Implications of Corporate Political Connections: Evidence from Campaign Contributions in the United States

By

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Declaration of authenticity

This thesis is the result of the author's original research. It has been composed by the author and has not been previously submitted for the examination which has led to the award of a degree.

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Abstract

Corporations have been actively engaging in the public policy process in an attempt to manage its impact on their businesses. The prevalent role of corporations within politics is controversial and there has been much discussion from diverse disciplines on the extent of corporations' influence on politics. Corporate finance literature that focuses on corporate political activities/connections has been investigating their determinants and consequences on firms' strategies and outcomes.

Firms can build connections with politicians using several tactics. This thesis uses campaign contributions, i.e., firms' hard-money contributions to politicians in their (re)election campaigns through firms' Political Action Committees (PACs) over a rolling six-year window, to identify corporate political connections in the US context and investigate their association with some of the firms' strategies and outcomes within three empirical chapters.

The first empirical chapter (Chapter 4) investigates whether corporate political connections are associated with their investments in R&D. It also investigates the impact of political connections on the association between executives' ownership and R&D. Using a sample of publicly-listed US (S&P1500) firms from 1992-2018, the findings show that those firms that support more politicians in their (re)election campaigns over a rolling six-year window have higher investments in R&D. The findings also suggest that the impact of political connections on the association between executives' ownership and R&D is not statistically significant. This insignificant impact might be due to the small within-firm changes in executive ownership concentration from year to year as suggested by Zhou (2001). Another possible explanation is the cancelling effect resulting from the interaction of the two variables (i.e., political connections and executive ownership).

The second empirical chapter (Chapter 5) focuses on an area that has recently been widely considered in academia and practice, which is corporate environmental, social, and

governance (ESG) practices. Studies suggest that corporate ESG bad practices have an adverse effect on business processes and threaten a firm's reputation and survival. Corporations may use several strategies, including their political ones, to mitigate risks that arise from ESG bad practices. In particular, this research focuses on firms' ESG negative/adverse incidents to evaluate if such incidents are associated with firms' long-term political connections. Using a sample of US listed firms from 2007-2018, it was found that firms with greater ESG negative incidents tend to have a higher intensity of political connections, measured by the number of supported candidates in their (re)election campaigns over a six-year rolling window. This chapter also examines whether each component of ESG negative incidents (i.e., Environmental, Social, and Governance) is associated with corporate political connections. The results show that the intensity of the association with corporate political connections varies across the three components of ESG, and that ESG incidents related to environmental issues are the main drivers of firms' long-term connections with politicians. The chapter also investigates whether long-term corporate political connections can positively impact the association between the firms' negative ESG incidents and performance; the findings show that they do, particularly when market performance measures are used (i.e., Tobin's Q). This implies that having corporate long-term connections to politicians is a proactive strategy for the firm to mitigate their reputational risk, particularly the risk that arises from their ESG negative incidents.

The third empirical chapter (Chapter 6) examines the existence of an association between corporate political connections and firm equity risk. By using a sample of S&P1500 firms from 1992-2018, this study finds that corporate political connections are associated with lower total risk (stock returns volatility), systematic risk, and idiosyncratic risk. It also examines a governance variable that has been considered to lower the firm's total risk, which is female representation in the Top Management Team (TMT). After validating that female representation in the TMT is related to lower firm total risk, the chapter then examines the possibility of corporate political connections impacting the negative association between female representation in the TMT and firm total risk; the results indicate that corporate political connections strengthen this negative association mainly by reducing the idiosyncratic risk.

Overall, the findings suggest that corporate political connections in the US through long-term hard-money contributions to political candidates in their (re)election campaigns are considered a valuable resource that is associated with higher investments in R&D (economic growth), and lower firm risk (total, systematic, and idiosyncratic). Such political connections can also be considered as a means to mitigate the reputational risk arising from the firm's negative ESG incidents.

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Chapter 1: Introduction

Corporate political spending is a topic that has recently been broached by finance researchers. Corporations in the United States (US) have been influencing public policymaking, or at least accessing information about future public policies through various tactics, such as campaign contributions. The Center for Responsive Politics' website[1] shows the considerable contributions made by business firms to political campaigns and that these contributions have grown significantly in the last 20 years.

Corporate money within politics is commonly seen as a concealed influence that may risk the reshaping of politics according to corporate interests. Moreover, corporate money in politics can be a means to generate favours, including access to information about future government policies. Both the US Government and legislators have put significant effort into regulating campaign contributions to candidates and political parties that result in influencing government officials, such as members of regulatory agencies and legislators (e.g., the Bipartisan Campaign Reform Act of 2002). Yet, corporations are still showing some advantages that they can generate through their legally accepted hard-money contributions to political candidates, including the influence on or access to policies that affect their investments. Therefore, it is no surprise to find that scholars in a number of different disciplines have given considerable thought to why corporations become involved in political activities and what the consequences are.

Current literature on corporate political activities (connections) is largely based on the notion that it is the pursuit of economic objectives that encourages firms to engage in political activities. Empirical studies suggests that politically connected firms enjoy several advantages, including preferential access to external financing (e.g., Claessens *et al.*, 2008), lower cost of equity capital (e.g., Boubakri *et al.*, 2012), increased likelihood of bailouts during financial distress (e.g., Faccio *et al.*, 2006), and improved chances of

[1] http://www.opensecrets.org

receiving government procurement contracts (e.g., Tahoun, 2014). Studies also examined the end effect of such connections on firm performance/value. However, evidence on the effect of political connections on firms' financial performance is contentious. Some studies note negative impacts (e.g., Faccio *et al.*, 2006), while others indicate positive ones (e.g., Cooper *et al.*, 2010). This thesis, in its first empirical chapter (Chapter 4), investigates the mechanics of such influences, as it has been argued that the effect on firms' financial performance can be positive or negative *depending on several factors* including R&D intensity (Cao *et al.*, 2018) and a firm's ownership structure (Wang, 2015). It is thus particularly concerned about *what* makes any such influence happen. Earlier Cao *et al.* (2017) called for further understanding of the real effects of corporate political connections. This thesis investigates empirically the association between corporate political connections and R&D investments.

Researchers have examined links between managerial ownership and R&D investment (e.g., Hirshleifer and Suh, 1992; Green, 1995; Barker and Mueller, 2002; Low, 2009), and between managerial ownership and political connections (e.g., Aggarwal *et al.*, 2012; Sun *et al.*, 2012; Ozer and Alakent, 2013; Rudy and Johnson, 2019). However, the author of this thesis believes that despite R&D investments depending on decisions by firms' top executives (Barker and Mueller, 2002), no studies have previously examined how corporate political connections can influence the association between executives' equity ownership and R&D investments (and hence innovation). Chapter 4 therefore tests the association between corporate political connections and R&D investments. It also investigates the impact of political connections on the association between executives' ownership and R&D. Using a sample of S&P1500 firms from 1992-2018, the findings suggest that firms that support more politicians in their (re)election campaigns over a rolling six-year window have higher investments in R&D. It is also found that the impact of political connections on the association between executives' ownership and R&D is not statistically significant. One possible explanation for this insignificant impact is the small changes in executive ownership concentration within-firm from year to year (see Zhou, 2001); another is the cancelling effect resulting from the interaction of the two variables (i.e., political connections and executive ownership), as the former has a positive association with R&D while the latter has a negative association with R&D.

Another angle that has recently been receiving growing attention is that of corporate ESG practices. Studies have shown that corporate ESG bad practices and negative incidents have been an area of concern by investors, managers, and policymakers. For corporations, negative ESG incidents harm their reputation and consequently their performance (e.g., Capelle-Blancard and Petit, 2019; Grewal *et al.*, 2019). Repeated failure in ESG practices by firms can alert policymakers to form policies that can adversely affect firms' businesses and investments. Drawing on the main favours mentioned earlier in this introduction, corporate money in politics is considered to be a concealed means to reshape politics according to corporate interests and to generate favours such as access to information about future government policies (Lim, 2015). This thesis therefore investigates in its second empirical chapter (Chapter 5) whether long-term political contributions by corporations to candidates in their (re)election campaigns can be used as *a proactive* and *a preemptive* strategy that helps in the case of bad ESG incidents from 2007-2018. It is expected that firms with higher ESG incidents participate more in the financial support of legislators in their (re)election campaigns to offset the possible increase in public policy pressure and change in standards. Cho *et al.* (2006) find that firms with a poor environmental performance tend to make more political contributions in an attempt to improve their perceived environmental performance by encouraging less strict performance standards; however, their study focused only on environmentally sensitive industries in the 2002 election campaign cycle. Moreover, their study only tackled the bad environmental performance of firms, while the current research expands this by studying whether the aggregate tainted ESG score and each individual factor of ESG negative incidents (E, S, and G) are associated with firms' political connections. This thesis also investigates, in Chapter 5, the effect of corporate political connections on firm financial performance. While the effect of political connections on financial performance has been widely studied and debatable outcomes have been documented, when the firms have tainted ESG incidents, the effect of those connections on firm performance have not yet been tackled. Overall, Chapter 5 seeks to address a gap in the literature on the link between the ESG negative incidents of firms and political connectedness, and to examine the effect of this link on firm performance. The main findings indicate that a greater magnitude of negative ESG incidents is associated with higher levels of political campaign contributions. Environmental incidents are the main driver for firms to have long-term political connections. The interaction of negative ESG events and greater campaign contributions is associated with higher levels of firm market-based performance (Tobin's Q). This implies that campaign contributions mitigate the reputational risk associated with negative ESG incidents.

Firms' equity risk is an area that has been considered in the literature and several studies have been investigating the means that can help firms to mitigate high equity (total) risk (stock returns volatility). For instance, Perryman *et al.* (2016) found that gender diversity (defined as the proportion of female executives in the Top Management Team (TMT)) reduces firm total risk (stock returns volatility). Jeong and Harrison (2017) also support this view and argue that female representation in CEO positions and TMT membership reduces stock returns volatility and, hence, the total risk. Given the favours that firms can generate through their connections to politicians, this thesis' third empirical chapter (Chapter 6) investigates whether corporate long-term connections to politicians are associated with firm total risk, an area that has been less investigated in the literature. Moreover, Chapter 6 investigates whether corporate political connections are associated with the sub-components of firms' total risk, namely systematic and idiosyncratic risk. Furthermore, building on studies where females are found to reduce the firm's stock volatility, Chapter 6 examines the existence of an impact by corporate political connections on the association between female presence in the TMT and the firm's total risk. Using corporate long-term financial contributions to political candidates in their (re)election campaigns in the US (S&P1500) from 1992-2018, the findings show that such political connections are associated with lower total risk (stock returns volatility), systematic risk, and idiosyncratic risk. Moreover, after validating that female representation in the TMT is related to lower firm total risk within the sample, the results indicate that corporate political connections strengthen this negative association. Further analysis shows that idiosyncratic risk is the one that is mainly influenced (reduced) resulting in this further reduction in firm total risk.

The aforementioned discussion establishes the possibility that corporate long-term connections with politicians can influence firms' investments in R&D, firms' reputational risk related to their ESG negative incidents, and firms' risk (total, systematic, and idiosyncratic). Moreover, the discussion provides the possibility of an interaction effect between corporate political investment strategies and other firm governance strategies, such as executive equity ownership and female representation in the TMT, on firms' investments decisions and outcomes such as R&D and total risk (i.e., stock returns volatility); this is a subject which has not been considered in previous studies.

Overall Contributions of the Thesis

Overall, this thesis has contributions to many areas. First it makes several contributions to the literature on corporate political connections. Various studies suggest a positive effect of corporate political connections on firms' value and financial performance (e.g., Claessens *et al.*, 2008; Bunkanwanicha and Wiwattanakantang, 2009; Goldman *et al.*, 2009; Cooper *et al.*, 2010; Bunkanwanicha *et al.*, 2013; Akey, 2015; Lin *et al.*, 2015; Xu *et al.*, 2015). However, the literature provides fewer insights into the precise mechanisms through which such connections can influence real economic investments, specifically those of R&D. This work enhances our understanding by showing that corporate political connections significantly affect firms' real investment decisions, particularly those of R&D, as such connections reduce uncertainty about future government economic policies. Moreover, while the association between corporate political connections and financial performance/value is well established in the literature, the association of such connections with the tainted company reputation arising from their ESG negative incidents is far from complete. This thesis contributes to the existing literature by showing that other non-market factors such as poor ESG practices can also be associated with companies' investments in political strategies. Using Resource-Based Theory (RBT), this study adds to the extant literature by showing that firms' long-term connections to politicians can be a way to manage reputational risk. Additionally, the findings reconcile the contradictory views on the association between corporate political connections and a firm's outcomes. Some studies note negative impacts of such connections on firm performance/value (Fisman, 2001; Faccio *et al.*, 2006; Duchin and Sosyura, 2012; Hadani and Schuler, 2013; Piotroski and Zhang, 2014; Unsal *et al.*, 2016), while others indicate positive ones (Claessens *et al.*, 2008; Bunkanwanicha and Wiwattanakantang, 2009; Goldman *et al.*, 2009; Cooper *et al.*, 2010; Bunkanwanicha *et al.*, 2013; Akey, 2015; Lin *et al.*, 2015; Xu *et al.*, 2015). Cheung *et al.* (2010) note that connections to politicians can be a helping or a grabbing hand in business. Aggarwal *et al.* (2012) also explained that corporate political contributions could be an investment or an agency cost for the firm. By exploring the economic consequences of such connections on the firm's risk (total, systematic, and idiosyncratic), this thesis contributes to the literature by finding that those connections are considered an investment and a helping hand in terms of reducing the firm's riskiness. The findings also show that corporate political connections not only reduce policy uncertainty, which increases R&D investments, but also relate to lower overall firm risk.

This thesis provides several contributions to the corporate governance literature, particularly that related to managerial ownership and gender diversity in the TMT. Executive ownership as a measure of executives' risk-taking behaviour, including their decisions on R&D investments, has been widely documented in the literature (Barker and Mueller, 2002; Kim and Lu, 2011; Beyer *et al.*, 2012). The relationship between executive ownership and contributions to politicians has also been examined by academic researchers (Gupta and Swenson, 2003; Aggarwal *et al.*, 2012; Ozer and Alakent, 2013). However, the effect of political connections on the association between executive ownership and risky and irreversible investments, particularly R&D, has not been tested. So, in this sense, this thesis is making a hitherto uncharted contribution to the literature by examining the influence of political connections on the association between executive ownership and R&D investments.

The literature on gender diversity encourages female participation in the TMT of corporations. Female presence in the TMT has been associated with broader cognitive perspectives, meaning that firms can recognize strategic opportunities, find alternatives, and deal with environmental changes (Wiersema and Bantel, 1992). Other studies argue that this female representation reduces firms' riskiness (e.g., Perryman *et al.*, 2016; Jeong and Harrison, 2017) but there is little information on whether non-market strategies (i.e., corporate political connections) can influence the role of the female proportion of TMT with regard to reducing firms' riskiness. This thesis contributes to the existing literature by examining the possible impact of corporate political connections on the association between the female proportion of the TMT and firm total risk. It further expands the analysis to examine which sub-division of total risk is most affected and hence influences firm total risk, which enriches the understanding in this less investigated area.

This thesis also contributes to one of the main corporate investment strategies that is highly related to economic growth at firm-level and aggregate-level, namely R&D investments. Earlier studies have been more concerned with identifying the determinants of R&D investments but have not considered corporate political connections through hard-money contributions as a determinant of R&D investments. Only a few studies have considered corporate political connections as a driver for innovation; they have focused mainly on innovation output, e.g., as measured by the number of granted patents and patent citations (Ovtchinnikov *et al.*, 2020). On the other hand, testing the association between corporate political connections and innovation input (R&D), offers unique and deep contributions that augment those reported by Ovtchinnikov *et al.* (2020). This research contributes to R&D literature by showing that corporate political connection is a significant stimulator for the willingness of managers to invest in R&D.

Another aspect of the literature that this thesis contributes to is corporate reputational risk. Studies have tackled how negative coverage (by the media and other public information sources) of corporate incidents has a negative impact on the firm reputation. This is particularly highlighted by Kothari *et al.* (2009) who noted that the credibility of news disclosure by the Press is higher than that for companies or analysts. Several studies also examined how ESG positive activities can affect firm performance and value positively (Lo and Sheu, 2007; Filbeck *et al.*, 2009; Fatemi *et al.*, 2015) or negatively (Brammer *et al.*, 2006; Lee and Faff, 2009). However, until now, no study has investigated whether the association between ESG negative incidents of firms and their performance can be influenced by their political connections. This work has a further particular contribution as, by using market-based and accounting-based performance measures, it tests the interaction effect of corporate political connections and negative ESG incidents on firm performance.

This thesis also contributes to the literature on equity risk management. A number of studies have been dedicated to identifying the factors/strategies that can mitigate stock returns volatility. Diamond and Verrecchia (1991) and Healy *et al.* (1999) argue that both improvement in financial reporting quality and disclosures help firms to mitigate information asymmetry and reduce stock volatility. Harjoto *et al.* (2015) argue that stock returns volatility is reduced by Corporate Social Responsibility (CSR) practices, and that institutional ownership mediates this reduction. Although some studies have tackled various non-market strategies (e.g., CSR) and their association with stock returns volatility (firm total risk), there is little information about whether corporate political connections, a form of non-market strategy, influences the volatility of stock returns. This research therefore contributes to the extant literature by showing that non-market strategies, specifically companies' political connections, are a means to mitigate/reduce stock returns volatility.

The rest of the thesis is structured as follows. Chapter 2 presents the literature review, which provides a brief background on corporate political connections then reviews relevant studies related to corporate political connections and the areas under examination; the main theories used in this thesis are also explained. Chapter 3 presents the approaches used in the literature to identify corporate political connections, the selected approach in the current thesis, and some descriptive statistics about the data related to those connections. Chapter 4 studies the relationship between corporate political connections and R&D investments; it also investigates the impact of those connections on the association between executive equity ownership and R&D investments. Chapter 5 examines the relationship between ESG negative incidents and corporate political connections; additionally, it investigates whether each individual factor of those incidents (E, S, and G) is associated with firms' political connections. Moreover, it examines the impact of those connections on the association between ESG negative incidents and firm performance. Chapter 6 tests the association between corporate political connections and firm (total, systematic, and idiosyncratic) risk; it also investigates the impact of those connections on the association between female representation in the TMT and firm total risk. Chapter 7 summarizes and concludes the thesis.

Chapter 2: Literature Review

This chapter starts by providing a background on corporate political connections, then moves to the debatable views about the influence of those connections on firm performance/value, giving its importance to corporate finance. After that, Section 2.3 specifically considers the literature and the relevant studies on corporate political connections and R&D investments/innovation, which is one of the main investigations of the first empirical chapter (Chapter 4). Section 2.4 focuses on the ESG negative incidents and the literature relating them to corporate political connections, which is the core investigation of the second empirical chapter (Chapter 5). Section 2.5 moves to the literature and the studies investigating the association between corporate political connections and firm equity risk, which is examined in the third empirical chapter (Chapter 6). In Sections 2.3, 2.4, and 2.5, the most relevant studies to each of these three chapters are considered, and the differences are discussed. Finally, the theories used in all three chapters are discussed in Section 2.6.

2.1 Background on Corporate Political Connections

Corporations, being significant players in the political scene, try to access policymakers in order to influence the processes of public policy. Because the economic performance of corporations is frequently reliant on both laws and regulations, there are clearly economic incentives for corporations to become involved in political activities (see Lim, 2015).

Building relationships with politicians can bring many advantages to firms. These include politically connected firms having preferential treatment and easier access to external credit (e.g., Gomez and Jomo, 1997; Johnson and Mitton, 2003; Cull and Xu, 2005; Khwaja and Mian, 2005; Faccio, 2006; Claessens *et al.*, 2008; Firth *et al.*, 2009). Also, such firms can receive lighter tax rates (e.g., Faccio, 2006), better chances of bailout during financial distress (e.g., Faccio *et al.*, 2006), lower operating and equity costs (e.g., Boubakri *et al.*, 2012), greater likelihood of obtaining government procurement contracts (e.g., Dinç, 2005; Chen *et al.*, 2014; Tahoun, 2014; Schoenherr, 2018), and greater likelihood of regulatory protection (e.g., Krueger, 1974; Kroszner and Stratmann, 1998). In addition, and more importantly, firms with political connections have a greater likelihood of influencing public policies (e.g., Hillman and Hitt, 1999) and accessing information about future government policies (e.g., Coate, 2004).

However, corporate political connections can be related to some disadvantages. For instance, Wang (2015) found that corporate political connections in State-controlled firms in China increase the risk of expropriation; indeed, Wang argues that the expropriation of minority investors in State-controlled listed firms with connections leads to over-investment problems to satisfy the political objectives of the controlling shareholder (i.e., the government officials). Some have also argued that corporate political connections increase the agency problem, as managers may employ their political-investment decisions to maximize their personal benefits, including reducing the likelihood of losing their own jobs (Sun *et al.*, 2012; Rudy and Johnson, 2019) at the cost of the maximization of shareholder value objective.

