



Degree Program in Corporate Finance

Chair of Asset Pricing

Political ideology and ESG legislation: an overview of the impact on stock returns.

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1. Introduction

In their constant path to increase efficiency and create wealth, nations worldwide and their respective economies are constantly adapting to the opportunities and challenges that emerge every day. In the past few decades, the raising awareness towards climate change and social inequalities pushed firms and investors to integrate sustainable projects and increase their social responsibility alongside their long-dated search for wealth. On one side firms increased their focus Corporate Social Responsibility (CSR) in their corporate strategies to make profits coexist with engendering a positive impact on society. Numerous companies thereby incorporated such values in their mission and began disclosing their socially responsible commitments to raise investors' awareness. A widely used metric to evaluate a company's commitment to sustainable responsibility are ESG scores. These scores are based on three main factors: environmental commitment, social responsibility, and efficient governance of a firm. According to the Governance & Accountability Institute (2020) around 92 percent of the companies listed on the Standard and Poor's 500 (S&P500) index reported ESG metrics, illustrating the popularity that these factors gained for the biggest American corporations. Additionally, there is an increasing number of investment funds that track ESG indexes or that solely include firms that score high in these factors in order to attract investors who are oriented towards sustainability (Kishan, 2022). As a result, higher CSR engagement led to reduce the cost of equity capital of firms, thanks to their higher valuation by investors and their perceived lower risk (El Ghoul et al., 2011).

Alongside the growing interest from investors and firms to ESG scores and CSR, governments worldwide also increased their commitment in the last decade to introduce new policies and legislation to increase the sustainable development of their economies. Nevertheless, this focus on sustainable legislations varies widely among different countries and political ideologies. In the United States (U.S.), the first world economy by GDP (The World Bank, 2022), there is a bipartisan political system, which by definition sees two opposite ideologies and approaches on numerous topics, including sustainability and social issues. On one hand, the republican party has a very conservative approach, limiting such legislation in order to avoid hindering firms' profits, and ultimately the national economy. On the other hand, the democrat party has shown to be more sustainability-oriented, as its cabinets showed much more committed to implementing policies that reduce the impact on climate change, eliminate social inequalities and allow a fair corporate governance in corporations. The party follows an ideology that stands

behind the reasoning that sustainable policies will provide long-term success and social welfare (McCright & Dunlap, 2003; Fisher, Leifeld, & Iwaki, 2013). To demonstrate this distinctive approach the last decade in the US is a straightforward example. During the first half of the decade, with a democrat-led Congress there was an increase in the number of sustainable and social policies introduced, such as the Affordable Care Act, the signature of the Paris Climate Agreement or the Dodd-Frank act. After 2016, with the change to a republican led not only fewer policies were implemented, but some were scrapped and overturned. Again in 2021, another Democratic led congress entered in service and additional legislation towards the matter was recuperated or newly introduced (Congress.gov, 2022).

As firms and governments live through the same evolutions, the former have the incentive to ensure that the government does not hinder their performance through its decisions. Indeed, favorable governmental policies to a certain industry or commitments to reach certain goals may constitute a firms' source of profitability. Corporations have several methods to exert political influence on governmental bodies, which include lobbying, the building of political connections and monetary donations. Indeed, in the US, firms may contribute to the financing of a specific political party, through corporate Political Actions Committees (PACs). Limited Liability Companies and other listed corporations are prohibited to make direct contributions to a political party or candidates, they may only do so through the establishment of a separate segregated fund to which it can solicit contributions from individuals connected to the organization (Federal Election Commission, 2022).

In the context of ESG investing and the political connections that firms create through their PACs, it is crucial to understand how firm returns with distinct political inclinations react to newly introduced ESG-related legislation. Past literature on political donations largely focuses on its impact on corporate governance, its correlation with stock returns and its risk-relations (Aggarwal, Meschke, & Wang, 2012; Adams & Hardwick, 1998; Liang & Renneboog, 2017). There is a clear deficiency in recent literature to identify the connection between political donations, firm returns, and the introduction of new legislation connected to the three ESG pillars. To fill this gap, this study will base itself on the assumption that donors to the democrat party would be more oriented towards activities that could benefit from the introduction of ESG-related legislation, and vice versa for republican firms. Indeed, as supported by Giuli and Kostovetsky (2014), Hong & Kostovetsky (2012), and Hoepner and Schophol (2015), democrat governments in the US are more prone to implement favorable ESG-related legislation

compared to their political opponent. Thus, it makes intuitive sense to believe that firms who operate PACs that mainly contribute to the finances of the Democrat party, would also benefit from their policy implementation. The opposite would hold for the Republican Party and its supporters.

Findings could be used by a wide range of investors regardless of their investment preferences. On one side, sustainable investors oriented towards high ESG principles and strong CSR levels could use political donations towards a certain party as a parameter to funnel their investments. Indeed, if certain firms with a given political affiliation react positively to the introduction of ESG-related regulation, investors may select these stocks as part of their portfolio. On the other side, as corporations are indirectly involved in political donations, the contributing individuals, especially top-level managers, and executives, may opt towards different political involvement to improve the profitability of their organization, and thereby reducing the political uncertainty around new legislative introductions.

Given this premise, this paper will be centered around the following research question:

What are the differences in Cumulative Abnormal Returns of the major corporate political donors in the U.S., in response to the introduction of ESG-related legislation?

This research question will be the starting point of the event study in the following sections, and will be answered analyzing various factors, such as political orientation of the firm, legislative characteristics, and financial commitment to political expenditures. To provide a more accurate answer to the research question through an event study methodology with the time frame ranging from January 1st, 2010, to December 31st, 2021. This methodology is the most accurate as the research aims at analyzing the impact that a series of events have on firms returns. In order to respond to the research question, daily returns of firms, listed on the S&P500 index and that contributed financially to political parties, will be gathered, and regressed to assess the significance of their cumulative abnormal returns. The firm sample will be selected by grouping the biggest corporate donors to both the Democrat and Republican party to analyze if there exists a significant difference in abnormal returns.

This research delivered significant results that can help understand the relation between politics and firm returns. First, a significant synergy effect emerges as firm sponsoring a given party

react positively when the same party introduces a legislation. Second, the amount of hard-money donation is irrelevant in determining abnormal returns, which suggests that corporate donation suggest a leniency towards a certain political orientation rather than a full commitment. Third, direct ESG-related legislation that aims at regulating ESG investment has a lower impact on CARs than broader legislation referring to environmental or social issues. Moreover, policies supported by the Democratic party seem to engender lower CARs for all firms suggesting that Republican firms pull down this trend as there is a great need to adapt operations to new policies. Finally, high ESG scores appear to go against the trend analyzed by past papers, lowering CARs of firms in response to political events.

This paper will proceed according to the following structure. First, a review of the available academic literature on corporate political donations and their effect on firm returns will be presented along with a glance at the effect that ESG-related governmental policies in the US have on the financial performance of firms. Second, the hypothesis made prior to the conduction of the study will be lined out followed by the methodology used to conduct the study. Then, the data sample for both the firm sample and the event selection will be displayed followed by the statistical results obtained. As a last step, an argumentative interpretation of the results will be made as to deliver a fully detailed answer to the main research question of this paper. Finally, a conclusion will be drawn from the content of the paper, along with an overview of the limitations and ideas for future research on the topic.

2. Literature Review

In the next section of this paper, an overview of the current state of academic literature relating to political economy and its influence on returns will be presented as a starting block for the study. First, the most relevant literature relating political donations from listed companies and their effect on stock returns will be presented. Second, an overview of previous studies examining abnormal returns of companies around political events will be presented. Finally, academic literature of ESG regulation and its effect on companies returns will be presented.

2.1. Corporate Political Contributions

A key building block of this study are corporate political contributions, which refer to the amount of money that a company gives out to support a political party or a specific candidate. Hence, in order to make valid hypothesis for the subsequent event study, it is crucial to expose the main effects that political donations have on firm stock returns, through the use of past academic literature. Studies have revealed diverse results and connections between political contributions and firm performance.

Cooper et al. (2010) developed one of the largest-scale studies on the effect of political contributions of U.S. firms and their stock returns. In their results, the authors find a positive causal effect between the number of political candidates supported by a firm, and its future earnings and returns. Moreover, the effect is enhanced when the candidate is located in the same state of the firm, as it is more likely that his actions have a direct impact on the firm. Nonetheless, they point out that hard money contribution is the only measurable part of political contributions, and that the cost of political connections may be way higher and therefore less profitable. More recently, Gounopoulos et al. (2021) also finds a similar positive effect of political contributions made by firm's executives on IPO premiums of companies entering the stock market. Likewise in a research by Jayachandran (2006), the author analyses abnormal returns of donors around a particular event in 2001 when the senate majority shifted from the Republican party to the Democrats as a result of Senator J. Jeffords leaving the Republican party. By distinguishing the recipient of donations from a company, the author observes that for every \$250,000 donated to the Republican party, a firm would lose 0.8 percent of its market capitalization, and vice versa for Democratic donors. These results highlight the role that political donations are either a way to support politicians that are in line with the firms' views or a way to lobby these politicians into engaging in favorable actions for the firm. This study thereby completes previous views on the positive or negative effect of political donations on stock returns, as it supports a clear defining factor, party connection.

Unlike previous studies, Hadani and Schuler (2013) investigate the effect of political donation of a sample of S&P500 companies on financial performance. The authors find a negative effect of political contribution on firm market and accounting performance. As reasons of this negative effect, the authors support that shareholder may not value political engagement as a valuable investment but rather as a reflection of managerial preferences. Nonetheless, the only

positive effect is seen in firms operating in regulated industries, as their political donations may induce favorable legislation through lobbying. Similarly, Hersch et al. (2008), take longer term view on the effect of political contributions on firm performance by analyzing the Tobin's q of firm donors. Their most compelling result is that they find no statistically significant effect that establish a causal connection between political donations and firm Tobin's q. The authors therefore conclude that political spending can benefit a company in the short-term but due the instable nature of modern political system it is practically impossible for companies to establish long-term financial benefits through political spending. Analogous results were found in a more recent study by Fowler et al. (2020) that find no benefits for corporation when the candidates supported by their PACs are elected, thereby highlighting the lack of benefits that may arise from campaign contributions.

Academic literature on political contributions and stock returns is heterogenous in its results, and it is not clear in which direction the former affects the latter. A potential reason is that the listed studies focus on markets as a whole, without regrouping firms by industry, size, or political affiliation. It is likely that the value of political contributions may be vastly different in various subsections of the market.

2.2. Political Factors and Stock Returns

Modern day politics in democracies around the world are dynamic and complex as they reflect the everchanging environment a nation encounters. In the context of this study, it is essential to glimpse at prior research on the effect that political events such as the introduction of new legislation, elections or governmental collapses have on stock returns of companies in that country, and whether these effects are homogenous or vary across groups of companies. As pointed out in the introductory section, the influence of political factors on stock returns is a highly documented topic in academic literature.

In a study by Pantzalis et al. (2000), the authors support the idea that market participants monitor closely the outcome of election results to weigh expectations of potential future policies that could be implemented with a certain government. Through their event studies, they find significant abnormal returns for firms in the two weeks preceding an election date, when polling results are less uncertain. The authors also find that abnormal returns are higher when the incumbent party is expected to lose its reelection. Similarly, Li and Born (2006) analyze stock

returns during election periods in the United States to analyze abnormal returns and volatilities in an unbiased framework. Their study suggests that when accounting for a specific party's election, the returns differ. For Democratic elections returns seem to fall in the period preceding the election and in the beginning of the new mandate, suggesting that investors wait to see whether promised policies will be implemented.

In a study by Lamb et al. (1997), the authors elaborate a peculiar concept behind the relation between the U.S. Congress action and stock performance, naming it "the Congress Effect". Their results imply that when the U.S. congress is in a period of recess, stock market growth is significantly higher than when the former is functional. This can be explained by the uncertainty that comes with the creation and approval of bills and legislation, which never have certain outcomes. More recently, Hiller and Loncan (2019) observed a similar reaction to political uncertainty in the Brazil economy, where a government collapse had a stronger effect on returns of companies who were connected to state-owned banks than others. Pastor and Veronesi (2013), compare the stock reaction to policy implementation during weak and strong economies. In their model, the authors reveal that under weak economies stocks experience more volatility and correlation when a government implements a new policy and thereby the risk premia is higher than in stronger economies. This is due to the fact that in weak economies political uncertainty is higher. Moreover, according to Kelly et al. (2016), the prices of options that span political events adjust themselves, accordingly, making them more expensive as they provide a valuable protection tool against political uncertainty. Finally, Cheng (2022), analyses the corporate performance on companies comparing periods of governmental stability and periods of instability and concludes that the corporate performance of companies is significantly higher when there is governmental unity, and thereby less uncertainty.

