

Master Thesis U.S.E.

Implications of ESG interests on traditional compensation schemes and the role of institutional investors

Student: Carmelo Massimiliano Mazzaglia (4651561)

University Supervisor: Evgenia Zhivotova

Abstract

This thesis studies the effects of environmental, social, and governance (ESG) performance on traditional incentives tied to financial metrics for a sample of S&P500 firms over the years 2021 and 2022. The study aims to comprehend whether companies tend to align their financial incentives with ESG conduct and assess the position of institutional investors, verifying also if this relationship differs across sectors. The analysis utilises a static panel data model to investigate the two-year data set. The findings indicate an absence of a significant relationship between the mentioned variables, providing limited empirical support for the direct impact of ESG performance on financial incentives. Moreover, higher proportions of institutional ownership do not exhibit a substantial influence on this relationship, as demonstrated by a non-significant interaction effect. When examining sector-specific dynamics, an interesting pattern emerges as financial companies display a significant causal effect of ESG performance on financial incentives that is present also considering the interaction of institutional ownership. This suggests that reputation management, investor preferences, sector-specific risks, and regulatory requirements may drive companies belonging to the financial sector to align financial incentives with ESG objectives. While these results contribute to the understanding of the interplay between ESG strength and financial incentives, the study acknowledges limitations related to the short time span, the limited sample size, the broad industry classification that impede a full generalizability of the findings and constitute a clue for future research.

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1 Introduction

This paper studies the relationship between ESG predisposition and compensation schemes of executives. The relevance attributed to environmental and social concerns has been growing dramatically over the last decades, and consequently, stakeholders and investors started to focus more on the long-term sustainability and ethical performance of companies (Lo and Sheu, 2007). As a result, organisations that are perceived as having poor ESG practices may face displeasing consequences, such as reputational damage or higher cost of debt when being financed by third parties (Raimo et al., 2021).

Such new interests in sustainability can presumably function as a motivating factor for boards of directors to incentivize managers to achieve ESG goals. This assumption can be explained by the fact that costs associated with hypothetical external effects of operations might not be properly internalised by firms. Consequently, companies are expected to manifest sensitiveness to these issues, and those that commit to include environmental, social and governance (ESG) performance metrics in the compensation schemes for the operations related to such external effects could potentially make equity shares more attractive to investors. On top of that, it is appropriate to consider that present time is also characterised by a rising tendency of companies to engage on greenwashing practices due to both organizational and individual drivers (Delmas and Burbano, 2011), which may in turn compromise investors' confidence.

The fact that compensation schemes chosen within an organisation can go under scrutiny of stakeholders is factual. For instance, Barrick Gold Corporation's compensation and governance aroused shareholder's discontent as the executive chairman John Thornton was awarded a 35% salary increase in 2015 despite the share price losing a third of its value. In that occasion, investors criticism exerted noticeable influence as Thornton forfeited his end-year bonus and reduced his pay package by 76% in the following year.

However, the option to tie executives' compensation to ESG metrics would be in contrast with shareholder primacy model and classic empirical evidence, which suggests that profits maximization is the only objective of shareholders.

Given that such dynamics are relatively new, existing literature does not provide a complete and exhaustive evidence when it comes to the determinants and the economic outcomes associated with ESG being used to define compensation. Nonetheless, various studies already tried to delve deep into the approaches towards non-monetary goals and the reliance on ESG metrics for compensation schemes.

The main purpose of this study is to shed light on whether traditional incentives tied to financial performance are being reduced due to the relevance attributed to new non-monetary objectives. Furthermore, the role of institutional investors is assessed as they could consist of a substantial determinant of the adoption of ESG-related compensation schemes, and these investigations are extended to the singular economic sectors to achieve a more detailed understanding of such dynamics.

To capture an accurate picture of these effects, the relationship between ESG performance and the strength of financial incentives is conceived as the main object of attention in this thesis. In particular, the research question of the study concerns the possibility that strong ESG behaviours mitigate the importance of financial concerns in compensation schemes, and that institutional ownership consists of a predominant factor for the adoption of such behaviours. To answer this, I employ data on S&P500 companies obtained from the FactSet database and effectuate an empirical analysis testing for the significance of this relations. The hypotheses tests are effectuated using clustered standard errors to adjust in case of clustering of observations within specific groups and deal with potential heteroskedasticity issues. Moreover, I include industry fixed effects to account of unobserved heterogeneity across different sectors and control for effects specific to each industry that could cause variation in the dependent variable. I find that ESG performance in general has not a significant effect on financial incentives, and the interaction with institutional ownership does not represent a noteworthy aspect. In addition, I find evidence that the relationship under scrutiny assumes a significant nature for companies included in the financials sector.

This dissertation is expected to contribute to future research by drawing an empirical overview of the implications of new sources of interest on organizations in the contemporary era. By investigating the relationship between ESG predisposition and compensation schemes of executives, this study not only enhances our understanding of the integration of environmental, social, and governance factors in corporate decision-making but also sheds light on the potential impact of non-monetary goals on traditional financial incentives. Furthermore, by examining the role of institutional investors as a determinant of the adoption of ESG-related compensation schemes, this research contributes to our knowledge of the factors influencing corporate governance practices. The findings of this study have the potential to inform policymakers, boards of directors, and investors in their efforts to promote sustainable and responsible business practices in relation to specific sectors. Consequently, this research provides valuable insights into the evolving landscape of corporate performance measurement and governance, paving the way for future research in this important area.

The remainder of this thesis is structured as follows. In section 2 I provide a literature review concerning the influence of ESG issues on executive compensation as well as the impact exerted by institutional investors, and I define the development of the hypotheses. Following this, I include the data set, the motivation behind using it, and a general data description in section 3. In section 4 I illustrate and describe the variables used in the empirical base model as well as the hypotheses testing. Thereupon, I discuss the results and illustrate the limitations of the study in section 5. Finally, the conclusion is presented in section 6.