Much research on corporate political connections assesses their resultant advantages and disadvantages, and relates them to firms' value and financial performance.

2.2 Corporate Political Connections and Firms' Value/Performance

Several studies argue that corporate political connections increase the firm value and performance. For instance, Cooper *et al.* (2010) used the firm-level contributions to US political campaigns from 1979-2004 as a proxy for political connections, finding that such a measure is positively associated with firms' future returns. Other studies indicate that political connections can increase firms' equity value during certain events (e.g., Faccio, 2006). Goldman *et al.* (2009) stated that when a firm's candidate politician is nominated, positive abnormal stock returns result, and Claessens *et al.* (2008) shared how contributing to winning candidates by Brazilian firms around the 1990 and 2002 elections brought higher stock returns than those of their non-contributing peers. In post-election periods, politically connected firms that donated to winning political candidates can enjoy stock returns increases of 3%, unlike peers who donated to losing candidates (Akey, 2015). Goldman *et al.* (2009) also highlighted how US companies with connections to the Republican Party increased their value after Republican success in the 2000 Presidential Election. Bunkanwanicha and Wiwattanakantang (2009) added that when big business owners win elections and become politicians they often expand the market share of the firms they own by using their power to influence regulations that suit their firms and thus bring them higher market shares.

From a different perspective, Bunkanwanicha *et al.* (2013) examined how the performance of family firms in Thailand improved by establishing political connections through marriage. They reported that when a member of a controlling family in a firm in Thailand marries a partner from a prominent business or political family, the family firms' average cumulative abnormal return (CAR) increased by 2.3% within an 11-day period (around the wedding). The average CAR was even higher when the family firms' operations depend on networks. Xu *et al.* (2015) also examined how political connections influence family firms' performance, by testing whether politically connected family firms assign second-generation family members to senior positions and, if so, why. They found that when a family firm founder has political connections they are more likely to assign family members to the role of Chairman, CEO, or director because they do not want to lose their firms' specialized assets that stem from their connection with government officials. These family firms thus increase company performance, measured via higher operating return on total assets and operating return on sales, by involving second-generation family members in the firm. According to the authors, the reasons for this concerns lower principal-agency cost and long-term commitment from family members, including their commitment to maintaining their connections with government officials.

Even in a global financial crisis, politically connected firms appear to gain some advantages and suffer less than their counterparts because of these affiliations. For instance, during the financial crisis of 2008, Houston *et al.* (2014) showed how US firms with political connections still paid lower debt costs on their bank loans because of their higher likelihood of being bailed out and lower risk of default, so they were generating advantages from their connections during difficult times. They also had a lower probability of bankruptcy during and after the crisis because they received government support (Kostovetsky, 2015). More pertinently here, they showed slight improvements in their stock returns during the global financial crisis if they were located in the same State as a US senator who is a member of the banking committee (Kostovetsky, 2015).

Some studies, however, note that political connections negatively influence firms' value and performance. For instance, Fisman (2001) argued that firms with political ties showed worse financial performance, even though they were receiving financial support from the government. Similarly, Faccio *et al.* (2006) said politically connected firms who were bailed out during financial distress showed worse financial performance during and after the financial assistance when compared with other bailed out but non-connected firms. Banerji *et al.*'s (2018) consideration on this was that although politically connected firms obtain bailout preference by governments and less monitoring by banks, they have hidden costs that lower their value. This is particularly so when firms substitute highly skilled and experienced staff with politically connected personnel to gain certain benefits (e.g., bailouts). Similarly, Duchin and Sosyura (2012) found that politically connected firms who were prioritized for a Federal Investments Program showed lower performance compared with their peers. Hadani and Schuler (2013) also provided empirical evidence for politically connected firms' S&P1500 investments being negatively associated with market performance. They added that investments of firms with political members on their board, except those firms within regulated industry, worsened their market and accounting performances. Explaining this from their testing of over 900 listed firms in S&P1500 over 11 years, Hadani and Schuler (2013) deemed this poorer performance as due to the agency problems deriving from managers who support political investments. These managers made risky decisions to satisfy personal issues, including ideological beliefs, self-aggrandizement, and even their desire to vote. Also, managers assigned to political activities favoured a strategy of over-evaluating those political investments, with this being difficult for shareholders to monitor. All these drivers adversely impacted the market and accounting values of firms involved in political activities (Hadani and Schuler, 2013). Unsal *et al.* (2016) supported Hadani and Schuler's (2013) views about how managers' ideological beliefs and political spending influence firms' value. Using lobbying expenditures to measure political connections, they found that firms with Republican CEOs had more lobbying expenditures and that these negatively impacted firms' value. Specifically, Republican-leaning managers spent much on lobbying, but their firms generated smaller increases in buy and hold abnormal returns, lower Tobin's Q, and higher cost of holding more cash compared with Democratic-leaning and apolitical managers. Unsal *et al.* (2016) described weaker governance and higher agency costs in Republican-leaning firms as the reason for this, as such firms spend much more on lobbying expenditures than Democratic-leaning and apolitical ones.

Using the same political connections measurement (i.e., lobbying expenditures), Cao *et al.* (2018) said political connections can harm some firms' performance but benefit others, depending on specific circumstances, i.e., when firms have complex operations (a factor score based on size, leverage, and diversity), then involvement in lobbying practices negatively associates with performance. Such a result supposedly supports the view that agency costs, which occur because of managers' involvement in lobbying activities to serve their own personal political interests, outweigh benefits generated from the lobbying activities. However, when firms have high growth potential (a factor score based on stock return volatility, R&D intensity, and intangible assets), then involvement in lobbying activities can be beneficial. As Cao *et al.* (2018) explained, infant industries can receive political protection that outweighs the agency costs of lobbying. Lobbying can therefore benefit firms but only under certain circumstances, particularly being in an infant industry with high growth potential.

2.3 Corporate Political Connections and R&D Investments

Based on the above-mentioned arguments, the effect of corporate political connections on firm performance and firm value is contentious in the literature. The mixed findings could be due to several reasons including whether the study is a cross-country or a single-country, the approach used to identify corporate political connections, and the circumstances taken into consideration (i.e., high growth firms, corporate governance mechanisms, and many others).

However, papers that particularly focused on the US context and firms' long-term hard-money contributions to political candidates in their (re)election campaigns (e.g., Cooper *et al.*, 2010), which is the context and approach used in the empirical chapters of this thesis, showed that corporate political connections are associated with higher future stock returns (performance). While studies such as that of Cooper *et al.* (2010) have considered the end effect of corporate political connections on the firm value/performance, the precise ways in which these connections can influence economic investments, in particular those of R&D, are less investigated. The first empirical chapter of this thesis (Chapter 4) enriches our understanding by examining the association between corporate political connections and R&D investments.

The association between corporate political connections and R&D investments can be rooted in the policy uncertainty reduction that firms can generate from their connections to policymakers. Regulatory uncertainty can be a concern for all companies. In this financial context, firms tend to delay their investments until some or all possible changes in government policies are resolved (Julio and Yook, 2012). Jens (2017) said firms' investments generally decline by 5% before elections because of uncertainty about future regulations; similar results were reported by Julio and Yook (2012), who documented that during political election years firms generally reduce their investments by almost 4.8%. The negative influence of political uncertainty regarding future policies and regulations is even stronger when firms' investments are irreversible, such as investments in innovation (Gulen and Ion, 2016; Bhattacharya *et al.*, 2017). In view of this situation, firms tend to look for options that help them in lowering such uncertainty about future regulations, which can be through their connections to politicians. Several studies argue that politically connected firms have better access to political information and can interact with legislators, with consequent insights and prior knowledge that at least partially mitigates policy uncertainty. For instance, Wellman (2017) provided empirical evidence on this topic, showing that politically connected firms suffer less during high uncertainty regimes as the drop in their investments is lower when compared to non-connected firms. Pham (2019) further endorsed Wellman's (2017) argument, stating that the better access to information that firms gain through their connections to politicians allows such firms to face lower policy uncertainty in periods of economic policy uncertainty. Further, Ovtchinnikov *et al.* (2020) argued that politically connected firms are better informed regarding political costs and also have greater access to policy information following their hard-money contributions to politicians, meaning that they clearly face lower policy uncertainty and also have a better innovation output. Based on these studies, it can be said that the unpredictability of future government policies can hinder firms' investments, but by having connections with legislators and politicians firms reduce this uncertainty through various benefits including better access to information (Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020). Hence, it is interesting to investigate whether such an advantage (access to information) generated through political connections can facilitate the connected firms' investments in R&D. Few studies have examined the association between corporate political connections and innovation in general. The next subsection covers the relevant studies and the difference that this thesis' first empirical chapter (Chapter 4) makes.

2.3.1 Relevant studies on Corporate Political Connections and Innovation

Ovtchinnikov *et al.* (2020) empirically examined how political connections can influence firms' innovation output by focusing on how such connections reduce policy uncertainty, which they call 'political uncertainty'. Pástor and Veronesi (2012) previously defined this concept as uncertainty about whether government policies will change, as any such changes may impact on firms' activities. Such uncertainty being unobservable and unknown to outsiders causes issues, particularly regarding irreversible investments whereby such uncertainty increases the value of firms' option to wait. That is to say, when the cost of the investment is uncertain and the resolution of such uncertainty is independent of firms' actions (i.e., not being privy to upcoming government policies), firms tend to postpone their investments (Dixit and Pindyck, 1994). The negative influence of policy uncertainty on firms' irreversible investment is more pronounced for investments in innovation as such investments are long-term (Davis, 2016), are costly and carry higher uncertainty regarding costs of innovation investments (Bhattacharya *et al.*, 2017). Ovtchinnikov *et al.* (2020) argue that since policy uncertainty reduces firms' innovation then any action firms take to reduce this can stimulate innovation. They specifically examined whether political activism, defined by hard-money contributions of firms to politicians in their (re)election campaigns, can stimulate innovation output since that activism builds connections and helps reduce policy uncertainty. Their argument is rooted in the information acquisition that politically active firms can gain through their connections to politicians. Specifically in this context, politicians provide firms with access to policy information in exchange for their contributions (Coate, 2004). Hence, if firms are politically active then such uncertainty reduces through the insights they gain into political plans and activities (as well as their costs or benefits). Reduced uncertainty in this sense actually means less volatility regarding expected future cashflows from innovation. This means the option to defer decisions and hold back on innovations becomes much less attractive. Indeed, Ovtchinnikov *et al.* (2020) provide evidence on how political activism lowers the uncertainty about future policy changes and increases firms' innovation, as measured by the number of granted patents and patent citations.

Kim's (2018) working paper similarly examined the association between corporate political connections and innovation via an event study that tested how loss of political capital influences connected firms' innovation, as measured by R&D. Their study used a different criterion for corporate political connections (hiring a lobbyist who previously worked for a politician's congressional office) from Ovtchinnikov *et al.* (2020) (making hard-money contributions to electoral campaigns). Rather than focusing on gaining information through political connections, Kim (2018) considered how political connections can influence barriers to entry and how losing such an advantage can affect connected firms' physical investments and investments in innovation. Using the sudden exit of legislators from US Congress, Kim (2018) compared a treatment group (politically connected firms who faced an unexpected exit of a politician who is a former employer of the firm's lobbyist) with a control group (politically connected firms that did not lose their political connections suddenly). On average, the treatment group firms increased their capital expenditures by 10% and R&D spending by 9%–11% in the year after the sudden loss of its political connection. Kim (2018) thus suggested that investing in political connections can substitute for investing in physical capital and innovation. This means that when a firm hires a lobbyist who previously worked in the office of a politician they tend to use their lobbying connections to erect artificially high entry barriers to give themselves first-move advantages. Once the firm loses such connections, its power to deter market entry and artificially increase costs for new entrants diminishes. Consequently, to maintain market competitiveness firms substitute such a loss by increasing their investments in physical capital and innovation. Hence, Kim (2018) suggested that political connection is a substitutional strategy for firms' physical investments and innovation.

Su *et al.* (2019) also examined how political connections can influence firms' innovation output in emerging markets, specifically China; their study differs from those by Ovtchinnikov *et al.* (2020) and Kim (2018) in two main ways. First, they focus on an emerging market while the others explore the US market; second, they define political connections using an explicit approach – i.e., a firm is considered politically connected if it has a top manager or board member who is a current or former official of the central government, local government, or the military. Su *et al.*'s (2019) major argument concerns how political connections can influence firms' innovation in economies with less developed legal systems, weaker investor protections, and higher government interventions. For them, political connections in emerging economies are more valuable for firms' investments, and their innovation in particular, as such connections give them several advantages. Innovation depends highly on liquidity and government policies, so politically connected firms can obtain these two major resources of innovation through their connections, i.e., they obtain better information about future policy directions, which brings lower policy uncertainty risk (paralleling Ovtchinnikov *et al.*'s (2020) argument). Su *et al.* (2019) add that better access to future policy plans allows politically connected firms to quickly recognize the direction of important trends the government will support. Consequently, they can shape their innovation strategies in ways that also increase their likelihood of gaining future government subsidies. Furthermore, when a firm is government-backed through political connections, it can even obtain policies that serve firm-specific objectives – an advantage more pronounced in economies where the legal system is less developed and regulatory enforcement is weak. Hence, Su *et al.* (2019) say that innovation, which is measured by the number of granted patents, is better stimulated in firms with political connections in China because these firms are more likely to obtain early information, better access to funds through government subsidies, and insights into policies that are favourable to them.

There are limited studies on the influence of political connections on innovation, which indicates a need for further research. Of those that do explore this, there are evidently different takes and focuses, namely such connections reducing policy uncertainty and hence better stimulating innovation (Ovtchinnikov *et al.*, 2020), firms increasing their investments in capital and R&D after losing their political connection (Kim, 2018), and emerging markets and better availability of resources such as government subsidies helping politically connected firms enhance their innovation (Su *et al.*, 2019). This thesis complements the existing literature by focusing on how hard-money contributions to politicians can be associated with firms' innovation input, particularly R&D investments. First, it contributes to understanding how political connections can influence real investment decisions, particularly those related to R&D investments. Such a measure of innovation has not yet been tackled in any depth within the context of political connections that have been established through hard-money contributions, though Ovtchinnikov *et al.* (2020) did study the influence of those connections through hard-money contributions on innovation outputs, particularly the number of granted patents and patent citations. Furthermore, while Kim (2018) tested how political connections through lobbying influence R&D investments, this thesis takes a different angle by focusing on how political connections of firms through their hard-money contributions influence their R&D investments. Second, the limited availability of studies that tackle the relationship between political connections and innovation suggests that other factors influence such a relationship. The current research therefore investigates one of the areas expected to play a role in this relationship – the concentration level of managerial ownership as a corporate governance mechanism. In other words, it examines how managerial ownership, when combined with political connections, influences decisions regarding innovation inputs, specifically R&D investments, meaning it also enriches the corporate governance literature. As undertaking R&D investments depends highly on managers' willingness, and such willingness increases with managers' personal connections (Faleye *et al.*, 2014), political connections can influence that willingness because of the many favours possibly gained through those connections. Moreover, several studies including Francis and Smith (1995) illustrate how agency costs can be reduced when managers own shares in their firms. However, to the best of the researcher's knowledge, the association between managerial ownership and R&D investments when the firm is politically connected has not yet been studied. This thesis fills this gap by testing the impact of corporate political connections on the relationship between managerial ownership and R&D investments. Finally, using R&D investments as a measure of innovation rather than patent counts and patent citations is critical in the current thesis as R&D investments depend on executives' and managers' decisions – unlike patents and patent citations, which depend on various economic processes. This is particularly important here as R&D has an exposure to risk that strongly relates to executives' decisions and their risk-taking level.

After reviewing the relevant studies regarding corporate political connections and innovation, and explaining how this thesis differs from them, the next subsection discusses the reputation risk arising from firms' ESG bad practices, and the role of corporate political connections in mitigating that risk.

2.4 Firm ESG Negative Incidents and Corporate Political Connections: Protection against Reputational Risk

Corporations' legitimacy and reputation is one of the essential pillars that grabs the concern of managers and decision-makers. Corporations may be involved, during their business and investments, in some incidents that can harm the environment, society, and their governance quality. As part of risk management, firms may tend to look for strategies that help them when such negative incidents occur to mitigate any possible rise in their reputational risk. This is particularly the case if their negative ESG incidents are captured in the publicly available sources which can attract the attention of policymakers to form policies that can influence firms' regular investments. The literature provides examples of firms' strategies to protect themselves from the possibility of releasing public policies that can affect their businesses. For instance, Patten (2002) finds that firms with bad environmental performance, have greater positive environmental disclosures to counteract the potentially increased public policy pressures arising from their poorer environmental performance. Fooks *et al.* (2011, 2013) argue that tobacco companies are involved in CSR activities to counteract any possible policies that might adversely affect tobacco consumption. Firms might therefore use their environmental disclosure or CSR activities to reduce the passing of new policies. However, little is known about whether corporate long-term contributions to political candidates in their (re)election campaigns can be used as a proactive strategy that helps the firms when ESG negative incidents arise. Corporate political strategies, such as contributions to political campaigns, can establish communication channels that help firms to both shape and influence legislators' policies and decisions (see Baysinger, 1984; Keim and Zeithaml, 1986). Hence, this thesis' second empirical chapter (Chapter 5) investigates if there is a positive association between corporate ESG negative incidents and their connections to politicians; it further explores if each component of ESG is associated with corporate political connections and investigates the influence of those connections on firm performance when it has negative ESG incidents.

2.4.1 Relevant Studies on Firm ESG Negative Incidents and Corporate Political Connections

To the best of the researcher's knowledge, only one paper appears to be relevant to the second empirical chapter (Chapter 5) of this thesis, i.e., that of Cho *et al.* (2006) who investigated if environmental industry firms with poorer environmental performance expend more than their better-performing counterparts on political activities. They also looked into a possible association between corporations' political activities spending and the environmental disclosures included in their financial report. Based on environmentally sensitive firms' contributions to political candidates in the 2002 election cycle, they found that those with poor environmental performance contribute more, and that there is a positive association between corporate political contributions and the extent of environmental disclosure. This finding suggests these are complementary tactics to manage public policy pressure in a strategic way.

Chapter 5 of this thesis differs from the views of Cho *et al.* (2006) in the four aspects discussed below.

First, Cho *et al.*'s (2006) study was undertaken from an ethical perspective. They found that political expenditures and environmental disclosures are complementary strategies that are undertaken by firms with bad environmental performance, and that those strategies indicate a considerable lapse in ethical conduct. Chapter 5, however, has a different angle since it focuses on reputational risk, which can be influenced by the overall negative ESG incidents' score.

Second, a focus on environmental bad performance is too limited because social and governance negative incidents, theoretically, could have different effects on corporate political connections. Hence, this research examines two additional dimensions of ESG not covered by Cho *et al.* (2006); it examines the association between each component of ESG negative incidents (i.e., Environmental, Social, and Governance) and political connections. This examination contributes to the literature as this research found no study that has considered each component of ESG negative incidents and its association with corporate political connections. Examining each component and its association with political connections is driven by the recent studies that showed a variation effect of each component. For example, Asante-Appiah (2020) noted that the components of negative ESG incidents vary with regard to their association with audits and the possibility of needing a restatement. Their conclusion was that auditors appear to make greater effort when ESG incidents are related to environmental and governance issues, but not when related to social issues. Their results can be regarded as an example that indicates the possible variation in the association of each component of ESG negative incidents with political connections, which is investigated in Chapter 5 of this thesis.

The third difference between this thesis and the study of Cho *et al.* (2006) is that they focused specifically on companies that are environmentally sensitive, which the researcher believes to be rather limited, so this thesis covers all publicly-listed US firms that exist in the RepRisk and Compustat databases.

The last difference considered is in terms of their methods and measurements. This thesis uses the corporate political connection by measuring the number of candidates who are supported in their (re)election campaigns over a six-year window (a relational approach), whereas Cho *et al.* (2006) depended only on the total amount of contributions in one election cycle (transactional approach). The reason for using the six-year window is that firms tend to use long-term relationships with several politicians to have a greater possibility of influencing their policy process or accessing information. The political connection measurement is supplemented in this thesis by the dollar contributions provided to politicians over a six-year window so that the results are robust. This research is therefore considered to be among the first to examine the association between firms' negative ESG incidents and corporate long-term political connections.

In addition to the points mentioned, the second empirical chapter (Chapter 5) of this thesis extends the investigation by examining the impact of corporate political connections on the association between ESG negative incidents and firm performance, an area not tackled by Cho *et al.* (2006) or any other study, to the best of the researcher's knowledge.

The next section discusses the literature related to Chapter 6 of this thesis, specifically, corporate political connections and firm equity risk.

