



**Do Investors Really Care? Measuring the Effect
of Institutional Investors on the Relationship
Between Scope of ESG Disclosure and ESG
Performance**

by

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Abstract

I investigate whether institutional investors significantly affect the relationship between ESG (environmental, social governance) disclosure and ESG performance. Corporate sustainability, as a trait that institutional investors consider, has been a hotly talked about subject as different institutional investors, like Blackrock, have released increasingly public statements about sustainability being a core part of their investment criteria, and that climate risk is investment risk. That being said, while there is ample literature suggesting that institutional investor presence increases sustainability disclosures made by the companies, and the positive association between sustainability disclosure and sustainability performance, there is a lack of literature considering all three factors together. With my senior thesis, I examine the possibilities of whether corporations simply increase disclosure to be able to receive more funding or if institutional investors are able to have a positive effect on the link between sustainability disclosure and sustainability performance. This thesis follows methodologies in previous literature using sample sets from Thomson Reuters and the Russell 3000 index and measuring correlation using the MSCI KLD data set for sustainability performance and the Bloomberg scores for scope of sustainability disclosure.

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Introduction and Literature Review

One situation at the forefront of business today is businesses being accused of greenwashing - the act of detailed sustainability reporting without true sustainability performance for corporations trying to receive funding from institutional investors (Kenton, 2021). As such, this senior thesis examines if a significant difference exists in the relationship between sustainability performance and sustainability reporting with the presence of institutional investors. In this thesis, terms ESG and sustainability are used interchangeably. Due to recent public sentiment in support of using investing for good and investing in companies that are making the world a better place, many institutional investors take sustainability reports into account when making investment decisions, thus requiring companies looking for funding and capital to report heavily even when their corporate value proposition may not align with sustainability initiatives. This has been further exacerbated by large institutional investors taking very public stances on the issue. For example, Larry Fink, the CEO of Blackrock, emphasized in his 2020 letter to CEOs that “climate risk is investment risk”, and Blackrock would start pricing in climate risk in their investment decisions (Sorkin, 2020). All of this discussion in the investment community has culminated in recent regulation changes as well. The Securities and Exchange Commission has given their initial approval for regulation that would require publicly traded companies to disclose the climate related risks associated with their businesses. The hope behind this regulation is standardization, transparency, and accountability for publicly traded companies, so that companies are not simply able to report about what looks good and will instead have to follow more guidelines to report material climate impact information (Goldstein and Eavis, 2022). As expected, there is ample discussion on both sides of this regulation proposal about the materiality of climate information and the effects of it. Unfortunately for

investors right now, there is a discrepancy between the sustainability rankings of companies by different rating agencies. For example, Berg, Kölbel, and Rigobon (2020) concluded that the correlations between the ratings from six rating agencies are on average 0.54, and range from 0.38 to 0.71. As a result, information that investors receive from ESG rating agencies is relatively inconclusive if they take into account all of the different options available.

Due to the subjectiveness in performance reporting and the current lack of regulatory measures allowing sustainability reporting to be voluntary, many companies are more heavily focused on ensuring their reporting is up to standards and showcasing the best sustainability strategies in their companies rather than giving investors a holistic view. As such, most of the current literature also relates to the impact of institutional investor presence on sustainability reporting or the impact of institutional investor presence on sustainability performance, but not on the relationship between the two.

Institutional Investor Impact on ESG Performance

Consistent with the myopic institutions theory, which explains that institutional investors are motivated by short sightedness when making investment decisions due to their focus on risk aversion and achieving short term profits (Hansen and Hill, 1991), studies in the early 2000s found that transient institutional investors did not consider sustainability considerations when making investment decisions (Yan and Zhang, 2009). Similarly, companies targeted by activist hedge funds see their ESG performance fall by 25% on average by year five (Desjardine and Durand, 2020). Activist hedge fund managers spoken to by Desjardine and Durand in their study viewed corporate social responsibility efforts as wasteful and conflicting with maximizing short term profits. However, another study done by Akey and Appel (2019) showed that hedge fund activism actually has a positive impact on sustainability performance and an average decrease of

emissions of around 8%. Additionally, environmental activist investing has also been shown to decrease emissions, reduce toxic releases, and diminish pollution levels for companies that become a target for these investors (Naaraayanan, Sachdeva, Sharma, 2021). This shows that in the activist hedge fund space, the research result has been mixed depending on the study. Unlike activist hedge funds who are usually focused on profits over sustainability impact, recent years have also resulted in a rise of socially responsible investment funds (often abbreviated as SRIs). Despite their increasing popularity, a study by Heath, Macciocchi, Michaely, and Ringgenberg (2021) found no evidence that SRI funds are able to improve the actions and behaviors of the companies that they invest in. This raises the question of whether passive institutional investors will be able to have an impact on company behavior when it comes to sustainability if passive SRI funds that specialize in sustainability cannot.

Passive mutual funds and government managed investment institutions with a long term time horizon are more focused on long term capital appreciation and generating value in the company, and as such, are more likely to take into account the sustainability practices made by firms when making investment decisions (Mutalib, H., Jamil, C. Z., Hussin, 2015). Thus, for the purpose of this study, this thesis focuses on long term institutional investors that are classified as a passively managed mutual fund similarly to that of Busse and Tong (2012), Ilie and Lowry (2015), and Appel, Gormley, and Keim (2016). Additionally, Starks, Venkat, and Zhu (2017) found that because ESG practices are more likely to have financial benefit in the long term compared to the short term, and as a result investors with long term time horizons are more likely than short term investors to invest in institutions with higher ESG ratings. In addition, previous literature also found that long term investors have higher overall portfolio level ESG scores as well, which has also resulted in higher risk adjusted returns for their associated portfolios

(Gibson, Kreuger, Mitali, 2018). Another study by Dyck, Lins, Roth, and Wagner (2019) used the Deepwater Horizon oil spill of 2010 as a quasi experiment for causality in the oil extractive industry where they found that, compared with firms with less institutional investor ownership, firms with greater institutional investor ownership improved their ESG policies in a greater magnitude.