In a bipartisan political system such as in the U.S. it is rather straightforward to analyze stock market variations under different administrations. Santa-Clara and Valkonov (2003) report that the market excess returns observed under Democratic administrations is significantly higher than for Republican ones, with higher real market returns and lower interest rates. The authors call this phenomenon the "presidential puzzle" which seems to go against the semi-efficient market hypothesis as political decisions are known to all (Wisniewski, 2016). Similarly, Hensel and Ziemba (2019) analyze stock returns under various administrations from 1928 until 1993 and find that stocks with small capitalization perform better under Democratic administration compared to Republicans. Bel et al. (2013) analyze the market performance of companies in

industries more dependent on governmental expenditures and reveal that these companies outperform others significantly under Democratic administrations and underperform during Republican congress. In an attempt to resolve the presidential puzzle, Sy and Al Zaman (2011), explain these higher returns by taking an accurate measure of risk into consideration, more specifically they allow systematic risk to vary across presidencies. The authors find that Democratic presidencies are indeed associated with higher returns, but only because they are simultaneously associated with a higher market and default risk premium, therefore adjusting returns upwards.

According to previous studies, stock prices react amid political events pushed by the uncertainty the latter bring along. Moreover, stock markets seem to react to election results and government changes as they can lead to different long-term outcomes. However, results seem to be varying between events and firm types, as an economy cannot be impacted homogenously by the same event.

2.3.ESG legislation and Political Donations

This study will focus on ESG related legislation in the U.S. as opposed to general political events as the ones described in the previous subsection. ESG investment and thereby its regulation is a relatively new topic in finance and therefore less documented in academic literature. In the following subsection an overview of the academic literature on ESG regulation will be provided. As a way to wrap up this review this section, studies relating the impact that politics have on ESG investments will be presented.

Corporate governance theories such as the shareholder and the stakeholder theories have given contrasting evaluation of the rise of ESG interest. The former sees the rise in ESG as detrimental for firm value as it restricts operations, whereas the latter sees it as an opportunity to improve financial performance in a more sustainable way (Nguyen et al., 2022). Logically, it would be intuitive to think that political candidates supporting sustainability would follow more the stakeholder view on ESG.

Analogous to ESG scores, CSR criterias of a firm are a way to estimate its impact on society. Di Giuli and Kostovetsky (2014) developed a studying relating the political orientation of senior

management and CSR ratings. The authors analyse CSR ratings of firms, comparing firms with a Republican founder and ones with a Democrat founder. They find that in general, Democrat firms tend to invest more in CSR as opposed to Republicans. Similarly, Hong & Kostovetsky (2012) conducted a study to compare the level of sustainable investment of mutual funds based on their political affiliation. They found significant results depicting that Democrat managers have significantly lower levels of investment in “sin stocks” of companies that are unsustainable and socially irresponsible, compared to Republicans. Also, Hoepner and Schopohl (2015), find similar results when the pension fund manager is a leaning democrat, they direct investments based on ESG criterias compared to their Republican counterpart. Nonetheless, a study by Borghesi et al. (2014) that analyses managerial attributes and their relation with CSR investment, finds no significance difference in CSR levels promoted by Democratic or Republican donors. The discontinuity in results regarding ESG is justified by the absence of long-term past data by Gillan et al. (2021) in a literature review that finds a lot of reverse causality in past studies on ESG characteristics.

Nonetheless in topics of political economy, the studies illustrated above denote a clear tendency to prove that Democratic leaning managers and thereby the entities they lead, have a tendency to engage in socially responsible activities compared to Republican managers, thereby following the stakeholder theory of corporate governance.

3. Data

Following the research plan elaborated in the introductory section previously, data on firm donations of the S&P500 firms, their respective returns, ESG aggregate scores along with separate E, S and G factors, and events around the regulatory environment of ESG in the U.S. were collected and formatted to proceed to the event study execution. In this section, a detailed explanation of the sample and event selection and its sources will be presented with appropriate justifications for this choice.

3.1. Political Donations and Return Database

Corporate political donations in the U.S. are tracked by the Federal Election Commission (FEC), an independent governmental body responsible to track and regulate all campaign finances in the country (Legal Information Institute, 1997). The FEC offers a complete historical database online that tracks every singular donation made by individuals, managers, and all types of PACs in the U.S. Nonetheless, the FEC database provides very raw and poorly classified data which makes it inconceivable to distinguish the contributions made by singular individuals to corporate PACs through this database. Indeed, as organizations themselves do not contribute directly to campaign financing, the FEC tracks singular donations rather than grouping them. Nevertheless, alongside the FEC, the Center for Responsive Politics (CRP) and the National Institute on Money in Politics (NIMP) are two nonprofit organizations who filter data from the FEC by groups of donors, including corporate PACs, and publish it on their online database [Opensecrets.org](https://www.opensecrets.org) for easier public access (OpenSecrets, 2022). For each of the existing corporate PACs, the database provides biannual historical data on the total amount of political contribution made by a given corporate PAC and distinguishes the recipient into Democrat Party and Republican Party. Hence, through this database it is simple to observe the political leniency of a listed corporation in financial terms, as for the same period the total amount donated is illustrated. Thereby, for accuracy purposes, the OpenSecrets database will be used to collect donations from corporate PACs for this study, rather than the FEC database. Indeed, many prior academic studies analyzing the impact of political contributions also used alternative databases instead of the FEC, for clarity and thereby reliability purposes.

A sample of 98 firms was selected and grouped based on their donations to political parties, after a careful screening on the Opensecrets database. For a valid firm sample selection several factors were taken into consideration to reduce the sample size to an appropriate amount. First, the total amount donated from each corporate PAC affiliated with an S&P500 company in the period starting from January 1st, 2010, and lasting until December 31st, 2021, was summed for each party. Subsequently, the selected firms were classified based on the major recipient, either the Democratic Party or the Republican Party. Appendix 1 shows the division of the sample based on the main recipient of PAC funds, along with the amount donated. Additionally, in order to be included in the sample, firms had to meet the following criteria: hold an operating corporate PAC during the whole time frame of the event study (i.e.: 2010 up to and including 2021); their contribution to political campaign through PACs must be greater than \$100,000 for

the total time span; the company must be included in the S&P500 index and the difference in total donations in absolute terms between both parties must be greater than \$10,000, for all measurements. All affirmations above must hold for the whole duration of the time used in this paper. These distinctions were kept because a clear leniency towards the support of one political party rather than the other was needed to provide more significant results in the event study. Indeed, smaller donors or PACs that donated similar amounts to both parties over the years, would lead to inconclusive results.

Based on the firm sample selected above according to political donations, the respective daily returns for these companies were collected. Daily returns were chosen as opposed to monthly returns, as for the scope of this study, which includes political events, the daily precision is required. Indeed, the effect of such events revolves around a few days around the passing of a bill. The Wharton Research Data Services (WRDS) and the Center for Research in Security Prices (CRSP) were used to obtain the daily closing prices for all companies included in the sample, as well as the S&P500 returns within the time frame. WRDS is an online platform providing historical financial data from the CRSP available for academic research (Wharton University of Pennsylvania, 2022).

3.2.Event Dates

As stated in the introduction, this paper aims at analyzing the impact of introduced governmental policies relating to ESG investments over the period starting on January 1st, 2010, up to and including December 31st, 2021. This particular time frame has been chosen as in these years both numerous of political changes occurred, namely elections of presidents from different political backgrounds, and the development in the ESG related legislation followed the growing interest from investors and investment funds in those pillars. For the sake of the event sample selection, ESG-related legislation is considered to be legislative introductions made by the US Congress that are directly or indirectly related to the three pillars of ESG scores. This is why, these events were separated into direct ESG policies and indirect policies for the purpose of this study. Direct ESG policies refer all proposed laws and regulations that directly regulate ESG investment or reporting. These policies aim at regulating ESG disclosures, reporting, accessibility and thereby improve the reliability for investors. On the other hand,

indirect policies refer to various environmental, social and governance policies that can impact firms who have a strong ESG commitment. For instance, these include policies tackling climate change, policies aiming at reducing social inequalities. After scrutinizing the legislative calendar of the time frame in the U.S., a sample of 17 events, listed in Appendix 2, was chosen to analyze the abnormal returns around policy introduction. In addition, two of the presidential election held in the time period were kept as they are significant political event influencing all firms. The list of selected policies was sampled from the online database of the U.S. congress for federal legislative information, Congress.gov. This official US database provides detailed information on all legislation which has been passed, introduced on in debate in the US congress, including its sponsors and status (Congress.gov, 2022). Hence, through the same database the party sponsoring a legislation was also retrieved along with the status of the legislation. As to distinguish legislation based also on its process to become into effect, the status of the legislation “today” was considered. Indeed, according to the US political law, before a legislation enters into effect it must be discussed and approved by both chambers of Congress, which can take a substantial amount of time. Hence, even legislation that has only been introduced to the Congress was included in the event list because ESG-related legislation, notably direct ESG regulation, is fairly recent and its approval is awaiting. Thanks to this distinction, it may also be interesting to analyze the difference in effect on abnormal returns of pending and approved legislation.

Exact event dates were also retrieved from the same U.S. Congress online database. For legislation that were already approved by the Congress, the event date was chose to be the day that the Congress had the final vote in passing that legislation. If the legislation has not yet been put into effect, the date in which its sponsor presented it to the US congress is considered as the event date.

3.3.ESG Scores

In order to account for how the ESG scores of a firm influence the reaction to political events, yearly ESG scores for firms included in the sample were obtained from the Refinitiv database for the selected firm sample over the period starting on January 1st, 2010, up to and including December 31st, 2021. The Refinitiv database provided a comprehensive overview of firm specific ESG scores as a whole and to each separate E, S and G factor, covering around 80% of

the global market capitalization. The database aggregates data from publicly available information from firms, indices, and regulatory disclosures (Refinitiv, 2023). Several academic studies use the Refinitiv database for the collection of ESG firm data, and to analyze its impact on stock returns. Flammer (2015) and Derwall et al. (2005) conduct studies in the US and European markets to analyze what impact ESG scores have on stock performance of companies, using the Refinitiv database as the main tool for ESG data collection.

For the scope of the study, both aggregate ESG firm scores and separate environmental (E), social (S) and governance performance (G) factors were collected for each firm included in the sample. The separation of the three factors allows to get a more in-depth view on what specific factor drives CARs. First, environmental scores are calculated based on company performance and attention to factors such as net emissions, energy consumption or renewable resources usage. Second, social scores focused on diversity and inclusion, employee satisfaction or community engagement. Finally, governance performance metrics assessed the transparency and efficiency of corporate governance practices, including board structure, executive compensation, and shareholder rights.

4. Hypothesis Development

The academic literature review provided in the second section of this paper serves as a base for the development of the hypothesis that will be used in this study. Indeed, these hypotheses will guide the event study into the direction of interest of this research. As illustrated from past academic literature there is clear heterogeneity in results that either find no significance effect of political connections, returns and ESG-investing or, support that Democratic connected firm support ESG-related activities. Thereby, in this fourth section of this paper, the various hypothesis that will be tested later on will be explained.

4.1. Firm Donations

The first hypothesis (H_1) bases itself on the assumptions that there is a positive correlation between the returns of firms politically connected to a given party and the moment when the same party implements a new legislation. These assumptions mainly rely on the findings by Cooper et al. (2010), Gounopoulos et al. (2021) and Jayachandran (2006) illustrated

previously, that find significant connections between political donations and the returns of a firm. For the sake of this study, the effect on ESG-related legislation will be tested with the hypothesis below. In this case, firm specific characteristics (i.e., their political donation toward a certain party), may interact with the policies introduced by a Congress.

H₁: the abnormal returns of a political donor of a given party will be positive when an ESG-related policy is introduced by a congress led by the same party.

Hypothesis 2 was developed by focusing on the type of event included in the sample. Indeed, separating events based on their characteristics is crucial to have a deeper understanding of the abnormal returns of firms. In this case, direct and indirect policies related to ESG-investing are separated. As previously explained, direct ESG policies refer to all policies introduced with the aim at regulating the ESG-investing environment. In addition, the distinction between the status of the legislation should be tested to see when the abnormal returns appear to be stronger and more significant. The relation between firm returns and political events was previously studied by Hiller and Loncan (2019), Kelly et al. (2016), Lamb et al. (1997), Li and Born (2006) and Pantzalis et al. (2000) who overall find that firm returns react abnormally to political events. Therefore, should a direct and fully implemented regulation in a particular field would lead to a stronger effect in abnormal returns for firms, hypothesis two (*H₂*) was elaborated below.

H₂: a direct and a fully approved ESG-related policy will have a stronger significant impact on abnormal returns of a firm than indirect policies.

Finally, by considering that the level of political engagement of a firm is determined by the amount of money donated to a given party, the latter may have an impact on firms' CARs in the event window. For instance, studies by Hadani and Schuler (2013), Hersch et al. (2008) and Fowler et al. (2020) analyze the quantitative relation between political donations and returns. For the scope of this study, it is assumed that if a firm donates more money to a given party, its operations are highly dependent from legislative and governmental changes, which thereby lead to stronger abnormal returns in magnitude. Hence, the following hypothesis *H₃*:

H₃: there is a positive correlation between firm abnormal returns and the amount of money donated from corporate PACs.