2.5 Corporate Political Connections and Firm Equity Risk

As mentioned earlier in this literature review chapter, firms can enjoy several advantages from their connections to politicians and these advantages can reduce some types of risk, such as credit risk (e.g., Claessens *et al.*, 2008). Some studies also showed that corporate political connections might raise other types of risk, such as higher agency problems (e.g., Aggarwal *et al.*, 2012), and expropriation (e.g., Wang, 2015). However, a limited number of studies investigate the association between corporate political connections and firm equity risk (which is the total firm risk or the stock returns volatility risk) or whether long-term connections with politicians can be associated with the systematic and idiosyncratic risks of the firm. Chapter 6 of this thesis investigates whether corporate political connections are associated with firm total, systematic, and idiosyncratic risks. Moreover, studies have been investigating some firm strategies that can reduce the firm total risk (i.e., gender diversity through female representation in the TMT). However, to the best of the researcher's knowledge, studies have not investigated whether corporate political connections can influence the association between female representation in the TMT and firm total risk. Chapter 6 also extends the investigation to examine whether corporate political connections have an impact on the association between female representation in the TMT and firm total risk.

2.5.1 Relevant Studies on Corporate Political Connections and Firm Equity Risk

To the best of the researcher's knowledge, only one relevant study was found to examine the association between corporate political connections and firm risk, namely systematic and idiosyncratic risk. Kim *et al.* (2019) examined how the employment of various political strategies (i.e., the presence of former politicians on corporate boards of directors, contributions to political campaigns, and corporate lobbying activities) interacts with the reduction of policy uncertainty (generated by political connections), and how that interaction influences the systematic and idiosyncratic risk of the firm. Their study used a combined index of different political strategies on an annual basis, whereas Chapter 6 of this thesis focuses specifically on political campaign contributions over a six-year rolling window. According to Snyder (1992), having multi-period political investments (contributions) is essential for a successful corporate political strategy, through which firms can cultivate relationships with key policymakers. Another difference is that Chapter 6 does not focus on just one politically generated favour (i.e., reduction in policy uncertainty); but considers the possible existence of an overall protection and hence an association between corporate political connections and firm risk. It also examines the possible existence of an association between corporate political connections and firm total risk (stock returns volatility), a subject not covered by Kim *et al.* (2019), or any other study in the US, to the best of the author's knowledge. Finally, Chapter 6 adds a further angle not yet undertaken, also to the best of the author's knowledge, that of examining the possible existence of an impact by corporate political connections on the relationship between a corporate governance variable (female representation in the TMT) and firm total risk.

Another study related to Chapter 6 is the one conducted by Lee and Wang (2016). They examined the influence of political connections, generated by including a politician on the board of directors of Chinese firms, on the price crash based on ownership structure and pinpointed two major findings: (1) In listed State-controlled firms, hiring politicians as directors exacerbates the risk of stock price crash; (2) Hiring politicians as directors in listed privately controlled firms helps reduce that risk. Chapter 6 of this thesis differs from Lee and Wang's (2016) work in several aspects. First, their findings are context-specific, i.e., the Chinese stock market includes both State-owned and privately-owned listed firms, while these State ownership classifications are not part of the US stock market. Their results are consequently difficult to be applied in the US context, as, depending on the ownership structure, they found contradicting results of political connections on the price crash risk. Second, their work tests the effect both of political connections and ownership structure on the price crash risk (i.e., negative conditional return skewness). Chapter 6 of this thesis, however, is focused on testing the existence of an association between political connections and three measures of firm risk: total, systematic, and idiosyncratic.

With regard to introducing the political connections as a factor that can influence the association between female executives and a firm outcome, two main studies are mentioned, although both are focused on firm performance rather than the firm total risk as the firm outcome. First, Ren and Wang (2011), using the emerging Chinese private economy, examined the relationship between female participation in TMTs and firm performance, and found a positive relationship between them. They extended their investigations by examining whether female education level and their political connections can moderate the positive association between the female proportion in the TMT and firm performance. Based on their results, they found that both the educational level and the political connections of female executives tend to strengthen the positive association between females in the TMT and firm performance; however, Chapter 6 in this thesis differs in several aspects. First, the approach of identifying corporate political connections in Chapter 6 is through hard-money contributions in the (re)election campaigns in the US, while Ren and Wang (2011) used a different political connections proxy[2]. Second, and more importantly, the dependent variable used in the Ren and Wang (2011) study is firm performance, while Chapter 6 uses firm risk.

Another recent paper that relates corporate political connections to female executives in the firm is the one conducted by Sun and Zou (2021). They claim that female CEOs in China are better performers compared to male CEOs, which is argued to be due to female CEOs' stronger political connections. By focusing on a certain exogenous shock in the

[2] Ren and Wang (2011) defined political connections as TMT members with work experience in central or local government, or the military; or are members of the national and local people's congress, members of the national and local committee of CPPCC (Chinese People's Political Consultative Conference), and committee members of federations of industry and commerce.

political arena (the 2012 political leadership transition), Sun and Zou (2021) found that such a shock destroys the female CEOs' political connections, which diminishes the performance gap between male and female CEOs in China. Chapter 6 of this thesis again differs in many aspects. First, Sun and Zou (2021) built their analysis on a specific exogenous shock that happened in China. Second, their study used female CEOs, while in contrast Chapter 6 uses female representation in the TMT, following the Upper Echelons Theory (UET). Most importantly, the study of Sun and Zou (2021) used the firm performance gap between male and female CEOs, while Chapter 6 focuses on firm risk (not performance).

After reviewing the literature on corporate political connections and the studies relevant to Chapters 4, 5, and 6, the following describes the theories used in those three empirical chapters.

2.6 Theories

Several theories have been considered in the three empirical chapters of this thesis, including The Resource-Based Theory (RBT) (Russo and Fouts, 1997), Institutional Theory (DiMaggio and Powell, 1983; Scott, 1987; Zucker, 1987), Exchange Theory (Hillman and Hitt, 1999), Theory of Economic Regulation (Stigler, 1971), and Upper Echelons Theory (UET) (Hambrick and Mason, 1984). These theories are defined in this subsection, and discussion is provided on how they are related to the thesis' empirical chapters.

The Resource-Based Theory (RBT)

This is considered to be the main theory of the three empirical chapters of this thesis. The Resource-Based Theory (View) has been explained by many authors but often without clear and homogeneous definition. Dahan (2005) provided an intensive description of the Resource-Based View and related it to corporate political activities (CPAs). A corporate resource is generally defined as any means that helps in firm development. As highlighted by Dahan (2005), the definition of corporate resource has many characteristics. First, it can be extremely diverse and cover several aspects (e.g., tangible, intangible, strategic, financial, human, etc.). Second, a resource is a means that helps a firm to achieve its ultimate goals. Third, and more importantly, this means does not necessarily have to be owned by the firm (e.g., Wernerfelt, 1984, 1989; Barney, 1986, 1991; Dierickx and Cool, 1989) because a firm only needs to secure privileged access to it. Potential corporate resources, as illustrated by Clegg *et al.* (1996) and many others, are infinite because several different means can become a resource for some firms in a specific context.

The Resource-Based Theory (View) in the political context has been highlighted in earlier works (e.g., Fainsod, 1940; Epstein, 1969; Leone, 1977; Mahon and Murray, 1981), who stated the need for mobilizing specific resources in order for the firm to influence public decisions successfully. Various authors have put effort into compiling their own list of resources in the political context by using several terms including "political resources" (e.g., Boddewyn, 1994). Political resources include financial resources, such as providing direct campaign contributions to political candidates. Dahan (2005) highlighted that political resources are considered to be a corporate resource because they (i.e., campaign contributions) are a means of development for the firm, as they are intended to achieve a specific state of public policy, resulting in a more favourable political-legal environment for the firm. Overall, Dahan (2005) suggests that CPAs are considered a resource-base for the firm as such activities enrich the resources firms can employ to gain competitive advantage in the non-market environment (see Dahan (2005) for a resource-based view of CPAs).

Russo and Fouts (1997) also support viewing CPAs as a resource, by suggesting that firms' long-term connections with politicians are a strategic resource that can help in promoting, neutralizing, or even managing the external factors that affect their investments.

Drawing on this theory, Hillman and Hitt (1999) built their comprehensive corporate political strategy formulation model. This thesis also draws on this theory, particularly in empirical Chapter 4, by showing that these political connections are considered a strategic resource that allows firms to facilitate their R&D investments by reducing the policy uncertainty risk related to those investments.

In Chapter 5, the RBT was also used to support the argument that corporate political connections are a proactive strategic resource that can help firms manage the public policy process when negative ESG incidents have occurred. The findings of Chapter 6 are also supported by RBT, as it was found that corporate long-term connections with politicians are a resource that helps firms to lower their total, systematic, and idiosyncratic risks.

The Institutional Theory

The Institutional Theory is used in Chapter 5 to determine if corporations use their political activities to compensate for their questionable corporate practices that can harm their legitimacy and reputation. The Institutional Theory of organization (DiMaggio and Powell, 1983; Scott, 1987; Zucker, 1987) concentrates on the role of the environment, within which firms operate, in the organizational structures, strategies, and activities. It is contended by institutional theorists that organizations mostly seek legitimacy (Oliver, 1991) which leads to social acceptance, competitive advantage, and ultimate survival (Scott, 1987; Zucker, 1987; Czinkota *et al.*, 2014).

The second empirical chapter (Chapter 5) draws on this theory and extends it by viewing two schools of legitimacy (institutional and strategic). While the former assumes that corporations must adapt to the external environment to survive, the latter believes that organizations require legitimacy in order to gain access to resources competitively (Pfeffer and Salancik, 1978). The strategic school expects that corporations will be more active in shaping their institutional environment rather than just passively accepting the external norms and values. To do this, firms must acknowledge any legitimacy gaps or discrepancies between their actions and the expectations society has of them (Sethi, 1979). A legitimacy gap often occurs when a firm's practices change while society's norms are unchanged, or vice versa (Wartick and Mahon, 1994). Scherer *et al.* (2013) identified three strategies commonly employed by firms to manage legitimacy gaps; the one related to

Chapter 5 of this thesis is manipulate their stakeholders' perception. A manipulating strategy means that firms tend to influence social expectations by manipulating key policymakers in their environment (Barley, 2010). A number of studies (e.g., Hillman *et al.*, 2004; Scherer *et al.*, 2013) suggest that social expectations are mainly shaped by a firm's political strategies. Hence, firms try to actively influence social expectations by involving corporate political strategies, including contributions to politicians' (re)election campaigns (Suchman, 1995). This suggests that corporate political strategies can have an essential role in managing legitimacy gaps, including those that exist from their negative ESG incidents. This argument was tested and supported in Chapter 5 where a positive association was found between corporate ESG negative incidents and their long-term political connections.

The Exchange Theory

The Exchange Theory suggests that firms use one or more of three general political strategies in an attempt to influence the policy process (Hillman and Hitt, 1999). First, "information strategy" focuses on providing policymakers with information on corporate desires and views. Second, "financial incentive strategy" involves providing direct financial support to political decision-makers in an attempt to influence political outcomes. Finally, "constituency-building strategy" focuses on a corporation's attempt to gain public members' support who are then expected to communicate the corporation's desires to the policymakers and hence influence policy deliberations indirectly (Hillman and Hitt, 1999). Within the context of Chapter 5, firms may use the second strategy from Hillman and Hitt's (1999) model and provide continuous financial incentives to politicians (via political contributions) as a long-term (proactive) strategy in exchange for influencing or managing the policy process, particularly when these firms have ESG negative incidents that have reached society.

The Theory of Economic Regulation

This theory was used in Chapters 5 and 6, and it is also supported, albeit circuitously, in Chapter 4. It views corporate political contributions as a way to gain favours from political candidates rather than a means to simply influence the election outcome (Stigler, 1971). This can be supported through the three empirical chapters as they all show how corporate political connections are used as a means to generate advantages.

The Upper Echelons Theory (UET)

This theory was considered in Chapters 4 and 6 of this thesis. For example, when examining the impact of corporate political connections on the association between executive ownership and R&D (Chapter 4), the ownership of the TMT rather than the CEO alone was considered. Similarly, when examining the possible impact of corporate political connections on the association between female executives and firm total risk (Chapter 6), the researcher considered the female proportion of the TMT rather than the CEO alone. Such an approach is based on UET, which suggests that top executives' demographics are believed to reflect managers' values and attitudes, consequently playing an essential role in influencing corporate strategic decisions and choices (Hambrick and Mason, 1984). The same authors also demonstrated that considering the TMT, instead of the CEO alone, gives greater strength to this theory as CEOs share their tasks with the entire team of executives and therefore the overall characteristics of the TMT influence the corporate decisions.

This chapter has reviewed the literature on corporate political connections relevant to the three empirical chapters (Chapters 4, 5, and 6) and the theories used in them. It has also provided a brief background on those connections, and their influence on firm value and performance.

Chapter 3 now describes the main approaches used in the literature to identify corporate political connections and the selected approach to be applied to the three empirical chapters.

Chapter 3: Corporate Political Connections Identification Approach/Method

This chapter starts by reviewing the main approaches used in the literature to identify corporate political connections, then moves to the selected approach used in this thesis to identify them. After that, it explains the process of obtaining the data. This will be followed by some descriptive statistics about the corporate political connections data obtained. Finally, it describes the measurements used in calculating corporate political connections which are used in each of the three empirical chapters.

3.1 Approaches to Identify Corporate Political Connections

The domain literature on corporate political connections classifies such connections into two main approaches: explicit or implicit (Cooper *et al.*, 2010; Ovtchinnikov and Pantaleoni, 2012; Carboni, 2017). An existing politician working in a firm and/or a current businessperson becoming a politician and/or having a close relationship to a top official is an explicit political connection, and this direct/individual-level measure is used by scholars including Faccio (2006) and Khwaja and Mian (2005). Other ways of identifying politically connected firms are considered implicit connections (Cooper *et al.*, 2010; Ovtchinnikov and Pantaleoni, 2012), and these types are many in number. They include the political background of a current businessperson (e.g., Goldman *et al.*, 2009), the networks associated with politicians such as friends and/or family members (e.g., Fisman, 2001; Amore and Bennedsen, 2013), firms' hard-money contributions to politicians in their (re)election campaigns (e.g., Cooper *et al.*, 2010; Wellman, 2017; Pham, 2019), firms' soft-money contributions through lobbying activities (e.g., Yu and Yu, 2011; Borisov *et al.*, 2016; Agarwal *et al.*, 2018), the investment of an active politicians in a firm's equity (e.g., Tahoun, 2014; Platikanova, 2017), and firms' geographical proximities to the political power (e.g., Kim *et al.*, 2012). It can be noted that most of the implicit political connections' measures described above indicate political connections at firm-level. Figure 3.1 relies on the literature (i.e., Carboni, 2017) and summarizes the explicit and implicit ways of identifying corporate political connections.

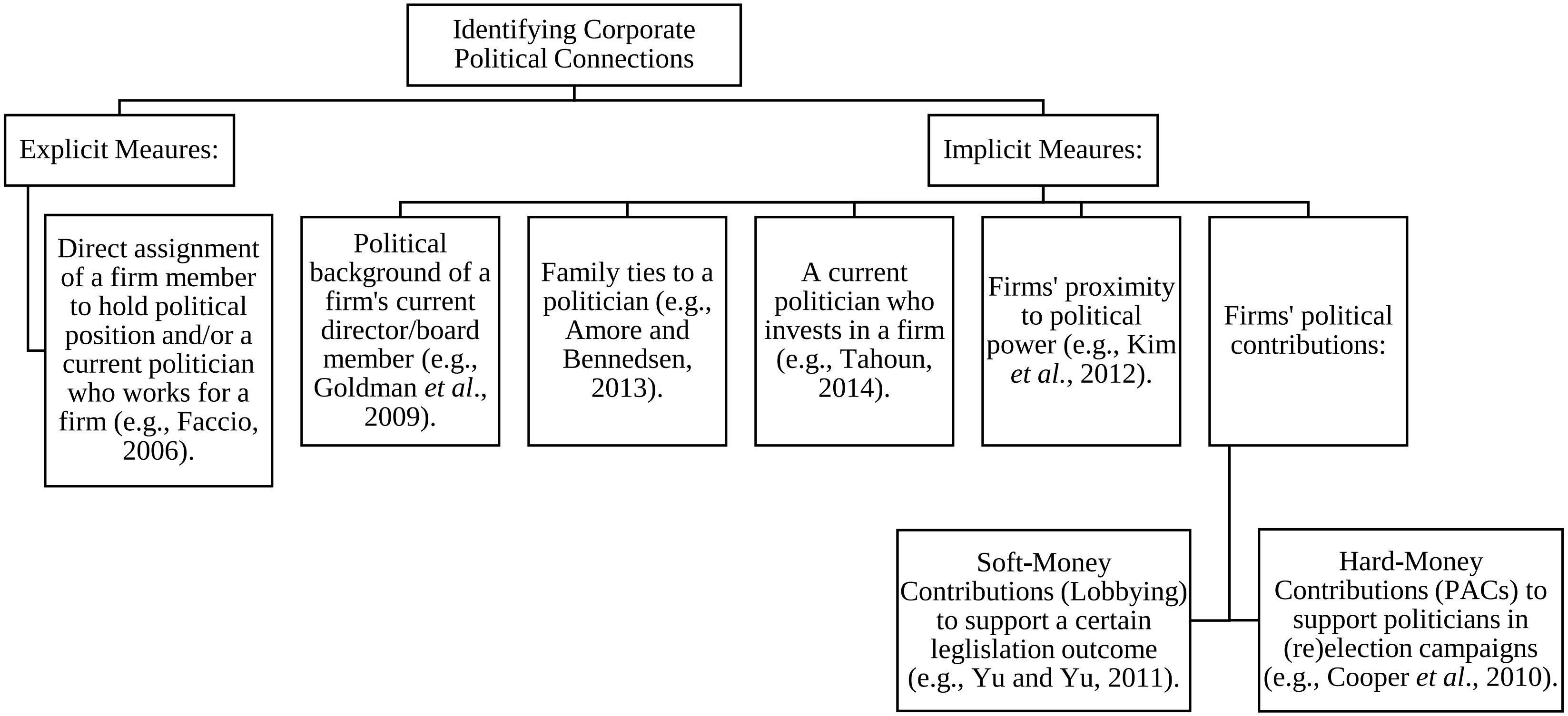

Figure 3.1 Main Approaches to Identify Corporate Political Connections

3.2 The Selected Approach to Identify Corporate Political Connections in the Current Thesis

The decision to use an explicit or implicit measurement to identify political connections depends highly on a study's purpose, context, and data availability. In a cross-country study, some implicit measures such as firms' contributions to elections and lobbying activities are impractical as each country has its own political system. When a study targets a specific country, more implicit methods are often employed, as is evident in studies within the US context, where scholars tend to rely on firms' contributions to elections (e.g., Masters and Keim, 1985; Cooper *et al.*, 2010; Wellman, 2017; Pham, 2019) and lobbying activities (e.g., Yu and Yu, 2011; Blanes i Vidal *et al.*, 2012; Antia *et al.*, 2013; Akey, 2015) to measure US firms' political connections. The main advantage of using contributions to politicians through Political Action Committees (PACs) in their (re)election campaigns or lobbying activities as a proxy for US firms is that these are objective measures, and hence the subjectivity associated with other measures such as the relationship of a businessperson to current and/or previous politicians can be avoided (Hill *et al.*, 2014)[3].

While both practices (PACs and lobbying) are alternative ways firms use to reach the Congress members in the US, the current study chooses PACs as its political connections proxy for the following reasons. First, firms and other contributors must disclose the identity of each receiving politician when they make hard-money contributions through PACs. Such disclosures are linked to the attributes of the political candidates (e.g., the candidate ID and the political party affiliation), which in turn give detailed insights into the connection between each firm and its supported political candidates. This means the available data describes exactly to which politician the fund is allocated. Thus, further investigations can be done using this detailed information, including into the strength of

[3] While Faccio's (2006) definition of political connections was widely utilized in the literature, it is not the best for categorizing US firms as politically connected because top-level US government officials are not allowed to be large shareholders or top officers (Hill *et al.*, 2014). Hence, according to the same authors, if Faccio's (2006) definition is used in the US context, only part of the definition will be applicable, which is when a large shareholder or top officer is closely related to a top politician or party.

firms' relationships with politicians. Such an advantage is missed in lobbying, where it is difficult to identify the cashflows each politician receives. Second, firms commonly provide hard-money contributions through PACs to gain access to legislators and to build relationships with these ultimate decision-makers, meaning these firms can influence legislation and extract information. This contrasts with lobbying, which focuses only on influencing legislation outcomes (Wellman, 2017). Hence, using PACs as a proxy better serves the current study's objectives. Third, soft-money contributions to politicians through lobbying only for the purpose of extracting political information is not required to be disclosed under the Lobbying Disclosure Act of 1995. In contrast, hard-money contributors are obliged to be disclosed and to contribute under certain requirements that are tracked and monitored by the Federal Election Commission (FEC) (Ovtchinnikov *et al.*, 2020). For these reasons, the current study uses PACs as a proxy for measuring political connections in the US as it is considered a significant method (Kroszner and Stratmann, 1998) and positively correlates with other measures of political connections (Bombardini and Trebbi, 2012; Akey, 2015). Given their significance here, PACs need clarifying and exploring, including the major regulations the FEC imposes on them.

