al. (2019).

For greater granularity, industry and year-over-year analyses could provide interesting findings. For example, the "anti-ESG" movement driven by the contradictories in the ESG rating reliability could be an interesting avenue for future research. This could be examined in relation

to bot, ESG ratings and ESG rating dispersion, assessing whether industry, year, or period-specific factors play a role.

Lastly, diving deeper into the monitoring role of foreign institutions from a practical perspective presents an interesting research topic. In this research, we argued that the decreased ESG rating dispersion results from closer monitoring by foreign institutions. Researching the specific mechanisms through which foreign investors enhance firms' reporting practices would provide valuable insights. Do the same methods used to influence ESG performance, such as private engagements, also contribute to reducing rating dispersion? Alternatively, the reduction could be explained by something completely different.

Appendix

Appendix 1: Variable Definitions

Variable	Definition
Foreign IO	End-of-the-year holdings by institutions headquartered in a different country where the stock is listed (outside the US) as a fraction of the total market capitalization.
Domestic IO	End-of-the-year holdings by institutions headquartered in the same country where the stock is listed (in the US) as a fraction of the total market capitalization.
ESG Refinitiv	End-of-year overall ESG rating provided by Refinitiv (not industry-adjusted).
ESG MSCI	End-of-year overall ESG rating provided by MSCI (not industry-adjusted).
Dispersion	The absolute difference between the two ESG ratings (Refinitiv and MSCI) at the end of each year.
MSCI ACWI	A dummy variable equaling one if a firm is included in the MSCI All Country World Index in a given year and zero otherwise.
Assets Total	End of year firm's total assets.
Ln Assets Total	Natural logarithm of the total assets.
Tangibility	End-of-year gross property, plant, and equipment divided by the total assets.
Leverage	End-of-year debt divided by the total assets.
Tobin's Q	End-of-year market value of total equity plus total debt divided by the total assets.
Profitability	End of year net income (loss) divided by the total assets.
Foreign_IO_HSN	End-of-year holdings by foreign institutions from high social norm countries, defined as those ranked above the median based on the average score in Table 4, as a fraction of the total market capitalization.
Foreign_IO_LSN	End-of-year holdings by foreign institutions from low social norm countries, defined as those ranked below the median based on the average score in Table 4, as a fraction of the total market capitalization.
Foreign_IO_Long	End-of-year holdings by long-term foreign institutions, based on FactSet's classification including Pension Fund Managers, as a fraction of the total market capitalization.
Foreign_IO_Short	End-of-year holdings by short-term foreign institutions, based on FactSet's classification including Hedge Funds, as a fraction of the total market capitalization.
Foreign_IO_Ind	End-of-year holdings by independent foreign institutions, based on FactSet's classification including Investment Advisers, Mutual Fund Managers, and Private Banking/Wealth Management Funds, as a fraction of the total market capitalization.

Appendix 2: Summary Statistics for Institutional Ownership and ESG Ratings (State)

Summary statistics of ESG ratings and institutional ownership. The table shows mean and median statistics for the sample of 1,726 US companies listed on NYSE, NASDAQ, and AMEX. The sample includes a total of 10,829 firm-year values between 2013-2023. The table summarizes the observations by the state where the company is headquartered. All variables are winsorized at the 1st and 99th percentiles.