4.2. ESG scores

Hypothesis 4 was developed in order to grasp the influence of firm ESG scores and E, S and G parameters separately on the CARs in response to the introduction of ESG related legislation. By including ESG factors directly it allows the statistical value of the research to increase and improve the relevancy of the study. A firm with a higher ESG level is more likely to be investing in ESG related matters and thereby is more sensitive to the introduction of new legislation regarding ESG. Hong & Kostovetsky (2012) and Flammer (2015) study the influence of ESG scores and CSR levels on the return response to related legislature, and find a positive correlation between high ESG or CSR levels and CARs in response to supportive legislature. Moreover, a meta analysis by Friede et al. (2015) find a positive correlation between ESG scores and financial performance, suggesting that high ESG scored firms respond positively to legislation in favour of ESG commitment, hence the following hypothesis:

H4: Firms that scored higher in ESG and E, S and G factors, will exhibit higher CARs in response to the introduction of ESG-related legislation.

5. Methodology

In order to assess the effect that newly introduced legislation has on the returns of the firms within the selected sample the event study methodology was selected. Event studies are a widely used tool in financial academic research, to assess abnormal returns for firms respective to a specific event. Academics value this tool as it has proven to deliver significant results for price responses to new information (MacKinley, 1997; Corrado, 2011; Crego, 2019). This statistical approach was the most appropriate for this study, as numerous events for a specific firm sample were selected. As a mean to test statistically and regress abnormal returns, the statistical software package Stata was used to follow the methodology explained below.

5.1.Descriptive Statistics

Prior to the event study execution, descriptive statistics were created to obtain an overview of the data used in the study. Within these statistics, the mean, median, minimum, maximum, and standard deviation were computed using Stata for the donation amount, daily returns, and CARs for both the whole sample and the subgroups. To compare the mean differences between the two subgroups of political affiliation, two sample t-tests with equal variance were performed to verify that the difference is indeed significant. Equation 1 below shows how the t-test was performed.

$$t = \frac{(x_1 - x_2)}{\sqrt{\frac{(s_1)^2}{n_1} + \frac{(s_2)^2}{n_2}}} \quad (1)$$

5.2.Event Study

Following the completion of the descriptive statistics for basic data analysis, the event study is computed in line with the methodology explained hereafter. First, the expected normal return of a given stock (i.e., return of a stock without the event happening) was estimated during a time window, located prior to the event day. As supported by MacKinley (1997), a suitable estimation window for an event study using daily data and the market model starts at 120 trading days prior to the event day. To avoid interference from the actual event being tested, the estimation window ends 10 trading days before the event day 0. The event at day 0, represents the introduction of a new legislation by the US congress. The event window is set at [-3;3] to capture the effect both the immediate aftermath of the event day and rumors a couple of days prior to the event. The abnormal returns are calculated by using a single factor market model. This method is used as it incorporates the market dynamics by using a benchmark to calculate expected returns (Crego, 2019). As a benchmark, the S&P500 index returns for the same time period were used, as the firm sample was selected only by choosing firms in that index.

Crego (2019), estimates expected returns with the market model with the model in Equation 2, below. Following the author, the same equation will be implemented in this study.

$$E(\widetilde{R}_{i,\tau} | \text{having an event}) = \alpha_i + \gamma_i Rm_{i,\tau} \quad (2)$$

First, normal returns are computed. Normal returns are the expected returns should the event not have occurred. The model is estimated by the OLS regression showed below in Equation 3, with respective estimators in Equation 4 and 5.

$$R_{i,\tau} = \alpha_i + \gamma_i Rm_{i,\tau} + \varepsilon_{i,t} \quad (3)$$

$$\hat{\gamma}_i = \frac{\sum_{\tau=\underline{T}}^{\bar{T}} (Rm_{i,\tau} - \frac{1}{\bar{T}} \sum_{\tau=\underline{T}}^{\bar{T}} Rm_{i,\tau}) * (R_{i,\tau} - \frac{1}{\bar{T}} \sum_{\tau=\underline{T}}^{\bar{T}} R_{i,\tau})}{\sum_{\tau=\underline{T}}^{\bar{T}} (R_{i,\tau} - \frac{1}{\bar{T}} \sum_{\tau=\underline{T}}^{\bar{T}} R_{i,\tau})^2} \quad (4)$$

$$\hat{\alpha}_i = \frac{1}{\bar{T}} \sum_{\tau=\underline{T}}^{\bar{T}} R_{i,\tau} - \hat{\gamma}_i Rm_{i,\tau} \quad (5)$$

Thereby, normal returns are computed with parameters that are replaced in Equation 2 above, to obtain the following Equation 6.

$$NR_{i,\tau} = \hat{\alpha}_i + \hat{\gamma}_i Rm_{i,\tau} \quad (6)$$

Hence, abnormal returns in this study are calculated by taking the difference between the actual return and the estimation of normal returns, as depicted in Equation 6 below. This is done for each firm and for each event. So that stronger statistical properties are ensured, the natural logarithm for each return is calculated, and the results will thereby be in percentage points.

$$AR_{it} = \ln(R_{i,\tau}) - \ln(NR_{it}) \quad (7)$$

However, the abnormal returns calculated in Equation 7 deliver abnormal returns for single points in time. For the scope of the study, these returns are accumulated for the period inside the event window, with the following Equation 8. This is done to obtain the overall effect of the events on returns.

$$CAR_i = \sum_{\tau=0}^L AR_{i,\tau} \quad (8)$$

Finally, the statistical significance for each CAR calculated as shown in Equation 8, is calculated with the t-statistic tool calculated as shown in Equation 9 below.

$$T - statistic = \frac{CAR_i}{Robust\ Standard\ Error} \quad (9)$$

5.3. Variable Description

In the event study, the dependent variable used is Cumulative Abnormal Return for every event and every firm in the sample. As explained in the last subsection, to evaluate the effect of a new legislation on the returns of firms, abnormal returns are summed per event and per firm, and their statistical significance tested. Singular firm returns are benchmarked to the S&P500 index returns to obtain abnormal returns for each event. To complete the regression model several independent variables were included in the study. Table 1 on the following page summarizes the various variables used in the study and their source.

<i>Variable Name</i>	<i>Data Source</i>	<i>Definition</i>
<i>Dependent</i>		
<i>CAR_{it}</i>	CRSP/WRDS	Sum of abnormal returns during the event window per firm
<i>Independent</i>		
<i>direct</i>	Congress.gov	Dummy variable: equals 1 if the legislation is directly aimed at ESG-regulation
<i>demdecision</i>	Congress.gov	Dummy variable: equals 1 if the congress enacting the legislation is led by the Democratic Party
<i>demfirm</i>	OpenSecrets	Dummy Variable: equals 1 is the firm donates more funds to the Democratic Party
<i>status</i>	Congress.gov	Dummy Variable: equals 1 if the legislation has already been approved by congress
<i>lnAmount</i>	OpenSecrets	Variable defining the natural logarithm total amount donated to a respective party during the time frame of the study
<i>lnESG</i>	Refinitiv DataStream	Natural logarithm of the firm ESG score
<i>lnE</i>	Refinitiv DataStream	Natural logarithm of the firm E factor score
<i>lnS</i>	Refinitiv DataStream	Natural logarithm of the firm S factor score
<i>lnG</i>	Refinitiv DataStream	Natural logarithm of the firm G factor score
<i>Control</i>		
<i>lnSize</i>	Compustat/WRDS	Variable defining the natural logarithm of total quarterly assets of a company
<i>leverage</i>	Compustat/WRDS	Ratio of a company's total long-term debt to its market value of equity, measured quarterly
<i>currentassets</i>	Compustat/WRDS	Ratio of company's quarterly current assets to total assets
<i>Fixed Effects</i>		
<i>Year</i>		Dummy variables indicating 1 for a specific year and 0 otherwise

Table 1: Summary of all variables included in the model, their data source, and their respective detailed description.

First, three dummy variables regarding legislative characteristics of the policies used in the study were introduced. The *direct* variable defines whether a policy is directly related to ESG-regulation, such as disclosure and regulatory law for ESG investment, or whether it is indirectly related, such as broader climate or social policies implemented by the U.S. congress. Second, the *status* variable refers to the stage in which the legislation is currently at, as both in process and active policies were included in the study. Then, the party leading the congress at a given time was included with the dummy variable *demdecision*, to distinguish policies introduced by the Democratic Party or the Republican Party. Appendix 2 shows all events with the respective type of legislation, status, and political sponsor. The variable *demdecision* shows the political affiliation of the firm based on its political contributions, and *lnamount* shows the total amount of political contribution done by a given company in the time frame. Finally, the variables for the aggregate ESG score for each firm and separate variables for each E, S and G factors were added to quantify the ESG commitment of a firm. The natural logarithm of these variables was taken in order to increase the significancy of the results. Previous academic research analyzed the impact of ESG scores in the same way (Hanauer & Schiereck, 2017). By enabling a natural logarithm transformation to the variable, a more normalized distribution can be created, making it more suitable for a use in regression analysis. Additionally, taking the natural logarithm can also help to reduce the influence of outliers, which improves the precision of the regression estimates.

In addition to the main independent variables included in the study, a series of control variables were added as to increase the internal validity of the regression model. First the variable *lnsize* refers to the natural logarithm of the amount of total assets held by a company, *leverage* is the debt-to-equity ratio for each company and *currentassets* is the ratio of all current assets (i.e., assets used to fund daily operations) to total assets.

5.4. Regression Model

Given the previously described variables, a regression model was developed to test the previously discussed hypothesis. Multivariate Ordinary Least Squares Estimations (OLS) are computed to determine the effect of the dependent variables on the independent variable of the study. CAR for firm i at time t are used as the dependent variable. To test the effect of the introduction of new legislation, several independent variables are used as listed above. Thus, Equation 10 illustrates the full regression model, with all independent variables. Indeed, such estimation would be able to conclude whether new legislative introductions have a statistically significant impact on abnormal returns, or whether they are also led by firm-specific characteristics. In addition to the previously listed variables several interaction variables were added to the model to test various event scenarios. First, the interaction between the *demdecision* and the *demfirm* variable is enabled to test CARs of Democratic donors when a Democratic sponsored legislation is introduced, as a way to analyze possible synergy effects between political affiliations. Similarly, the triple interaction variable is tested to analyze the same CARs as with the previous interaction variable, only now including solely direct ESG legislation. Both interaction variables have the purpose of testing Hypothesis 1, with the goal of obtaining stronger coefficients and higher significance levels. The last four variables are continuous variables used to test the impact of ESG levels on firm CARs.

$$\begin{aligned} CAR_{it} = & \alpha_{it} + \beta_1 direct + \beta_2 demdecision + \beta_3 dem + \beta_4 demdecision * demfirm + \\ & \beta_5 amount + \beta_6 status + \beta_7 demdecision * demfirm * direct + \\ & \beta_8 lnESG + \beta_8 lnE + \beta_8 lnS + \beta_8 lnG + \varepsilon_i \end{aligned} \quad (10)$$

6. Results

6.1. Descriptive Statistics

Prior to the execution of the event study to test the significance of the various variables of interest, the data itself used to compute the study was analyzed with descriptive statistics. These statistics have a purpose of obtaining a first idea of how the data actually looks. In the section below, tables summarizing descriptive statistics of data will be presented.

First, the statistics for political donations amongst the two different parties in the U.S. and their differences are analyzed below. Table 2 underneath shows descriptive statistics regarding donations to each party in the period 2010 to 2021.

	Mean	Standard Deviation	Minimum	Median	Maximum	Mean Difference
Democrat Donors	\$1.07M	\$1.4M	\$103,5k	\$543k	\$6.11M	
Republican Donors	\$3.12M	\$2.23M	\$368k	\$2.61M	\$8.08M	\$2,05M*** (4.03)

Table 2: Descriptive statistics in absolute values for corporate political contributions during the time period: 2010-2021. Values in million of U.S. dollars.

During this period, in absolute terms, the Republican party received a significant higher amount of funding from corporate PACs in the US compared to the Democratic Party, with a significant mean difference. Indeed, when comparing both recipient's statistics, the mean is almost three times higher, and the median is almost four times higher for donations destined to Republicans. This stronger engagement shown from firms donating to Republican campaigns and candidates can be partly explained by the "no corporate PACs money" pledge. This pledge was taken by several candidates during the last decade, as they refused to finance their campaign with money collected from corporations. Such engagement was taken on by a significant higher number of Democratic candidates as opposed to Republicans. Indeed, in the 2018 election cycle, 185 Democratic candidates took on the pledge (Godfrey, 2018).