Institutional Investor Impact on ESG Disclosure

In a study about corporate governance and corporate sustainability disclosure from the perspective of the signaling theory, it was found that institutional owners benefit from sending positive signals to outsiders about their environmental, social, and economic stewardship in their investment process (Bae, Masud, Kim, 2018). In addition, Bae, Masud, and Kim also found that institutional owners are motivated to pressure management to disclose sustainability information in order to protect their investment risk, which supports prior literature as well. Similarly, in another study by Garcia-Sanchez, Rodriguez-Ariza, Aibar-Guzman, and Aibar-Guzman (2020), it was found that ownership by foreign investors and pension funds increase the information disclosed about a company's contribution to the United Nations Sustainable Development Goals 2030 agenda. Existing literature that compares ESG disclosure by companies with private investors and companies with public investors has found that public companies report ESG activities more than private firms (23.8% versus 13.8%); private firms are also less likely to follow GRI guidelines for sustainability disclosures and 40% as likely to even publish sustainability reports (Hickman, 2020). Siegel and Vitaliano (2007) argued that through pressuring management of companies that they invest in to disclose more sustainability information, they are showcasing them taking on responsibility for ESG goals to outside parties.

Overall, previous literature finds that there is a positive relationship between the presence of institutional investor ownership and sustainability disclosure scope.

The Association between ESG Disclosure and ESG Performance

The voluntary disclosure theory predicts a positive association between environmental performance and the level of discretionary environmental disclosure (Dye, 1985). It holds that better environmental performers try to convey their status by using objective environmental disclosure indicators that are hard for inferior status firms to mimic. Inferior status firms will choose to be silent or disclose less instead of disclosing poor material. Previous literature examined environmental disclosures in Canada from a voluntary disclosure theory perspective and found that firms were more likely to disclose environmental information with more news media coverage of environmental exposure, higher pollution propensity, and more political exposure, suggesting a positive association between environmental performance and environmental disclosure (Bewley and Li, 2000). In contrast, the legitimacy theory predicts a negative association between environmental performance and level of discretionary environmental disclosures because it suggests that corporations choose to disclose an abundance of environmental performance items due to social and political pressures (Patten, 2002). The inferior status firms have their legitimacy threatened, so they disclose more in order to shift stakeholder perception to solidify their legitimacy. In testing the competing suggestions of these two theories, previous literature has found a positive association between environmental performance and the level of discretionary environmental disclosures when comparing toxic emissions and waste management data (Clarkson et al., 2008).

Statement and Justification of the Problem

To examine whether or not institutional investors (the group of investors who account for 45 percent of all assets for U.S. stock based funds) actually take sustainability performance into consideration as they have communicated to their investors or if they only value the amount of disclosures provided, and not the actual actions, it is essential to examine how sustainability performance and scope of reporting changes depending on the level of presence of institutional investors (Cox, 2019). For the first time in 2019, passive domestic stock funds totaled assets of \$4.3 trillion, which matched the assets under management for actively managed funds (Segal, 2019). Given half of U.S. stock investors are investing with passive funds and that governments worldwide are promoting sustainable investing with “creating businesses of enduring value” as a key goal, more research is needed on just how “sustainable” these institutional investors are, and whether the impact they can have on public corporations is enough without detailed government regulation (Kolakowski, 2021).

Readers should care about the effectiveness of sustainable reporting as a proxy for sustainable performance as it relates to investments because the easiest way to influence the environmental impact of corporations is through influencing the investors that provide them with funding. Luckily, in the past couple of years, there has been an increase in investor interest in this topic. This is great, but if the investor’s values do not align with the promotion of sustainability, they may only be interested in showing the public that this is an investment factor they are taking into account in their investment decisions through the presence of sustainability disclosure to appease public pressure. However, that would not have a significant impact on improving the sustainability of their invested companies unless sustainability performance is also a factor of their investment decisions. A prime example of this dilemma comes from the fact that

in the past 20 years the number of companies filing GRI standard based Corporate Social Responsibility reports have dramatically increased, all while carbon emissions have continued to rise at unprecedented rates (Pucker, 2021). In addition, for readers that are thinking about their own investment decisions for funds that they are looking to put their money into, this is a question of whether the fund's mission and values would align with the reader's. If the reader also believes that climate risk is an important factor to take into consideration for investments, it's important to see if the funds that are investing their money are also taking it into consideration.

To date, most of the literature surrounding institutional investors and ESG center around the impact institutional investors have on ESG disclosure or ESG performance, with additional literature surrounding the association of ESG disclosure and ESG performance . Previous research lacks the examination of the relationship of all three of these factors instead of just two of them. Specifically, the purpose of this research thesis is to examine the impact of institutional investor ownership presence on the relationship between sustainability reporting quality and sustainability performance. Highlighted below are my hypotheses for this study based on previous research and literature.

This thesis tests four hypotheses:

- **H1:** There is a positive association between scope of ESG disclosure and ESG performance.
- **H2:** There is a positive association between the presence of passive institutional investors and ESG performance.
- **H3:** There is a positive association between the presence of institutional investors and scope of ESG disclosure

- **H4:** The association between scope of ESG disclosure and ESG performance is stronger when more passive institutional investors are present.