3.2.1 Political Action Committees (PACs)

In the US, corporations can contribute to politicians' electoral campaigns through their sponsored PAC – a committee that explicitly fundraises for candidates who align with their policy preferences and share their ideology (Poole *et al.*, 1987). Such political contributions are legal and heavily monitored by an independent regulatory agency, namely the FEC. Although PACs date back to 1944 (OpenSecrets, 2019), they have experienced much growth in recent decades. According to finance reports filed with the FEC, PACs raised $2.6 billion in the first 18 months of the 2017-2018 election cycle, $316.8 million of which was raised by corporations' PACs[4].

[4] https://www.fec.gov/updates/statistical-summary-18-month-campaign-activity-2017-2018-election-cycle/

The guidelines and regulations relating to PACs' activities are proposed and monitored by the FEC. According to the latest Campaign Guide for Corporation and Labor Organizations of the FEC, any political contribution of $200 or more requires disclosure. Also, firms cannot contribute directly to political campaigns; instead, under Federal Election Law this must be done by establishing a Separate Segregated Fund (SSF), more commonly called a PAC. While firms can pay for the establishment, overheads, and fundraising expenses of PACs, they are prohibited from giving funds from the treasury as contributions to federal candidates. Contributions should come from restricted individuals, namely firms' executive and administrative personnel and their families, in addition to stockholders and their families. Notably, decisions regarding PACs and distributing contributions typically come from firms' top executives (Federal Election Commission, 2018). The current thesis used qualified PACs where 50 or more of the corporation members contributed to support political candidates, following Pham (2019).

According to the Federal Election Commission Act passed by Congress in 1971, for each two-year election cycle a qualified PAC can contribute up to $5,000 to a candidate during a primary election and up to $5,000 during a general election, totalling $10,000 per candidate per election cycle. Notably, the Bipartisan Campaign Reform Act passed in 2002 had no changes on ceiling limits of contributions made by PACs (Federal Election Commission, 2018; OpenSecrets, 2019).

3.2.2 Data Sources for Corporate Political Connections

The raw data on corporate political contributions come from the FEC datasets. The FEC provides two-year election files containing information on each PAC, i.e., amount provided, details of beneficiaries, each contribution date, and details on the candidates who are receiving the contributions (Federal Election Commission, 2018). Thus, as mentioned earlier, identifying political connections through PACs is a significant proxy for US firms as the data are traceable.

The data for the period 1985-2018 were obtained in September 2019 from three files on the FEC website: 'Committee Master', 'Contributions from Committees to Candidates and Individual Expenditures', and 'Candidate Master'. Each file provides certain information, all of which is linked by the committee identifier (Committee ID) and the election cycle (Cycle). This information is clarified in the next three subsections that explain how contributors' information, contributors' financial transactions, and candidates' information were obtained from the above three FEC files. Figure 3.2's flow diagram shows how the data were generated from each file[5].

[5] This thesis provides details of the process of extracting the data from the FEC datasets as they are not straightforward, and each file contains a certain type of information. The researcher found challenges at the beginning to extract and merge the political contributions data from the FEC datasets. So, providing the process of generating such data is considered the first initiative that has not been done before, to the best of the researcher's knowledge, and can be useful for future studies. Special thanks to Pham (2019), who had used the same approach of identifying political connections as the one used in this thesis, for the support provided whenever challenges were faced about extracting and combining the data obtained from the FEC.

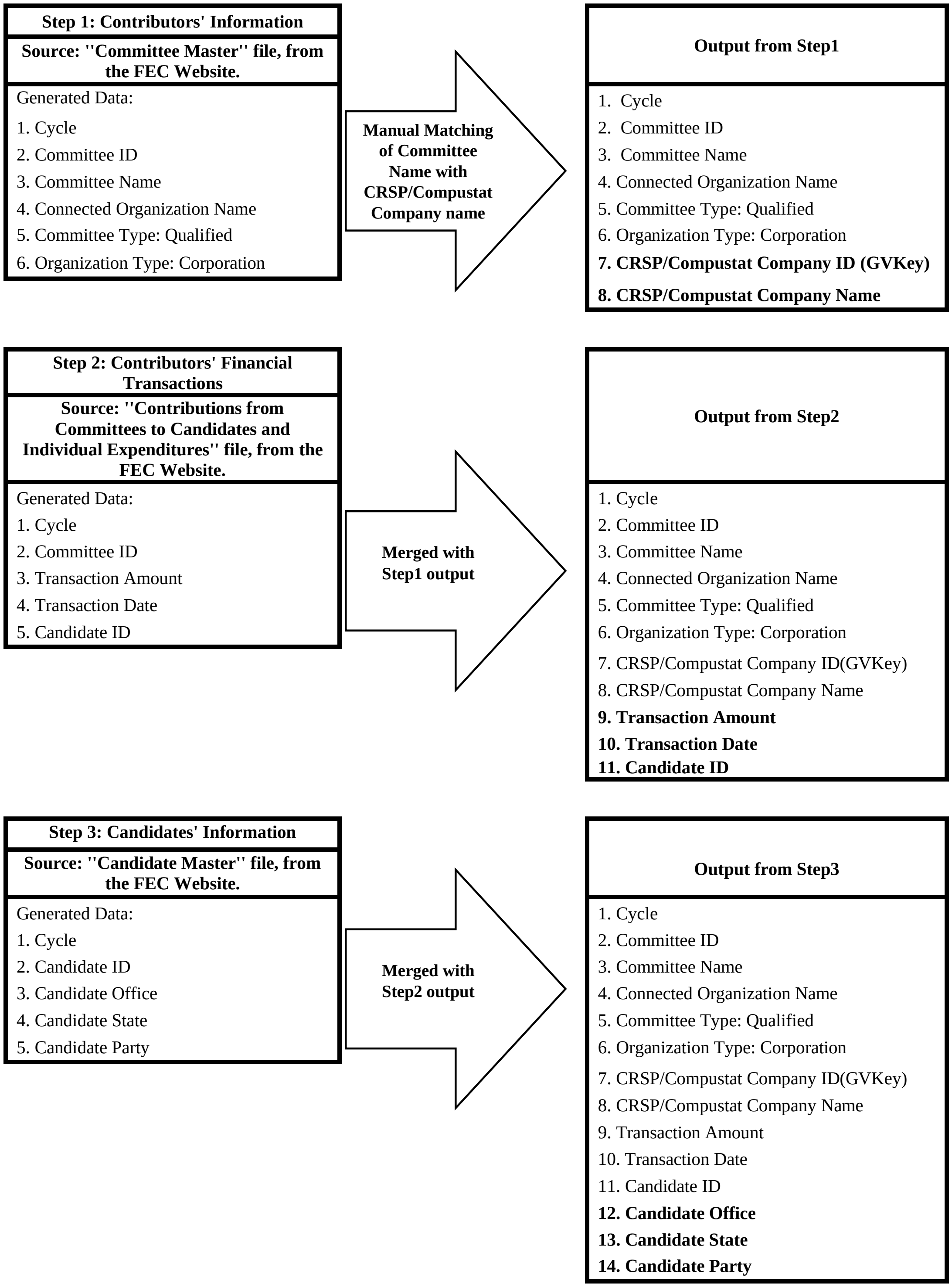

Figure 3.2 Corporate Political Connection Data Collection Process

This flow diagram shows the steps and data sources used to collect the data regarding firms with hard-money contributions to politicians (1985-2018). The main data source is the FEC datasets.

3.2.2.1 Contributors' Information

As step one in Figure 3.2 shows, the 'Committee Master' file provides required details on the contributors' committees such as ID, Official Name, Type, Connected Organization Name and Type, etc. The file also provides the Election Cycle, which is important for linking this file with others, as will be discussed later.

Committee Type was helpful to identify Qualified PACs, or those committees who (i) have been registered with the FEC for six months or more; (ii) received contributions from more than 50 people; and (iii) made contributions to five or more federal candidates. Focusing on Qualified PACs (i.e., SSFs) can reflect a significant political connection, where more than 50 people from a certain corporation, who are either executives, administrative personnel, shareholders, or their families, make contributions.

The 'Committee Master' file data classify contributors into seven distinct groups who contribute to all candidates running for President, Office in the Senate, or House of Representatives. These groups are (1) individuals, (2) labour organizations, (3) corporations, (4) trade membership and health organizations, (5) corporations without capital stock, (6) party committees, and (7) non-party committees (Cooper *et al.*, 2010). However, since the current study focuses on firms, the corporations' contributions through their sponsored PACs (the third group, namely corporations) was selected among all donating groups to identify the corporate political connection, a widely used approach in political-connection research (e.g., Cooper *et al.*, 2010; Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020).

As step one in Figure 3.2 shows, Qualified PACs (Q) were filtered from the 'Committee Type' field in the 'Committee Master' file, and Corporations (C) were filtered from the 'Organization Type' field from the same file. Firm names from the CRSP/Compustat database were manually matched with the selected qualified committees that represent corporations based on the 'Committee Name', which is also available in the 'Committee Master' file. The FEC requires the Committee Name to include the corporation name (the sponsoring/connected organization[6]) and may include some additional standard abbreviations such as 'Company' or other similar words. Moreover, the full committee name can include the acronym 'PAC' (Federal Election Commission, 2018)[7]. In some cases, the available corporation name represents a subsidiary but in the Compustat database only its parent company name is available. In such cases, the subsidiary firm was matched with its parent firm, similarly to Cooper *et al.* (2010). Regarding name changes, the CRSP/Compustat history names were used to find the appropriate matching name, resembling Cooper *et al.*'s (2010) approach.

3.2.2.2 Contributors' Financial Transactions to Candidates

The second step in the political connection data-collection process involved clarifying the contributors' financial transactions (through PACs) and the PACs' networks. Such data were also derived from the FEC website, namely from a file called 'Contributions from Committees to Candidates and Individual Expenditures'. This file identifies the amount of contributions and independent expenditures[8] made to a candidate during the two-year election cycle by a PAC, a party committee, a candidate committee, or another federal committee. It also provides detailed information including the committees' IDs, receiving candidate's ID, and date of contribution.

Using the Committee ID and the Election Cycle, the researcher matched the Qualified Corporations PACs obtained earlier from the 'Committee Master' with the contribution amounts, contribution dates, and recipients' IDs, as presented in the second step's output in Figure 3.2.

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[6] A Connected Organization represents the corporation or the union that creates, administers, or provides financial support to a PAC, whether directly or indirectly (Federal Election Commission, 2018).

[7] In less than 0.01% cases of the sample, the Committee Name does not clearly represent a corporation name. In such cases, a company name from CRSP/Compustat was matched with the Connected Organization Name, which is also available in the "Committee Master File". The researcher matched the company name with the Committee Name first rather than the Connected Organization Name as the latter often contains a missing value.

[8] PACs may support (or oppose) candidates by making independent expenditures. Independent expenditures are not contributions so are not captured in the current thesis' empirical chapters.

3.2.2.3 Candidates' Information

The third step involved obtaining information about the candidates who were receiving the contributions in each cycle from a file called 'Candidate Master' on the FEC website. As Figure 3.2's third step shows, for each candidate the researcher collected the receiving candidate's identity, the sought-after public office, the State for which the candidate is running, and the candidate's party affiliation.

As the third step's output shows, the researcher merged the identified contributing firms, amount, date of contribution, and supported candidates' information into one file. After excluding the contributions not assigned to a certain candidate (i.e., independent expenditures), and those from unidentifiable committees, the number of uniquely identified firms with political contributions is 2,226 from 1985-2018. After excluding financial firms, firms with missing total assets, and firms not listed on US stock exchanges, the number of uniquely identified firms with political contributions is 1,177 from 1985-2018[9].

Using the collected data on corporate political contributions, this work provides some descriptive statistics on these contributions. This is essential for a better understanding of the size and frequency of contributions to support candidates, and how such political support varies across different industries.

3.2.3 Descriptive Statistics on Corporate Political Contributions

Before clarifying the exact measurements used to quantify corporate political connections through their hard-money contributions, firms' contribution characteristics per election cycle from 1985-2018 need to be explained. Table 3.1 presents the characteristics of corporate political contributions by election cycle.

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[9] The number of uniquely identified politically connected firms will be reduced further in later stages, when the political connection data are merged with other data and the financial variables in each empirical chapter.

Importantly, the dollar amounts of contributions in Table 3.1 have been adjusted to 1985 prices using the annual Consumer Price Index (CPI) data from the Bureau of Labor Statistics (BLS)[10]. As the table shows, the average total donation amount per firm per cycle gradually increased from $61,274 in 1986 to $100,412 in 2018. The average contribution per firm to a specific candidate also rose gradually. In the 1986 election cycle, a typical firm contributed on average $969 per candidate. This increased cycle-on-cycle to reach $1,594 per candidate in the 2018 election cycle. The number of candidates supported by a typical firm varies little across cycles, ranging from at least 53 per firm in 2003-2004 to a maximum of 67 per firm in 2013-2014. Regarding supported candidates' political party, firms' contributions tended to be continually more towards Republican than Democratic candidates, at an average of 37 Republican politicians and 25 Democratic politicians per election cycle. The number of supported candidates with other political party affiliations (e.g., Libertarians) is minor, where fewer than three candidates are supported per election cycle. The whole distribution of average contributions per firm also moves gradually to the right with the maximum amount being at the cap of $10,000[11].

Overall, Table 3.1 illustrates the increasing interest of firms in providing hard-money contributions, as their real contributions grew by around 64% from $61,274 to $100,412 between 1985 and 2018. The total donation amount per cycle and the amount received per candidate per cycle presented in Table 3.1 are comparable to those reported by Akey (2015) and Correia (2014) when using their criteria[12].

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[10] The annual dollar values are adjusted for inflation using 1985 as a base year in the following formula: adjusted dollar amount in year t= (CPI of year 1985/CPI of year t) x nominal dollar amount in year t (Mankiw, 2004).

[11] According to the Federal Election Commission Act of 1971, a PAC can contribute up to $10,000 to a candidate per election cycle. This limit was not changed even after the Bipartisan Campaign Reform Act of 2002 (Cooper *et al*., 2010). Although in each cycle at least 99% of donating corporations comply with the contributing limit, some extreme donations exceed this. The FEC requires contribution recipients to refund amounts exceeding the limit. In such cases the Committee must deduct the excess amount and record it as a negative entry in its coming report if the excess amount was already itemized. Thus, the minimum and maximum in Table 3.1 are calculated in each cycle by applying the condition that it must be above zero and less than $10,001.

[12] For its robustness checks, this research took the same period covered by Akey (2015) (1991-2010) and calculated the average nominal total donation amounts on an annual basis, which are shown to be

Similarly, evaluating political contributions at an industry-specific level offers critical insights. Fama and French propose eight industry classifications, ranging from five to 49 industries, based on SIC codes. The Thirty-Group classification is used for the descriptive statistics in Table 3.2[13], which shows the industry-specific average number of supported candidates per election cycle and contributions based on candidates' office (President, House, or Senate). Moreover, it presents the average number of firms that contributed from each industry (Panel B). After excluding the financial sector, Table 3.2 shows the top five industries, and the remaining industries were averaged[14].

As Panel A of Table 3.2 shows, the top five industries for number of supported candidates per cycle are respectively, Telecommunication (628), Utilities (592), Transportation (587), Healthcare (525), and Business Equipment (509). All these sectors are notably under high regulation, a point Carboni (2017) made when demonstrating that firms in highly regulated industries are more likely to have political connections so they could then be involved in shaping any regulations that have a significant influence on their business activities. Another possible reason is the economic benefits that some industries could gain through their political connections. For instance, within the Telecommunication, Healthcare, and Business Equipment industries, firms need to invest considerably in R&D, but they might be discouraged from doing so as such investments are highly uncertain and highly influenced by policy uncertainty. Hence, firms may tend to establish political connections to reduce the uncertainty related to R&D investments. This possible reason created the idea of examining the association between corporate political connections and R&D investments, which will be tested in Chapter 4. When evaluating the *number* of

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comparable. Additionally, a robustness check for number of supported candidates here involves comparing the average annual number of supported candidates in the current study (1985-2006) with those of Correia's (2014) work (1980 and 2006), which are 39 and 32 candidates respectively. So, the average number of supported candidates of the current study are comparable with Correia (2014).

[13] When 12-industry and 17-industry classifications were applied, many data were classified as 'Other industry'. Thus, the 30-industry classification facilitated a better analysis.

[14] The codes of the 30 industries were obtained on November 3, 2019 from https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_30_ind_port.html

contributing firms by industry, Panel B presented in the last column of Table 3.2 shows that the highest number of politically donating firms are from Utilities (65 firms/cycle) and Healthcare (45 firms/cycle). The differences in the number of politically contributing firms by industry are explained by Grier *et al.* (1994) who documented that industries having greater potential benefits from government support tend to have more systematic political contributions. However, they argue that the ability to realize these benefits is particularly constrained by the overall concerns that are faced by firms in the industry. Cooper *et al.* (2010) add that as the number of firms with political contributions within an industry increases, the possibility of a firm within that industry to be politically active increases; which indicates that firms are encouraged to be more politically active as their industry peers are already connected to politicians. Hence, their concerns can be collectively reported to politicians and their possibility to gain the potential benefits increases (Grier *et al.*, 1994).

Regarding the political distribution among different office representatives, Panel A of Table 3.2 shows most are for the House Representatives across all sectors. Overall, industries allocate 81.5% of their dollar contributions to House Representatives and 18% to Senates, with firms' contributions to Presidents being only 0.5%[15]. Putting another way, between 1985 and 2018 firms' contributions supported around 424 House Representatives, 93 Senates, and only four Presidential candidates per election cycle across all sectors. A possible reason behind the highest support for House Representatives is the greater control they have over bills and spending. Thus, firms find it more beneficial to support House Representatives with political contributions as any potential firm value is likely to come through them. Cooper *et al.* (2010) argued similarly after controlling for the Senate effect, though they added that both the House of Representatives and the Senate have positive economic results for donating firms. Another possible reason for the greater allocation to candidates for the House of Representatives when compared to Senators is the variation

[15] It is not surprising that less than 1% of the corporate political contributions is allocated for Presidential candidates (Cooper *et al.*, 2010), as corporations tend to target the laws and regulations, which are mainly the responsibility of the Congress members (the House of Representatives and the Senators).

in their institutional structure. Grier and Munger (1993) argue that the structures of the House of Representatives and Senate differ, and committee membership in the Senate carries less weight than it does in the House. They also suggest that if the Senate's institutional structure reduces the marginal benefits of committee membership, the distribution of PAC contributions in the Senate may differ from that to the House. Another reason could be the variation in the serving period between House Representatives and Senators. Because Members of the House serve two-year term lengths, they are typically more responsive to their constituents' concerns (including those of corporations) than Senators, who have six-year terms. Senators cannot ignore their constituents' needs, however, as only one third of them are up for re-election every two years while the remaining two-thirds stay in their positions and hence can take more time over their decisions. Moreover, the proportion of House, compared to Senate, seats running for (re)election per election cycle is much greater. In any given electoral cycle, only 33-35 Senate seats are up for election vs. all 435 House seats; the remaining two-thirds of Senate therefore remain current members (Milyo *et al.*, 2000). A further possible reason for the higher allocation of contributions to House candidates could be the type of committees that comprise both the House of Representatives and Senate, i.e., House Committees are more involved in matters that concern corporations. For instance, the Ways and Means House Committee considers legislations around taxation, a subject that most concerns corporations. Hence, corporations find it more beneficial to contribute to the relevant House Committee(s) that could influence their businesses, indicating that Committee Members of the House of Representatives have considerable power to influence policy in their jurisdiction (Akey, 2015). It can be seen that there are clearly many different possible reasons for the higher allocation of contributions to the House Representatives compared to those allocated to the Senate. Though, as explained by Cooper *et al.* (2010), both House Representatives and Senators have positive value for donating firms, as Senators need to approve any bill raised by the Committees of the House of Representatives.

Analysing the characteristics of corporate hard-money contributions has shown how firms have tended to make continual and gradually increasing contributions to politicians between 1985 and 2018. Also, firms are more supportive of politicians who are Republicans, and their hard-money contributions are more towards supporting House Representatives and vary across sectors. After analysing the characteristics of the corporate hard-money contributions to political candidates, the measurements of political connections that are used in the current thesis are explained next.