Second, the returns for the different party subgroups and the market index were analyzed with the same descriptive statistics as previously. This is done to see in a clearer way whether there is a significant difference in returns between Democrat and Republican donors. Table 3 below shows descriptive statistics for the daily returns of the S&P500 index and the companies in the selected sample for this study, divided by their political contributions.

	Mean	Standard Deviation	Minimum	Median	Maximum		Mean Difference
Daily Returns	0.02%	3.9830	-424.82%	0.07%	338.30%	Democrat Donors	-0.05%**
	-0.03%	4.2035	-522.78%	0.05%	255.32%	Republican Donors	(-2.18)
	0.05%	1.0857	-12.75%	0.08%	8.96%	S&P500	

Table 3: Descriptive statistics in percentage for firm daily returns based on their political donations, during the time period 2010-2021.

Firms who are major donors to the Democratic party have an average daily return of 0.02% whereas Republican donors exhibit an average negative 0.03%. From the table, it is clear that firms who engage in donations to the Democratic party exhibit higher mean and median daily returns with a lower standard deviation compared to Republican donors. However, both donor classes exhibit lower average daily returns than the tracking index S&P500. As above, the mean difference for daily returns is statistically significant at the 5 percent level.

Another set of descriptive statistics refers to the Cumulative Abnormal Returns (CARs) on the day of events separate by party donors. These statistics should give an idea of the direction of the later event study. Table 4 below shows the summative statistics for all CARs in the event window [-3;3] computed for each event in the study.

	Mean	Standard Deviation	Minimum	Median	Maximum		Mean Difference
CARs	-0.22%	0.0464	-20.49%	-0.15%	26.55%	Democrat Donors	-0.08%**
	-1.03%	0.0760	-92.04%	-0.04%	31.49%	Republican Donors	(-2.01)
	-0.6%	0.0619	-92.04%	-0.35%	31.49%	All Firms	

Table 4: Descriptive statistics in percentage for firm CARs in the event window [-3;3] based on their political donations, during the time period 2010-2021.

Without considering donations, it is observable that on average firm returns respond negatively to the events listed in the sample. For Republican donors the negative magnitude is larger compared to Democratic donors, for both mean and median. Republican donors also exhibit higher variance, and bigger outliers than Democratic donors who observe a lower standard deviation in CARs. Indeed, when taking the statistics for the whole firm sample, Republican exhibit lower average CARs and higher standard deviations. This suggests that similar results will be found with the event study afterwards, where Republican firms are more negatively impacted by legislative events. The mean difference for CARs is statistically significant at the 5% level between both parties.

The final set of descriptive statistics refers to aggregate ESG scores during the time frame of the event study, separated by party donors. These statistics should give an idea of the relationship between political orientation and ESG commitment. Table 5 on the next page shows the summative statistics for all ESG scores, classified by party donors.

	Mean	Standard Deviation	Minimum	Median	Maximum	Mean Difference
Democrat Donors	67.19	15.24	11.73	69.78	93.45	
Republican Donors	66.87	15.72	9.91	69.74	93.72	-0.508 (-0.59)

Table 5: Descriptive statistics for firm yearly ESG scores, during the time period 2010-2021.

Firms who are major donors to the Democratic party have an average ESG score of 67.19 whereas Republican donors exhibit a slightly lower mean of 66.87. From the table, it is clear that for both subgroups, there is not a substantial difference in ESG scores, in all parameters as suggested by the lack of statistical significance in the mean difference. As a preliminary analysis, this goes against what suggested by previous literature, which generally supports the fact that Democrat oriented firms score higher in ESG levels compared to their Republican counterpart.

6.2.Portfolio Analysis

In addition to the descriptive statistics presented in the previous subsection, a basic portfolio analysis was performed in order to analyze the evolution of the firm sample's stock returns during the time frame 2010 to 2021. Through this analysis, a clear idea of trend can be identified which can help gaining a more accurate comprehension of the later event study. Two hypothetical portfolios were created using the same firm sample as for the event study, one tracking the returns of the democratic affiliated firms, and another tracking republican firms. Moreover, the returns of the market index used in the event study, the S&P500 index was also included for comparison sakes. As a way to make the comparison senseful, S&P500 returns were adjusted to the average capitalization of the two hypothetical political portfolios. Figure 1 below shows the evolution of the portfolios during the time period.

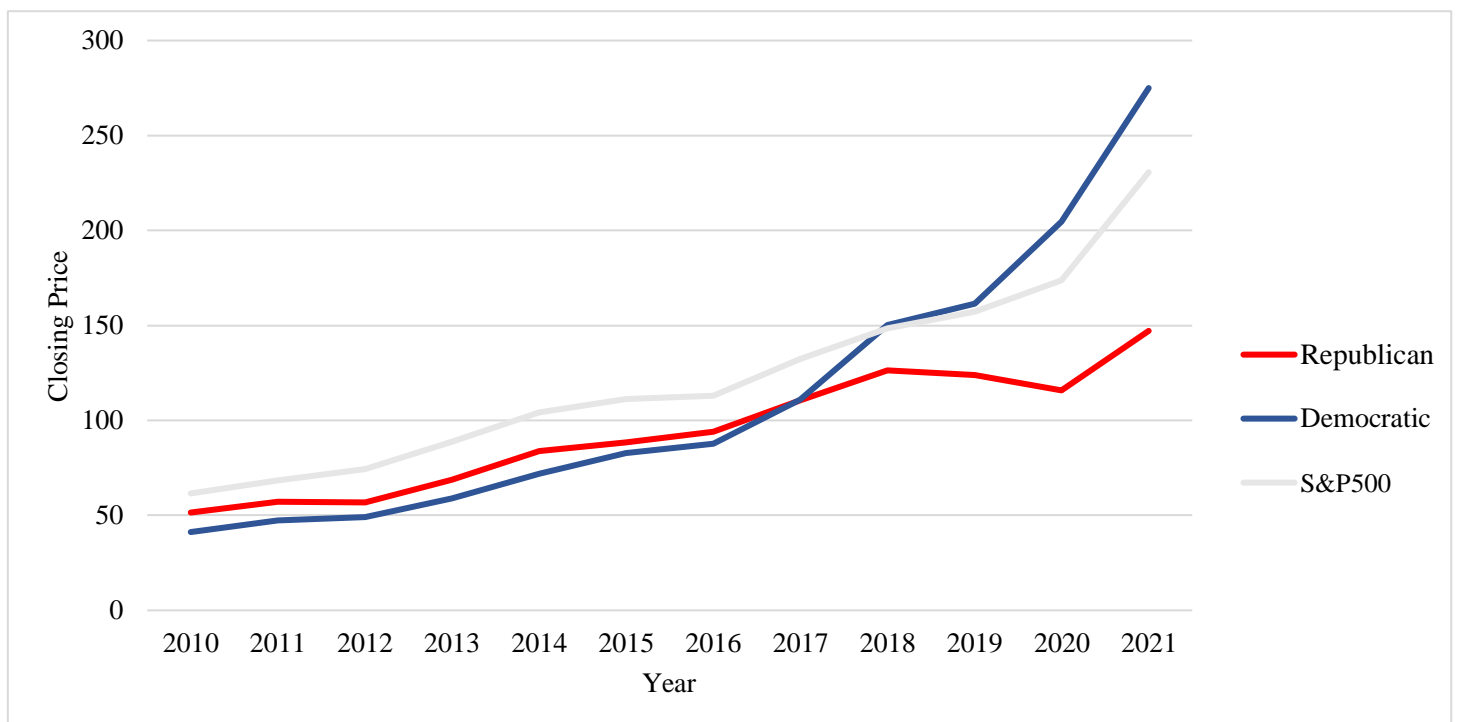


Figure 1: evolution of the Republican, Democratic and S&P500 portfolios from 2010 to 2021. Republican in red denotes the evolution of returns of the hypothetical portfolio affiliated to the Republican part, whereas the blue lines track Democratic firms.

By taking a glance at Figure 1, it is observable that up to 2016 the Republican and Democratic portfolios have similar growth rates and closing prices. Moreover, during this same period both portfolios underperform the S&P500 market index, making them poorly attractive for investors.

Starting from 2017, there is a significant increase in the growth of stock returns for the Democratic portfolio, which surpasses S&P500 returns from 2019 to 2021, whereas the Republican portfolio grows slower and underperforms the market index. This confirms the previous descriptive statistics that show on average higher daily returns for Democratic firms. This peculiar evolution is somewhat unexpected as in 2016 with the election of Donald Trump as the president of U.S. and the Congress' leadership becoming Republican, the opposite effect would be more senseful. Moreover, the slightly lower average closing price for Democratic affiliated firms prior to 2016 is surprising as President Obama was in office. A possible explanation is that Democratic affiliated firm in the sample are most often in more innovative industrial sectors that often exhibit higher growth rates which boosted recently, independently to political events. On the other side, Republican affiliation is often more common in more conservative and mature industries. These observations would already go against what hypothesized in H_1 as they would suggest that firm returns do not match political affiliation. However, these findings are a valuable starting point to evaluate whether abnormal returns follow similar patterns in the event study.

6.3. Main Regression Results

As previously mentioned in the methodology section of this paper, a multivariate regression analysis was performed to observe and analyze the impact that several independent variables have on CARs of the selected sample of firms. This analysis serves the main purpose of determining which are the significant characteristics of both firms and introduced legislation on CARs, as well as the magnitude of their effect, thereby testing the previously listed hypotheses.

As part of this regression analysis, four models were elaborated each with different independent variable combinations, as shown in Table 5 along with the results yielded. The first regression model (Model 1) solely focuses on legislation characteristics, with two dummy variables *direct* and *status*. The second model (Model 2) considers firm political affiliation and the party sponsoring a particular legislation, with two dummy variables *Democratic Firm* and *Democrat Initiated Dummy*. Third, Model 3 considers one additional interaction variable compared to model 2, joining the *Democrat Initiated Dummy* and *Democratic Firm Dummy*. The main regression model is Model 4, which includes all independent variables in the study, with the

additional variable *Donation Amount* and the triple interaction variable *Democrat Initiated Dummy# Democratic Firm Dummy #Direct*. Table 5 shows all coefficients in percentage points and the respective T-statistics in brackets below each one. To control for any heteroskedasticity that could be present in the various model, robust standards errors were used to compute the t-statistics corresponding to each parameter.

<i>Model</i>		(1)	(2)	(3)	(4)
Dependent Variable		CARs	CARs	CARs	CARs
Independent Variables					
<i>direct</i>		-0.0176*** (-6.07)			-0.0796*** (-9.94)
<i>demdecision</i>			-0.0105** (-2.77)	-0.0204*** (-3.28)	-0.0258*** (-4.03)
<i>demfirm</i>			0.0081** (2.06)	-0.0053 (-0.96)	-0.0031 (-0.54)
<i>status</i>		0.0082*** (2.72)			0.0017*** (5.15)
<i>lnamount</i>					-0.0005 (-0.23)
<i>demdecision# demfirm</i>				0.0196*** (2.60)	0.0111* (1.63)
<i>demdecision# demfirm #direct</i>					0.0696*** (7.44)
Control Variables					
<i>leverage</i>		0.0022 (0.57)	0.0029 (0.72)	0.0025 (0.64)	0.0028 (0.70)
<i>TotalAssets</i>		7.45e-08 (1.18)	7.61e-08 (1.17)	7.79e-08 (1.20)	8.45e-08 (1.31)
<i>Current Ratio</i>		0.1566 (0.94)	0.1645 (0.98)	0.1709 (1.02)	0.1806 (1.09)
<i>Intercept</i>		-0.0067 (-1.55)	0.0036 (0.87)	0.0012 (0.35)	0.0143 (-0.48)
<i>Adjusted R²</i>		0.0044	0.0105	0.0159	0.0159
<i>Year Fixed Effects</i>		YES	YES	YES	YES
<i>Number of Observations</i>		1401	1401	1401	1401

Table 5: multivariate regression model with a [-3,3] event window and dependent variable CARs. In brackets all t-statistics can be found, and the significance level is illustrated as follows: *:10% significance level, **: 5% significance level, ***:1%significance level

6.3.1. Party Affiliation

The first step of this event study aims at testing the first hypothesis (i.e., H_1 : the abnormal returns of a political donor of a given party will be positive when an ESG-related policy is introduced by a congress led by the same party), the coefficients of various dummy variables and interaction variables must be considered in Models 2 through 4. Model 2 shows the difference in the impact on CARs of firms who are major donors to the Democratic party and policies introduced by Democratic members, as opposed to the Republican party. The results show that policies introduced by Democrats on average decrease CARs by 1.05 percentage points for all firms with a statistical significance at the 5% level, compared to policies introduced by the Republican party. Moreover, CARs of Democratic donors are positively impacted by all legislative introductions, as they increase CARs, on average, by 0.81 percentage points as opposed to Republican donors, with the coefficient being statistically significant at the 5% level. Continuing to model 3, where an interaction variable that shows the effect on CARs of Democrat Firms when a Democratic-sponsored legislation is introduced, the coefficients vary. First, the newly inserted variable is highly significant at the 1% level and suggests that when a Democrat sponsor inserts a new legislation, the returns of Democratic firms will be higher by 1.96 percentage points, on average, compared to Republican firms. Moreover, the *demdecision* dummy illustrates that legislation sponsored by democrats decreases CARs by 2.04 percentage points on average (significant at the 1% level), compared to Republican sponsors. Finally, the full regression model, Model 4, exhibits similar results for the previously discussed coefficients, whereas the triple interaction variable *demdecision#demfirm#direct*, shows higher CARs of 6.96 percentage points, significant at the 1% level for Democratic firms when a legislation is sponsored by the Democratic party and the legislation is directly linked to ESG-investing.