2 Literature review and theoretical framework

In this section, I present existing literature related to the determinants of executive compensation and the relationship between ESG orientation and compensation packages as well as presumptive factors with an effective influence on this relation.

2.1 Executive compensation and ESG issues

In general, the magnitude of executive compensation has substantially and well-knowingly increased over the last couple of decades, but external ESG-related factors were not taken into consideration by scientific research as the inclusion of non-financial goals in compensation schemes was absent in an initial moment. Therefore, the thematic assessed in this thesis is relatively new and the scientific support behind it is still weak at this stage.

Classic theory assumes that motives of financial nature consist of the sole factor that drives compensation. According to Jensen and Murphy (1990), the total executive rewards should be dependent on firm performance. Moreover, competitiveness of markets and managerial power, intended as the possibility of high-powered managers to have a palpable influence on the pay setting process, have also been defined as important compensation determinants (Frydman and Jenter, 2010). Further determinants of compensation schemes can also be related to tax policy, as it is shown that executive salaries, bonuses, and stock option grants can be responsive to changes in labour income tax rates (Frydman and Molloy, 2011).

Taking into consideration the current importance obtained by ESG issues, studies tend to contradict each other as both positive and negative aspects emerge from the use of ESG-related compensation schemes, which is relevant for this thesis as it implies that it is not clear whether

there is an actual convenience for companies in considering a shift from traditional compensation schemes to the inclusion of non-monetary objectives.

Klimkiewicz (2017) shows that ESG performance consists of a third important factor on top of economic and operational performances to be linked to incentive schemes in order to achieve an optimal development of the supply chain network. Moreover, funds appear to be willing to include companies in their portfolios following their adoption of ESG pay (Cohen et al. 2022). These two arguments suggest that an important influence of ESG-related compensation schemes would be probable.

Conversely, it is also argued in some cases that ESG-based compensation should not be expected to lead to meaningful incentives for the creation of value for all stakeholders. More precisely, the inclusion of ESG metrics in compensation schemes might merely benefit the interests of executives. Bebchuck and Tallarita (2022) find evidence that aggregate stakeholder welfare tends to be negatively affected when ESG pay is implemented as only a limited subset of stakeholders benefits from it. Additionally, the same study also concludes that agency problems are likely to occur with such compensation schemes as it is often impossible for external observers to notice whether ESG metrics are tied to performance and effectively incentivize executives not to pursue their personal interests.

In addition, Yoon et al. (2018) shows that the value-enhancing effect of ESG conduct diminishes in case firms operate in environmentally sensitive industries such as in the utilities, materials, and energy sectors, after examining 7056 Korean firms over the 2010-2015 time span.

2.2 The role of institutional ownership

As cited in the previous section, investors play an important role when it comes to the rise of ESG concerns of the contemporary era. Accordingly, Bonham and Riggs-Craun (2022) find that the extent to which shareholders value ESG has a remarkable influence on executive compensation contracts as it leads to an enhancement of a firm's ESG activities. On top of it, different investor groups might have also particular influences on firms. Cohen et al. (2022) find that institutional investors exert a crucial influence in the adoption of ESG compensation schemes by firms. In coherence with that, as it can be assumed that ESG compensation is typical of companies with remarkable ESG performances, existing literature also suggests that sin stocks tend to be held in smaller proportions by institutional investors such as pension funds, banks, and insurance companies, whilst individual investors are willing to invest more in such

stocks as they can keep their positions out of the view of enforcers of societal norms (Hong and Kacperczyk, 2009). This indicates that the economic sector of a company may function as an influencing factor when it comes to the themes of this thesis, and as a matter of fact, Tamimi and Sebastianelli (2017) reveal that different industry sectors tend to have also dissimilar levels of transparency in terms of ESG disclosure, particularly for the Social and Governmental dimensions, whilst Lee and Suh (2022) find that industry constitutes one of the elements explaining differences in investors' reactions to ESG controversies.

Prior research also indicates that institutional investors can exert influence on firms through trading decisions on top of direct engagement, and therefore, companies could be tempted to adopt ESG-related compensation to retain institutional investors even if they are not the targets of direct engagements (Admati and Pfleiderer, 2009). Anyway, an additional finding from Cohen et al (2022), suggests that ESG-related compensation schemes are more prevalent in environmentally controversial companies, and therefore, it becomes unclear whether institutional ownership has a direct and significant correlation with ESG compensation.

In addition to the evidence emerging from prior literature, it is appropriate to report that future trends could be difficult to predict also because of further consequences deriving from the behaviour of institutional investors. As a matter of fact, the Financial Times recently reported that due to a rising Republican backlash against sustainable investing, Florida's Treasury Division is going to divest two billion dollars from BlackRock. More in detail, the American investment management company clearly outlined the necessity to include climate change in investment decisions at present, and this position caused Republican leaders to notice an alleged intention to pursue goals different than returns. This view is evidently not shared by Republicans, who argue that ESG investing entails unjustified concerns about climate change and compromise performance because of the reduction of the exposure to oil and gas companies.

2.3 Hypotheses development

As outlined in the previous subsections, executive compensation currently appears to be a fertile area of academic enquiry because of the alleged implications of the rising importance attributed to Environmental, Societal and Governmental issues, and based on the current contribution of existing research, this study aims to expand it by investigating whether the strength of incentives linked to financial performance is affected by a predisposition to achieve ESG objectives. Considering prior research, a motivation to expect a specific positive or negative

influence is absent, and the test that concerns this relation is two-sided. Accordingly, the first hypothesis is the following:

Hypothesis 1 (H1): ESG performance has a significant relation with traditional incentives tied to financial metrics.