In particular, with the specific data sets utilized to measure scope of ESG disclosure and ESG performance, testing for hypothesis 1, hypothesis 2, and hypothesis 3 is to confirm that there are positive associations involved between the aforementioned variables, while hypothesis 4 is meant to further explore the relationship between ESG disclosure and ESG performance with the added variable of institutional ownership.

Methodology and Data

This study utilized a regression analysis model that first finds the association between sustainability disclosure with the Bloomberg framework and sustainability performance with the MSCI KLD framework as a proxy for the relationship of the two factors. The study then splits the firms in the sample in halves based on ownership by percentage of institutional ownership utilizing Thomson Reuters for the first sampling method. The second methodology followed the prior literature and utilized the variation in passive institutional ownership between Russell 1000 and 2000 indexes.

Sampling Method 1: Thomson Reuters

To start off this study, the Thomson Reuters database was utilized through the WRDS platform of 13F filings to measure the most recent institutional ownership filings available, in this case September of 2019. From there, the percent of institutional ownership in the company is used as a proxy for passive institutional ownership utilizing this measure as the independent variable in my analysis, as conducted in previous literature (Roberts and Yuan, 2010). To create two samples, the dataset is split above the median institutional ownership percentage and below the median institutional ownership percentage. This study then measured the relationship between sustainability performance and sustainability disclosure as measured in the below section, and ran a linear regression for initial insights, looking to see if there is a significant difference between the two subsamples of the dataset. To download this data on WRDS, this study pasted in all of the tickers from the Russell 3000 index into the sample set and ended up with 13,026 results. From there, this study matched the percent of institutional ownership from this dataset to its assigned company by comparing both stock tickers and CUSIP numbers.

CUSIP numbers consist of nine characters (including letters and numbers) that uniquely identify a company or issuer and the type of financial instrument (Investor.gov).

Sampling Method 2: Russell 1000 and 2000 index

For further insights, this thesis also measured institutional ownership with an index split to see if different results are found due to the control placed on companies of similar size. Consistent with previous literature measuring the impact of passive institutional investors, this thesis utilized the Russell 1000 and 2000 indexes to measure a difference in ownership (Appel, Gormley, and Keim, 2016). This identification strategy was also used in the study by Boone and White (2015) that measures the effect of institutional ownership on firm transparency and information production. Their findings found that institutional investors constitute higher proportional ownerships in firms who are at the top of the Russell 2000 index compared to firms who are at the bottom of the Russell 1000 index, even though there are no significant differences in characteristics between those firms (Boone and White, 2015). This is due to the construction of the two indexes that are based on value weightings, so stocks at the top of the indices receive a heavier weighting (and thus more institutional ownership) than stocks at the bottom of the indices (Frino and Gallagher, 2001). This methodology is based off of the paper by Appel, Gormley, and Keim (2016) and compares one subset of fixed bandwidths (+- 300) around the threshold. This selection uses the June 2021 portfolio weights and index inclusions due to the index being recalculated every June and this dataset being the closest available with the institutional investor ownership percentage numbers from the previous section. This study focuses on the effect of institutional holdings after the reconstruction of the index, similar to the analysis by Crane, Michenaud, and Weston (2016). As a result, the 300 stocks in the Russell 1000 dataset serves as a proxy for low institutional ownership, while the 300 stocks in the

Russell 2000 dataset serves as a proxy for high institutional ownership. To obtain this data, this study utilized the holdings in the Blackrock iShares Russell 1000 and Russell 2000 ETFs as a proxy for the member weightings of the index in order to find the bottom 300 members of the Russell 1000 index and the top 300 members of the Russell 2000 index. The 300 was selected based on inspiration from Appel, Gormley, and Keim (2016) where the number used in the study was 250, but to account for stocks that were not covered by either MSCI KLD or Bloomberg, a buffer space of 50 stocks was added. The members were then merged with previous data on institutional ownership percentage from the Thomson Reuters platform in order to run the regressions comparing the association of ESG disclosure scope and ESG performance for groups of stocks with low institutional ownership and groups of stocks with high institutional ownership.

Bloomberg ESG Disclosure Score

Bloomberg ESG Disclosure Score focuses on the scope and level of disclosure from a company, and does not take into account any data on the company's ESG performance. This follows the precedent of the study by Smeesters and Mottet (2018) that uses the Bloomberg scoring system due to the prevalence of the Bloomberg Terminal as it pertains to actors in the financial sector. Through the terminal, there is a Bloomberg Environmental, Social, and Governance Data function that can be accessed through <BSEG>. This is where the ESG disclosure score is housed. The ESG Disclosure Score ranges from 0.1 for companies that minimally disclose ESG data to 100 for companies that disclose every ESG data point that is covered by Bloomberg and is updated annually. The score is based upon 100 ESG metrics in environmental topics, social topics, and governance topics, and sources information from company annual reports, press releases, third-party research, and sustainability reports.

Bloomberg data points are all transparently sourced from company documents in order to provide investors with a clear picture of the scope of disclosure a company has. Bloomberg applies a proprietary weighting to the 100 metrics based on whether or not the metric is reported by the company in question and then overweighting commonly disclosed fields (Bloomberg Terminal). For example, greenhouse gas emissions carry the greatest weight out of all the disclosure metrics. In addition, there are industry specific metrics applied as well in order to account for industry specific issues that are not applicable to other industries. For example, companies in the utility industry will have “Total Power Generated” as a metric that is measured in the total ESG Disclosure Score (Smeesters and Mottett, 2018). This allows for Bloomberg ESG Disclosure Scores to be standardized across industries, allowing them to be comparable units of measurement for investors. This study uses the most recent Bloomberg ESG Scope of Disclosure Data to date (as of February 20, 2022) accessible on the Bloomberg terminal.