6.3.2. Legislative Characteristics

Legislative characteristics (i.e.: the various ESG-related legislation passed in the time frame) of the selected event sample are tested in Model 1 and Model 4. These models are used to test hypothesis two (i.e., H_2 : a direct and fully implemented ESG-related policy will have a stronger significant impact on abnormal returns of a firm than indirect policies). In both Model 1 and Model 4 the observed coefficient of the dummy variable *direct* is negative, hence direct ESG-

related legislation decreases CARs of all firms. More specifically, in Model 1 direct legislation decreases CARs by 1.76 percentage points on average, compared to indirect policies, with a statistical significance at the 1 percent level. In Model 4, the variable *direct* suggests that direct policies decrease CARs for all firms by 7.96 percentage points on average, significant at the 1% level.

In addition, the variable *status* was introduced to analyze the difference in CARs if a legislation had already been fully approved by the Congress, as opposed to ongoing policies. Here, results suggest that legislation, which is already approved increases CARs on average, by 0.82 percentage points according to Model 1 and 0.17 percentage points according to Model 4, compared to ongoing legislation, both with a strong statistical significance at the 1 percent level.

6.3.3. Political Donations

In order to obtain a deeper perspective on the value of political contributions, the variable *lnamount* was added to Model 4 to test hypothesis 3 (i.e., H_3 : there is a positive correlation between firm abnormal returns and the amount of money donated from corporate PACs). In Model 4, this variable was added to check whether a larger donation amount can explain CARs of the selected sample. Even though the obtained coefficient is positive, which suggests a stronger magnitude for CARs when a given firm donates a larger amount of money to its PAC, the result is insignificant at all statistical levels.

Due to the poor statistical significance of the results from the main regression model in respect to Hypothesis 3, an alternative test was performed to show whether a different regression model would lead to results with a higher significancy. Thus, the same firm sample used before was separated between highest five firm donors and lowest five firm donors for each party affiliation. Appendix 4 shows the components of the reduced firm sample, classified by party affiliation. All other firms were dropped for this regression model. In addition, a new dummy variable taking value 1 for top donors and 0 for bottom donors was created to analyze the difference in effect between. The identical event study methodology described previously was used for the regression model depicted in Equation 11 below.

$$CAR_{it} = \alpha_{it} + \beta_1 \ln amount + \beta_2 topdonor + \beta_3 dem + \beta_4 topdonor * demfirm + \varepsilon_i \quad (11)$$

Equation 11 regresses CARs for the reduced firm sample that aims at comparing the top and bottom donors of the total sample, as well as the party affiliation of the firm. The variable *lnamount* is kept in the model. Results of the regression model below can be seen in Table 6 below.

<i>Variables</i>	<i>CARs</i>
<i>lnamount</i>	-0.0062 (-1.37)
<i>topdonor</i>	0.0268 (1.60)
<i>dem</i>	0.0162 (1.53)
<i>topdonor#dem</i>	-0.0321*** (-2.70)
<i>Intercept</i>	0.0711 (1.18)
<i>Adjusted R²</i>	0.0338
<i>Year Fixed Effects</i>	YES

Table 6: multivariate regression model with a [-3,3] event window and dependent variable CARs. In brackets all t-statistics can be found, and the significance level is illustrated as follows: *:10% significance level, **: 5% significance level, ***:1%significance level.

Table 6 presents the multivariate regression results for Equation 11. All results are statistically insignificant except for the interaction variable *topdonor#dem*. This variable examines the CARs for top donors affiliated to the Democratic party. The coefficients suggests that the top five democrat donors experience lower CARs by 3.21 percentage points on average, compared to the bottom five democrat donors.

6.3.4. ESG Scores

As mentioned in the previous hypothesis section of this paper, to improve the validity of the study the inclusion of ESG variables was decided, to have a proper overview of their influence on company returns. Nonetheless, due to the poor statistical significance in the main regression model of ESG scores as independent variables, the natural logarithm of ESG scores and individual E, S and G factors is taken and newly regressed to determine whether the actual ESG score of a company has an impact on CARs in response to a political event. Table 7 below shows the regression model results. Indeed, by taking the absolute value of ESG scores and regressing them against daily returns, the results delivered were not statistically meaningful. Hence, to test the fourth hypothesis of this study (i.e., *H4: Firms that scored higher in ESG and E, S and G factors, will exhibit higher CARs in response to the introduction of ESG-related legislation.*), the coefficients of the various aggregate ESG scores and the individual factors in Model 1 and 2 in Table 7 should be considered. Model 1 shows the impact that these scores have on CARs in the event window frame. The results show that every increase in ESG scores by one percentage point the CARs decrease by around 1.1 percentage points, significant at the 5 percent level. Moreover, firm CARs are negatively impacted by higher scores in the governance factor, for every increase by one percentage point in the G factor, CARs decrease by 0.74 percentage point, with a statistical significance at the 10 percent level. Model 2 regresses the same ESG score variable and additionally the previously included firm characteristics and legislative variables. The model confirms previously found results for both ESG score variables and other dummy variables, with the exception of the lack of statistical significance for the ESG aggregate score. The environmental (E) and social (S) factors are statistically insignificant at all significance levels.

<i>Model</i>		(1)	(2)
Independent Variables	Dependent Variable	CARs	CARs
		<i>direct</i>	
<i>demdecision</i>			0.0128*** (3.91)
<i>demfirm</i>			0.0039* (1.37)
<i>status</i>			0.0125*** (3.56)
<i>lnESG</i>		-0.0111** (-2.44)	0.0058 (0.39)
<i>lnE</i>		0.0026 (0.66)	0.0019 (0.40)
<i>lnS</i>		0.0031 (0.48)	0.0047 (0.53)
<i>lnG</i>		-0.0074* (-1.81)	-0.0092* (-1.64)
Control Variables			
<i>leverage</i>		0.0022 (0.57)	0.0029 (0.72)
<i>TotalAssets</i>		7.45e-08 (1.18)	7.61e-08 (1.17)
<i>Current Ratio</i>		0.1566 (0.94)	0.1645 (0.98)
<i>Intercept</i>		0.0462** (2.42)	0.0036 (0.87)
<i>Adjusted R²</i>		0.0055	0.0105
<i>Year Fixed Effects</i>		YES	YES
<i>Number of Observations</i>		1401	1401

Table 8: multivariate regression model with a [-3,3] event window and dependent variable CARs. In brackets all t-statistics can be found, and the significance level is illustrated as follows: *:10% significance level, **: 5% significance level, ***:1%significance level.

Furthermore, for the sake of the study and to obtain further insights on potential differences on how ESG scores influence CARs between democrat and republican affiliated companies, the same regression was computed only accounting for Democratic firms. Table 8 below shows two additional regression models, based on political orientation. Model 1 only considers firm who are major donors to the Republic party and Model 2, Republican donors.

<i>Model</i>		(1)	(2)
Independent Variables	Dependent Variable	CARs	CARs
	<i>direct</i>		-0.2128*** (-4.73)
<i>demdecision</i>		0.0168*** (3.40)	0.1051** (2.41)
<i>status</i>		0.0111** (2.13)	0.0129*** (2.82)
<i>lnESG</i>		-0.0096 (-0.04)	0.0057 (0.27)
<i>lnE</i>		-0.0062 (-0.89)	0.0071 (1.02)
<i>lnS</i>		0.0191* (1.71)	-0.0018 (-0.15)
<i>lnG</i>		-0.0075 (-0.80)	-0.0098* (-1.82)
<i>Intercept</i>		-0.0295 (-0.70)	-0.0157 (-0.52)
<i>Number of Observation</i>		1402	1402

Table 8: multivariate regression model with a [-3,3] event window and dependent variable CARs. Model 1 refers to Democratic firms only and Model 2 to Republican firms. In brackets all t-statistics can be found, and the significance level is illustrated as follows: *:10% significance level, **: 5% significance level, ***:1% significance level.

Based on this division two significant coefficients emerge. For democrat firms in Model 1, the results show that every increase in the S factor by one percentage point the CARs increase on average by 1.91 percentage points, significant at the 10 percent level. Additionally, for republican firms in Model 1, the results show that every increase in the G factor by one percentage point the CARs decrease on average by 0.98 percentage points, significant at the 10 percent level.

6.3.5. Control Variables

As a way to improve the validity of the event study performed above, a series of control variables were added and their statistical significance tested as previously explained. All control variables listed in the previous sections were included in all models. The coefficients and their respective t-statistics are present in Table 5. The chosen control variables refer to firm characteristics that may simultaneously influence returns with the event sample. The results of all control variables in all models are statistically insignificant and therefore none of the variables have a significant impact on the CARs of the selected firm sample, as they have relatively low t-statistics. Their insignificance suggests that they do not contribute to explaining the abnormal returns of firms in the event window [-3;3], which validates the selected parameters in the study.

6.4. Robustness Tests

As a final step for this section, robustness checks have been performed on the aforementioned event study to ensure the reliability of its results and enhancing the study's validity according to academic standards. For this scope two robustness tests, have been performed. First, a smaller event window [-1;1] was set up to test CARs on a smaller time period around the event. Second, dummy variables related to political connections were changed, where Republican connected firms take the value of one in the regression analysis. Results of this robustness test can be found in Appendix 4 and 5 respectively. In the following sections, comparisons of the results between the original models and the robustness tests will be made.

6.4.1. Shorter Event Window

As a validation tool of the priorly discussed results, a smaller event window starting one trading day before the event and ending one trading day after was set up using the original regression model. Appendix 4 shows its results. Overall, the sign and magnitude of the coefficients of interest suggest similar results in both event windows for this study. Furthermore, the robust model seems to provide higher statistical significance in the variables *direct* and *status*, which may suggest that there is a more relevant effect of legislative characteristics closer to the event dates for the firm sample. The sole differences that can be spotted on the smaller event frame are for the variables *status* and *lnamount* as they have opposite sign coefficients in Model 1 and Model 4. However, these results are statistically insignificant which validate our previous results.

6.4.2. Dummy variable change

An additional method used to validate the results of the study, was to switch the direction of a dummy variable to see if intuitive results would appear. Hence, the variable *demfirm* was transformed into *repfirm* so that, in this model, it would equal one if the firm was a republican donor and 0 otherwise. To be successful in their validation, the new results for the dummy variable *repfirm* would need to show opposite sign for each of the coefficients compared to the to the variable *demfirm*. Appendix 5 shows the results of the same regression model with the new dummy variable. As expected, it is observable that similar coefficients with similar significance levels emerge for the replaced dummy variables but with the opposite sign. A peculiar change emerges in the triple interaction variables in which, although not statistically significant at any level, the coefficient would suggest that republican firms would positively benefit from Democratic legislation directly linked to ESG-investing.

7. Discussion

The main purpose of this study was to analyze the impact of legislative introductions in the US relating to ESG-investing, on selected firms present in the S&P500 index. Thanks to the model described above, firm CARs were regressed, and the results delivered various insights from this event study. In the next section of this paper, a further interpretation of the results, along with a detailed discussion will be presented.

As a starting point for this event study, the policies passed through the US congress during the time frame were scrutinized. As a main factor, the sponsor of each legislation was considered to distinguish policies led by the Republican party and the Democratic party. As mentioned in previous sections, the Democratic party has a stronger tendency to promote social, environmental and governance legislation to induce firms to engage into more innovative and sustainable line of business. On the other hand, as supported by the event sample, Republican are more conservative on the issue and sometimes even back out of new legislation passed by a previous Democratic congress. This distinction makes it therefore fundamental to analyze the cumulative effect on the returns of various firms.

Given the results above, Hypothesis 2 has to be partially rejected. Indeed, as opposed to what was expected direct ESG legislation has a lower significant impact on firm CARs than indirect policies. This is justifiable with two main reasons. First, direct ESG legislation does not impact all firm activities, but rather specific missions that the firm conducts as opposed to indirect legislation that impacts more dimensions of certain industries. For instance, ESG disclosure regulation only modifies an inferior procedure in most companies as opposed for instance carbon standards which may impact a full production line and thereby require a long and deep adaptation. This divergence between the impact that direct and indirect policy have, can explain the lower impact direct ESG legislation has on CARs. Furthermore, whether the impact of legislation is positive or negative on CARs, its magnitude will be larger for indirect policies as it would reward companies that already committed to sustainable policies and force laggards to adapt. Nonetheless, the positive coefficients of the variable *status* in both models suggest, as expected, that a fully approved legislation has a stronger impact on CARs than a pending legislation. Indeed, it is logical that investors and companies react more to fully approved measures due to higher degree of certainty that is implied. Indeed, once a legislation has been approved compliance is mandatory and the eventual costs cannot be avoided.