Summary Statistics by State							
State	Institutional Ownership [Mean, (Median)]			ESG Ratings [Mean, (Median)]		Number of Firms	Number of firm-year observations
	Total (%)	Domestic (%)	Foreign (%)	Refinitiv	MSCI		
ALABAMA	85.31 (86.77)	75.56 (75.35)	9.70 (9.09)	37.88 (41.23)	43.08 (41.50)	6	38
ARIZONA	78.40 (84.69)	67.72 (73.31)	10.54 (10.30)	46.27 (43.40)	46.97 (47.00)	33	242
ARKANSAS	68.26 (75.05)	60.24 (66.03)	8.00 (7.94)	48.86 (49.24)	41.43 (41.00)	9	65
CALIFORNIA	74.42 (78.77)	64.62 (66.88)	9.75 (9.21)	43.24 (39.52)	48.18 (48.00)	334	1823
COLORADO	70.57 (79.05)	61.79 (67.55)	8.67 (7.88)	43.80 (44.64)	46.85 (47.00)	46	268
CONNECTICUT	77.78 (83.89)	67.83 (71.62)	9.84 (9.04)	45.68 (47.03)	47.75 (47.50)	38	270
DELAWARE	76.63 (83.37)	67.11 (69.67)	9.52 (10.53)	52.57 (54.48)	46.67 (47.00)	10	46
FLORIDA	76.27 (80.88)	67.07 (69.80)	9.17 (8.84)	41.18 (38.40)	44.83 (45.00)	64	423
GEORGIA	74.20 (79.67)	64.74 (67.08)	9.43 (9.13)	43.82 (43.16)	47.18 (47.00)	51	336
HAWAII	87.30 (87.67)	79.48 (78.14)	7.82 (7.61)	46.21 (49.99)	45.22 (47.00)	1	9
IDAHO	78.54 (79.70)	66.21 (64.09)	12.33 (12.95)	46.69 (42.88)	49.67 (51.00)	7	43
ILLINOIS	76.50 (80.70)	65.91 (68.93)	10.53 (10.39)	51.22 (52.30)	47.06 (48.00)	74	551
INDIANA	74.40 (78.67)	64.08 (66.41)	10.24 (10.29)	44.71 (42.26)	49.82 (49.00)	21	150
IOWA	67.20 (69.20)	62.01 (62.99)	5.19 (5.49)	40.52 (34.38)	47.95 (46.00)	5	39
KANSAS	63.85 (76.92)	58.25 (70.14)	5.70 (5.21)	39.53 (41.60)	40.06 (40.00)	4	34
KENTUCKY	70.90 (75.98)	62.15 (66.27)	8.75 (7.81)	47.76 (52.15)	43.03 (43.00)	9	72
LOUISIANA	66.88 (75.38)	58.57 (68.64)	8.29 (8.73)	32.82 (33.26)	52.08 (51.00)	6	37
MAINE	89.75 (87.79)	78.56 (78.91)	11.18 (8.54)	44.46 (41.82)	57.72 (58.50)	2	18
MARYLAND	71.33 (76.96)	61.80 (68.03)	9.54 (8.96)	41.56 (35.12)	45.86 (45.00)	29	152
MASSACHUSETTS	77.19 (83.88)	67.62 (71.04)	9.50 (8.34)	42.38 (39.83)	47.35 (47.00)	127	678
MICHIGAN	78.26 (83.32)	67.17 (69.12)	11.00 (10.45)	52.63 (51.18)	47.26 (46.50)	32	238
MINNESOTA	76.97 (80.16)	67.75 (70.16)	9.19 (8.87)	50.88 (48.97)	51.42 (52.00)	40	276
MISSISSIPPI	75.82 (76.57)	67.74 (68.99)	8.08 (7.53)	34.09 (33.06)	36.25 (35.00)	1	8
MISSOURI	79.35 (82.50)	69.95 (70.76)	9.29 (9.03)	43.92 (40.11)	41.86 (42.50)	17	118
MONTANA	80.20 (82.83)	69.22 (71.23)	10.98 (10.54)	37.35 (35.48)	52.31 (51.00)	2	13
NEBRASKA	78.29 (80.40)	68.08 (69.49)	10.22 (10.54)	43.19 (44.80)	45.90 (46.00)	8	59
NEVADA	64.11 (64.13)	58.30 (59.78)	5.82 (5.12)	37.86 (32.29)	43.05 (42.00)	20	133
NEW HAMPSHIRE	77.51 (89.86)	68.99 (81.68)	8.53 (8.88)	30.03 (28.58)	44.69 (45.50)	5	32
NEW JERSEY	76.40 (80.04)	66.44 (67.90)	9.93 (9.39)	49.60 (49.98)	47.05 (47.00)	50	324
NEW MEXICO	96.52 (96.52)	73.84 (73.84)	22.68 (22.68)	29.67 (29.67)	48.50 (48.50)	1	2
NEW YORK	74.64	64.10	10.40	45.43	46.58	115	667