MSCI KLD Sustainability Performance Scores

To date, most of the literature on sustainability performance is based on the KLD framework as a proxy for sustainability performance or even social capital (Lins, Servaes, Tamayo, 2017; Khan, Serafeim, Yoon, 2016). KLD employs a proprietary system to evaluate corporations’ environmental, social, and governance performance and generate annual company ratings. KLD researchers utilize a company’s public documents (the annual report, the company website, ESG reporting, media sources, and other data sources) to determine a company rating that represents a snapshot of the company’s profile at the end of a calendar year. The KLD dataset is compiled around the beginning of every year in January and usually available for distribution by February. For the purpose of this thesis, the January 2022 dataset is utilized due to accessibility of available information. Specifically, this study utilized the industry adjusted

ESG score that ranges from 0 for worst performance to 10 for best performance by aggregating subscores in environmental, social, and governance categories. Depending on the location, some scores are also represented in letter format ranging from CCC to AAA (see appendix for the numerical score to letter grade translation). The subscores are made up of 10 key themes that cover 35 key issues (MSCI, 2020). The industry adjusted ESG score that is used in this study aims to measure the company's resilience to long term ESG risks that could potentially affect financial performance. The methodology also considers the industry that the company functions within and the potential positive or negative effects of the industry on the environment and overall sustainability. According to the MSCI ratings methodology, the ratings aim to answer four main questions:

- What are the most significant ESG risks and opportunities facing a company and its industry?
- How exposed is the company to those key risks and/or opportunities?
- How well is the company managing key risks and opportunities?
- What is the overall picture for the company and how does it compare to its global industry peers?

These ESG performance scores were data scraped from the database and then compiled as a csv file in Excel. Industry adjusted ESG score ratings from the data set were scrapable for a total of 2,614 stocks and were merged with the data set through stock ticker.

Data Preparation and Limitations

The four datasets described above were all merged together by stock ticker and CUSIP identification number to organize each stock by percentage of institutional investor ownership as of September 2019, MSCI KLD industry adjusted score for ESG performance, and Bloomberg

score for scope of ESG disclosure. In total, my cleaned data set of stocks that had all three data points totaled 1,680 individual stocks. The total amount of stocks that had both institutional ownership percentage and ESG performance score totaled 2,067 individual stocks. The total amount of stocks that had both institutional ownership percentage and scope of ESG disclosure totaled 2,030 stocks. These three sets of cleaned data formed the core analysis material for my thesis. All data sets were first downloaded in CSV format before being translated into xlsx format on Microsoft Excel. Similarly, all regression analyses and correlation research was done on Microsoft Excel as well.

This biggest limitation in this study was the availability of data for each of these variables. Bloomberg and MSCI KLD both cover a set amount of stocks, for which they have information, ratings, and reports that are released to subscribers. Out of all the stocks in the initial sample, a little less than half of the stocks in the Russell 3000 index either didn't have one of those variables or didn't have all of those variables, greatly decreasing the sample size of the initial regressions that involved all the stocks in the index. In addition, the availability of access and subscriptions also provided a limitation, as this study initially had ESG disclosure measured by the GRI reporting standards, but did not receive access to the data. Although the Bloomberg data measures ESG disclosure scope in a way that is also helpful to this study, it is not a variable that has been studied in academia previously, outside of the thesis referenced above.

Theoretical Framework

This thesis focuses on the complementary view of agency theory that explains how stakeholders and managers may create an agency relationship with the principal being the stakeholder and the agent being the manager (Kopp, 2021). Due to the role of the manager as the agent, they may be better informed about the inside details and functions of the company even

though the stakeholder needs the information to make informed investment decisions. This thesis explores how institutional investors can affect corporate governance as it relates to sustainability reporting and sustainability performance, and whether those two aspects are correlated with one another. It has been argued in previous literature that the agency problem lies in the self-interested opportunism of corporate executives and is a problem solved only by increased independent monitoring, sharper sanctions, and more appropriately targeted incentives (Roberts 2005). Thus, information disclosures exist to help potential investors level the playing field and inform stakeholders about the facts they need to know to make educated decisions. Due to the increased attention on sustainability in investing, sustainability reporting is a disclosure needed to provide stakeholders with a holistic view of the company, which supports the hypothesis that the presence of institutional investors will increase the presence of sustainability disclosure. In addition, if the disclosures made are representative of the company's value and actions, this theory should also support a positive relationship between sustainability disclosure and sustainability performance.

Additionally the institutional theory, which states that an organization needs other organizations that can encourage that organization to adapt to generally accepted social norms, explains why more organizations have adopted sustainability reporting standards in recent years after institutional investor funding became at stake (DiMaggio and Powell, 1983). Pressure from the general public, investors, and internal stakeholders like employees and board members has been driving organizations to adopt sustainability sentiments as the new social norm (Amidjaya and Widagdo, 2019). This has prompted an influx of ESG reporting, whether high quality or not, that organizations hope is enough to prove that they are doing good for the world they exist in. Contrasting to the agency theory, the institutional theory says that corporations are only adopting

sustainability sentiments as a way to adapt to what is socially acceptable, which means that the underlying values of the corporation may not support sustainability performance even though their disclosures make them seem like it does. In turn, this would result in the presence of institutional investor ownership increasing the presence of ESG disclosure, but supports a negative relationship between ESG performance and ESG disclosure with increased institutional investor presence.

Another theory affected by this thesis is the signaling theory which focuses on solving the problem of information asymmetry in a competitive environment. The signaling theory explains that management has intentions to share information and receive signals (feedback) from the market and other stakeholders about their decision. Signals, in this case ESG disclosure and reports, reduce the information asymmetry between the management of a business, consisting of executives, directors, or managers, and the users of that information, consisting of investors, employees, or society as a whole (Taj, 2016). In a study by Ching and Gerab on sustainability reporting in Brazil through the lens of signaling theory, it is suggested that improvements in sustainability reporting quality is a signal from corporations to external stakeholders to gain legitimacy against the information asymmetry that exists (Ching, Gerab, 2017). Similarly to the institutional theory, the signaling theory suggests that sustainability disclosure and reporting may not accurately represent the underlying values of the corporation or organization.