Democratic sponsored legislation also engendered lower CARs for the whole sample. These results go against what previously found in researches by Santa-Clara and Valkonov (2003) and Hensel and Ziemba (2019) who found that during Democratic presidencies returns were higher. This connection is potentially driven by the lower CARs and daily returns for Republican donors. Indeed, as previously explained ESG related policies, and especially indirect ones, may require a lot of adaptation from companies who did not focus on such issues prior to the introduction of a legal obligation. Indeed, should a firm already have implemented sustainable policies in its operation, a legislative obligation may actually engender positive CARs as they would have a short-term competitive advantage over firms who need to restructure their operations and adapt them to new standards. This is valid for all three ESG pillars, as they require a longer period of adaption rather than immediate implementation.

When interacting various variables, meaningful results emerge. As explained in the previous sections, it would be of intuitive sense that if a firm donates a higher amount of money to a given party it does so because it believes that a government led by the latter would benefit the financial performance of the firm, mainly through the introduction of legislation that promote the line of business that the firm is in. The results obtained in the model presented in this paper, support this reasoning, which leads us to fail to reject Hypothesis 1. Indeed, it appears that when the firm is a donor to a given party and the same party sponsors a legislation, there is a positive and stronger effect on that firm CARs, creating a synergy effect. This is valid for both Democratic donors and Republican donors. This is similar to what identified by Jayachandran (2006) and Li and Born (2006). Furthermore, this distinction could also be explained by taking a closer look at the firm sample. Republican donors are primarily industrial companies that operate in mature industries, such as energy or real estate companies. These companies do not operate in markets where there is a strong focus on ESG related topics, that are more supported by Democrats. Indeed, these lines of businesses tend to perform better if there is fewer environmental or social regulation. As shown in the robustness test performed priorly, Republican donors show lower CARs when a Democratic sponsored legislation is introduced, confirming previous claims. On the other hand, Democratic donors operate from a wider range of sectors including IT companies or financial services. Such companies tend to be more innovative, and their financial performance has a higher probability of benefitting from decisions that promote sustainability. This logic is also backed

by the effect that direct ESG-legislation implemented by a Democratic sponsor has even a stronger positive effect on the returns of Democratic donors. These results confirm studies by Di Giuli and Kostovetsky (2014), Hong & Kostovetsky (2012) and Hoepner and Schophol (2015), who unanimously support the fact that Democratic leaning firms and investment funds engage more in ESG activity thus benefitting from it. Nonetheless, from this study nothing can be concluded for the amount of donations made by a firm and its impact on abnormal returns as results are not significant, which thereby leads the rejection of Hypothesis 3. This insignificant result suggests that donation suggests an orientation towards an ideology rather than a full financial commitment to a political party. This is confirmed by the alternative regression model in Equation 11, where being a top Democratic donor decrease CARs compared to bottom donors, meaning that a higher financial contribution does not mean a positive effect of CARs.

When focusing on the ESG firm levels and their influence on CARs, unexpected results emerged from the regression coefficients. Indeed, hypothesis 4 has to be refuted, as the negative coefficients for the aggregate ESG score variable implies that an increase in ESG score diminishes CARs for all firms. This result is not in line with neither the previous reasoning excepted from the event study, nor what supported by other literature. Another interesting result goes in line with the previous one, specifically the negative coefficient in the governance (G) factor. These unpredicted results can be explained by two phenomena. First, investors could perceive legislative introduction regarding ESG as a potential motivation for improvement for firms that are laggards in ESG improvement. Indeed, if firms are legally forced to increase their commitment, they could increase their performance by getting in line with higher ESG scores. Investors may thereby reward more companies with lower ESG levels compared to the more devoted ones, as a way to push management to increase their commitment. On the other hand, companies with a high ESG commitment are less influenced by such legislative introduction, as they have less need to adapt to the new regulatory environment. The focus on the governance factor, which includes high compliance costs and structural changes in the company management which could have vast repercussions on the company performance in the short term. Investor perception on these costs could increase their reaction in response to a legislative introduction, notably for firms that exhibit a lower ESG score. Indeed, an improvement in the corporate governance structure of a firm generally increases firm value on the long-term for shareholders, as it lowers the conflict of interests and agency problems. These results can be connected with the previously mentioned results

found for the difference in CARs between indirect and direct ESG legislation, which also suggested that for an increase in compliance requirements, CARs became higher.

Furthermore, it is plausible that investors perceive companies with lower ESG levels, as carrying a higher risk, thereby requiring higher returns, hence the higher CARs. This increase in risk perception is due to the fact that lower ESG commitment exposes the company to environmental, social and governance risks, which could negatively impact their long-term financial profitability and value creation once additional legislations are introduced.

The additional two regression models included, suggest new insights related to ESG scores and political affiliation. For democrat firms, the S factor shows a positive relationship which implies that for democrat firms, an improvement in the S factor leads to higher CARs. This suggests that an improvement in the social commitments of firms, such as diversity, inclusion or employee welfare are valued by investors and positively impact the financial performance of democrat firms. This result is in line with previous studies that show that supportive ESG legislation is positively correlates with CARs. On the other hand, for republican firms, a negative relationship emerges as an increase in the G factor leads to lower CARs. This could indicate that factors associated with the variable G, such as governance practices or policies, may be perceived negatively by investors or have adverse effects on the financial performance of republican firms. A plausible explanation for that is that changes to improve the governance of a firm could be destabilizing for more conservative firms who follow a more traditional organizational structure, and thereby implies a higher room for improvement as explained previously.

8. Conclusion and Limitations of the Research

The previous sections of this paper analyzed the effect that ESG-related legislation has on the returns of the selected firm sample. Although several significant results could be drawn and interpreted from this study, some limitations and areas for further research subsist.

First, direct ESG-legislation is not yet very numerous in the U.S. as ESG investing is a developing trend that emerged in the past decade. Hence, such a study should be replicated in several years from now to analyze the cumulative impact of additional direct ESG policies that aim at regulating them. Second, as promoted by the structure of the U.S. political system, it is hard to distinguish if previously introduced legislation can be generalized through time to a given party. As U.S. politicians can only enter Congress through one of the two parties, radical

views within each are present. Hence, the generalization of this research to all future policies sponsored by a given party should be done with caution.

Nonetheless, in this study the impact of ESG-related governmental policies on politically connected firm returns in the U.S. was found to be relevant. Through a detailed event study methodology for a sample of events from 2010 to 2021, this research finds that such policies have a significant impact on stock returns of the firm sample. The most meaningful results are that there is indeed a positive connection between the ESG-policies implemented by a party and the returns of companies who are affiliated to the same party. Additionally, the negative coefficients for ESG scores reveal a very peculiar return reaction to legislative introduction. These results that go against previous trends and could be a starting point for an interesting area for future research in the connection between investor behavior and ESG commitment, focusing on the perceived room for improvement which laws and regulation mandate firms to execute. These results add on to the wide range of academic literature on political donations by giving it a more recent perspective thanks to the inclusion of the latest developments in ESG legislation. Furthermore, this study helps both investors who are oriented towards ESG-investing to take a deeper look on the political donations of firms as a way to predict the performance of a stock under a certain government. Finally, it can provide a valid starting point for future research that should be made at a time when ESG-investing will be more regulated and popular in U.S. economy as to analyze further developments in this topic.

Appendices

Appendix 1: List of firm sample used in the event study and the respective amount of funds donated, ranked by party affiliation. *Source: [opensecrets.org/political-action-committees-pacs](https://www.opensecrets.org/political-action-committees-pacs)*

Democrat Donors	
Company Name	Amount Donated (2010-2021)
Alaska Air Group	\$347,750
Amazon, Inc.	\$1,805,170
AT&T Inc.	\$7,776,000
Applied Materials, Inc.	\$328,000
Becton, Dickinson, and Company	\$444,730
Caesars Entertainment Corporation	\$528,400
Centene Corporation	\$4,954,500
Cisco Systems	\$1,631,500
DISH Network Corporation	\$6,109,500
Edison International	\$1,038,220
Eversource Energy	\$355,250
Hewlett Packard Enterprise	\$1,214,670
Intuit Inc.	\$293,900
L3 Harris Technologies	\$1,837,000
Linde Plc.	\$398,250
Marriott International, Inc.	\$892,000
Matson Inc.	\$297,760
Mattel Inc.	\$128,000
MGM Resorts International	\$471,290
Nike Inc.	\$634,400
Oracle Inc.	\$714,980
Prudential Financial, Inc.	\$1,919,200
Qualcomm Inc.	\$542,980
SVB Financial Group	\$103,500
The AES Corporation	\$340,500
The Clorox Company	\$202,600

The Walt Disney Company	\$764,250
Thermo Fischer Scientific	\$614,770
Alphabet Inc.	\$2,912,600
Microsoft Corp.	\$2,584,300
United Parcel Service Inc.	\$4,361,080
General Electric Co.	\$3,997,150
Morgan Stanley	\$1,652,000
JPMorgan Chase & Co.	\$1,814,720

Republican Donors

Company Name	Amount Donated (2010-2021)
Amgen Inc.	\$3,236,250
Brown-Forman Corporation	\$472,640
Caterpillar Inc.	\$3,692,010
Comcast Corp.	\$7,391,500
Chevron Corporation	\$4,107,500
Deere & Company	\$3,278,000
Devon Energy Corporation	\$1,647,510
Dominion Energy, Inc.	\$1,798,400
Duke Energy Corporation	\$2,523,200
Exelon Corporation	\$2,248,700
Exxon Mobil Corporation	\$7,261,250
Valero Energy	\$3,046,100
Goldman Sachs Group, Inc.	\$3,131,500
FedEx Corporation	\$3,774,010
Arch Coal, Inc.	\$1,406,300
JP Morgan Chase & Co.	\$2,874,710
Wells Fargo	\$2,418,800
Williams Companies	\$2,024,000
Las Vegas Sands Corporation	\$367,950
Lockheed Martin Corporation	\$8,075,250
Marathon Oil Corporation	\$955,000
Northrop Grumman Corporation	\$6,269,500
Peabody Energy	\$566,400

The Boeing Company	\$7,035,500
The Home Depot, Inc.	\$7,205,500
The International Paper Company	\$2,613,050
The Monsanto Company	\$1,387,500
Tyson Foods, Inc.	\$711,140
NextEra Energy Inc.	\$2,278,300
Facebook Inc.	\$1,031,500
Walmart Inc.	\$3,768,560
PepsiCo Inc.	\$677,280
Dow Chemical	\$1,877,200
Honeywell International Inc.	\$9,330,000
Lockheed Martin Corp.	\$8,075,250
Delta Air Lines Inc.	\$2,232,880
Berkshire Hathaway Inc.	\$274,700
CVS Health Corp.	\$893,950
Walgreens Boots Alliance Inc.	\$128,000
Bank of America Corp.	\$2,937,500
CME Group Inc.	\$2,292,750
Humana Inc.	\$1,986,490
BP America Inc.	\$1,148,500
Visa Inc.	\$940,000
Occidental Petroleum Corp.	\$1,641,900
Aetna Inc.	\$1,547,000
Abbott Laboratories	\$2,157,330
GlaxoSmithKline PLC	\$1,399,250
Eli Lilly and Co.	\$1,795,88
Raytheon Co.	\$6,105,000
Ford Motor Co.	\$2,666,000
Verizon Communications Inc.	\$5,169,170
Entergy Corp.	\$1,289,320
Pfizer	\$3,243,460
General Motors Co.	\$2,760,250
Southern Company Gas	\$709,800

UnitedHealth Group Inc.	\$2,579,600
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Appendix 2: list of events considered in the event study in chronological order. For each event: party sponsorship (R stands for Republican Initiation, D for Democrat Initiation), directly related to ESG-investing, current status of legislation. *Source: [congress.gov](https://www.congress.gov)*

Date	Event	Party	Direct	Status
July, 29 th 2011	Raised Fuel Efficiency Standards to lower emissions	D	No	Passed
October 26 th , 2015	Department of Labor guidance in ESG incorporation in reporting	D	Yes	Passed
November 9 th , 2016	Donald Trump Election	R	No	Passed
June 1 st , 2016	Paris Climate Agreement Withdrawal	R	No	Passed
December 18 th , 2017	Climate Change removed from National Security threats	R	No	Passed
January 25 th , 2018	Environmental Protection Agency lowers pollutions standards	R	No	Passed
February 12 th , 2018	Budgetary Cuts to Climate Programs	R	No	Passed
June 23 rd , 2020	ESG investment restriction to 401K retirement plans	R	Yes	Passed
November 3 rd , 2020	Joe Biden Election	D	No	Passed
December 14 th , 2020	Amend Investment Advisers Act of 1940	D	Yes	Passed
January 20 th , 2021	Recommitment to Paris Climate agreement	D	No	Passed
May 28 th , 2021	Sustainable Investment Policies Act of 2021	D	Yes	Introduced
June 4 th , 2021	Climate and ESG task force creation	D	Yes	Passed
June 8 th , 2021	ESG criteria disclosure act	D	Yes	Introduced

June 16 th , 2021	Corporate Governance Improvement and Investor Protection Act	D	No	Introduced
June 24 th , 2021	Honest Enterprise Act	D	No	Introduced
October 14 th , 2021	Department of Labor Law, easier access to ESG investment in 401k retirement plans	D	Yes	Introduced

Appendix 3: reduced firm sample for alternative regression model to test Hypothesis 3.