Furthermore, despite it would be rational to expect socially questionable companies to mitigate their environmental and social impacts by using ESG compensation more, this would be in contrast with institutional investors being present in higher proportions when such policies are adopted whilst their individual counterparts appear more in sin stocks. Hence, considering the findings of Hong and Kacperczyk (2009) and the evidence derived from Cohen et al (2022) who decided to focus on BlackRock, Vanguard, and State Street (The Big Three), this thesis aims to build on top of this present corroboration, and I formulate a second hypothesis expecting that institutional investors are willing to accept lower returns in exchange for improvements on ESG dimensions:

Hypothesis 2 (H2): There is a significant and negative relation between institutional ownership and traditional incentives tied to financial metrics.

Finally, a further goal of this research is to expand the analysis by focusing on the specific sectors. Considering the findings of Tamimi and Sebastianelli (2018) as well as Yoon et al. 2018, it appears that the relationship between ESG performance and executive compensation may substantially vary across different sectors, that can have distinct operational and environmental predispositions as well as and varying levels of emphasis on ESG issues. For instance, sectors such as energy and materials may prioritize environmental aspects more than health care and information technology. Furthermore, sector-specific regulations, standards, and stakeholder expectations could play a significant role in shaping the relationship between ESG and financial incentives. Industries with specific regulatory frameworks or more intense stakeholder pressure for ESG integration may exhibit different patterns compared to those operating in less regulated or less scrutinized sectors. Therefore, it is appropriate to consider sector-specific characteristics when examining the link between ESG and financial incentives. By including a third hypothesis that investigates the relationship traditional incentives for individual sectors and ESG performance, I intend to contribute to existing literature with a more nuanced understanding of how executive compensation practices align with ESG objectives

within specific sectors, which would be useful for investors, stakeholders and policymakers interested in sector-specific sustainability practices. I expect to find significant results for socially questionable and environmentally sensitive sectors:

Hypothesis 3 (H3): The relationship between ESG performance and traditional incentives tied to financial metrics varies across industry sectors.

Finally, I also expect a strong and positive linear relation between ESG performance and institutional ownership, which would suggest that as the proportion of institutional investors in a company increases, so does the company's environmental, social, and governmental performance.

3 Data and sample

The motivation behind this thesis is to determine how environmental, social, and governmental interests affect compensation schemes and detect the extent to which the presence of institutional investors implicates the adoption of such attentiveness. To capture such effects, FactSet is the financial data and analytics platform used to obtain the data required for this research. The main motive for choosing this database over other alternatives is that it covers thousands of companies worldwide and disposes of a wide range of high-quality operational and financial metrics. Particularly, it offers an extensive financial markets coverage, and provides both real time and historical data for the fast-paced financial industry. Moreover, it standardizes financial data across different markets and companies, allowing for an increased consistency of research due to a better information comparison and analysis, and provides a wide range of analytical tools to support financial modelling and enhance the research flair. Finally, it preserves a scrupulous collection and validation process to ensure an adequate level of data accuracy and integrity, employing also robust quality control measures.

To serve the purpose of this thesis, I collect data on companies included in the S&P500 index as it is widely regarded as a benchmark index that represents the overall performance of the US stock market and provides a broad view across many sectors of the economy. A further motivation for choosing the S&P500 companies is to ensure a satisfactory level of data quality and availability and avoid significant challenges or limitations during the collection.

As previously cited, the topics considered in this research are relatively new and rapidly evolving, and the analysed dataset contains 952 observations relative to the years 2021 and 2022. These years have been characterised by significant global events, policy changes, and more in general, an increased attention to ESG issues. Hence, effectuating empirical analysis on recent and up-to-date information can help to capture the present-day trends and dynamics in the field, following up on the evidence produced by existing literature relative to the contemporary trends and responses of companies to evolving ESG concerns. On top of that, the nature of the core items assessed in this thesis implicates a remarkable limitation in terms of data availability, which consists of an additional factor influencing the use of such time span. By concentrating on a two-year period, the analysis specifically aims to explore the short-term effects and impact of ESG performance on traditional financial incentives and the influence of institutional ownership. This focused approach is expected to allow for an examination of the immediate impact of these factors without the potential confounding effects of long-term trends or other external factors.

The measures and data on firms contained in the FactSet platform and needed for this research are presented more in detail in the following section, which introduces the regression model and variables employed.

4 Methodology

In this section I present the methodology to be used to answer the research question previously cited. Specifically, I explain the empirical model implemented and outline the dependent variable and the control variables selected for this model. The regression model that explains the relationship between control variables, institutional ownership, ESG performance and financial incentives is given by

$$Fin_Inc_{it} = \beta_0 + \beta_1(ESG_Perf)_{it} + \beta_2(Inst_O)_{it} + \beta Controls_{it} + e_{it},$$

where:

The dependent variable *Fin_Inc* represents the strength of incentives linked to financial performance, and it is measured as stock option compensation expense net of tax multiplied by 1000 and divided by the market value of the company. Stock option compensation is incorporated into the dependent variable in order to capture a direct link between executive

incentives and the financial performance of the company. It is often used as a key component of executive compensation packages, particularly for top level executives, as it provides them with the opportunity to benefit directly from the appreciation of the company's stock, aligning their interests with the ones of shareholders and motivating them to work towards improving financial performance. Using stock option compensation rather than alternative measures of executive compensation is preferable as it directly links executive incentives to the company's financial performance, and it is plausibly more reflective of the impact of executives' actions on shareholder value. Furthermore, stock option compensation can be objectively quantified and measured, making it possible to obtain a reliable and precise variable for analysis. Additionally, it is necessary to account for the possibility that larger companies may tend to have higher absolute stock option compensation amounts. The market value of a company consists of a widely recognised and objective measure of its overall worth, which provides a reference point for evaluating the strength of executive incentives in relation to the company's size and financial standing. By dividing stock option compensation by the market value of the company the variable is normalised to account for differences in company size, allowing for a comparison of executive incentives across companies of varying size and ensuring that it captures the relative strength of incentives in proportion to the company's overall value. Furthermore, incorporating the market value of companies in the variable allows to reflect the market's assessment of the company's worth and consider further factors such as expectations of investors, future growth potential, and industry dynamics. This market-based perspective is expected to add external validity by incorporating market perceptions of the company's financial performance and value.