Results and Discussion

Hypothesis 1

There is a positive association between ESG disclosure and ESG performance.

For Hypothesis 1, the sample included the 1,679 observations in the Russell 3000 index that were covered by both Bloomberg for their scope of ESG disclosure score and MSCI KLD for their ESG performance score. With a coefficient of 0.05 and a t-stat of 15.95, the results confirm previous literature that shows that the scope of ESG Disclosure has a positive and statistically significant association with ESG Performance. This result confirms the hypothesis that is based on the signaling theory and the voluntary disclosure theory. The interpretation of the line of best fit is that each one point increase in ESG Disclosure Score is associated with a 0.05 point increase in ESG Performance Score. Figure 1 showcases the plot of the 1,679 observations along with the line of best fit.

Figure 1. ESG Disclosure and ESG Performance Plot with Line of Best Fit

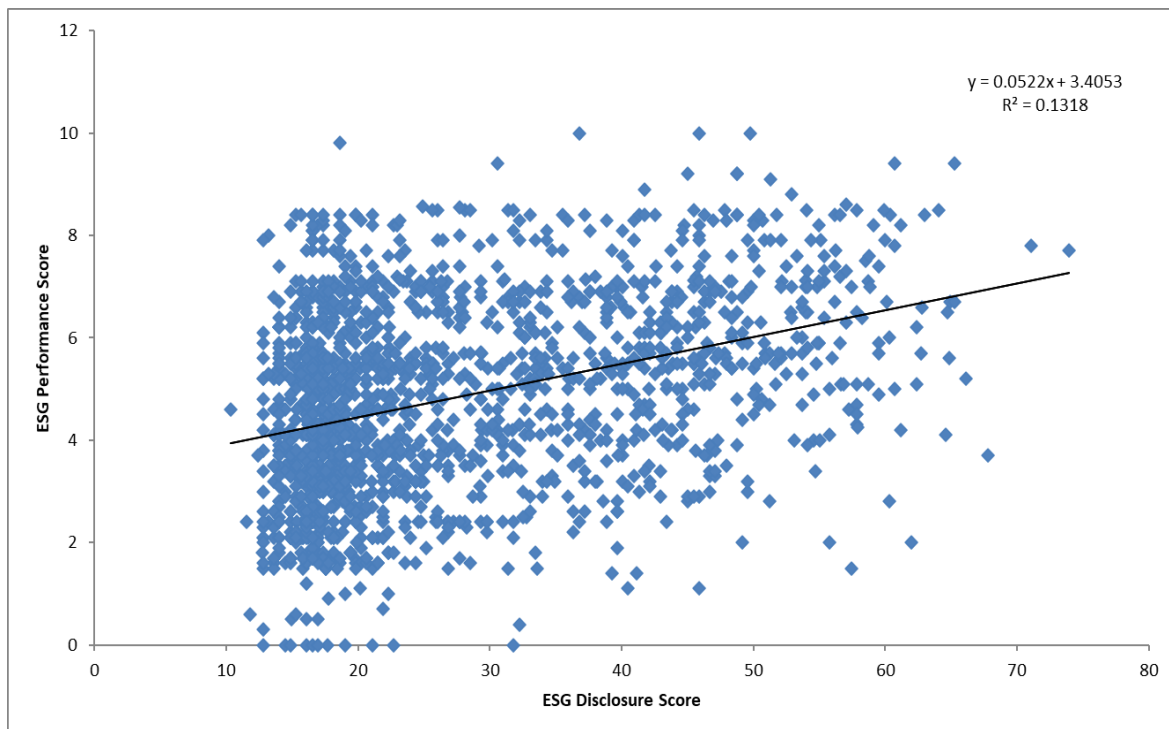


Table 1. ESG Disclosure and ESG Performance Summary Regression Output

<i>Regression Statistics</i>	
Multiple R	0.36
R Square	0.13
Adjusted R Square	0.13
Standard Error	1.76
Observations	1679

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	3.41	0.10	34.04	1.49E-193
Scope of ESG Disclosure	0.05	0.00	15.96	1.75E-53

Hypothesis 2

There is a positive association between the presence of institutional investors and ESG performance

For Hypothesis 2, the sample included the 2,068 observations in the Russell 3000 index that were covered by MSCI for their KLD ESG performance score. With a coefficient of 1.18 and a t-stat of 6.15, the results confirm previous literature that shows that the percent of institutional investor ownership has a positive and statistically significant association with ESG performance. The interpretation of the line of best fit is that each one percent increase in institutional ownership is associated with a 1.18 point increase in ESG Performance Score. Figure 2 showcases the plot of the 2,068 observations along with the line of best fit.