	(78.31)	(65.60)	(10.13)	(43.03)	(47.00)		
NORTH CAROLINA	77.04 (78.96)	67.57 (69.32)	9.45 (9.13)	42.50 (41.42)	46.17 (47.00)	43	268
NORTH DAKOTA	79.93 (78.83)	70.90 (71.69)	9.03 (7.15)	17.83 (18.62)	54.33 (55.00)	1	3
OHIO	75.44 (77.79)	65.94 (66.15)	9.48 (9.19)	48.06 (49.69)	47.53 (48.00)	60	437
OKLAHOMA	65.69 (71.41)	58.66 (63.43)	6.98 (6.76)	33.48 (30.35)	42.13 (41.00)	12	68
OREGON	72.97 (79.97)	62.81 (65.59)	10.16 (10.46)	49.48 (51.54)	49.38 (50.50)	9	50
PENNSYLVANIA	76.85 (80.81)	67.24 (69.84)	9.59 (9.11)	46.11 (43.16)	46.43 (46.00)	72	500
RHODE ISLAND	76.59 (80.04)	68.72 (72.73)	7.87 (7.04)	65.41 (69.03)	51.14 (52.00)	4	35
SOUTH CAROLINA	77.72 (79.76)	71.22 (72.83)	6.43 (6.61)	43.75 (46.26)	47.30 (47.00)	6	44
SOUTH DAKOTA	62.54 (62.54)	53.87 (53.87)	8.67 (8.67)	21.80 (21.80)	46.50 (46.50)	1	2
TENNESSEE	79.08 (82.37)	68.55 (69.30)	10.47 (10.03)	45.21 (42.51)	45.58 (46.00)	32	232
TEXAS	74.77 (80.34)	66.06 (70.03)	8.63 (8.69)	43.37 (41.76)	46.65 (47.00)	180	1084
UTAH	71.16 (74.07)	62.97 (66.09)	8.08 (7.78)	34.86 (33.13)	45.51 (44.50)	19	76
VIRGINIA	77.92 (82.27)	68.70 (71.35)	9.16 (8.54)	46.34 (44.18)	46.59 (47.00)	52	354
WASHINGTON	73.25 (76.15)	63.16 (66.49)	10.01 (9.65)	53.03 (55.94)	48.28 (48.00)	29	217
WASHINGTON DC	86.02 (86.50)	72.76 (75.60)	12.95 (12.56)	51.89 (54.73)	49.77 (47.00)	6	53
WEST VIRGINIA	90.93 (92.58)	83.23 (85.49)	7.70 (9.12)	55.89 (58.42)	48.33 (48.50)	1	6
WISCONSIN	78.27 (84.57)	67.33 (70.62)	10.89 (10.70)	42.43 (41.10)	50.40 (51.00)	32	236
Total	75.47 (80.10)	65.86 (68.69)	9.56 (9.11)	44.99 (42.94)	47.10 (47.00)	1726	10829

Appendix 3: Correlation Table

Correlation table of variables used in the analyses. The subcategories of foreign institutional ownership as well as ESG ratings (pillar scores) are excluded. The sample period is 2013-2023 and it includes 10,829 firm-year observations. All variables are winsorized at the 1st and 99th percentiles. The variables are described in appendix 1.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) ESG Refinitiv	1.000										
(2) ESG MSCI	0.337	1.000									
(3) Dispersion	-0.191	0.006	1.000								
(4) Foreign IO	0.360	0.200	-0.061	1.000							
(5) Domestic IO	0.162	0.156	-0.188	0.180	1.000						
(6) MSCI ACWI	0.467	0.109	0.070	0.432	-0.087	1.000					
(7) Ln Assets Total	0.352	0.030	0.203	0.126	-0.171	0.460	1.000				
(8) Tangibility	0.035	-0.180	0.039	-0.071	-0.051	-0.004	0.083	1.000			
(9) Leverage	0.182	0.032	0.041	0.064	-0.025	0.155	0.131	0.143	1.000		
(10) Tobin's Q	-0.054	0.063	0.011	0.076	-0.022	0.173	-0.078	-0.212	-0.057	1.000	
(11) Profitability	0.239	0.048	-0.064	0.221	0.149	0.268	0.124	0.122	0.050	0.013	1.000