This ratio is then multiplied by 1000 in consideration of the fact that the values produced could be extremely small. For instance, in case the stock option compensation is in the range of thousands or tens of thousands, and the market value is in the millions or billions, the resulting ratio would be a decimal value close to zero, and it would be more difficult to obtain effective comparisons and interpretations with such small values. By scaling these values up to a more readable and interpretable range and preserving the proportions between observations, it is possible to have a clearer representation of the strength of incentives in relation to the market value without any distortion of the inherent relationship between the variables.

ESG_Perf expresses the Environmental, Social, and Governmental performance of companies, and it is reflected by the FTSE ESG Rating for a specific company sourced from FTSE Russell ESG, which is designed to provide investors with an objective assessment of a company's ESG performance relative to its industry peers. It is a measure of the overall quality of a constituent's

management of ESG issues and can function as an assessment of how well a company incorporates ESG considerations into its operations and business practices. This rating captures different aspects of ESG performance, such as corporate governance practices, environmental sustainability social impact, carbon emissions, labour practices, and transparency in reporting.

Inst_O relates to the proportion of institutional investors within a company. This measure is obtained as the ratio that involves the total number of shares of a company held by institutional investors over the total number of shares outstanding.

β_0 represents the constant term of the model and consists of the expected value of Financial Incentives when the coefficients of ESG performance and the other explanatory variables are equal to zero.

Controls refers to the control variables included in the model. This inclusion is aimed at preventing the possibility to have a spurious regression and isolate the effect of financial incentives and institutional ownership on the dependent variable, hence making the regression more accurate. The control variables are presented more in detail in the following sub-paragraph.

e represents the error term and captures the random variation or unobserved factors that affect Financial Incentives but are not accounted for by ESG performance.

4.1 Control variables

In this sub-paragraph I present the additional independent variables that potentially account for both firm characteristics and circumstantial features. These variables are included in the model to ensure a reliable level of robustness of results.

Size represents the size of the company, and it is expressed by the natural logarithm of total assets. This variable is included in the model as the increased volume of resources of larger companies might implicate more articulated incentive schemes in relation to financial performance. In particular, the complexity of larger organisations may result in higher compensations for the executives in comparison to their counterparts in the smaller ones.

Lev captures leverage and hence the level of debt of a company. It is measured by the debt-to-equity ratio, which is a widely accepted measure of leverage that provides adequate information about a company's capital structure and financial risk. Leverage of companies is included as the ones with higher levels of debt could focus more on overhauling it rather than dedicating to long-term initiatives and implementing ESG-related compensation schemes.

RoA expresses the profitability of a company in relation to its total assets. Following Cohen et al. (2022) this thesis uses returns on assets as a proxy for profitability, and this measure is included in the regression model as it is possible that companies that follow responsible business practices and prioritise ESG issues in their business strategies achieve better financial performance in the long run. Moreover, as companies with a higher profitability presumably have more financial means, they may also implement more generous compensation packages for their executives.

Net_Inc is the net income margin within a company. Whilst the return on asset is included in the model as it captures the profitability of companies in relation to their total assets, the inclusion of net income margin further enhances the analysis as it provides a different perspective on profitability. In fact, it highlights a company's ability to generate profits in relation to its revenue stream and specifically consists of the ratio of net income to net sales, which is then multiplied by 100 to be expressed as a percentage.

By including both control variables, it becomes possible to account for different dimensions of profitability, ensuring a more comprehensive understanding of its potential influence on executive compensation, institutional ownership and ESG performance.

The joint effect of ESG performance and institutional ownership on financial incentives might be different from the individual effects of these variables because of the potential synergies between them. Therefore, to adequately test the second hypothesis, the significance and direction of the interaction effect between ESG performance and institutional ownership is assessed, as the interaction term *ESG_Perf*Inst_O* helps to determine whether the relationship between ESG performance and financial incentives is influenced by the presence of institutional investors.

Ind refers to the industry a company belongs to. The need to control for industry and isolate the effect of ESG performance on compensation schemes is due to the hypothetical differences at a systematic level in terms of compensation and ESG performance depending on the industry in which a company operates. For instance, companies subject to heavy regulations or dealing with greater environmental and social risks at the industry level may be impacted on both ESG performance and executive pay. To obtain a valid measure for this variable, I use the Global Industry Classification Standard (GICS), a standardised industry classification system which classifies companies in eleven sectors based on the principal business, and then uses specific criteria to further categorise them into sub-groups. It is also easily accessible as it is used by multiple financial data providers, including FactSet. In this study, the sector layer is the one considered for the model, and obviously, as qualitative information is incorporated for the

definition of this variable, this is going to result in a categorical variable with dummy values representing the different sectors.

Table 1 provides information on the frequency, percentage, and cumulative percentage of companies in each GICS sector. The main implication of the table's content to consider is represented by the substantial difference in terms of observations for each sector. As a matter of fact, the analysis of the sectors with a lower frequency is characterized by a reduced statistical power, whilst in case of larger subsample size, the estimates are presumably more reliable and precise. Consequently, in this research context, sectors with higher numbers of observations such as industrials and financials are probably more representative of the overall population of companies, allowing for more accurate inferences. Conversely, sectors with lower observation counts such as communication services and energy may be characterized by wider confidence intervals, meaning that parameter estimates would have a higher degree of uncertainty and be less precise, and consequently, a narrower representation of the broader population assumably occurs in this case. This aspect is logically considered under evaluation of Hypothesis H3.