Figure 2. ESG Performance and Percentage of Institutional Investor Ownership with Line of Best Fit

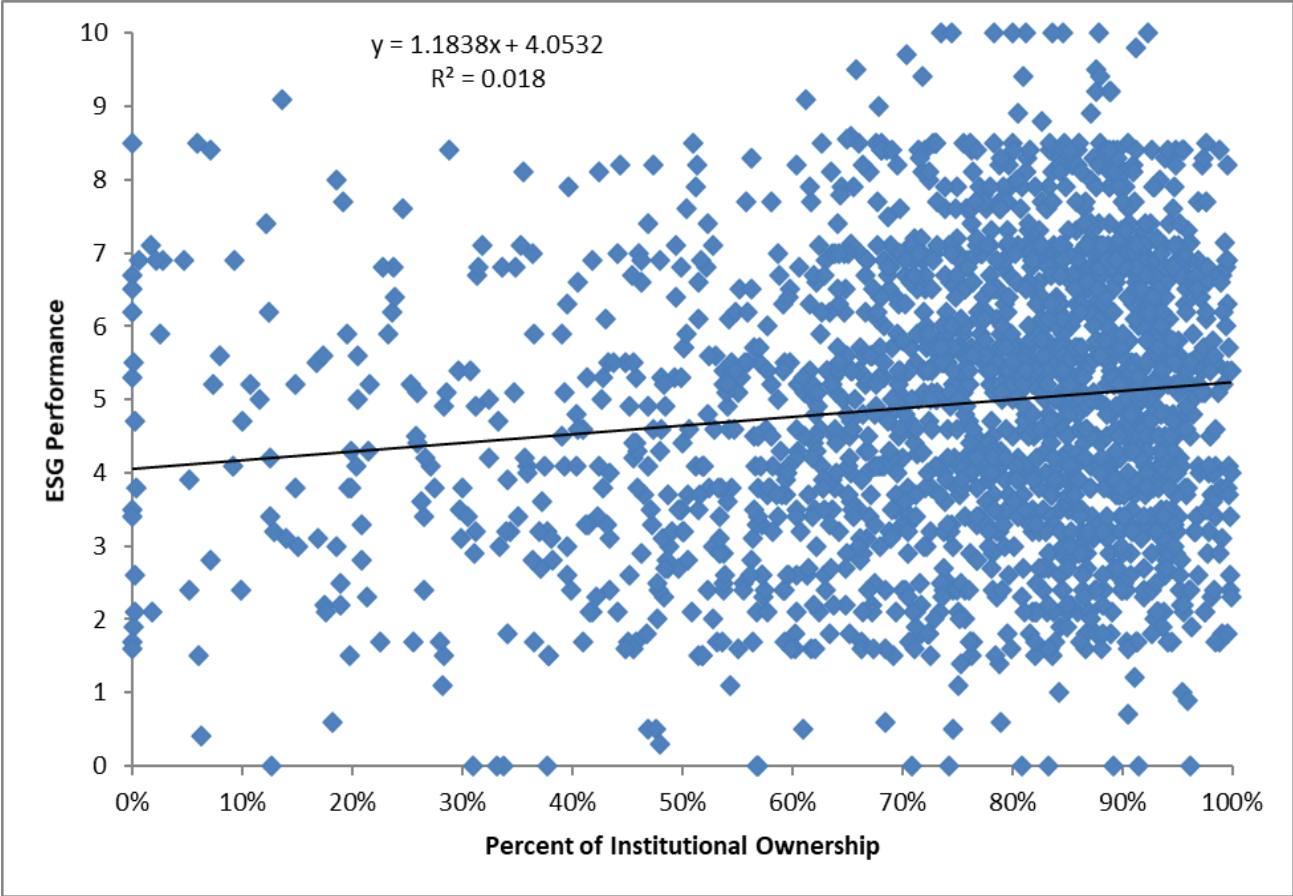


Table 2. ESG Performance and Percentage of Institutional Investor Ownership Summary

Regression Output

<i>Regression Statistics</i>	
Multiple R	0.13
R Square	0.02
Adjusted R Square	0.02
Standard Error	1.91
Observations	2068

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	4.05	0.15	26.48	2.85E-133
Institutional Ownership	1.18	0.19	6.15	9.23E-10

Hypothesis 3

There is a positive association between the presence of institutional investors and ESG disclosure

For Hypothesis 3, the sample included the 2,030 observations in the Russell 3000 index that were covered by Bloomberg for their scope of ESG disclosure score. With a coefficient of 12.04 and a t-stat of 10.19, my sample confirmed what was found in previous literature that there is a positive association between scope of ESG disclosure and presence of institutional investor ownership. This follows the hypothesis predicted by the complementary view of agency theory and the institutional theory. The interpretation of the line of best fit is that each one percent increase in institutional ownership is associated with a 12.04 point increase in ESG Disclosure Score. Figure 3 showcases the plot of the 2,030 observations along with the line of best fit.

Figure 3. Scope of ESG Disclosure and Percentage of Institutional Investor Ownership with Line of Best Fit