3.2.4 Measurements of Corporate Political Connectedness

The two main measures of corporate political connections used in the current thesis are firms' number of supported candidates and the sum of their dollar contributions made to those candidates, both done via a multi-period time horizon (a six-year window). Using such a process (multi-period time horizon) is essential as prior evidence shows that firms tend to build long-term relationships with politicians by providing frequent political contributions (e.g., Ovtchinnikov *et al.*, 2020). The reason behind the former measure (the number of supported candidates) is the prior evidence and theories indicating that differential access to policymakers increases with increases in the number of candidates supported (Herndon, 1982). Thus, similarly to Cooper *et al.* (2010), Wellman (2017), Pham (2019) and Ovtchinnikov *et al.* (2020), the first measure of corporate political connections is *PC_Candidate*, which is the natural logarithm of one plus the total number of political candidates a firm supports over a six-year window:

$$PC\_Candidate_{it} = Ln\left(1 + \sum_{j=1}^{J} Candidate_{jt,t-5}\right)$$

where $Candidate_{jt,t-5}$ is an indicator that equals one if the firm contributed to $Candidate_{j}$ over the years t-5 to t.

The second measure is a supplementary proxy concerning the total amount of dollar contributions to each candidate over a six-year window. Specifically, the second measure, *PC_Financial*, is defined as:

$$PC\_Financial_{it} = Ln\left(1 + \sum_{j=1}^{J} Amount_{jt,t-5}\right)$$

where the $Amount_{jt,t-5}$ is the sum of total dollar contribution a firm provides to $Candidate_j$ over the years t-5 to t. Such a proxy was also used by Cooper *et al.* (2010), Wellman (2017), Pham (2019) and Ovtchinnikov *et al.* (2020).

The selected approach and the measures used to identify corporate political connections described in this chapter will be briefly explained in each empirical chapter, to remind the reader.

It is important to now discuss whether corporate political contributions are considered to be a relational or transactional approach; Hillman and Hitt (1999) differentiate between these two approaches that firms pursue when they have political investments. The former exists when firms tend to build long-term relationships with politicians, so that when needed, the vehicle for access/influence is already in place. This relational approach is similar to the one used in the current thesis, where the cumulative intensity of political connections is through a long-term period (a six-year window). However, the latter approach exists when firms decide to establish political connections in an ad hoc manner, as they wait until some issues arise to establish political connections. This same approach will be used in some robustness checks in the empirical chapters of this thesis.

After reviewing the approaches used to identify corporate political connections, and the selected approach and measurements used in this thesis, Chapters 4, 5, and 6 are the empirical chapters.

Tables of Chapter 3

Table 3.1 Contribution Characteristics

This table presents firms' political contribution characteristics for each election cycle from 1985-2018: the total dollar value of contributions per firm, the average dollar value of contribution per firm per candidate, the number of candidates supported per firm, and the number of supported candidates based on their political party. All the data are from the FEC datasets. The table comprises all publicly traded non-financial US firms with political contributions and non-missing values for total assets. The dollar amounts of contributions are adjusted at 1985 prices using the annual CPI data from the BLS.

Election Cycle	$ Total Donating Amount (Average)	Average $ Contribution/Candidate						Number of Supported Candidates (Average)	A. Number of Republicans	B. Number of Democratics	C. Others
		Mean	Min	P25	Median	P75	Max				
1986	61,274	969	5	295	500	991	10,000	63	38	27	1
1988	64,405	1,007	6	455	555	947	9,944	64	36	30	1
1990	62,996	1,040	9	412	724	1,127	9,757	61	34	29	1
1992	65,809	1,062	4	383	767	1,167	9,760	62	34	30	2
1994	62,939	1,066	4	363	726	1,117	9,978	59	32	29	2
1996	65,302	1,081	4	353	686	1,372	9,944	61	44	18	2
1998	60,993	1,134	2	335	665	1,331	9,984	54	37	18	1
2000	69,825	1,256	5	625	646	1,292	9,811	56	38	20	1
2002	75,283	1,375	2	598	897	1,794	9,626	55	37	20	1
2004	78,013	1,485	3	570	1,139	1,754	9,573	53	36	19	1
2006	85,787	1,572	1	542	1,085	2,169	9,728	55	36	20	1
2008	94,203	1,576	10	519	1,038	2,288	9,708	60	33	29	1
2010	97,438	1,609	4	502	1,003	2,467	9,994	62	32	32	2
2012	100,555	1,589	2	478	1,172	2,343	9,567	64	41	25	1
2014	106,295	1,606	4	462	1,136	2,280	9,201	67	42	26	1
2016	103,243	1,639	2	454	1,135	2,256	9,054	64	41	25	2
2018	100,412	1,594	1	439	1,097	2,169	9,641	64	39	27	2
Total Average	**80,436**	**1,346**	**1**	**478**	**897**	**1,735**	**10,000**	**60**	**37**	**25**	**2**

Table 3.2 Industry-specific Contribution Characteristics

This table presents the average industry-level political contribution characteristics per cycle from 1985-2018: Panel A presents the number of candidates who received political contributions by industry, the number of House Representatives, the number of Senates, and the number of Presidents. Panel B presents the average number of contributing firms per industry. All the data on political contributions are from the FEC datasets. Industry Classification is based on Fama and French's 30-industry classification. The table comprises all publicly traded non-financial US firms with political contributions and non-missing values for total assets.

Industry	***Panel A:*** **Average Number of Candidates/Cycle**				***Panel B:***
	Total number of Candidates	**A. Number of House**	**B. Number of Senates**	**C. Number of Presidents**	**No. of Firms**
Telcom	628	515	108	4	25
Utilities	592	485	104	5	65
Transportation	587	484	101	4	26
Healthcare	525	422	100	3	45
Business Equipment	509	413	93	3	33
Average of the remaining 24 industries[16]	279	223	55	2	12
Total Average	**520**	**424**	**93**	**4**	**34**
Allocation	**100%**	**81.5%**	**18.0%**	**0.5%**	

[16] The financial industry is excluded.

Chapter 4: Corporate Political Connections and Executive Equity Ownership: Implications for Research and Development[17]

Keywords: political connections; political hard-money contributions; campaign contributions; R&D; innovation; executive ownership; managerial stock ownership; risk-taking; corporate governance.

[17] This chapter was presented at the Doctoral Colloquium (DC) of the R&D Management Conference 2021. The author thanks the Academic Chairman, Professor James Cunningham (The Director of the Research and Knowledge Exchange at the Newcastle Business School), and the participants for their valuable feedback.

4.1 Introduction

Corporate political connections have attracted worldwide academic interest. A large body of research shows that political connections increase firm value (e.g., Goldman *et al.*, 2009; Cooper *et al.*, 2010). One way these connections enhance value is through preferential access to changes in or continuance of government policies (e.g., Grossman and Helpman, 1994; Faccio, 2006). Provided that politically connected firms can have preferential access to future policies, it is of interest to investigate how this advantage could be associated with their R&D investments; such knowledge would be useful as R&D is a driver of economic growth in contemporaneous economies (e.g., Brown *et al.*, 2009). In this respect, this chapter's first objective is to investigate the association between corporate political connections and R&D investments. Moreover, R&D relates to executive risk-taking behaviour regarding whether to accept or reject such investments (Barker and Mueller, 2002). Executives' ownership and its influence on risk-taking and the investment choices of R&D have been widely studied, and some studies show that ownership concentration is negatively associated with R&D (e.g., Ghosh *et al.*, 2007). The second objective of this chapter is to investigate whether political connections can positively impact the association between executives' ownership and R&D.

Investment in R&D is a driver that promotes a nation's long-term economic growth (Li, 2011). Fundamental to this is knowledge accumulation and innovative activity, which comes via R&D. Empirical evidence supports the theoretical prediction that R&D investments positively influence economic growth at both a firm (Del Monte and Papagni, 2003) and an aggregate level (Sterlacchini, 2008). As R&D investments facilitate overall economic growth, they are mostly funded by private entities in G20 countries. A recent report released by the UNESCO Institute for Statistics (UIS)[18], says the US, one of the largest countries in terms of R&D expenditure in pure dollar terms, spent $543 billion on R&D in 2017 – 2.8% of the country's GDP – and 62.5% of R&D investments came directly from businesses[19]. Hence, the corporate sector plays a massive role in overall

[18] http://uis.unesco.org/en/news/new-uis-data-sdg-9-5-research-and-development
[19] http://data.uis.unesco.org

R&D investments and a country's economy. At the corporate level, R&D investments generate positive outcomes. For instance, increasing R&D spending by one dollar generates a two-dollar increase in long-term profits and leads to a five-dollar increase in a firm's market value (Sougiannis, 1994). Higher R&D spending is also associated with higher firm productivity (Griliches, 1986), higher share prices (Chan *et al.*, 1990), and greater long-term abnormal performance (Eberhart *et al.*, 2004). Given the essential role of corporate R&D investments in driving growth at both firm and country levels, a considerable body of research has been dedicated to identifying corporate R&D investments' determinants. However, little is known about whether corporate political connections are associated with R&D investments.

Pharmaceutical firms are consistently near the top, in respect of federal political campaign contributions, which shows the importance of such contributions in pharmaceutical firms' R&D objectives, such as ensuring quicker approval for drugs and products entering the market[20] and increasing access to privileged information about policy changes. This implies that political contributions to political candidates are associated with R&D investments. In fairly recent trending news on corporate hard-money contributions to politicians, a STAT News article noted how pharmaceutical firms were, as stated in its headline, "showering Congress with cash" during the COVID-19 pandemic (Facher, 2020)[21]. The same article says these firms donate to several incumbent members of Congress but avoid contributing to Presidential candidates as they see "little utility in placing presidential bets" (Facher, 2020). Sheila Krumholz, the Executive Director of the Center for Responsive Politics, was quoted as commenting on the connections formed from these contributions, saying: "It's less about a particular deliverable and more about creating relationships," which may be so, but it is also about more, as she subsequently revealed that it is about "greasing the skids on a particular issue for which a company has great concern or sees great opportunity" (Facher, 2020). This indicates that building

[20] https://www.opensecrets.org/industries/indus.php?cycle=2020&ind=h04
[21] https://www.statnews.com/feature/prescription-politics/prescription-politics/

relationships with several politicians involved in policy and regulations can be a means of gaining desired information that ultimately facilitates R&D investments[22].

Documented determinants of corporate R&D investments include firm characteristics such as financial resources and financial constraints (Himmelberg and Petersen, 1994; Brown *et al.*, 2009, 2013; Acharya and Xu, 2017) as well as industry characteristics such as type (Herzlinger, 2006; Golec *et al.*, 2010) and concentration (Connolly and Hirschey, 1984; Symeonidis, 1996). Those concerning governance structures include independent directors' (Faleye *et al.*, 2011) and top executives' ownership (Barker and Mueller, 2002; Kim and Lu, 2011; Beyer *et al.*, 2012). More recent contributions have considered CEOs' traits as crucial R&D determinants. For example, CEOs' overconfidence (Hirshleifer *et al.*, 2012) and their social connections (Faleye *et al.*, 2014) have been deemed to influence their willingness to engage in risky projects, consequently impacting their R&D investments. However, little is known about the association between other types of connections, specifically political ones, and R&D investments and this is therefore one of the objectives of this thesis.

Firms' long-term connections with politicians are a strategic resource that can help in promoting, neutralizing, or even managing the external factors that affect their investments (Russo and Fouts, 1997). Benefits include preferential access to external financing (e.g., Claessens *et al.*, 2008), lower cost of equity capital (e.g., Boubakri *et al.*, 2012), increased likelihood of bailouts during financial distress (e.g., Faccio *et al.*, 2006), and improved chances of receiving government procurement contracts (e.g., Tahoun, 2014). However, evidence on the effect of political connections on firms' financial performance is contentious. Some studies note negative impacts (e.g., Fisman, 2001; Faccio *et al.*, 2006; Duchin and Sosyura, 2012; Hadani and Schuler, 2013; Piotroski and Zhang, 2014; Unsal *et al.*, 2016), while others indicate positive ones (e.g., Claessens *et*

[22] While the provided example shows the association between political connections and R&D, there is a possible existence of reverse causality between political connections and R&D. To mitigate such an issue, lagged models are applied as a robustness check in Section 4.4.2.1.2.

al., 2008; Bunkanwanicha and Wiwattanakantang, 2009; Goldman *et al.*, 2009; Cooper *et al.*, 2010; Bunkanwanicha *et al.*, 2013; Akey, 2015; Lin *et al.*, 2015; Xu *et al.*, 2015). This work acknowledges and addresses this debate, but it also wishes to avoid limiting its scope simply to whether political connections influence firms' financial performance positively or negatively (or even identifying if this is neutral). Instead, it is more intrigued by other findings on the mechanics of such influences, as some argue that this effect on firms' financial performance can be positive or negative *depending on several factors* including R&D intensity (Cao *et al.*, 2018) and a firm's ownership structure (Wang, 2015). It is thus more concerned about *what* makes any such influence happen. Cao *et al.* (2017) called for further understanding of the real effects of corporate political connections. Evidently, the understanding and association between corporate political connections and R&D investments is incomplete.

Managers' equity ownership can influence risk-taking and investment choices of R&D (Hirshleifer and Suh, 1992; Green, 1995; Barker and Mueller, 2002; Low, 2009). It is also suggested that executive equity ownership affects their decisions on investing in political connections. Some say that the proportion of managerial ownership is negatively associated with the propensity for firms' political donations (Aggarwal *et al.*, 2012; Ozer and Alakent, 2013). Others suggest that executives with ownership may increase their political contributions, assuming that such contributions will increase their firm's value and, consequently, their wealth (Gupta and Swenson, 2003), so firms with more managerial ownership make higher political investments. Researchers have thus examined links between managerial ownership and R&D investment and even those between managerial ownership and political connections. Yet, to the best of the researcher's knowledge and despite R&D investments being dependent on decisions by firms' top executives (Barker and Mueller, 2002), studies have not examined how corporate political connections can influence the association between executives' equity ownership and R&D investments (and hence innovation) – that is, until now. This study addresses this gap, as it examines the impact of corporate political connections on the association between managerial stock ownership and R&D investments.

This chapter examines the association between corporate political connections and R&D investments. Additionally, it assesses the impact of those connections on the association between executives' equity ownership and R&D investments. Such examinations are conducted using fixed effects Ordinary Least Squares (OLS) regression models on panel data of publicly-listed US firms (S&P1500) from 1992-2018. The main sample is derived from three main sources – one for each different data type. First, the corporate political contributions data were obtained from the FEC datasets. Second, executives' ownership data were obtained from the ExecuComp database, which comprises only S&P1500 index firms. Third, financial variables, including the dependent variable of the current study (R&D Expenditures), were obtained from the Compustat database. The final sample comprises 39,805 firm-year observations during the period 1992-2018.

This work's findings suggest that corporate political connections are positively associated with R&D investments. This suggestion is in line with the view of Herndon (1982), who found that the more support that is given to politicians, the more access a firm has to policymakers. With greater access to politicians, the likelihood of accessing useful information increases, which in turn increases the likelihood that a firm will invest more in R&D and leverage this information advantage. Such an interpretation is in line with Ovtchinnikov *et al.* (2020), who found that firms that support more candidates acquire better information, which ultimately improves innovation output. The findings also show that the influence of corporate political connections on the association between executives' equity ownership and R&D investments is not statistically significant. One possible explanation for the insignificant impact could well be the small within-firm changes in executive ownership concentration from year to year as proposed by Zhou (2001), and is the cancelling effect resulting from interacting corporate political connections with executive ownership. Hence, there is not enough evidence to support the assumption of a positive impact of political connections on the association between executives' equity ownership and R&D investments.

This chapter contributes to the literature in several ways. It contributes to R&D literature, as prior studies have not focused on corporate political connections through hard-money contributions as a determinant of R&D investments, although this is not its only focus. Also, limited studies have considered corporate political connections as a driver for innovation but instead have focused mainly on innovation output, e.g., as measured by the number of granted patents and patent citations (Ovtchinnikov *et al.*, 2020). Testing the effect of political connections on innovation input (R&D), on the other hand, can offer more unique and deeper contributions that add to those reported by Ovtchinnikov *et al.* (2020)[23]. Therefore, this research contributes to the R&D literature by showing that corporate political connection is a significant stimulus for managers' willingness to invest in R&D.

Many studies have investigated the positive effect of corporate political connections on firms' value and financial performance (e.g., Goldman *et al.*, 2009; Cooper *et al.*, 2010), but the literature provides fewer insights into the precise mechanisms through which such connections can influence the real economic investments, specifically those of R&D. This work fills this gap and enhances our understanding of this field of study.

This study also makes contributions to corporate governance literature. Executive ownership as a measure of executives' risk-taking behaviour, including their decisions on R&D investments, has been widely documented in the literature (Barker and Mueller, 2002; Kim and Lu, 2011; Beyer *et al.*, 2012). The relationship between executive ownership and contributions to politicians has also been examined by academic researchers (Gupta and Swenson, 2003; Aggarwal *et al.*, 2012; Ozer and Alakent, 2013), who already noted various positive and negative effects of managerial ownership on firms' political investments. However, the effect of political connections on the association between executive ownership and risky and irreversible investments, particularly R&D,

[23] Using R&D investments as a measure of innovation, rather than patent counts and patent citations, is critical herein as the former depend on executives' decisions while the latter depend on various external economic processes. Moreover, firms might be investing in R&D but choose not to apply for patents because of the long process of obtaining such certification (Pavitt, 1982).

has not been tested. So, in this sense, this study is making a hitherto uncharted contribution to the literature by examining the influence of political connections on the association between executive ownership and R&D investments.

There are also practical contributions from this study, including important implication for firms' decisions on R&D investments. Prior studies have shown that decision-makers generally depend on market-oriented measures, such as growth opportunities, when deciding on their R&D investments (Ryan and Wiggins, 2002; Bracker and Ramaya, 2011). However, certain non-market-oriented factors have an essential influence on R&D investment decisions, such as personal networks and social connections (Faleye *et al.*, 2014). This chapter provides new insights into the consideration of non-market-oriented factors by exploring how long-term connections to politicians through hard-money contributions can significantly influence firms' R&D investments.

Another practical contribution concerns implications for policymakers. While corporate political contributions facilitate corporate investments in R&D, which consequently influences economic growth, corporate insiders may tend to support certain candidates with the intention of increasing their own advantages. However, investors may have wider concerns, including the desire to be protected from externalities generated by corporate gain-seeking behaviours, including those through political connections. Since corporations in the US are not mandated to disclose their political expenditures in their public reports (Werner, 2017)[24], transparency issues may exist between corporations and their investors. Hence, the current study suggests that policymakers may mandate public companies to disclose their political expenditures in their quarterly/annual reports to increase transparency between corporations and their investors.

[24] While corporate political hard-money contributions are recorded and disclosed by the FEC, the process of matching these contributions with firms' annual financial reports in the current study and many others is done manually. Such manual efforts might be impractical for regular investors for every investment decision they make.

This chapter is organized as follows. Section 4.2 explores the background to this work using prominent pertinent literature and presents the hypotheses development. Section 4.3 covers the sample selection process, data collection, and identification of variables. Section 4.4 presents the results and analyses, and Section 4.5 concludes the chapter.

4.2 Background and Hypotheses Development

As discussed in Chapter 2, regulatory uncertainty concerns most, if not all, companies. In the financial context, firms tend to delay their investments until some or all government policy changes are resolved (Julio and Yook, 2012). The negative influence of political uncertainty[25] regarding future policies and regulations is even stronger when firms' investments are irreversible, such as those in innovation (Gulen and Ion, 2016; Bhattacharya *et al.*, 2017). Given this, firms understandably desire options for lowering this uncertainty, and several studies show that political connections are one such option. For instance, Wellman (2017) said that politically connected firms can access political information and interact with legislators, with the resultant insights and foreknowledge at least partially mitigating policy uncertainty. Wellman (2017) also provided empirical evidence for this by showing the average drop in investments of connected firms during high uncertainty regimes as being approximately 8.1%–13% lower than the total drop non-connected firms experience. Pham (2019) endorsed this argument by noting that the superior information politically connected firms can obtain means they face lower policy uncertainty during periods of economic policy uncertainty. Similarly, Ovtchinnikov *et al.* (2020) argued that firms with political connections are better informed about political costs and have better access to policy information through their hard-money contributions to politicians, meaning they face lower policy uncertainty and have a better innovation output. Overall, the unpredictability of future government policies hinders firms' investments, but establishing political connections with legislators and politicians reduces this uncertainty through benefits such as better access to information (Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020).

[25] Political uncertainty in the context of this thesis specifically focuses on uncertainty about future regulations and not the conflict or instability between partisans within the country or with other countries.

There are limited numbers of studies on the influence of political connections on innovation, indicating a need for further research. Of those that do explore this area, there are different takes and focuses, namely regarding such connections reducing policy uncertainty, with specific results including firms' higher patent counts and patent citations (Ovtchinnikov *et al.*, 2020), increasing investments in capital and R&D after losing their political connections (Kim, 2018), and encountering better availability of resources (e.g., government subsidies) that, in turn, enhance their innovation (Su *et al.*, 2019). The current study complements the existing literature by focusing on whether hard-money contributions to politicians can be associated with firms' innovation input, particularly R&D investments.