Top Five Donors			
Democrat		Republican	
<i>Company Name</i>	<i>Amount Donated (2010 to 2021)</i>	<i>Company Name</i>	<i>Amount Donated (2010 to 2021)</i>
Amazon, Inc.	\$1,805,170	Lockheed Martin Corporation	\$8,075,250
Centene Corporation	\$4,954,500	The Home Depot, Inc.	\$7,205,500
DISH Network Corporation	\$6,109,500	The Boeing Company	\$7,035,500
L3 Harris Technologies	\$1,837,000	Northrop Grumman Corporation	\$6,269,500
Prudential Financial, Inc.	\$1,919,200	FedEx Corporation	\$3,774,010
Bottom Five Donors			
Democrat		Republican	
Intuit Inc.	\$293,900	Tyson Foods, Inc.	\$711,140
The Clorox Company	\$202,600	Peabody Energy	\$566,400
Mattel Inc.	\$128,000	Brown-Forman Corporation	\$472,640
SVB Financial Group	\$103,500	Las Vegas Sands Corporation	\$367,950

Appendix 4: Robustness Test results with shorter event window [-1;1].

<i>Model</i>	(1r)	(2r)	(3r)	(4r)
Dependent Variable	CARs	CARs	CARs	CARs
Independent Variable				
<i>direct</i>	- 0.0053* (-1.86)			-0.0057** (-2.39)
<i>demdecision</i>		- 0.0057** (-2.03)	-0.0132*** (-3.28)	-0.0167*** (-3.45)
<i>demfirm</i>		0.0034 (1.28)	-0.0067 (-1.43)	-0.0087 (-1.64)
<i>status</i>	-0.0033 (-1.06)			-0.0057* (-1.71)
<i>lnamount</i>				0.0015 (1.13)
<i>demdecision# demfirm</i>			0.0147*** (2.60)	0.0156** (2.34)
<i>demdecision# demfirm #direct</i>				0.0226** (2.25)
<i>Intercept</i>	-0.0018 (-0.56)	-0.0039 (-1.45)	0.0012 (0.35)	-0.1154 (-0.58)
<i>Adjusted R²</i>				0.0251
<i>Year Fixed Effects</i>	YES	YES	YES	YES
<i>Number of Observations</i>	983	983	983	983

Appendix 5: Robustness Tests results with Republican Firm dummy variable.

<i>Model</i>		(2d)	(3d)	(4d)
Dependent Variable		CARs	CARs	CARs
Independent Variable				
	<i>direct</i>			
<i>demdecision</i>		-0.0105** (-2.06)	-0.0204*** (-3.28)	-0.0008 (-0.13)
<i>repfirm</i>		-0.0081** (-2.06)	0.0053 (0.96)	0.0105 (-1.55)
<i>status</i>				0.0012 (0.23)
<i>lnamount</i>				-0.0005 (-0.23)
<i>demdecision# repfirm</i>			-0.0196*** (-2.60)	-0.0265*** (-3.23)
<i>demdecision# repfirm #direct</i>				0.0025 (0.18)
<i>Intercept</i>		0.0049 (1.50)	-0.0017 (-0.46)	0.0039 (0.14)
<i>Adjusted R²</i>		0.0105	0.0159	0.0159
<i>Year Fixed Effects</i>		YES	YES	YES
<i>Number of Observations</i>		983	983	983

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Thesis Summary

1. Introduction

The paper explores the relationship between corporate political donations, ESG-related legislation, and firm returns in the United States. It begins by discussing the increasing focus on sustainability and social responsibility in corporate strategies, with companies incorporating these values and disclosing their commitments through ESG scores. The popularity of ESG factors among investors is highlighted, leading to reduced equity capital costs for firms engaged in CSR. Governments have also been introducing sustainable policies and legislation, although their commitment varies based on political ideologies. The paper focuses into the differences between the two major political parties in the U.S., Republicans and Democrats, regarding their approaches to sustainability and social issues. Republican policies tend to limit sustainability-related legislation to prioritize firm profits and the national economy, while Democrats are more sustainability-oriented, implementing policies to reduce climate impact, address social inequalities, and promote fair corporate governance.

The study focuses on the relationship between political donations, firm returns, and the introduction of ESG-related legislation. It assumes that firms donating to the Democratic Party would benefit from favorable ESG-related policies, while Republican-affiliated firms may be less affected. The research question examines the differences in Cumulative Abnormal Returns (CARs) of major corporate political donors in response to the introduction of ESG-related legislation. The paper outlines the event study methodology used, which analyzes the impact of events on firm returns. Daily returns of S&P500-listed firms that contributed financially to political parties are collected and regressed to assess the significance of their CARs. The sample consists of the largest corporate donors to both parties, and the analysis aims to identify if a significant difference in abnormal returns exists.

The research findings indicate a significant synergy effect, with firms that sponsor a particular party reacting positively when that party introduces legislation. The amount of financial donation does not determine abnormal returns, suggesting that corporate donations reflect a leaning toward a specific political orientation rather than a full commitment. ESG-related legislation has a lower impact on CARs compared to broader environmental or social policies. Policies supported by the Democratic Party tend to result in lower CARs for all firms,

indicating that Republican firms counterbalance this trend due to the need to adapt operations to new policies.

The structure of the paper is as follows. First a literature review of previous research and connected hypotheses are formulated. Then the methodology and the data sample used is elaborated. Finally the statistical results and interpretations are included along with the research limitations and ideas for future research.

2. Literature Review

The literature review focuses on political economy and its influence on stock returns. They examine three main areas: corporate political contributions, political factors and stock returns, and the relationship between ESG regulation and political donations.

2.1. Corporate Political Contributions

Cooper et al. (2010) find a positive causal effect between the number of political candidates supported by a firm and its future earnings and returns. Similarly, Gounopoulos et al. (2021) find a positive effect of political contributions made by firm executives on IPO premiums. On the other hand, Hadani and Schuler (2013) find a negative effect of political contributions on firm market and accounting performance, except for firms in regulated industries. Hersch et al. (2008) find no significant effect of political contributions on firm Tobin's q, a measure of firm performance. Overall, the literature on political contributions and stock returns yields mixed results, suggesting that the impact may vary depending on industry, size, and political affiliation.

2.2. Political Factors and Stock Returns

The second section explores the relationship between political factors and stock returns. Pantzalis et al. (2000) find significant abnormal returns for firms in the weeks preceding an election date, with higher returns when the incumbent party is expected to lose. Li and Born (2006) observe different returns during election periods based on the specific party in power. Lamb et al. (1997) describe the "Congress Effect," where stock market growth is higher during periods of congressional recess. Moreover, other studies highlight the impact of political uncertainty on stock returns and the role of political events in shaping market

volatility. Results vary across events and firm types, indicating that political factors affect stock prices in different ways.

2.3.ESG legislation and Political Donations

The third section focuses on the relationship between ESG regulation and political donations. Di Giuli and Kostovetsky (2014) find that firms with Democratic founders tend to invest more in CSR compared to those with Republican founders. Similarly, Hong and Kostovetsky (2012) find that Democratic managers have lower levels of investment in socially irresponsible companies compared to Republican managers. Hoepner and Schophol (2015) find that pension fund managers leaning towards Democrats direct investments based on ESG criteria. However, in a study by Borghesi et al. (2014) the authors fail to find a significant difference in CSR levels between Democratic and Republican donors, which could be caused by the limited availability of long-term data on ESG characteristics, which may contribute to the inconsistency in findings.

In summary, the literature on political economy and stock returns yields mixed results. Corporate political contributions can have both positive and negative effects on firm performance, with varying outcomes depending on industry, size, and political affiliation. Political events can lead to significant abnormal returns and market volatility, but the impact varies across events and firms. Studies on the relationship between ESG regulation and political donations suggest a tendency for Democratic-leaning managers to engage in socially responsible activities, but the findings are not consistent.

3. Data

Data on corporate political donations for the study was collected from the OpenSecrets database, which provides information on donations made by corporate PACs to political parties. A sample of 98 firms from the S&P500 was selected based on their political donations, with a focus on firms that exhibited a clear bias towards one political party. Daily stock returns for these firms were obtained from the Wharton Research Data Services and Center for Research in Security Prices.

The study analyzes the impact of ESG-related legislation introduced by the US Congress between January 1, 2010, and December 31, 2021 through 17 events related to ESG policies,

including both direct policies that directly regulate ESG investment and reporting, and indirect policies that affect firms with a strong ESG commitment. The event dates were obtained from the official US database of the US Congress, Congress.gov.

To account for the influence of ESG scores on the reaction to political events, yearly ESG scores for the firms in the sample were obtained from the Refinitiv database. This database provides comprehensive ESG scores for companies, covering around 80% of global market capitalization. The ESG scores include aggregate scores as well as separate scores for environmental, social, and governance factors. The environmental scores consider factors such as emissions and renewable resources, social scores focus on diversity and community engagement, and governance scores assess corporate governance practices.

The selected firms had to meet specific criteria, including a minimum donation threshold and a clear political bias. Daily stock returns were chosen to capture the impact of political events with precision, and the event dates were determined based on the status of the legislation in the US Congress.

4. Hypothesis

The first hypothesis (*H₁: The abnormal returns of a political donor of a given party will be positive when an ESG-related policy is introduced by a congress led by the same party.*) suggests a positive correlation between the abnormal returns of politically connected firms and the introduction of ESG-related policies by the same party. This hypothesis is based on previous research that found significant connections between political donations and firm returns. The second hypothesis (*H₂: A direct and fully approved ESG-related policy will have a stronger significant impact on abnormal returns of a firm than indirect policies.*) focuses on the type of event and suggests that direct and fully approved ESG-related policies will have a stronger impact on firm abnormal returns compared to indirect policies. This hypothesis is supported by studies that found abnormal reactions of firm returns to political events. The third hypothesis (*H₃: There is a positive correlation between firm abnormal returns and the amount of money donated from corporate PACs.*) proposes a positive correlation between firm abnormal returns and the amount of money donated from corporate PACs. The fourth hypothesis (*H₄: Firms that scored higher in ESG and E, S, and G factors will exhibit higher CARs in response to the introduction of ESG-related legislation.*) examines the influence of

firm ESG scores and their separate environmental, social, and governance factors on cumulative abnormal returns (CARs) in response to the introduction of ESG-related legislation. Studies have found a positive correlation between high ESG or CSR levels and CARs in response to supportive legislation.

5. Methodology

The study utilizes event study methodology to evaluate the impact of newly introduced legislation on firm returns. Event studies are widely used in financial research to analyze abnormal returns in response to specific events. Descriptive statistics were initially computed to provide an overview of the data used in the study, including donation amount, daily returns, and cumulative abnormal returns (CARs). Two-sample t-tests were performed to compare mean differences between political affiliation subgroups.

The event study itself involved estimating the expected normal return of stocks during a pre-event time window. The estimation window started 120 trading days before the event day and ended 10 trading days prior to the event. The event day represented the introduction of new legislation by the US Congress. The event window spanned from three days before to three days after the event. Abnormal returns were calculated using a single factor market model with the S&P500 index returns as the benchmark.

Normal returns were computed using an ordinary least squares (OLS) regression model, and abnormal returns were calculated as the difference between actual returns and estimated normal returns. The natural logarithm of returns was taken to ensure stronger statistical properties. Cumulative abnormal returns (CARs) were obtained by summing the abnormal returns within the event window. The t-statistic was used to assess the statistical significance of the CARs, with robust standard errors employed for calculation.

6. Variables

The event study focuses on the Cumulative Abnormal Return (CAR) as the dependent variable for each event and firm in the sample. Abnormal returns are calculated by comparing individual firm returns to the S&P 500 index returns. The study includes several independent

variables, such as dummy variables for direct and indirect ESG-related policies, policy status, and the political affiliation of the Congress leading the legislation. Variables related to firm ESG scores and its E, S, and G factors are also included, with the natural logarithm taken to enhance the statistical significance and normalize the distribution. In addition, a range of control variables were added to improve the validity of the model.