Table 1: Distribution of observations by industry sector

Industry	Freq.	Percent	Cum.
Communication Services	40	4.20	4.20
Consumer Discretionary	100	10.50	14.71
Consumer Staples	66	6.93	21.64
Energy	44	4.62	26.26
Financials	134	14.08	40.34
Health Care	126	13.24	53.57
Industrials	150	15.76	69.33
Information Technology	128	13.45	82.77
Materials	54	5.67	88.45
Real Estate	58	6.09	94.54
Utilities	52	5.46	100.00
Total	952	100.00	

Notes: This table displays the eleven GICS sectors that are considered in the model as well as their frequency, their percentage, and the cumulative percentage for each industry sector.

The extended expression of the regression model takes the following form:

$$Fin_Inc_{it} = \beta_0 + \beta_1(ESG_Perf)_{it} + \beta_2(Inst_O)_{it} + \beta_3(Size)_{it} + \beta_4(Lev)_{it} + \beta_5(RoA)_{it} + \beta_6(Net_Inc)_{it} + \beta_7(ESG_Perf*Inst_O)_{it} + \beta_8(Ind) + e_{it}$$

4.2 Data descriptives and correlations

Table 2 reports the descriptive statistics of my measure of financial incentives along with ESG performance, institutional ownership, and the control variables. The dependent variable has a mean value of 6.341, flanked by a standard deviation of 3.756. ESG_perf has the smallest range of values and is characterised by the lowest standard deviation. Inst_O is characterised by a mean value of 82.933, corresponding to an average of 82.93% of shares owned by institutional investors, and shows a standard deviation of 12.125. The debt-to-equity ratio, which is used to measure firm leverage, shows the highest standard deviation among all the variables included in the model, indicating a considerable variation in terms of capital structure among the companies that constitute the sample. The Size variable shows a mean of 10.221 as well as a very low variation, which is consistent the S&P500 sample representing the 500 largest companies in the United States. Furthermore, an interesting aspect is constituted by the sizeable difference between the standard deviations of RoA and Net_Inc, that represent two different dimensions of profitability. In fact, Net_Inc's standard deviation is remarkably higher. The different ways in which these two variables are calculated could implicate variations in the magnitude of values, and consequently, they could affect also standard deviation.

Table 2: Descriptive Statistics

	Mean	Min	Max	Stdev.	Obs
Fin_Inc	3.641	0.01	32.533	3.756	952
ESG_Perf	3.054	1.2	4.8	0.608	952
Inst_O	82.933	31.29	100	12.125	952
Size	10.221	7.306	15.136	1.285	952
Lev	222.309	0.228	2.077.428	826.477	952
RoA	8.017	-32.065	75.775	8.133	952
Net_Inc	13.401	-695.476	145.567	29.998	952
ESG_PerfInst_O	252.045	7.899	421,652	58.201	952
Communication Services	0.042	0	1	0.201	952
Consumer Discretionary	0.105	0	1	0.307	952
Consumer Staples	0.069	0	1	0.254	952
Energy	0.046	0	1	0.21	952
Financials	0.141	0	1	0.348	952
Health Care	0.132	0	1	0.339	952
Industrials	0.158	0	1	0.365	952
Information Technology	0.134	0	1	0.341	952
Materials	0.057	0	1	0.231	952
Real Estate	0.061	0	1	0.239	952
Utilities	0.055	0	1	0.227	952

Notes: This table displays the mean, the minimum (Min) and maximum (Max) values and the standard deviation (Stdev.) of the variables used in the models, as well as the total number of observations.

Table 3 presents the correlation coefficients among the variables used in this research. Financial incentives show a weak positive correlation with ESG performance, indicating a slight linear relation between these two variables. Institutional ownership is negatively correlated with financial incentives but with a correlation coefficient close to 0, which does not concretely support Hypothesis H2, and at the same time there is also a small inverse relationship with ESG performance, which is in contrast with my expectations. One of the highest magnitudes is present for between return on assets and size, with a negative coefficient suggesting that on average larger companies tend to have lower returns compared to smaller companies. Moreover, the correlation between the GICS sectors and both financial incentives and ESG performance varies substantially, suggesting that the relationship between Fin_Inc and ESG_Perf may be different across industries, in accordance with Hypothesis H3. Finally, as easily predictable, the interaction term presents high linear relations with ESG performance and institutional ownership as they constitute the two components, and at the same time, also leverage and return on assets have one of the highest correlation coefficients as they are both related to profitability.