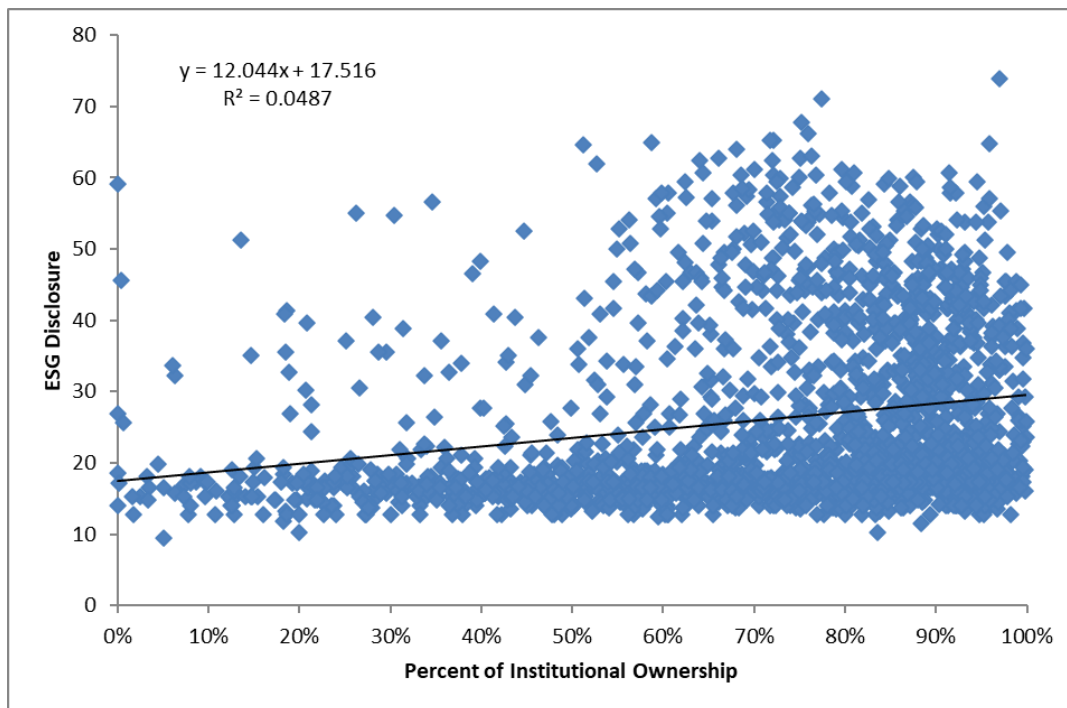


Table 3. Scope of ESG Disclosure and Percentage of Institutional Investor Ownership

Summary Regression Output

<i>Regression Statistics</i>	
Multiple R	0.22
R Square	0.05
Adjusted R Square	0.05
Standard Error	12.49
Observations	2030

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	17.52	0.91	19.17	2.04E-75
Institutional Ownership	12.04	1.18	10.19	7.97E-24

Hypothesis 4

The association between ESG disclosure and ESG performance is stronger when more institutional investors are present.

The purpose of this study was to understand if institutional investors had a significant impact on not only the ESG disclosure scope of the company in question, but also the likelihood that high ESG disclosure was representative of improved ESG performance as well. Study results from this section suggest that association between ESG disclosure and ESG performance is actually stronger in firms with low institutional investor ownership than firms with high institutional investor ownership, which is contrary to my initial hypothesis. This brings up the importance of future discussion surrounding whether incentives are in place for companies to simply disclose sustainability metrics without improving ESG performance

The first sample size utilized in this study was all the stocks in the Russell 3000 index that had all the data points needed for analysis - percent of institutional investor ownership, ESG

Performance Score, and scope of ESG Disclosure Score. Figure 6 showcases the data frame used for the core of this analysis.

Table 4. Hypothesis 4 Sample Data Frame

<u>Stock Ticker</u>	<u>Company Name</u>	<u>CUSIP Number</u>	<u>Bloomberg Scope of ESG Disclosure Score</u>	<u>Percent of Institutional Ownership</u>	<u>MSCI KLD ESG Performance Score</u>
AA	Alcoa Corp	01387210	64.87602997	78.134314%	5.6
INO	Inovio Pharmaceuticals Inc	45773H20	17.76859474	46.299541%	6.6
AXP	American Express Co	02581610	50.43859482	81.4935869%	7.3
VZ	Verizon Communications Inc	92343V10	48.14814758	62.3630162%	7.1
SPWH	Sportsman's Warehouse Holdings Inc	84920Y10	18.18181801	93.0185178%	4.9
SABR	Sabre Corp	78573M10	21.9008255	92.7026435%	2.9

The data was then split at the median to analyze the difference between low institutional ownership and high institutional ownership. The low ownership split included 839 stocks with institutional ownership that ranged from 0% to 82.2%. The sample median was 66.9% of institutional ownership and the sample mean was 61.5% of institutional ownership. The regression was statistically significant with an t-stat of 13.50 and a linear line of best fit of the following equation (See below for the regression output):

$$\text{Scope of ESG Disclosure} = 12.45 + 3.11 (\text{Industry Adjusted ESG Performance})$$

Table 5. Russell 3000 Above / Below Median Split - Low Institutional Ownership Summary Regression Output

<i>Regression Statistics</i>	
Multiple R	0.42
R Square	0.18
Adjusted R Square	0.18
Standard Error	12.79
Observations	839

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	12.45	1.15	10.82	1.31E-25
ESG Performance	3.11	0.23	13.50	1.07E-37

The high ownership split included 839 stocks with institutional ownership that ranged from 82.3% to 100%. The sample median was 91.2% of institutional ownership and the sample mean was 92.8% of institutional ownership. The regression was statistically significant with a t-stat of 8.52 and a linear line of best fit of the following equation (see below for the regression output):

$$\text{Scope of ESG Disclosure} = 18.96 + 1.85 (\text{Industry Adjusted ESG Performance})$$

Table 6. Russell 3000 Above / Below Median Split - High Institutional Ownership

Summary Regression Output

<i>Regression Statistics</i>	
Multiple R	0.28
R Square	0.08
Adjusted R Square	0.08
Standard Error	11.55
Observations	839

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	18.96	1.18	16.11	4.35E-51
ESG Performance	1.85	0.22	8.52	7.27E-17

Compared to the high ownership split, the equation for the low ownership split has a lower intercept with a higher coefficient predicting more dramatic changes in the scope of ESG

disclosure score when the institutional ownership level is below the mean. Utilizing the Z Score test to see whether the difference between coefficients is significant yields the following results:

$$Z = \frac{b_1 - b_2}{\sqrt{SEb_1^2 + SEb_2^2}} = \frac{3.11 - 1.85}{\sqrt{0.23^2 + 0.21^2}} = 3.97$$

With a z-stat of 3.97, the difference in coefficients is statistically significant at the 0.01 level, so the positive association between scope of ESG disclosure and ESG performance is stronger when institutional ownership is lower. This may indicate that there is more decoupling when institutional ownership is high because there is more incentive for companies to report more without making operational improvements in regard to sustainability in business practices or business habits. Another explanation for this is that with the low institutional ownership split starting with a lower coefficient due to low incentives to report, but as they reach the median level of institutional ownership split, they are provided with more incentive to report more and their ESG performance is simply secondary to that.