Appendix 4: OLS Regression for ESG Ratings and Rating Dispersion Clustered at the Industry and Year Levels

Regressions are done for the total sample of 10,829 firm-year observations in the US between 2013-2023. The dependent variables are the natural logarithms of Refinitiv's ESG rating, MSCI's ESG rating, and the dispersion between the two which is the absolute value of the difference between the two ratings. Foreign IO is total institutional ownership of institutions headquartered outside the US. Domestic IO is total institutional ownership of institutions headquartered in the US. LN Assets Total is the natural logarithm of firm's total assets. Tangibility is gross PP&E to total assets, Leverage is total debt to total assets, Tobin's Q is market value of total equity plus total debt to total assets, and Profitability is net income (loss) to total assets. Industry, State, and Year fixed effects are applied. All dependent variables are lagged by one year. All variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the industry level in Panel A and at the Year level in panel B and shown in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)
Panel A	ESG Refinitiv	ESG MSCI	Dispersion
Foreign IO	0.926*** (0.182)	0.303*** (0.0741)	-15.65*** (4.038)
Domestic IO	0.375*** (0.0671)	0.102*** (0.0239)	-8.753*** (1.797)
Ln Assets Total	0.182*** (0.00920)	0.0215*** (0.00442)	1.163*** (0.279)
Tangibility	0.105 (0.0832)	-0.0887*** (0.0300)	0.946 (2.091)
Leverage	0.0980*** (0.0351)	0.0287 (0.0317)	0.230 (1.285)
Tobin's Q	-0.00173 (0.00368)	0.00508*** (0.00167)	0.169 (0.130)
Profitability	0.102 (0.0621)	0.00528 (0.0395)	-5.541*** (1.104)
Constant	1.517*** (0.207)	3.426*** (0.112)	3.050 (5.668)
Industry FE	Yes	Yes	Yes
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	8,849	8,849	8,849
R-squared	0.363	0.371	0.570
Panel B	(1) ESG Refinitiv	(2) ESG MSCI	(3) Dispersion
Foreign IO	0.926*** (0.152)	0.303*** (0.0366)	-15.65*** (2.054)
Domestic IO	0.375*** (0.0633)	0.102*** (0.0216)	-8.753*** (0.899)
Ln Assets Total	0.182*** (0.00671)	0.0215*** (0.00250)	1.163*** (0.242)
Tangibility	0.105*** (0.0324)	-0.0887*** (0.00981)	0.946 (1.008)
Leverage	0.0980*** (0.0155)	0.0287** (0.00967)	0.230 (0.432)
Tobin's Q	-0.00173 (0.00377)	0.00508*** (0.000990)	0.169*** (0.0479)
Profitability	0.102*** (0.0310)	0.00528 (0.0170)	-5.541*** (0.718)
Constant	1.517*** (0.0459)	3.426*** (0.0554)	3.050 (5.840)
Industry FE	Yes	Yes	Yes
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	8,789	8,789	8,789
R-squared	0.573	0.458	0.244

Appendix 5: ESG Rating Correlation Matrix

Correlation matrix of ESG ratings and their constituent pillars across six (6) commonly used ESG rating providers in Academia. KL, SA, MO, SP, MS, RE refers to KLD, Sustainalytics, Moody's ESG, S&P Global, MSCI and Refinitiv, respectively. Source: Berg et al., 2022

	KL SA	KL MO	KL SP	KL RE	KL MS	SA MO	SA SP	SA RE	SA MS	MO SP	MO RE	MO MS	SP RE	SP MS	RE MS	AVERAGE
ESG	0.53	0.49	0.44	0.42	0.53	0.71	0.67	0.67	0.46	0.70	0.69	0.42	0.62	0.38	0.38	0.54
E	0.59	0.55	0.54	0.54	0.37	0.68	0.66	0.64	0.37	0.73	0.66	0.35	0.7	0.29	0.23	0.53
S	0.31	0.33	0.21	0.22	0.41	0.58	0.55	0.27	0.68	0.66	0.28	0.65	0.26	0.27	0.27	0.42
G	0.02	0.01	-0.01	-0.05	0.16	0.54	0.51	0.49	0.16	0.76	0.76	0.14	0.79	0.11	0.07	0.30

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