Table 3: Correlation Matrix

	Fin_Inc	ESG_Perf	Inst_O	Size	Lev	RoA	Net_Inc	ESG_Pe-O	Com. Serv	Cons. Dis.	Cons. St.	Energy	Financials	Health Care	Industrials	Inf. Tech.	Materials	Real Estate	Utilities	
Fin_Inc	1.0000																			
ESG_Perf	0.1246	1.0000																		
Inst_O	-0.0226	-0.1626	1.0000																	
Size	0.0713	0.2603	-0.4007	1.0000																
Lev	0.1007	0.0032	-0.0726	-0.0325	1.0000															
RoA	-0.1678	-0.0749	-0.0075	-0.3177	-0.0421	1.0000														
Net_Inc	-0.1311	0.0303	0.1058	0.0134	-0.0819	0.4206	1.0000													
ESG_PerfInsto	0.0924	0.7653	0.4995	-0.0284	-0.0365	-0.0725	0.0745	1.0000												
Com. Serv.	0.1885	-0.0728	-0.0772	0.1312	-0.0164	-0.0677	-0.0246	-0.1059	1.0000											
Cons. Dis.	0.0403	-0.0658	-0.0134	-0.1029	0.1192	0.0311	-0.1926	-0.0602	-0.0717	1.0000										
Cons. St.	-0.1028	0.1473	-0.1752	0.0092	0.0189	-0.0049	-0.0389	0.0081	-0.0572	-0.0935	1.0000									
Energy	-0.0061	-0.0268	-0.0320	0.0689	-0.0203	0.0546	0.0145	-0.0412	-0.0461	-0.0754	-0.0601	1.0000								
Financials	0.0576	0.1695	-0.0240	0.3667	-0.0516	-0.1820	0.0973	0.1356	-0.0848	-0.1387	-0.1105	-0.0891	1.0000							
Health Care	-0.0216	-0.1339	0.1120	-0.0609	0.0223	0.0693	0.0125	-0.0527	-0.0818	-0.1338	-0.1066	-0.0860	-0.1581	1.0000						
Industrials	-0.1088	-0.1089	-0.0518	-0.1680	-0.0480	0.0439	-0.0257	-0.1241	-0.0906	-0.1482	-0.1180	-0.0952	-0.1750	-0.1689	1.0000					
Inf. Tech	0.2648	0.0898	0.0298	-0.1704	0.0074	0.2219	0.0645	0.0875	-0.0825	-0.1350	-0.1076	-0.0868	-0.1595	-0.1539	-0.1705	1.0000				
Materials	-0.0699	0.0516	-0.0036	-0.0495	-0.0224	0.0252	-0.0179	0.0434	-0.0514	-0.0840	-0.0669	-0.0540	-0.0993	-0.0958	-0.1061	-0.0966	1.0000			
Real Estate	-0.1490	-0.0586	0.2535	-0.0630	-0.0006	-0.1090	0.1200	0.1098	-0.0533	-0.0873	-0.0695	-0.0561	-0.1031	-0.0995	-0.1102	-0.1004	-0.0625	1.0000		
Utilities	-0.1512	0.0023	-0.0437	0.1203	-0.0138	-0.1662	-0.0196	-0.0172	-0.0503	-0.0823	-0.0656	-0.0529	-0.0973	-0.0939	-0.1040	-0.0947	-0.0589	-0.0612	1.0000	

Notes: This table shows the correlation coefficients of the variables used In this research

4.3 Hypotheses testing

The primary hypothesis of interest of this research is Hypothesis H1, concerning the relationship between financial incentives and ESG performance. This hypothesis can be investigated by estimating the empirical base model and using a two-sided t-test to assess the significance of the coefficient estimate. The regression coefficients are estimated while accounting for clustering at the symbol level, where each symbol is an identifier for the individual companies. Using clustered standard errors helps to adjust for any potential correlation or heteroskedasticity and provide more robust results. Furthermore, industry fixed effects are considered to control for industry-specific factors that may be driving variation in the dependent variable, providing a more robust analysis. The second Hypothesis H2 is also tested with this type of assessment, but it is a one-sided test as it focuses on determining whether the observed data specifically support a negative direction of the relationship between the variables rather than simply testing for any significant relationship. Hypothesis H3 concerning the difference in the relationship between traditional financial incentives and ESG performance depending on which GICS sector is considered can be investigated by splitting the sample in sub-samples and proceeding with a new estimation of the empirical model for specific sectors of the economy, in order to adequately detect hypothetical variations of the relationship between the already mentioned variables across the different sectors.

5 Results and discussion

In this chapter I discuss the outcomes of my empirical investigation relative to the research question this thesis. In particular, I illustrate the results of the empirical base model to assess Hypothesis H1 and Hypothesis 2. Then, I also present the evidence deriving from the assessment of the singular GICS sectors to investigate the validity of Hypothesis H3 on sector-specific dynamics.

5.1 Financial incentives and ESG performance

Table 4 shows the results of the empirical base model and includes the direction and the magnitude of the relationship between each independent variable and the financial incentives of companies, as well as the statistical significance of the estimates. The dependent variable is regressed over the independent variables using clustered standard errors to address the issue of potential heteroskedasticity and account for possible clustering of observations within specific

groups. In terms of model fit, the coefficient of determination indicates that 24,4% of the variation in Fin_Inc can be explained by the independent variables.

The coefficient of ESG_Perf implies a positive relation between ESG predisposition and traditional financial incentives, which is in contrast with the findings of Bebhuck and Tallarita (2022), but it is important to note that the coefficient is not statistically significant at conventional levels. Therefore, these results either do not deliver a substantial support to the findings of Kimkiewicz (2017) and Cohen et al. (2022).

Considering the other independent variables included in the regression model, there are some cases of statistically significant relation. The coefficient estimate for Lev is positive and statistically significant at the 5% level, indicating a positive influence exerted by high levels of debt on financial incentives. This justifies the rationale for including debt to equity ratio as a control variable, but it is also appropriate to highlight the very low magnitude of this influence. Furthermore, focusing on RoA, results also indicate that a better firm performance generally decreases financial incentives for firms, as indicated by the negative coefficient and the 1% level of confidence. These findings could indicate that a high leverage could incentivize companies to focus on mending it and on financial goals at the expense of long-term sustainable objectives, whilst the opposite mechanism could be triggered in case of solid profitability standards, which could favour an attention shift to improve ESG performance. Based on this discussion, I conclude that there is not evidence that ESG performance has a direct and significant effect on financial incentives.

Table 4: Base model output

	Fin_Inc
ESG_Perf	1.149 (1.899)
Inst_O	0.0241 (0.0698)
Size	0.00517 (0.183)
Lev	0.000372** (0.000174)
RoA	-0.108*** (0.0261)
Net_Inc	-0.00388 (0.00361)
ESG_Perf*Inst_O	-0.00604 (0.0224)
Constant	-2.505 (6.6536)
Observations	952
R square	0.244
Industry FE	Yes
Clustered by	Symbol

Standard errors in parentheses

*p<0.05, **p<0.01, ***p<0.001

Notes: This table shows the model output for the empirical base model estimated using fixed effects. Clustered standard errors are given in parentheses.