Savvy executives understand political connections to be a strategic resource for promoting, neutralizing, or even managing the external factors that influence their firms' investments (Russo and Fouts, 1997), including R&D. RBT supports this view of political connections being valuable resources for bringing superior performance/investments over time (Russo and Fouts, 1997). Thus, via those connections and the information gained from them, firms experience lower uncertainty about future regulations (Ovtchinnikov *et al.*, 2020). This is particularly important, given that executives commonly show greater risk-aversion to undertaking risky investments, especially at least partially irreversible ones, as they carry high uncertainty regarding costs (Bhattacharya *et al.*, 2017) and have significant implications for future cashflows. R&D investments meet such criteria but are also long term (Davis, 2016) so policies possibly changing over time compound such risk. Since uncertainty can negatively affect R&D investments, reducing this uncertainty can encourage more R&D investments. By having connections to politicians, firms can reduce uncertainty and, hence, are expected to make greater investments in R&D, an argument hypothesized as follows:

H1: Corporate political connections are positively associated with R&D investments.

Further, this study examines whether corporate political connections can positively affect the association between executives' equity ownership (a governance mechanism) and R&D investments. The importance of this investigation lies in a gap found in the literature, where several studies examined the association between managerial ownership and political connections and those between managerial ownership and R&D investments, but examining the presence of both political connections and managerial ownership on influencing innovation input decisions, specifically R&D investments, has not yet been studied to the best of the researcher's knowledge. Given that firms' executives control R&D investments and that their ownership highly influences their decisions on such investments (e.g., Green, 1995), political connections may affect how executives with ownership perceive R&D investments, especially because of the reduction in policy uncertainty advantage generated from such connections.

With regard to studies that examined how executives' equity ownership influences companies' political donations/connections, the literature shows mixed results. Some studies argue that managerial ownership is negatively associated with corporate political donations/connections. For instance, Ozer and Alakent (2013) found that executives with higher equity ownership are less likely to make large resource commitments to political donations as such donations do not guarantee shareholder value. In other words, executives aligning with owners through their equity ownership makes them reluctant to invest in relational political connections as these are considered costly, continuous, and not directly linked to bettering a firm's return. Accordingly, they say executives' equity ownership negatively associates with political donations as such ownership makes executives more aligned with the overall shareholder objective of maximizing shareholder value. Similarly, Aggarwal *et al.* (2012) examined how corporate political donations to political candidates in the US link to a firm's return and whether corporate governance influences such an association. They found that governance mechanisms, including insider, block, and institutional ownerships, attenuate the negative association between political donations and a firm's return; while the effect of insider ownership is statistically not significant in their work, they do indicate that firms with good corporate governance practices are less likely to make large contributions to politicians. From a theoretical perspective, Ozer and Alakent (2013) and Aggarwal *et al.* (2012) employed Agency Theory to explain how executives' equity ownership can bring better alignment between managers and owners, resulting in lower political donations. So, according to the mentioned studies, executives' ownership is negatively associated with (reduces) political donations/connections. Other studies, however, argue that managerial ownership is positively associated with corporate political connections, particularly if such connections are expected to generate advantages that better serve the firm value and, consequently, the wealth of managers with ownership. For instance, Gupta and Swenson (2003) found that, in response to a proposed tax law change, firms tend to make larger political campaign contributions to tax-writing members of Congress, and such contributions are positively associated with their tax benefits. More importantly, they found that firms tend to make even greater political campaign contributions when managers own shares in their firms. They explained this by saying that when managers own shares in their firms, their wealth become tightly related to the firm's cashflow and earnings-per-share; hence, if the proposed tax forgiveness law increases the value of a firm's stock, it will consequently increase the wealth of the managers with ownership. Therefore, a positive association exists between managerial ownership and firms' political campaign contributions. Despite the inconclusive views about the effect of managerial ownership on political contributions, executives' equity ownership is an essential mechanism under which those executives focus on strategies that maximize shareholder value (Gomez-Mejia *et al.*, 2003), including their strategy of being politically active.

Concerning the association between executives' equity ownership and R&D, several studies examined this association with mixed results. On the one hand, some studies (e.g., Barker and Mueller, 2002) argue that when executives, particularly CEOs, invest more of their wealth in the firm, their investments in R&D increase; indicating a positive association. One explanation is that equity ownership of executives lowers the agency cost, and encourages them to be more long-term oriented, resulting in a better alignment between their interests and those of shareholders, which better serves the maximization of shareholders' wealth objective (Baysinger *et al.*, 1991; Ang *et al.*, 2000). Based on this alignment, executives with ownership are more likely to undertake risky investments, including those in R&D as they expect that the capital market will reward them for those investments (May, 1995) and hence will increase their firms' and their own wealth. On the other hand, some studies argue that executives' stockholdings increase their risk-aversion to risky investments such as R&D. From this perspective, when executives own shares their wealth becomes closely tied and more sensitive to firm performance, so they may make overly conservative risk choices (Kim and Lu, 2011). Greater wealth-performance sensitivity hence causes insufficient risk-taking (Kim and Lu, 2011), increases the rejection of risky projects with potentially positive NPV (Hirshleifer and Suh, 1992; Low, 2009), and, ultimately, lowers R&D investments. This risk-aversion effect is supported by Ghosh *et al.* (2007), who found CEOs' ownership concentration to be negatively associated with R&D investments (i.e., an increase in ownership links to R&D under-investment). Other studies (e.g., Beyer *et al.*, 2012) even argue that the association between managerial ownership and R&D is non-linear (an inverse U-shape).

Overall, studies have documented that executives' ownership concentration is associated (positively or negatively) with R&D investments. This study acknowledges such debate, but it mainly aims to investigate the impact of corporate political connections on the association between executives' equity ownership and R&D investments[26]. Building on the literature that documents that political connections can be a source to reduce policy

[26] The current study does not have a specific hypothesis to test the association between executives' equity ownership and R&D investments, as many studies have already examined such an association. Moreover, the assumption of a positive impact of corporate political connections on the association between executives' equity ownership and R&D, tested in H2, will still hold whether that association is positive or negative in the current sample. In other words, if executives' ownership is negatively associated with R&D, then corporate political connections are assumed, based on the arguments provided in this section, to positively impact such an association and mitigate (at least partially) the risk-aversion of managers with ownership. Likewise, if executives' ownership is positively associated with R&D, then in that case, corporate political connections are still assumed to positively impact such an association and lead to further investments in R&D. However, due to the mixed findings, in the multivariate analysis, before examining the interaction effect of corporate political connections and executives' equity ownership on R&D investments, the association between each of these two variables separately and R&D will be tested to find the direction of that association within the sample of the current study.

uncertainty (e.g., Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020), executives with ownership incentive to invest in R&D may increase. That is to say, political connections may encourage equity-owning managers to increase their R&D because of the reduced policy uncertainty gained from their political connections. As such, it is hypothesized that:

H2: Corporate political connections positively impact the association between executives' equity ownership and R&D investments.

Having presented this study's two hypotheses, this work proceeds by presenting the sample selection process and data used to test them.

4.3 Sample Selection, Data Collection, and Variables' Identification

This section is organized as follows. Section 4.3.1 gives the sample selection and screening process after combining the corporate political contributions data, the executives' ownership data, and the other financial variables. Section 4.3.2 explains the selected approach for identifying corporate political connections and the data source used to collect corporate political connections data; the proxies used to measure the corporate political connections are also described in this section. Section 4.3.3 explains the approach and data source used to collect executives' equity ownership data. Section 4.3.4 identifies and explains the dependent, explanatory, and control variables used.

4.3.1 Sample Selection Process

The sample selection process starts by collecting firm-specific annual political contributions to political candidates in their (re)election campaigns using the FEC datasets from 1985-2018. These data are then merged with executives' ownership data, taken from the ExecuComp database, which comprises the S&P1500 index from 1992 onwards. Because of this limitation, the dataset is reduced to contain the S&P1500 firms from 1992-

2018. The financial variables, including the dependent variable (R&D Expenditures), are obtained from the Compustat database and combined with the current study dataset. The initial sample consisted of 51,870 firm-year observations, after which screening was conducted.

As Table 4.1 shows, this research excluded firms without financial data in the Compustat database (identified by missing total assets) and financial firms (identified by SIC 6000–6999). It also excluded observations with a leverage ratio of more than 100%, and where the ratios of R&D and dividend are negative. Hence, the sample was reduced to 42,365 firm-year observations from 1992-2018. Further excluded were observations with missing/zero executives' equity ownership. For observations of 78% ownership or more, a manual check was conducted and, consequently, observations that present private firms, delisted firms, unrecognized stock split, unrecognized spin-off, missing firm reports, and typos were excluded[27]. Additionally, observations with a missing stock closing price (data item: PRCC) were excluded. As Table 4.1 shows, the final sample comprises 39,805 firm-year observations from 1992-2018.

Table 4.2 categorizes the final sample as having political connections or not; the unique number of politically connected firms with executives owning equity is 852, and for their non-politically connected counterparts numbers 2,226. Also, Table 4.2 shows that firm-year observations with political connections and executives owning shares represent 25% of the overall sample.

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[27] The reason for applying the manual check at the 78% level of ownership or more, i.e., up to 99.9%, is because the researcher found that at this threshold and beyond it, some observations show a considerable difference between the calculated managerial ownership ratio (OWN= SHROWN_EXCL_OPTS/SHRSOUT) used in the current study and the already available ownership percentage in the ExecuComp database (data item: SHROWN_EXCL_OPTS_PCT). For further details on the two mentioned measures of ownership, please refer to Table 4.3. Moreover, the number of observations with 78% ownership or more are relatively few, making it easier for the researcher to check them manually and spot any observations with issues (i.e., unrecognized stock split), and hence are excluded (51 observations).

After describing the sample selection process, the approach used to measure corporate political connections is explained in the following subsection.

4.3.2 The Selected Approach to Identify Corporate Political Connections

As discussed in Chapter 3, there are two main approaches used in the US context to identify corporate political connections: firms' soft-money contributions through lobbying activities (Yu and Yu, 2011; Borisov *et al.*, 2016; Agarwal *et al.*, 2018), and firms' hard-money contributions to politicians in their (re)election campaigns through firms' PACs (Cooper *et al.*, 2010; Wellman, 2017; Pham, 2019).

While both practices (PACs and lobbying) are alternative ways firms use to reach the Congress members in the US, the current study uses the corporate political contributions to support political candidates in their (re)election campaigns through firms' PACs as a proxy to identify corporate political connections[28].

4.3.2.1 Data Source of Corporate Political Connections

The corporate hard-money contributions to political candidates in their (re)election campaigns are obtained from the FEC datasets. The FEC is an independent regulatory agency that records and monitors the hard-money contributions to different political candidates provided by corporations through their PACs. While the data are available, they are not straightforward. Hence, the process of matching the contributions provided by corporations through their PACs with the firms' identification in the Compustat (GVKEY) was done manually. The current study uses qualified PACs where 50 or more of the corporation members contributed to support political candidates[29], following Pham (2019).

[28] The reasons for selecting firms' PACs as a proxy are explained in Section 3.2.
[29] Details regarding guidelines and regulations relating to corporate PACs' activities (i.e., ceiling limits of contributions) are provided in Section 3.2.1.

4.3.2.2 Measurements of Corporate Political Connections

This work's main measure of corporate political connections is firms' number of supported candidates via a multi-period time horizon (a six-year window). The reason behind the use of the number of supported candidates is the prior evidence and theories indicating that differential access to policymakers increases with increases in the number of candidates supported (Herndon, 1982). Thus, similarly to Cooper *et al.* (2010), Wellman (2017), Pham (2019), and Ovtchinnikov *et al.* (2020), the main measure is *PC_Candidate*, which is the natural logarithm of one plus the total number of political candidates a firm supports over a six-year window, defined as follows:

$$PC\_Candidate_{it} = Ln\left(1 + \sum_{j=1}^{J} Candidate_{jt,t-5}\right)$$

where $Candidate_{jt,t-5}$ is an indicator that equals one if the firm contributed to $Candidate_{j}$ over the years t-5 to t.

A supplementary proxy concerns the total amount of dollar contributions to each candidate over a six-year window. Specifically, *PC_Financial* is employed and defined as follows:

$$PC\_Financial_{it} = Ln\left(1 + \sum_{j=1}^{J} Amount_{jt,t-5}\right)$$

where $Amount_{jt,t-5}$ is the sum of total dollar contributions a firm provides to $Candidate_{j}$ over the years t-5 to t. Such a proxy was also used as an alternative to the number of supported candidates in several studies (e.g., Cooper *et al.*, 2010; Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020).

The above clarifies this work's measurements of corporate political connections. The identification of data sources and measurements of executives' equity ownership need similar clarification.

4.3.3 Identifying Executives' Equity Ownership

Several studies demonstrate that managers tend to act as owners when they have a stake in the business (Beyer *et al.*, 2012), though studies vary in the methodology used to identify executives' equity ownership. This section explores the differences between various methodologies and considers an approach to identify executives' ownership in the current study.

In terms of identifying executives' equity ownership, the process seems less complicated than that for identifying corporate political connections, though studies do vary. Some focus on the whole executive team (Wright *et al.*, 1996; Kor, 2003; Beyer *et al.*, 2012; Grieser and Hadlock, 2019), while others rely specifically on CEOs' equity ownership (Zhou, 2001; Coles *et al.*, 2012; Phua *et al.*, 2018). The executive team, however, represents all inside top-level executives, including CEOs, CFOs, business unit heads, and vice presidents (Ferrier, 2001; Kor, 2003).

For several reasons, the current study uses the equity ownership of the TMT, referred to herein as the executives or the executive team, rather than the CEO alone, to identify equity ownership. First, several studies evidence how studying TMTs rather than CEOs alone gives better predictions of organizational outcomes (Finkelstein, 1988; Tushman and Rosenkopf, 1996), while others note that using executive team attributes rather than only CEO attributes better explains variances in firm-level outcomes (Bertrand and Schoar, 2003; Zhang and Rajagopalan, 2004). Second, this approach can account for differentiation in TMT roles, e.g., the CFO must personally certify firms' accounting statements before filing them with regulators and reporting them to shareholders (Finkelstein *et al.*, 2008). Hence, some responsibilities are legally assigned to executive team members other than the CEO (Finkelstein *et al.*, 2008), which indicates their heavy involvement in the decision-making process. In other words, the TMT is the executive body most responsible for strategic decision-making and, by extension, for firms' strategies and performances (Finkelstein *et al.*, 2008). Therefore, the executive team indicates equity ownership in this thesis, following the UET.

When obtaining data on executives' equity ownership, this research relies on shares owned by executives, excluding options, as others have done (e.g., Kim and Lu, 2011; Lilienfeld-Toal and Ruenzi, 2014; Koo *et al.*, 2017; Grieser and Hadlock, 2019). Excluding options is because managerial equity ownership is argued to be more related to the firm's market performance than is stock option exercise (McGuire and Matta, 2003). Besides, excluding stock options is more related to the managerial preference for owning shares in their firms, rather than receiving stock options. Furthermore, managers tend to have their interests tied to shareholders when they own shares, not options.

4.3.3.1 Data Source for Executives' Equity Ownership

Data on executives' equity ownership comes from the Standard and Poor's (S&P) ExecuComp database, which collects executive compensation and ownership data directly from each company's annual proxy statement (DEF14A SEC form). This database has been widely used in managerial ownership literature (e.g., Zhou, 2001; Datta *et al.*, 2005; Janakiraman *et al.*, 2010; Coles *et al.*, 2012; Lilienfeld-Toal and Ruenzi, 2014; Hong *et al.*, 2016; Koo *et al.*, 2017; Phua *et al.*, 2018; Duan and Niu, 2019) for its various advantages. First, it is deemed an accurate and convenient data source for executives' equity ownership (Core and Larcker, 2002), providing reliable data on executives that are easily integrated with the financial variables and political connections data required herein. Second, it provides a reasonable level of heterogeneity as it includes large-, medium-, and small-sized firms. Third, it comprises about 88% of market capitalization of publicly traded US firms (Cadman *et al.*, 2010), giving a good representation of managerial ownership data for these firms. However, it has limitations, especially in providing data only from 1992 onwards and only for firms in the S&P1500 index, including the S&P500, S&P400 mid-cap, and S&P600 small-cap indices. Thus, it comprises only 25% of firms in the Compustat database (Cadman *et al.*, 2010). As such, this study's collected data on corporate political contributions is reduced to cover the available time-period and the available firms in the ExecuComp database.

4.3.3.2 Measurements of Executives' Equity Ownership

There are two ways to obtain executives' equity ownership data, excluding options, from the ExecuComp database:

1. **A directly available variable of Ownership in the ExecuComp database** (data item: SHROWN_EXCL_OPTS_PCT).
2. **A calculated Ownership** conducted as the total shares owned by executives excluding options divided by the total common shares outstanding, both generated from the ExecuComp database (data items: (SHROWN_EXCL_OPTS/SHROUT) /10). The division by ten is because the total shares outstanding are in millions while the shares owned are in thousands in the ExecComp database.

Table 4.3 compares the two approaches and their strengths and limitations, citing relevant studies.

As Table 4.3 indicates, the calculated ownership ((SHROWN_EXCL_OPTS/SHRSOUT) /10) is a superior method for several reasons. First, it presents all the shares owned by executives, even the amounts lower than 1%. Second, it helps in avoiding the problem of missing data. Third, as shown in the table, many studies have used such a method (e.g., Carlson and Lazrak, 2010; Kim and Lu, 2011[30]; Li *et al.*, 2014; Hong *et al.*, 2016; Huang-Meier *et al.*, 2016; Unsal *et al.*, 2016; Duan and Niu, 2019), suggesting it is a reliable approach.

Therefore, the calculated ownership approach is employed in this research. In this, the variable of executives' equity ownership is the sum of total shares owned by executives, excluding options, of firm i in year t divided by the number of common shares outstanding as reported by the firm in year t:

[30] Kim and Lu (2011) used the manually calculated percentage ((Shrown/Shrout)/1000) rather than the readily available percentage of ownership to minimize missing data. However, when the calculated value was one or greater, they replaced it with the readily available percentage of total shares owned, excluding options (SHROWN_EXCL_OPTS_PCT). This thesis, however, uses the more accurate method of manually checking all the observations where the calculated percentage is 78% or greater.

$$OWN_{it} = (\sum SHROWN\_EXCL\_OPTS_{it} \; / \; SHRSOUT_{it})/1000$$

where the $SHROWN\_EXCL\_OPTS_{it}$ is the total shares owned by an executive, excluding options, and $SHRSOUT_{it}$ is the total common shares outstanding[31].

While the main variable of ownership is the calculated ratio, the directly available variable of ownership percentage, excluding options (data item: SHROWN_EXCL_OPTS_PCT), is employed as a robustness check. Hence, the alternative ownership proxy is identified as follows:

$$OWN\_Alternative_{it} = (\sum SHROWN\_EXCL\_OPTS\_PCT_{it})/100$$

The other variables used herein, including the dependent variable, are obtained directly from the Compustat database. The following section identifies all this study's variables.

4.3.4 Variables' Identification

The current study's dependent variable is R&D investments scaled by total assets. The explanatory variables are the variables of interest (i.e., political connections and executives' ownership proxies) and a set of firm-level control variables identified in the literature as influencing R&D investments.

4.3.4.1 Dependent Variables: R&D Investments

R&D measures in the literature are classified into two main groups: input and output (Hagedoorn and Cloodt, 2003). R&D investments are considered the former, while patent counts and citations are examples of the latter. As this study focuses on the decisions executives take regarding investing in R&D, rather than the output from those investments, it uses R&D intensity as a proxy for R&D investments. Scholars calculate

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[31] The division by 1000 consists of the following. First, the division by 10 is because the total shares outstanding are in millions while shares owned are in thousands in the ExecuComp database. Second, the division by 100 is to give ownership a comparable ratio.

R&D intensity as R&D divided by a scaler, so this work follows Brown *et al.* (2009), Hirshleifer *et al.* (2012), and Xu (2020) in calculating R&D based on the research and development expenditures (XRD) scaled by the book value of total assets (AT). Such an approach to measuring R&D is compatible with normalized financial variables, which are scaled by total assets. This research also sets the *R&D_Assets* to zero when XRD is missing (Xu, 2020). The rationale behind this treatment is the assumption that values are missing due to the absence of the R&D expenses on firms' financial statements, which are reported as missing. According to Hirschey *et al.* (2012), treating XRD as zero if missing is justifiable as the Securities and Exchange Commission (SEC) (since 1972) requires all public firms to report all material R&D expenses in the year in which the XRD are incurred. The data source of R&D expenditures (XRD) and total assets (AT) is the Compustat database.

4.3.4.2 Explanatory Variables

The primary explanatory variable in the current study is corporate political connections. Another explanatory variable that is introduced when testing the second hypothesis is the executives' equity ownership.

Corporate Political Connections

PC_Candidate is the first proxy of political connections and is calculated as the natural logarithm of one plus the total number of candidates a firm supports over a six-year window. *PC_Financial* is the second proxy of political connections and is calculated as the natural logarithm of one plus the total dollar value of hard-money contributions made to the candidates supported by the firm-sponsored PAC over a six-year window. For a robustness check, the study employs a political connection dummy variable *(Dummy_PC)* equating to one if a firm makes political contributions in year *t* and zero otherwise.