The Russell 1000/2000 sampling technique was then utilized to try and control for innate characteristics of the companies studied that may be different. The bottom 300 stocks were selected from the Russell 1000 index to act as a proxy for low institutional ownership. The resulting sample (due to lack of data availability for all stocks) resulted in 189 observations with a median percentage of institutional ownership of 84.89% and a mean percentage of institutional ownership of 79.28%. The regression was statistically significant with an t-stat of 3.62 and a linear line of best fit of the following equation (see below for the regression output):

$$\text{Scope of ESG Disclosure} = 21.60 + 1.69 (\text{Industry Adjusted ESG Performance})$$

Table 7. Russell 1000/2000 Split - Low Institutional Ownership Summary Regression Output

<i>Regression Statistics</i>	
Multiple R	0.26
R Square	0.07
Adjusted R Square	0.06
Standard Error	12.24
Observations	189

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	21.60	2.48	8.70	1.72E-15
ESG Performance	1.69	0.47	3.62	0.00

The top 300 stocks were then selected from the top of the Russell 2000 index to act as a proxy for high institutional ownership. The resulting sample resulted in 214 observations with a median percentage of institutional ownership of 87.19% and a mean percentage of institutional ownership of 85.00%. The regression was statistically significant with an t-stat of 2.94 and a linear line of best fit of the following equation (see below for the regression output):

$$\text{Scope of ESG Disclosure} = 19.60 + 1.18 (\text{Industry Adjusted ESG Performance})$$

Table 8. Russell 1000/2000 Split - High Institutional Ownership Summary Regression

Output

<i>Regression Statistics</i>	
Multiple R	0.20
R Square	0.04
Adjusted R Square	0.03
Standard Error	10.64
Observations	214

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	19.60	2.07	9.45	6.53E-18
ESG Performance	1.18	0.40	2.94	0.00

Given these regression outputs, there was not a significant difference between the relationships between ESG performance and ESG disclosure for the sample chosen. In addition, it appears to be less significant due to the small sample size. Comparison of coefficients is consistent with the first sampling method of Thomson Reuters data, where low institutional ownership has higher coefficient, but the difference is not statistically significant due to small sample size. Utilizing the Z Score test to see whether the difference between coefficients is significant yields the following results:

$$Z = \frac{b_1 - b_2}{\sqrt{SEb_1^2 + SEb_2^2}} = \frac{1.69 - 1.18}{\sqrt{0.47^2 + 0.40^2}} = 0.83$$

With a z-stat of 0.83, results for the difference in coefficients from these two regressions are not significant at the 0.01 level.

Limitations and Suggestions for Future Research

The main limitation of this study is the availability of data and coverage by both Bloomberg and MSCI KLD. A lot of the shrinking in sample size resulted from differing coverage of stocks in the index by the two institutions. Additionally, since there is not yet regulation implemented for sustainability reporting measures and frameworks, this study does not measure or take into account the quality of reporting. For future research, the GRI framework has indicators for reporting quality which could be interesting to look at. Also, future studies should try to further address the issue of potential confounding variables, e.g., by refining the Russell 1000/2000 cutoff methodology following the existing literature and controlling for important firm characteristics. Potential confounding variables that have been preliminarily studied in previous literature include gender makeup of the board of directors, management structures, and industry of the company. All those variables would be interesting to look at as it relates to the association of ESG disclosure and ESG performance. My thesis was limited by only using the pure cutoff methodology that controlled for size, which made results susceptible to confounding variables. In addition, as the SEC seeks to implement ESG disclosure regulation for public companies, future studies should ideally focus on the incentives put in place for institutional investors to check off a box if a potential investment discloses certain metrics without taking the actual metric results into account. Likewise, studies should examine whether skewed incentives are being put in place to improve sustainability disclosure across companies without putting in incentives to also improve sustainability performance.

Appendix A: MSCI KLD ESG Key Issue Hierarchy Rating Methodology

Source: MSCI ESG Rating Methodology

3 Pillars	10 Themes	35 Key ESG Issues
Environment	Climate Change	Carbon Emissions Product Carbon Footprint Financing Environmental Impact Climate Change Vulnerability
	Natural Capital	Water Stress Biodiversity and Land Use Raw Material Sourcing
	Pollution and Waste	Toxic Emissions and Waste Electronic Waste packaging Material and Waste
	Environmental Opportunities	Opportunities in Clean Tech Opportunities in Green Building Opportunities in Renewable Energy
Social	Human Capital	Labor Management Health and Safety Human Capital Development Supply Chain Labor Standards
	Product Liability	Product Safety and Quality Chemical Safety Financial Product Safety Privacy and Data Security Responsible Investment Health and Demographic Risk
	Stakeholder Opposition	Controversial Sourcing Community Relations
	Social Opportunities	Access to Communications Access to Finance Access to Healthcare Opportunities in Nutrition and Health
Governance	Corporate Governance	Ownership and Control Pay Board Accounting

	Corporate Behavior	Business Ethics Tax Transparency
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Appendix B: MSCI KLD ESG Key Issue Hierarchy Rating Methodology

Source: MSCI ESG Rating Methodology

Letter Rating	Final Industry Adjusted Company Score
AAA	8.571 - 10.0
AA	7.143 - 8.571
A	5.714 - 7.143
BBB	4.286 - 5.714
BB	2.857 - 4.286
B	1.429 - 2.857
CCC	0.0 - 1.429

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