5.2 Financial incentives and institutional ownership

As already mentioned, the regression output displayed in table 4 is also utilised to test the influence exerted by institutional ownership on the monetary goals of companies. Results show a positive coefficient for Inst_O, that is opposite to my expectations as it would implicate a positive relationship between institutional ownership and incentives tied to financial metrics. However, this coefficient is not statistically significant, indicating that this effect could not be robust or statistically reliable. Besides that, the interaction term ESG_Perf*Inst_O is included in this assessment to achieve a more comprehensive understanding of the relationship of financial incentives and institutional ownership, as the inclusion of ESG performance could alter the relationship with the dependent variable. The joint effect of ESG_Perf and Inst_O changes direction as the coefficient is negative, indicating a potential negative moderating effect of ESG performance on the relationship between institutional ownership and traditional incentives. However, also in this occasion the coefficient is not statistically significant at conventional levels. Consequently, there is not concrete evidence supporting the hypothesis of a negative relationship between institutional ownership and traditional incentives tied to financial metrics, and the supposition that institutional investors are minded to secure lower returns but improved ESG standards drawn in consideration of the findings of Hong and Kacperczyk (2009) does not obtain a substantial support.

5.3 Differences among sectors

The third hypothesis (H3) of this study states that the relationship between ESG performance and financial incentives varies depending on the sector in which a company operates. Table 5 describes the results of the model for the GICS sector financials, for whom there are 134 observations. Moreover, there is an improved model fit compared to the empirical base model results in Table 4, as in this case the proportion of variance of the dependent variable predicted by the independent ones is over 28%.

Unlike all the other sectors, in the case of financials ESG_Perf shows a strong positive relationship with Fin_Inc at the 1% level, suggesting that financial companies with better ESG performances tend to have also higher financial incentives. Moreover, also the coefficient of Inst_O is positive and statistically significant (5% level), implying a positive effect of institutional ownership on incentives tied to financial metrics within the sector considered. Thirdly, the interaction term ESG_Perf*Inst_O shows a significant negative relation at the 5% level, suggesting that the effect of Inst_O on Fin_Inc is attenuated or even inverted in case of a

high ESG performance. Considering the control variables, RoA negatively affects Fin_Inc at the 1% level of significance in coherence with the results of the base model, confirming that optimal returns could implicate a mitigation of the relevance of financial objectives. Considering that significant results are obtained only for a sector which is not environmentally controversial like energy, materials, utilities, and industrials, the evidence obtained appears as coherent with the findings of Yoon et al. (2018). However, except for the industrials, for whom there are 150 observations, the frequencies of the other environmentally sensitive companies are substantially lower, and it would be appropriate to plan a more comprehensive analysis with a deeper sample.

These results support the third hypothesis of this study despite not being in line with my exact expectations, which posits that the relationship between ESG performance and financial incentives varies depending on which sector of the economy is considered, as unlike the rest of the sectors financial companies with strong ESG performance appear to be willing to place greater emphasis on non-financial factors when determining executive compensation. This can be attributed to the present tendency of financial companies to put effort in creating financial products related to sustainable investments, as well as the importance of maintaining a respectable reputation and a high level of public trust.

Table 5: Model output for financials

	Fin_Inc
ESG_Perf	11.6368*** (3.066)
Inst_O	0.3524** (0.1113)
Size	0.4713 (0.425)
Lev	0.0076 (0.0043)
RoA	-0.0521 (0.0858)
Net_Inc	-0.0237 (0.0218)
ESG_Perf*Inst_O	-0.126** (0.0358)
Constant	-34.6135*** (8.9583)
Observations	134
R square	0.2841
Clustered by	Symbol

Standard errors in parentheses

*p<0.05, **p<0.01, ***p<0.001

Notes: This table shows the model output for the empirical model estimated for the financials GICS sector. Clustered standard errors are given in parentheses.

5.4 Limitations of the study

Although this research provides new insights on the relationship between ESG performance and traditional financial incentives and clarifies the role covered by institutional ownership as well as differences within sectors, it is appropriate to acknowledge possible limitations.

Firstly, the study is conducted over a time span of two years, and this relatively short interval may limit the extensibility of the findings, as economic and industry conditions tend to evolve over time and the relevance of ESG predisposition may change in response to market dynamics, stakeholder expectations, and regulatory frameworks. Hence, this thesis does not deliver an effective investigation of the variation over time of the effects of ESG performance on financial incentives, and for future research it could be appropriate to take into account the potential for temporal changes beyond the scope of this study, using a longer time horizon to provide a more comprehensive understanding of the implications of ESG interests on traditional compensation schemes.

Furthermore, the sample size is limited to the companies listed in the S&P500 index, and the findings could not be exhaustively representative of broader populations of companies. In fact, S&P500 companies are expected to meet specific listing requirements in terms of market capitalization, trading volume, and liquidity. Therefore, it would be advisable to extend this type of research to a wider and more comprehensive sample to capture firms' diversity across different sectors, sizes, and geographical regions.

In addition, the GICS layer considered for this research is the sectors one, that assembles companies into broad industry groups. Accordingly, it is possible to capture only the broad industry-level effects on the dependent variable with a generalised view of how industry characteristics influence the relationship between financial incentives, ESG performance and institutional ownership. Increasing the number of companies included in the data set would help to obtain a sufficient level of observations for each sub-sample as well as a more detailed breakdown of companies within industries or sub-industries, which in turn would provide a higher level of granularity and allow for a highly focused analysis of the relationship between the variables in specific subcategories of companies.

Lastly, despite efforts to control for potential confounding variables and cluster the standard errors, there may still be omitted variables that could potentially influence the observed relationships and outcomes. Unobserved factors specific to ESG performance, financial incentives, and sector dynamics that are not considered in this analysis could introduce potential

biases or limitations in the findings, even though this research employs valid statistical methods and accounts for a range of relevant variables.

In summary, to refine the analysis realised in this thesis, future research should consider addressing the mentioned limitations with larger sample sizes, longitudinal designs, and additional relevant variables, allowing for a more nuanced and robust understanding of the complex relationship under investigation.