Executives' Equity Ownership

To measure executives' equity ownership, this work follows various authors (Carlson and Lazrak, 2010; Kim and Lu, 2011; Li *et al.*, 2014; Hong *et al.*, 2016; Huang-Meier *et al.*, 2016; Unsal *et al.*, 2016; Duan and Niu, 2019) by using the calculated ownership ratio *(OWN)*, which is the sum of the total shares owned by the total executives, excluding options, divided by the total common shares outstanding. Missing or zero executives' ownership observations are excluded.

For a robustness check, this work uses an alternative proxy for ownership *(OWN_Alternative)*, which is a directly available variable of ownership percentage, excluding options (SHROWN_EXCL_OPTS_PCT), from the ExecuComp database, but with many missing observations. Missing or zero executives' ownership observations are excluded.

For a further robustness check for the executives' ownership proxy, this research uses a piecewise-linear function, i.e., executives' ownership is divided into three intervals of real numbers with arbitrary cut-off points at 5% and 25% ownership (Morck *et al.*, 1988; Kim and Lu, 2011). The piecewise-linear variables of ownership are *(OWN_05, OWN_0525, OWN_25)*. The function of the piecewise-linear terms of ownership will be discussed more in the Sensitivity Analysis.

4.3.4.3 Control Variables

Common variables that have been considered in the literature as factors that affect R&D investments at firm-level are controlled for in this work. The current study controls for Firm Size, Profitability, Growth Opportunity, Industry Concentration, Liquidity, Dividend Payments, Leverage, and Asset Tangibility. These variables are calculated based on firms' financials reported in the Compustat database.

The following is a brief explanation of how each control variable is associated with innovation input, particularly R&D investments.

Firm Size is considered a major determinant of R&D investments in the literature. Larger firms are inclined to invest more in R&D because of their better access to financial markets, economies of scale, and project diversification, which help them reduce R&D risks and better absorb any failed R&D projects (Symeonidis, 1996). According to this view, a positive relationship is predicted in the current work between firm size and R&D investments. Nevertheless, larger firms have greater resistance to change, confidence in their market position, and complex management structures for implementing new projects, causing them to invest less in R&D (Bhattacharya and Bloch, 2004). Based on this argument, a negative relationship between firm size and R&D investments is possible to exist in the current study.

Following the literature, *Size* is measured by taking the natural logarithm of the book value of total assets (Ln (AT)) (Hillier *et al*., 2011; Pham, 2019; Ovtchinnikov *et al*., 2020).

Profitability influences R&D investments through its intimate relationship with a firm's available internal resources (often preferred for financing R&D over external resources given the latter's higher costs) (Myers, 1984; Myers and Majluf, 1984). Growth in profitability through higher internal earnings also indicates firm success and efficiency, which encourage executives who predict higher profits through R&D investments to invest more in R&D (Lee and Hwang, 2003). Based on this assumption, a positive relationship is predicted to exist in the current work between profitability and R&D.

However, a single year's profitability is assumed to be a poor indicator of R&D investments as the latter are long term and require massive financial resources (Kalaycı, 2003). Similarly, yet from an alternative perspective, declines in profitability sometimes induce firms to invest more in R&D to regain their market share or to maintain competitiveness by producing something new. Additionally, declined profits signify a potential decline in the firm's recognition, which leads executives to rapidly increase their R&D investments for long-term viability. As such, declining profitability may lead to more R&D investment (Hundley *et al*., 1996; Kalaycı, 2003; Kumar and Aggarwal, 2005). Based on this argument, a negative relationship between profitability and R&D may possibly exist in the current study.

Following Fang *et al.* (2014), profitability is measured by *ROA*, which is the operating income before depreciation (OIBDP) scaled by total assets (AT).

Growth Opportunities are a firm characteristic that influences the R&D investments. Firms with higher growth opportunities invest more in R&D (Romano, 1990; Ryan and Wiggins, 2002) to capture these. Such firms also base their value on their prospects rather than their tangible assets, which motivates them to increase their R&D investments. According to this argument, the relationship between a firm's growth opportunities and R&D is predicted to be positive in the current study.

The current study uses the mean value of Tobin's Q as a proxy for growth opportunities. *Growth Opportunity (Q)* is calculated as the book value of assets (AT) plus the market value of equity (CSHO*PRCC) minus the book value of equity (CEQ) minus balance sheet deferred taxes (TXDB), which is set to zero if missing, all scaled by total assets (Fang *et al.*, 2014; Ovtchinnikov *et al.*, 2020). In Compustat, *Growth Opportunity (Q)* = [(AT + CSHO*PRCC– CEQ– TXDB)/AT].

Industry Concentration reportedly influences R&D investments in different ways. Companies that belong to highly concentrated industries invest more in R&D (Schumpeter, 1950) because of their greater market power, where only one or very few firms dominate the industry. Such market power means they can generate returns easily and use their profits to finance R&D investments (Symeonidis, 1996). According to this view, a positive relationship between industry concentration and R&D is predicted to exist in the current study. However, other studies document how market power negatively influences the value R&D investments generate (Connolly and Hirschey, 1984) based on leaks of new products and processes happening more in highly concentrated industries, which reduce firms' ability to capture their full value from innovation (Mansfield, 1985). Based on this argument, firms in highly concentrated industries are less encouraged to invest in R&D, so a negative relationship between R&D and industry concentration is expected.

To measure industry concentration, this work uses the Herfindahl index[32] – a common measurement in several studies (e.g., Cooper *et al.*, 2010; Hottenrott and Peters, 2012). Specifically, the *Herfindahl index (HI)* in year t is calculated by squaring the market share of all firms in an industry then summing the squares as follows:

$$HI = \sum_{i=1}^{n} (MS_i)^2$$

The *Herfindahl index (HI)* of a firm's industry in year t is calculated based on sales at four-digit SIC industries (as with Cooper *et al.*, 2010; Hottenrott and Peters, 2012; Deyoung *et al.*, 2015).

Liquidity is an essential factor that influences R&D investments. According to Pecking Order Theory, firms depend mainly on internal cash when financing their R&D projects. This is particularly so with R&D investments as their uncertain future outputs increase the cost of financing them externally. Moreover, asymmetric information between insiders and external shareholders aggravates the risk and hence the cost of externally financing R&D investments (Hillier *et al.*, 2011). For these reasons, companies with available internal funds are better positioned to invest in R&D projects. Hence, a positive relationship between liquidity and R&D is predicted in the current study.

Following Hirshleifer *et al.* (2012), this work uses cash holdings as a proxy for internal fund availability. *Cash_Assets* is calculated as the cash and short-term investments (CHE) scaled by total assets (AT).

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[32] The Herfindahl index is also known as the Herfindahl–Hirschman Index, HHI, or sometimes the HHI-score.

Dividend Payment intimates to investors about future firm growth and, consequently, future earnings for them (Hughes, 2008). Thus, some firms might be encouraged to pay more dividends. In addition, regardless of the tax regime, the tax relief that firms gain when they have dividends payouts encourages some firms to pay high dividends (Thomas *et al.*, 2003). Such high dividends payment is assumed to lower the investments in R&D as it lowers the internal cashflow, the prime source of finance for R&D. Alternatively, firms more incentivized regarding R&D and with high growth opportunities pay lower dividends (La Porta *et al.*, 2000; Fama and French, 2001). In both cases, the association between dividend payment and R&D is expected to be negative in the present study.

The dividend in the current study is calculated based on dividend of the current year's net income, scaled by total assets (Hillier *et al.*, 2011). In Compustat, *Div_Assets* = DVC /AT.

Leverage is also considered an essential factor that influences R&D investments. Researchers argue that debt financing discourages R&D investments (Long and Ravenscraft, 1993) because the latter's high risk and uncertainty deter creditors from providing loans to finance such investments (Stiglitz, 1985). Accordingly, with limited financial resources and wary of such high risk and uncertainty, firms with high debt-to-equity ratio are predicted to spend less on R&D. This is so because with a high debt-to-equity ratio firms use their cash to settle long-term debt rather than putting it into investments, particularly long-term ones such as R&D (Hall *et al.*, 1990). Such a financial deficiency limits firms' ability to develop new technologies, to innovate new applications, or even to adapt existing technologies for developing new products (Cumming and Macintosh, 2000). Thus, as many empirical studies have documented, debt significantly and negatively impacts on R&D (Hall *et al.*, 1990; Hirshleifer *et al.*, 2012), and a negative association between leverage ratio and R&D is expected in the current study.

Following Unsal *et al.* (2016), leverage in the current study is calculated as the sum of the long-term and short-term debt scaled by the total assets. In Compustat, *Leverage* = (DLTT+DLC)/AT.

Tangibility of Assets has been considered by several studies as a factor that influences R&D investments. Companies that invest more in physical capital have greater financial constraints and more sensitivity to internal funds (Fazzari *et al.*, 1988; Hsiao and Tahmiscioglu, 1997). In these circumstances, firms' ability to invest in R&D is likely to decrease (Hillier *et al.*, 2011). Moreover, firms commonly prefer to invest more in tangible assets rather than intangible ones, including R&D, as the latter is generally not accepted as collateral. This can be a constraint that limits a firm's ability to raise capital (Berger and Udell, 1998). Additionally, the uncertainty about outcomes of future R&D projects may encourage firms to prefer investing more in seeking certain outcomes they reach through tangible assets. Accordingly, the association between R&D and asset tangibility is expected to be negative in the current study.

Following Hillier *et al.* (2011) and Ovtchinnikov *et al.* (2020), Asset_*Tangibility* is herein calculated as the net book value of property plant and equipment (PPENT) scaled by total assets (AT).

Overall, according to previous studies, Growth Opportunity and Liquidity are expected to be positively related to R&D investments. On the other hand, Dividend Payments, Leverage, and Asset Tangibility are expected to be negatively related to R&D. Studies have inclusive results about the direction of the relationship between the remaining variables (Size, Profitability, and Industry Concentration) and R&D investments. Hence, this work does not have a definite direction (positive or negative) between these variables and R&D. Table 4.4 summarizes the literature view on the direction (positive or negative) of the relationship between this study's control variables and R&D investments. Appendix 4.A summarizes all the variables used in the current study, their measurements, and their data sources.

After discussing the data and the sampling process, the next section presents the results and analyses.

4.4 Results and Analyses

This section analyses the previous sections' data to investigate whether corporate political connections are positively associated with R&D investments (H1). It also examines if political connections positively impact the association between the executives' equity ownership and R&D investments (H2). The results come via univariate and multivariate analyses.

4.4.1 Univariate Analysis

Panel A of Table 4.5 provides summary statistics on the final sample. It shows the R&D to total assets, which is set to zero if missing, as 3.2%. This figure is comparable with that of Serfling (2014), who reported an average R&D of 3.47% for S&P1500 US firms (1992-2007). Similarly, Lewis and Tan (2016) reported an average R&D of 3.4% for S&P1500 US firms (1972-2009).

On political connection measures, the mean value of *PC_Candidate(6Y)*, which is calculated as the natural logarithm of one plus the number of supported candidates over a six-year window, is 1.153. That means that a typical firm in the sample supports around 33 political candidates on average over a six-year window[33]. The mean value of *PC_Financial(6Y)*, which is calculated as the natural logarithm of one plus the total amount of dollar contributions to candidates by a firm over a six-year window, is 3.3. That means that a typical firm in the sample contributes an average of $123,237 to political candidates over a six-year window[34].

[33] In untabulated statistics, the average number of supported political candidates over a six-year window (before applying the ln (1+number of supported candidates) used in the PC_Candidate proxy) is 32.8≈33.
[34] In untabulated statistics, the average total amount of political contributions over a six-year window (before applying the ln (1+total amount of contributions) used in the PC_Financial proxy) is $123,237.

In terms of managerial ownership, Panel A of Table 4.5 shows that the average equity ownership by a typical firm's executive team in S&P1500 firms is 4.0% during the sample period. Executives' ownership exhibits considerable skewness in that the median value is only 0.8%. These results are comparable with those of Lafond and Roychowdhury (2008), who reported a mean and median ownership by top managers as 4.5% and 0.9%, respectively (1992-2004).

Average firm size (measured by the natural logarithm of total assets) for the full S&P1500 sample is 7.3, in line with recent studies of S&P1500 firms (Chen J. *et al.*, 2017; Canil and Karpavičius, 2018; Koh *et al.*, 2018; Bui *et al.*, 2019). A typical S&P1500 firm has an average profitability (ROA) of 13.3%, in line with that reported by Koh *et al.* (2018), and an average growth opportunity (Q) of 2.02, in line with the average Tobin's Q reported by Chen J. *et al.* (2017). For the proxy of industry concentration, the Herfindahl Index (HI) has a mean value of 23.2%, which is comparable to that reported by Shaikh and Peters (2018), whose S&P1500 US firms (1997-2007) reported an average HI ratio of 22.1%. Average cash holdings is 14.8% and the average dividend to assets ratio is 1.2%. Such results are comparable to Koo *et al.*'s (2017) 14.5% cash holdings and Chen J. *et al.*'s (2017) 1.4% dividend to assets ratio, which both used S&P1500 US firms. The leverage ratio is 23%, which is comparable to many studies on US S&P1500 firms including Chen J. *et al.* (2017) and Bui *et al.* (2019). Assets' tangibility is 29.9%; similar results derive from Koo *et al.* (2017), who documented an average assets' tangibility for their S&P1500 firms (1994-2011) of 28.1%.

Panel B of Table 4.5 shows the descriptive statistics for firms with and without political connections[35]. There are 10,015 firm-year observations for firms with political connections and 29,790 for those without for most variables. Regarding means tests, firms with political connections significantly differ from those without in all dimensions. The

[35] The sample has been divided based on a dummy variable *(Dummy_PC)* equating to one if a firm makes political contributions in year *t* and zero otherwise.

difference in medians between firms with political connections and those without are also significant in all dimensions, except for ROA.

Also, Panel B of Table 4.5 shows that politically connected firms tend to invest less in R&D, relative to their assets, compared to non-politically connected firms. Additionally, executives of firms with political connections tend to own lower percentages of their firms' shares than executives of firms without political connections. However, politically connected firms are larger, more profitable, and have more tangible assets than non-connected firms. They also have higher leverage ratios and pay higher dividends, but hold less cash. Growth opportunities for politically connected firms are lower, but these firms seem to operate in a similar level of industry concentration to non-connected firms.

Overall, Panel B shows that firm sizes between politically connected and non-connected firms as well as the other control variables of each group are different. Hence, multivariate analysis is essential to evaluate the association between political connections and R&D after controlling for these variables, particularly size.

Table 4.6's correlation matrix tests relationships among the dependent variable (R&D investments), the variables of interest, and the control variables. It shows that all variables significantly correlate with R&D investments at a 95% confidence level. On the control variables, R&D positively correlates with cash holdings and growth opportunity (Q) and negatively correlates with firm size, profitability, industry concentration, dividends, leverage, and assets' tangibility. Also, all political connection proxies negatively correlate with R&D investments. Table 4.6 further shows that the association between R&D and executives' equity ownership proxy *(OWN)* is negative, where a higher proportion of ownership negatively associates with R&D investments.

Overall, the provided correlation matrix helped to check for multicollinearity. Noticeably, the correlations among the variables are not high, implying no issue of multicollinearity[36]. Additionally, Variance Inflation Factor (VIF) tests are performed after each regression, when possible, to double-check that the problem of multicollinearity does not exist (Neter *et al.*, 1985; Ryan, 1997)[37]. Although this correlation matrix presents only the association of each variable with R&D investments individually, the association between the variables of interest and R&D investments might differ when applying a multivariate analysis.

4.4.2 Multivariate Analysis

Before conducting the multivariate analysis, the methods for its empirical tests need to be explained. All models are estimated using fixed effects OLS regressions on a large unbalanced panel dataset comprising 39,805 firm-year observations of publicly-listed US firms (in the S&P1500 index) from 1992-2018. The dataset's form is an unbalanced panel because the dataset covers a fairly long time period (1992-2018) where new firms frequently enter the database periodically. Moreover, some firms may be delisted, acquired, or merged during this time. Conducting a balanced panel data analysis wherein all firms must have an identical number of observations may reduce the sample to an undesirable size (Hillier *et al.*, 2011). Thus, including firms that ceased to exist using unbalanced panel data analysis is more suitable for the current research. In all models, the dependent variable is R&D expenditures to total assets (set to zero if absent). The variables of interest are the firm's political connections and the joint effect of these connections with executives' equity ownership. The remaining variables are drawn from the literature and included for control purposes. Standard errors are clustered at firm-level to correct for heteroskedasticity (Hirshleifer *et al.*, 2012; He and Wintoki, 2016; Kim, 2018). The multivariate analysis itself is divided into two subsections: the first tests and analyses the relationship between corporate political connections and R&D investments; the second

[36] The correlation between the political connections' proxies (PC_Candidate and PC_Financial) is high, but this is not an issue as each of them will be used as a political connections proxy in a separate model.
[37] As shown later in the regression tables, the VIF tests are less than five, indicating that the models do not suffer from multicollinearity.

tests and analyses the impact of corporate political connections on the association between executives' ownership and R&D.

4.4.2.1 The Relationship between Corporate Political Connections and R&D Investments

The following OLS regression relates political connections proxies to R&D investments:

$$R\&D\_Assets_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Size)_{it} + \beta_3(ROA)_{it} + \beta_4(Growth\ Opportunity\ Q)_{it} + \beta_5(Herfindahl\ Index)_{it} + \beta_6(Cash\_Assets)_{it} + \beta_7(Div\_Assets)_{it} + \beta_8(Leverage)_{it} + \beta_9(Asset\_Tangibility)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it} \qquad \textbf{(Model 1)}$$

where $(Political\ Connections\ Proxy)_{it}$ is a measure of the firm's political connectedness to politicians, and the remaining variables, in brackets, are control variables.

Controlling for the industry effect in the current study is essential as R&D is industry-specific and strongly related to a firm's specific business area (Hambrick and Mason, 1984; Hillier *et al.*, 2011). For instance, R&D investments are more important in the pharmaceutical industry than in the retail industry. The importance of the industry effects on R&D is recognized in studies that limit their analysis to certain industries when examining R&D activities and determinants (Hall and Mairesse, 1995). Political connections literature also highlights the industry effect on political contributions and how some industries make higher contributions than others (Martin *et al.*, 2018). Following the literature, controlling for the industry fixed effect in the current study is based on the SIC two-digit classification (Hirshleifer *et al.*, 2012). An applied time fixed effect is also essential in the current study for controlling for business cycle shocks and macroeconomic variables that influence R&D. Controlling for industry and year fixed effects in the current study follows the standard approach in R&D literature (Brown *et al.*, 2009; He and Wintoki, 2016; Wang *et al.*, 2017).

Controlling for industry fixed effects has been widely used when examining R&D investments, but some firm-specific unobserved effects could influence the relationship between political connections and R&D investments. According to Hirschey *et al.* (2012), most variations in R&D investments are explained by firm, industry, and time effects. Thus, this work subsequently employs an OLS regression with firm fixed effects in the sensitivity analysis to control for unmeasurable firm-specific variables.

Since this is a panel dataset, the residuals might highly correlate across its two dimensions. Thus, clustered standard errors at firm-level are estimated to correct for heteroskedasticity and correlation within firms (Petersen, 2009). Clustering standard errors at the firm-level was applied following the R&D literature (Hirshleifer *et al.*, 2012; He and Wintoki, 2016; Kim, 2018). All financial variables are winsorized at the 1% and 99% levels to mitigate outliers. Firms without PACs are assigned a value of zero in the political connections proxies.

4.4.2.1.1 Main Results

Table 4.7 reports the main results of the OLS regressions that examine the relationship between corporate political connections and R&D investments. The difference between the two models (A and B) concerns the political connections proxy. Model A uses the number of supported candidates over a six-year window $(PC\_Candidate)_{it}$, defined as the natural logarithm of one plus the number of supported candidates by a firm over a six-year window. Model B uses $(PC\_Financial)_{it}$ as a proxy for political connections, computed as the natural logarithm of one plus the total dollar value of political donations a firm made to candidates supported by the firm's sponsored PAC over a six-year window. The two proxies are set to zero if a firm has no political contributions. Both models control for variables that influence R&D based on the R&D literature and for industry and time fixed effects in line with Brown *et al.* (2009), He and Wintoki (2016), and Wang *et al.*

(2017). Clustering standard errors at the firm-level is also applied in both models. Table 4.7 shows the results.

As Table 4.7 shows, the $\beta 1$ coefficient is positive and significant at the 99% confidence level in both models (A and B). This finding is consistent with H1, which suggests a positive relationship between political connections and R&D investments. Model 1 (A) implies that firms who support more political candidates invest more in R&D. This parallels Herndon's (1982) finding about how increased support for different politicians gives firms greater access to policymakers. It is this political support that gives firms access to information and thus an information advantage, increasing their courage to invest more in R&D. This interpretation aligns with that of Ovtchinnikov *et al.* (2020), who noticed how firms that support more candidates acquire better information and this stimulates patent counts and citations.