7. Regression

A multivariate Ordinary Least Squares Estimations (OLS) was used to test the hypothesis. The dependent variable is CAR for each firm at a specific time, and several independent variables, including those previously mentioned, are used to examine the effect of new legislation. The regression model, represented by Equation 10, incorporates all independent variables. Additional interaction variables are included to analyze various event scenarios, specifically testing the CARs of Democratic donors when Democratic-sponsored legislation is introduced. Continuous variables related to ESG levels are also included to assess their impact on firm CARs. The aim is to determine the statistical significance of the relationship between new legislative introductions and abnormal returns, considering firm-specific characteristics.

$$CAR_{it} = \alpha_{it} + \beta_1 direct + \beta_2 demdecision + \beta_3 dem + \beta_4 demdecision * demfirm + \beta_5 amount + \beta_6 status + \beta_7 demdecision * demfirm * direct + \beta_8 \ln ESG + \beta_9 \ln E + \beta_{10} \ln S + \beta_{11} \ln G + \varepsilon_i \quad (10)$$

8. Results

Descriptive statistics were analyzed prior to conducting the event study to gain insights into the data used in the study. Firstly, the statistics regarding political donations showed that the Republican Party received significantly higher funding from corporate PACs compared to the Democratic Party. This difference can be attributed to the "no corporate PACs money" pledge taken by a larger number of Democratic candidates. Secondly, the daily returns of firms divided by their political contributions indicated that firms donating to the Democratic Party had higher average daily returns compared to Republican donors. However, both donor classes had lower average daily returns than the S&P500 index. The cumulative abnormal returns (CARs) for events showed that, on average, firm returns responded negatively to the events in the sample. Republican donors exhibited larger negative magnitudes and higher

variance compared to Democratic donors. This suggests that Republican firms were more negatively impacted by legislative events. Lastly, the descriptive statistics for aggregate ESG scores showed that there was not a substantial difference between Democratic and Republican donors. This finding contradicts previous literature suggesting that Democratic-oriented firms have higher ESG levels.

A basic portfolio analysis was conducted to examine the stock returns of Democratic and Republican-affiliated firms from 2010 to 2021. Until 2016, both political portfolios had similar growth rates and underperformed the S&P500 index. From 2017 onwards, however, the Democratic portfolio showed a much stronger growth and outperformed the S&P500 index, whilst the Republican portfolio did not succeed such a performance, due to a much lower growth. This unexpected trend contradicted the initial hypothesis and suggested that firm returns may not align with political affiliation. These findings serve as a valuable starting point for evaluating abnormal returns in the subsequent event study.

The multivariate regression analysis aimed to investigate the influence of various independent variables on the Cumulative Abnormal Returns (CARs) of the selected firms. Four regression models were constructed, each incorporating different combinations of variables. Model 1 focused solely on legislation characteristics, Model 2 included firm political affiliation and the party sponsoring the legislation, Model 3 added an interaction variable, and Model 4 incorporated all independent variables, including donation amount and a triple interaction variable. The coefficients in percentage points and their respective T-statistics were presented in Table 5 in the thesis, with robust standard errors used to account for heteroskedasticity. This analysis aimed to evaluate the significance and magnitude of the variables' effects, thereby examining the research hypotheses.

First, the event study analyzed the impact of political donations and legislative introductions on Cumulative Abnormal Returns (CARs) of firms. The regression models tested the first hypothesis regarding the positive abnormal returns of political donors when ESG-related policies are introduced by the same party. The results showed that Democratic-sponsored policies decreased CARs by 1.05 percentage points on average compared to Republican-sponsored policies. However, CARs of Democratic donors increased by 0.81 percentage points on average, indicating a positive impact of legislative introductions. Model 3 revealed that when Democratic-sponsored legislation was introduced, CARs of Democratic firms were

higher by 1.96 percentage points, while legislation sponsored by Democrats decreased CARs by 2.04 percentage points compared to Republican sponsors. The full model (Model 4) supported these findings, with a triple interaction variable showing higher CARs of 6.96 percentage points for Democratic firms when legislation directly linked to ESG-investing was sponsored by the Democratic party.

The impact of legislative characteristics on firm CARs was analyzed in Model 1 and Model 4, testing hypothesis two. Direct ESG-related legislation was found to generate lower CARs in both models. In Model 1, direct legislation decreased CARs by 1.76 percentage points on average compared to indirect policies, with statistical significance at the 1% level. In Model 4, direct policies decreased CARs by 7.96 percentage points on average, also significant at the 1% level. The variable status, which distinguishes fully approved legislation from ongoing policies, showed that already approved legislation increased CARs by 0.82 percentage points in Model 1 and 0.17 percentage points in Model 4, both with statistical significance at the 1% level.

Hypothesis 3, which examines the correlation between firm abnormal returns and the amount of money donated from corporate PACs, was tested using *lnamount* in Model 4. The coefficient for *lnamount* was positive, indicating a stronger magnitude of CARs for firms donating larger amounts. However, the result was insignificant at all statistical levels. To explore this further, a separate regression model was used, dividing the firm sample into the top five and bottom five donors for each party affiliation, as shown in Equation 11. The analysis showed no significant difference in the effect between these groups.

$$CAR_{it} = \alpha_{it} + \beta_1 lnamount + \beta_2 topdonor + \beta_3 dem + \beta_4 topdonor * demfirm + \varepsilon_i \quad (11)$$

Overall, the results suggest that direct ESG-related legislation has a lower impact on CARs, while already approved legislation increases CARs. The correlation between political donations and firm abnormal returns was not statistically significant.

Table 6 in the thesis displays the regression results for Equation 11, which compares top and bottom donors and their party affiliation. The coefficients are mostly statistically insignificant, except for the interaction variable `topdonor#dem`. This variable indicates that the top five Democrat donors have lower CARs by an average of 3.21 percentage points compared to the bottom five Democrat donors.

The inclusion of ESG scores in the regression analysis did not yield statistically significant results in the main regression model. In order to thereby test the fourth hypothesis, the natural logarithm of ESG scores and individual E, S, and G factors was regressed instead. Model 1 showed that higher ESG scores were associated with a decrease in CARs by 1.1 percentage points on average, while an increase in the governance (G) score negatively impacted CARs by 0.74 percentage points. Model 2 confirmed these results, except for the lack of statistical significance in the ESG aggregate score. The environmental (E) and social (S) factors were not statistically significant.

Two additional regression models were computed to analyze the influence of ESG scores on CARs for Democratic and Republican firms separately. For Democratic firms, an increase in the social (S) factor was associated with a significant increase in CARs. For Republican firms, an increase in the governance (G) factor was linked to a significant decrease in CARs.

The control variables included in the regression models showed statistically insignificant results, indicating that they do not have a significant impact on the CARs of the selected firm sample. This suggests that the chosen variables in the study effectively capture the factors influencing abnormal returns during the event window.

To ensure the reliability of the results, robustness tests were conducted. The first test involved using a shorter event window of [-1;1] around the event. The results of this test showed similar coefficients and magnitudes compared to the original models, with some variables exhibiting higher statistical significance. This suggests that the effect of legislative characteristics closer to the event dates may have a more relevant impact on the firm sample. The second robustness test involved changing the direction of a dummy variable. The results of this test confirmed the previous findings, with coefficients showing opposite signs compared to the original models. The triple interaction variables showed an interesting

change, indicating that Republican firms could potentially benefit from Democratic legislation directly linked to ESG-investing, although this result was not statistically significant.

9. Discussion

As aforementioned, the purpose of this paper was to analyze how ESG-related legislature impact firm returns in the selected time period.

The study began by examining the policies passed by the US Congress during the specified time period, considering the sponsorship of each legislation to differentiate between Republican and Democratic-led policies. It was observed that the Democratic party tends to promote social, environmental, and governance legislation to encourage firms to adopt more sustainable and innovative business practices. In contrast, the Republican party is generally more conservative on these issues and may even reverse previously introduced Democratic legislation. This distinction is crucial in analyzing the cumulative effect of these policies on firm returns.

Contrary to expectations, the results suggest that direct ESG legislation has a lower significant impact on firm returns (CARs) compared to indirect policies. This can be attributed to the fact that direct legislation only affects specific aspects of a firm's activities, while indirect legislation has a broader impact on certain industries. For example, ESG disclosure regulations may only require minor adjustments in most companies, whereas carbon standards could necessitate significant changes in an entire production line, leading to a longer and more complex adaptation process. Additionally, the magnitude of the impact, whether positive or negative, is greater for indirect policies as they reward companies already committed to sustainability and compel laggards to adapt. However, the positive coefficients for the variable "status" in both models indicate that fully approved legislation has a stronger impact on CARs than pending legislation. This is expected as investors and companies react more decisively to fully approved measures, which provide a higher level of certainty and entail mandatory compliance.

Furthermore, the study found that Democratic-sponsored legislation resulted in lower CARs for the overall sample of firms. This contradicts previous research that suggested higher returns during Democratic presidencies. This connection may be influenced by the lower

CARs and daily returns observed for Republican donors. As previously explained, ESG-related policies, particularly indirect ones, require significant adaptation from firms that had not prioritized such issues before the introduction of legal obligations. Firms already implementing sustainable practices may experience positive CARs, gaining a short-term competitive advantage over those that need to restructure their operations to meet new standards. This applies to all three pillars of ESG (environmental, social, and governance) as they require a longer period of adjustment rather than immediate implementation.

Interactions between variables revealed meaningful results. It is intuitive to assume that a firm donates a higher amount of money to a particular party because it believes that a government led by that party would benefit its financial performance, primarily through the introduction of legislation aligned with the firm's line of business. The results support this reasoning, indicating a positive and stronger effect on CARs when a firm is a donor to a party that sponsors legislation. This synergy effect holds true for both Democratic and Republican donors and aligns with previous studies. Additionally, the analysis suggests that the impact of donations on abnormal returns is not significant, indicating that donations reflect an ideological orientation rather than a direct financial commitment to a political party. This is further supported by the alternative regression model, which shows that being a top Democratic donor decreases CARs compared to bottom donors, implying that a higher financial contribution does not necessarily lead to positive CARs.

Unexpected results emerged when examining the influence of ESG scores on CARs. Contrary to expectations, an increase in ESG scores was found to diminish CARs for all firms, contradicting the previous reasoning and existing literature. One possible explanation is that investors perceive ESG-related legislative introductions as potential motivations for improvement among firms with lower ESG scores. In this context, investors may reward companies with lower ESG levels, pushing them to enhance their performance. Conversely, companies with higher ESG commitments are less affected by legislative introductions as they have already incorporated sustainability practices and face fewer adaptation needs. The negative coefficient for the governance factor also aligns with this interpretation. Governance changes, which may involve compliance costs and structural adjustments, can have significant short-term repercussions on firm performance. Investors may react more strongly to legislative introductions, especially for firms with lower ESG scores. Furthermore, lower ESG commitment exposes companies to environmental, social, and governance risks that could

negatively impact their long-term financial profitability and value creation when additional regulations are introduced, leading to higher perceived risk and, consequently, higher CARs.

The additional regression models explored the relationship between ESG scores, political affiliation, and CARs. For Democrat firms, a positive relationship was observed between the S factor (social commitments) and CARs, indicating that improvements in social aspects such as diversity, inclusion, and employee welfare are valued by investors and positively impact the financial performance of Democrat firms. This aligns with previous studies highlighting the positive correlation between supportive ESG legislation and CARs. Conversely, Republican firms exhibited a negative relationship between the G factor (governance) and CARs. This suggests that factors associated with governance, such as governance practices or policies, may be perceived negatively by investors or have adverse effects on the financial performance of Republican firms. One explanation could be that governance changes destabilize more conservative firms that follow traditional organizational structures, leaving more room for improvement.

10. Conclusion

In summary, this study shed light on the impact of legislative introductions related to ESG-investing on the returns of selected firms in the S&P500 index. The findings revealed that direct ESG legislation has a lower impact on CARs compared to indirect policies, and fully approved legislation has a stronger effect than pending legislation. Democratic-sponsored legislation resulted in lower CARs for the sample, potentially due to the need for adaptation among firms less focused on ESG issues. The analysis also highlighted the positive and stronger effect on CARs when a firm is a donor to a party that sponsors legislation, regardless of political affiliation. Unexpectedly, higher ESG scores were associated with lower CARs, likely due to investor perceptions of risk and motivations for improvement among firms with lower ESG commitment. The study also identified the positive relationship between social commitments and CARs for Democrat firms and the negative relationship between governance and CARs for Republican firms. These findings contribute to the understanding of the complex relationship between legislative introductions, ESG scores, political affiliation, and firm returns. However, there are limitations to consider, such as the need for future research to analyze the cumulative impact of additional direct ESG policies and the caution

required when generalizing the findings to future policies sponsored by a specific party. Nonetheless, these results provide valuable insights for investors interested in ESG investing and suggest a potential area for future research on investor behaviour and ESG commitment.