6 Conclusion

This thesis studies the relationship between traditional incentives tied to financial metrics and ESG attentiveness of companies, as well as the influence covered by institutional ownership and the variation of these dynamics taking place among eleven different sectors, composing the data set with firms in the S&P500 index with observations relative to the years 2021 and 2022. I investigate these topics incorporating stock option compensation in the dependent variable of the base model and using the FTSE ESG Rating sourced from FTSE Russell ESG as the proxy for ESG performance of companies. I conduct this investigation using a static panel data model estimated using industry fixed effects and with standard errors clustered at the firm level, in order to achieve robustness against heteroskedasticity and more reliable estimates.

The obtained results show that ESG performance has a positive but not significant influence on financial incentives, and considering the literature reported, it implicates an absence of substantial coherence with both Kimkiewicz (2017) and Cohen et al (2022) as well as a contrast with Bebchuck and Tallarita (2022) who find a negative effect on welfare.

Next to that, there is evidence of a positive influence of high leverage on financial incentives as well as a negative effect exerted by firms' performance. Furthermore, I do not find evidence of a willingness of institutional investors to forego financial returns in exchange of improved ESG standards, as there is not a significant negative effect of institutional ownership on financial incentives even though also the joint effect of institutional ownership and ESG performance are evaluated in the analysis.

Moreover, it appears that the relationships analysed can assume different directions depending on the industry a company belongs to. I find that a positive and significant relationship between ESG performance and financial incentives is present in the financials GICS sector, which is compatible with the findings of Yoon et al. (2019) and suggests that financial

companies are putting a greater emphasis on non-financial factors in determining executive compensation. The motivation for doing so can be related to the fact that financial companies heavily rely on reputation and public trust and are tending to develop innovative financial products that support sustainable investments.

These results contribute to existing literature by providing a substantial discussion of the relationship between ESG performance and traditional financial incentives, as this thesis contributes to society with a clarification of the relevance that is being attributed at present time to non-financial objectives and helps companies to increase their awareness of the role played by such goals in relation to what sector of the economy they belong to.

Additional studies could amplify this type of investigation by using a longer time horizon as well as a broader and more diversified sample to capture a comprehensive and detailed picture, by using more sophisticated methodologies and reliable measures to minimise results' biases and deficiencies.

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Appendix

Table 6: Model output for the rest of GICS sectors

	Com. Serv.	Cons. Dis.	Cons. St.	Energy	Health Care	Industrials	Inf. Tech	Materials	Real Estate	Utilities
	Fin_Inc	Fin_Inc	Fin_Inc	Fin_Inc	Fin_Inc	Fin_Inc	Fin_Inc	Fin_Inc	Fin_Inc	Fin_Inc
ESG_Perf	5.367 (10.386)	-2.7925 (4.9327)	-2.4236 (1.6751)	4.8546 (7.1431)	-4.9319 (2.9399)	-3.2811 (3.8238)	5.406 (7.0685)	0.9934 (4.4896)	2,6583 (5.5424)	1.602 (1.6646)
Inst_O	0.2073 (0.3386)	-0.0579 (0.1649)	-0.1363* (0.0631)	0.2115 (0.2749)	-0.1714 (0.1071)	-0.1311 (0.1381)	0.1305 (0.2581)	0.0407 (0.1812)	0.1039 (0.1501)	0.0999 (0.0759)
Size	-0.2343 (0.6208)	0.4168 (0.6079)	0.2556 (0.2213)	-0.0597 (0.7375)	-0.281 (0.3332)	-0.9011 (0.532)	-0.4364 (0.5597)	0.1334 (0.5531)	0.1164 (0.31)	0.0196 (0.1646)
Lev	-0.0034 (0.0051)	0.0005 (0.0001)	-0.0005 (0.0003)	0.0086*** (0.0011)	-0.0003 (0.0003)	0.0015 (0.002)	-0.0003 (0.0005)	0.0012 (0.0008)	0.0008 (0.0006)	0.0013 (0.0021)
RoA	0.4179 (-0.2486)	-0.1928 (0.0459)	0.0611 (0.0583)	-0.0428 (0.0667)	-0.0641 (0.0525)	-0.1348 (0.0894)	-0.1935* (0.0845)	0.1166** (0.0359)	0.1401 (0.0761)	0.1691** (0.059)
Net_Inc	-0.2631 (0.1568)	0.0024 (0.0047)	-0.1285** (0.0425)	-0.0029 (0.0372)	0.0077 (0.0117)	-0.1344*** (0.0316)	-0.0343 (0.0634)	-0.1015 (0.0502)	-0.0306* (0.0136)	-0.0669*** (0.0162)
ESG_Perf*Inst_O	-0.0603 (0.1148)	0.0361 (0.0581)	0.0402 (0.0204)	-0.057 (0.0844)	0.0719 (0.0389)	0.038 (0.0441)	-0.0412 (0.0848)	-0.0085 (0.0522)	-0.0208 (0.0581)	-0.0241 (0.0221)
Constant	-7.6122 (33.4714)	5.687 (14.315)	8.6619 (5.221)	-14.4902 (26.4707)	18.109 (10.2393)	25.2796 (16.7445)	-3.7642 (20.0701)	-3.129 (18.7207)	-11.5246 (15.2765)	-5.8078 (6.4051)
Observations	40	100	66	44	126	150	128	54	58	52
R square	0.1113	0.3336	0.2725	0.6059	0.1067	0.3815	0.199	0.1062	0.3456	0.3869
Clustered by	Symbol	Symbol	Symbol	Symbol	Symbol	Symbol	Symbol	Symbol	Symbol	Symbol

Standard errors in parentheses
*p<0.05, **p<0.01, ***p<0.001

Notes: This table shows the model output for the empirical model estimated for the other ten GICS sectors excluding financials. Clustered standard errors are given in parentheses