When supplementing the number of supported candidates with the dollar value of contributions to politicians over a six-year window, as shown in Model 1 (B), a positive and significant association is found between political contribution dollar amount and R&D investments[38].

4.4.2.1.2 Sensitivity Analysis

Examining the main results' reliability involves several robustness checks. First, this research investigates the results' sensitivity to the two proxies used for measuring political connections. Although the applied measurements of political connections have been fairly

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[38] Models A and B, tested in Table 4.7, were re-tested where the ratios of R&D to assets are not recorded as zero if missing, as some studies argue that this ratio should not be considered as zero if missing (e.g., Cain and McKeon, 2016). The untabulated results show that the $\beta 1$ coefficient of the political connections proxy (PC_Candidate(6Y)) is 0.0017*** and is 0.0005*** when (PC_Financial(6Y)) is the proxy for political connections. Hence, the obtained results shown in Table 4.7 are still consistent as both proxies of political connections have a positive and significant association with R&D at the 99% confidence level. The only difference is that the economic value of the political connections coefficient is improved when R&D ratios are not recorded as zero if missing. However, this improvement is at the cost of losing around 40% of the observations presented in Table 4.7.

used in the literature, the results may be driven by political measurements, especially as the two measurements use a six-year window. Thus, checking the results' robustness here uses an alternative proxy for political connections on a yearly basis, i.e., a political connection dummy variable *(Dummy_PC)* is used as an alternative proxy for political connections, which is equal to one if firm i has a political contribution in year t, and zero otherwise. As Table 4.8 shows, this study re-examines Model 1 using an alternative political connections proxy, which is the dummy variable for political connection status *(Dummy_PC)*.

As shown in Table 4.8, even when using an alternative proxy for political connections (i.e., political connection dummy variable) the results also confirm that political connections have a significant positive association with R&D investments at the 99% confidence level, thereby supporting H1.

The second robustness check considers only firms with political connections (contributions through PACs). The reason is that, as shown as shown earlier in Table 4.5's descriptive statistics, the political connection variable (PC_Candidate(6Y)) is highly skewed as it is zero at the 25^{th} and 50^{th} percentiles. To eliminate the concern about the distribution of the data in the main analysis, this study retests Model 1 using a subsample of only those firms with political contributions (PC_Candidate(6Y) > 0). Table 4.9 shows the results.

As shown in Table 4.9, for the subsample of firms with political contributions, these contributions positively associate with R&D investments. Specifically, political connections have a significant positive association with R&D investments at the 95% confidence level, thereby still supporting H1.

Another robustness check tests the results' sensitivity to firm-specific unobserved effects. Although applying the industry fixed effects in the models for explaining the variations of R&D is common, unobservable firm characteristics can influence the results. This is particularly important as R&D relates to many unquantifiable variables such as culture, strategy, and propensity to innovate (Hillier *et al.*, 2011). According to Hsiao (2007), employing fixed effects models can capture and control for the effects of unobserved heterogeneity. Owing to the collinearity between industry and firm fixed effects, this study applied the industry fixed effect in Table 4.7's models as R&D investments are highly industry specific. For a robustness check, the industry fixed effect is substituted by the firm fixed effect while holding all other conditions used in Table 4.7, such as control variables, the year fixed effect, and clustering standard error at firm-level. As Table 4.10 shows, when applying the firm fixed effect the results also confirm that political connections have a significant positive association with R&D investments, thereby supporting H1.

While the provided robustness tests confirm that corporate political connections are positively and significantly associated with R&D investments, the existence of a reverse causality is a matter of concern. In other words, although the current study claims that political connections facilitate R&D, it is also possible that R&D dependence pushes firms to establish such political connections. To mitigate such a reverse causality issue, this study follows Faleye *et al.* (2014), among others, by regressing the dependent variable on lagged values of the explanatory and control variables, based on the argument that these historical values are largely predetermined. This approach is implemented in the current study by regressing the current year dependent variable (*R&D_Assets*) on the lagged political connections measure and the control variables by one year (1Y lag) and two years (2Y lag). Table 4.11 shows a positive relationship between previous political connections and current R&D investments, suggesting that the results are not due to reverse causality issues[39].

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[39] As an attempt to mitigate the endogeneity problem, the current study applied a quasi-natural experiment following Ovtchinnikov *et al.* (2020) which is based on an exogenous change in the assignments of the House of Representatives committee chair positions in 1994. While the interaction variable of the treatment and the post-event is positive in the Difference-in-Differences (DiD) model, it is not statistically significant. Hence, the null hypothesis that there is no difference between the treatment and the control group in their R&D, based on the exogenous event of 1994, could not be rejected. Consequently, a causal effect of political connections on R&D cannot be confirmed. Details of the quasi-natural experiment are in Appendix 4.B.

Overall, the multivariate analysis supports H1: *Corporate political connections are positively associated with R&D investments*. This result is in line with that reported by Ovtchinnikov *et al.*, (2020), who argued that politically active firms can be better informed about future regulations and hence have greater patent counts and citations. Moreover, while the univariate analysis shows a negative relationship between corporate political connections and R&D investments, the multivariate analysis reveals that this relationship reverses and becomes positive when controlling for the other R&D drivers identified in the literature, particularly size.

4.4.2.2 The Impact of Corporate Political Connections on the Association between Executives' Equity Ownership and R&D Investments

This section tests the second hypothesis, where executives' equity ownership is introduced into the models to evaluate the joint effect of political connections and executives' ownership on R&D investments. As per the second hypothesis, this work expects that political connections will positively influence the association between executives' ownership and R&D investments.

Two models are employed here: Model 2 tests the association between each of the two variables (Political Connections and Executives' Ownership) and R&D with no interaction variable. The main reason for using this model is to check whether executives' equity ownership is positively or negatively associated with R&D investments. Model 3 includes an interaction variable between Political Connections and Executives' Ownership.

Models 2 and 3 are presented as follows:

$$R\&D\_Assets_{\,it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Executives'\ Ownership\ Measure)_{it} + \beta_3(Size)_{it} + \beta_4(ROA)_{it} + \beta_5(Growth\ Opportunity\ Q)_{it} + \beta_6(Herfindahl\ Index)_{it} + \beta_7(Cash\_Assets)_{it} + \beta_8(Div\_Assets)_{it} + \beta_9(Leverage)_{it} + \beta_{10}(Asset\_Tangibility)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it} \quad \textbf{(Model 2)}$$ [40]

[40] When the model was replicated where only the executives' equity ownership was the explanatory variable (excluding the political connections proxy), the results were almost the same.

$$R\&D\_Assets_{\,it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} +$$
$$\beta_2(Executives'\ Ownership\ Measure)_{it} +$$
$$\beta_3(Political\ Connections\ Proxy\ X\ Executives'\ Ownership\ Measure)_{it} +$$
$$\beta_4(Size)_{it} + \beta_5(ROA)_{it} + \beta_6(Growth\ Opportunity\ Q)_{it} +$$
$$\beta_7(Herfindahl\ Index)_{it} + \beta_8(Cash\_Assets)_{it} +$$
$$\beta_9\big(Div\_Assets\big)_{it} + \beta_{10}(Leverage)_{it} + \beta_{11}\big(Asset\_Tangibility\big)_{it} +$$
$$Industry\ and\ Year\ fixed\ effects + \ \varepsilon_{it} \quad \textbf{(Model 3)}$$

Both models use the same political connection proxies of Model 1, i.e., they use the number of supported candidates $(PC\_Candidate)_{it}$, and the total contributions $(PC\_Financial)_{\,it}$ over a six-year window. Executives' Ownership Measure uses the variable $(OWN)_{it}$, which is the total shares owned by the executive team of firm i, excluding options, divided by the total common shares outstanding of firm i in year t. Both models control for *Size, ROA, Growth Opportunity Q, Herfindahl Index, Cash_Assets, Div_Assets, Leverage,* and *Asset_Tangibility*. The two models also control for industry and year fixed effects, following standard approaches in R&D literature (e.g., Brown *et al.*, 2009; He and Wintoki, 2016; Wang *et al.*, 2017). The standard errors are clustered at firm-level to correct for heteroskedasticity in both models, following several studies (e.g., Hirshleifer *et al.*, 2012; He and Wintoki, 2016; Kim, 2018). The only difference between Models 2 and 3 is the latter has the interaction variable.

4.4.2.2.1 Main Results

Table 4.12 shows the regressions for Models 2 and 3 (interaction variable in the latter). Each model has two columns: in column (A) the number of political candidates over a six-year window (PC_Candidate(6Y)) is a political connections proxy; in column (B) the total dollar amount of contributions to politicians over a six-year window (PC_Financial(6Y)) is another political connections proxy.

Table 4.12's results provide additional support for H1, which assumes that political connections are positively associated with R&D investments. As Model 2 in Table 4.12 shows, executives' ownership has a negative and statistically significant association with R&D investments. On the second hypothesis, Model 3's results in Table 4.12 show that the interaction effect of political connection and executives' equity ownership on R&D is not statistically significant. Thus, the second hypothesis regarding political connections' positive impact on the association between executives' ownership and R&D investments cannot be accepted. Zhou's (2001) point about changes in managerial ownership concentration from year to year within a firm being small perhaps explains these insignificant results. Another possible explanation is that the interaction between political connection (positive) and ownership (negative) might be cancelling each other out, resulting in an insignificant impact on R&D. While the interaction term is not significant, this study next estimates its regressions (Models 2 and 3) using other ownership measurements to check if the results are similar.

4.4.2.2.2 Sensitivity Analysis

This study uses a different proxy for executives' equity ownership to check the consistency of the results. This proxy is the directly available variable in the ExecuComp database (data item: SHROWN_EXCL_OPT_PCT), which is the percentage of total shares owned excluding options but with many missing values.

As Table 4.13 shows, the results resemble those in Table 4.12. Put another way, when using a different proxy for executives' equity ownership Model 2's results show a negative and statistically significant association with R&D investments. As noted via Model 3, the interaction effect of political connection and executives' equity ownership on R&D investments is not statistically significant, similarly to what Table 4.12 conveys. Thus, there is still not enough evidence to accept H2, which assumes that firms' political connections positively influence the association between managerial ownership and R&D investments.

This work also applies a further sensitivity analysis based on a possible nonlinear relationship between ownership and R&D, as suggested by Morck *et al.* (1988), who argued that the relationship between ownership and Tobin's Q is nonlinear. Hence, as an alternative proxy for the continual variable of ownership OWN_{it}, this research applies fairly tight parametrized specifications, with cut-off points at 5% and 25% ownership. Following Kim and Lu (2011), this involves the following piecewise-linear variables of ownership:

OWN_05	= *OWN* if *OWN* < 0.05,
	= 0.05 if *OWN* ≥ 0.05;
OWN_0525	= 0 if *OWN* ≤ 0.05,
	= *OWN* minus 0.05 if 0.05 < *OWN* < 0.25,
	= 0.20 if *OWN* ≥ 0.25;
OWN_25	= 0 if *OWN* ≤ 0.25,
	= *OWN* minus 0.25 if *OWN* > 0.25

For instance, an executives' ownership (OWN_{it}) of 0.29 would give *OWN_05=0.05, OWN_0525=0.20, and OWN_25=0.04*. The piecewise-linear terms allow for the slope to change at certain points (5% and 25% share ownership). Thus, instead of using dummy variables that take only a value of zero or one, the variable *OWN_05* captures the variation in the ownership from above zero to 5%, the variable *OWN_0525* does the same from 5% to 25%, and the variable *OWN_25* does this from 25% and more.

The estimate of the effect of political connection and executives' ownership on R&D uses the three managerial variables (OWN_05, OWN_0525, and OWN_25). When estimating the regressions (Models 2 and 3), PC_Candidate(6Y) is a proxy for political connections, which is the natural logarithm of one plus the number of supported candidates over a six-year window. This controls for industry and year effects and for the variables identified earlier as influencers on R&D investments. The results of this estimation of the regressions using the piecewise variables of ownership are given in Table 4.14.

As Table 4.14 shows, the Model 2 results indicate that the positive effect of political connection on R&D still exists. It also shows the relationship of ownership with R&D is negative and statistically significant only when ownership is in the 5% to 25% range. When testing the interaction effect of political connections and ownership using the three piecewise-linear terms (Model 3), the results are statistically not significant in any of the three ownership groups. Hence, there is still not enough evidence to support H2 even when using piecewise-linear terms for ownership.

In sum, the multivariate analysis shows that firms' political connections have a positive association with R&D investments, supporting H1. Although the univariate analysis shows a negative relationship between corporate political connections and R&D investments, the multivariate analysis reveals that this relationship becomes positive once controlling for the other R&D drivers identified in the literature, particularly firm size. Additionally, the executives' ownership variable has a negative and statistically significant association with R&D investments. The interaction effect of political connection and executives' equity ownership on R&D investments is, however, not statistically significant. Thus, there is not enough evidence to support H2, which proposes that the political connections positively influence the association between executives' ownership and R&D investments[41].

4.5 Conclusion

Investment in R&D is a substantial driver for long-term economic growth (Li, 2011). Studies show that corporations have a significant role in overall R&D investments of the economy and such investments are associated with higher long-term profits (Sougiannis, 1994). Numerous studies investigate the determinants of corporate R&D investments,

[41] Assets' tangibility in all models of this chapter is calculated as the net book value of property plant and equipment (PPENT) scaled by total assets (AT). The (PPENT/AT) used in the main regressions was alternated with *CAPEX_Assets*, calculated as capital expenditure (CAPX) divided by book value of total assets (AT), which is set to zero if missing. The results are found to be qualitatively similar.

doing so from a traditional finance and economic point view (e.g., Himmelberg and Petersen, 1994; Brown *et al.*, 2009, 2013; Acharya and Xu, 2017). This study, however, is one of the first to demonstrate that political connection is a considerable determinant of corporate investment in R&D.

This chapter has investigated the association between corporate political connections and R&D investments. It considered the number of supported political candidates in their (re)election campaigns and the amount of contributions on a long-term basis (six years of analysis) as the main measures of political connectedness. This study's examination of political connections' association with R&D investments employed RBT whereby executives view their connections with politicians as a valuable resource that can lead to superior performance/investments over time (Russo and Fouts, 1997).

This study has also examined the effect of political connections on the association between executives' equity ownership and R&D investments, doing so based on three segments: The first concerns literature indicating that R&D investments are risky (Hud and Hussinger, 2015) and that decisions on investing in R&D are made mostly by firms' top managers (Barker and Mueller, 2002). Second is the literature recommending that managers' equity ownership influences their level of risk-aversion (Green, 1995; Barker and Mueller, 2002). The third involves the information acquisition advantage that can allow politically active firms to be better informed about lawmakers' political costs, which in turn reduces policy uncertainty (Ovtchinnikov *et al.*, 2020).

Using S&P1500 data for the period 1992-2018, this research produced two main findings. First, corporate political connection positively associates with R&D investments. This finding holds under several robustness checks and is consistent with the view that politically active firms tend to have better information gain, which reduces policy uncertainty and hence encourages managers to invest more in R&D. This result complements those previously found by Ovtchinnikov *et al.* (2020), who identified a positive association between political activism and innovation output and that this stems from better access to information. Second, although separately two key variables produce mixed results – political connections positively associate with R&D investments and managerial equity ownership negatively associates with R&D investments – the interaction effect of these two variables on R&D investments is statistically not significant. An explanation for this may well be the small changes in executive ownership concentration within-firm from year to year as proposed by Zhou (2001). Another possible explanation is the cancelling effect resulting from interacting these two variables.

The chapter's findings have some implications for corporate decision-makers and policymakers. Corporate decision-makers can consider the role of implicit connections to politicians through hard-money contributions on their investments, particularly R&D investments. On the other hand, while corporate political contributions are recorded and managed by the FEC, firms are not required to disclose their political investments in their reports. Such information can be essential for investors' decisions, as some investors have wider concerns, including the desire to be protected from externalities. Policymakers could thus mandate the disclosure of corporate political activities in firms' public reports. This would enhance corporate transparency, investor protection, and hence the firm's value to outsiders.

The current research, like any other research, has some limitations, though these nevertheless lead to useful recommendations for future research. First, this work focused on hard-money contributions to politicians as a measurement for political connections so did not particularly target other aspects such as lobbying. Studying the influence of corporate lobbying activities *and their interactions with managerial ownership* on R&D investments and comparing its results with the current research can be considered in future research. This can help firms – both those involved in political money contributions and those not – reappraise such political investments from a more informed perspective. Second, the current research focused on one corporate governance mechanism in the form of executives' equity ownership. Looking at other corporate governance mechanisms, e.g., institutional ownership, and similarly examining their interactive effect with corporate political connections on R&D investments could give additional perspectives to this issue.

Despite these limitations, this study has offered various contributions (as noted) while providing a platform for future research. Ultimately, it has enriched understanding of firms' political connections and their joint effects with management structure on R&D.

Tables of Chapter 4

Table 4.1 Sample Screening Process for the period of 1992-2018

Sample Screening:	No. of Observations
The full sample generated from FEC and ExecuComp (1992-2018):	**51,870**
Missing Total Assets	-120
Financial Firms	-8,905
Leverage ratio greater than 100%	-476
Negative R&D to Assets ratio	-3
Negative Dividend to Assets ratio	-1
The Sample is reduced to	**42,365**
Missing Executive Ownership Ratio (Shares owned/shares outstanding)	-2,137
Zero Executive Ownership Ratio (Shares owned/shares outstanding)	-224
Observations with more than 78% ownership and experiencing issues[42]	-51
Missing Closing Price (PRCC)	-148
The Final Sample (1992-2018):	**39,805**

Table 4.2 Sample Classification

This table presents the number of observations and the number of uniquely identified firms in the sample, classified based on their political connection status. The sample includes firms listed in S&P1500 without missing financials in the Compustat database (1992-2018). The numbers are presented after excluding financial firms.

	No. of Observations	%	No. of Firms
Firms with Executives' Equity Ownership:			
Politically Connected	10,015	25	852
Non-Politically Connected	29,790	75	2,226
Total	**39,805**	**100.00**	**3,078**

[42] The issues are several: unrecognized stock split (7 observations), privatization (became private) (27 observations), delisting (1 observation), typo in reporting the number of shares owned (not divided by 1000) (7 observations), missing firm reports (8 observations), and unrecognized spin-off transaction (1 observation). These issues mean that a total of 51 observations have been excluded during the sample selection process.

Table 4.3 Comparing the Two Approaches of Measuring Executives' Equity Ownership (from the ExecuComp database)

1. **Available Variable of Ownership**	2. **Calculated Ownership**
Higher number of missing observations: The database reads the percentages directly from the proxy statements, which report ownership percentages of less than 1% as stars. Therefore, they appear as missing values in the ExecuComp database. Around 12,000 observations are missing, even though in many of them executives own some shares (less than 1%).	**Lower number of missing observations:** The calculated percentages of ownership allow obtaining shares owned by executives, including those presenting less than 1% of total shares outstanding. Only 2,137 observations are missing.
Consistency: Since the database uses the proxy statement figures (percentages), both the common shares outstanding and the number of executive shares are obtained from the same report with no time difference.	**Time Difference:** Common shares outstanding in the ExecuComp database are reported as of fiscal year ends (10-K annual report), while the number of shares owned by executives is generated from the proxy statement, which may be released a couple of months after the annual report. Hence, the number of outstanding shares might differ because of the time difference between the two reports' release. However, as the time difference is usually only a couple of months, many studies have used this method in calculating executives' equity ownership.
Examples of Studies: Dorion *et al.* (2014); Koo *et al.* (2017); Grieser and Hadlock (2019)	**Examples of Studies:** Carlson and Lazrak (2010); Kim and Lu (2011); Li *et al.* (2014); Hong *et al*. (2016); Huang-Meier *et al.* (2016); Unsal *et al.* (2016); Duan and Niu (2019)

Table 4.4 The Literature View on the Direction of Association between the Control Variables and R&D

This table summarizes the studies that tested the association between the current study's control variables and R&D. The (+) indicates a positive association while the (-) implies a negative association.

Variable	**The Direction of Association with R&D (Example of studies)**
Size	+ (Schumpeter, 1939; Symeonidis, 1996; Becker and Pain, 2008) − (Schumpeter, 1947; Barker and Mueller, 2002; Bhattacharya and Bloch, 2004; Hirshleifer *et al.*, 2012)
Profitability	+ (Lee and Hwang, 2003) − (Hundley *et al.*, 1996; Kumar and Aggarwal, 2005)
Growth Opportunity	+ (Romano, 1990; Ryan and Wiggins, 2002)
Industry Concentration	+ (Schumpeter, 1950; Ho *et al.*, 2006) − (Connolly and Hirschey, 1984; Ehie and Olibe, 2010)
Liquidity	+ (Brown and Petersen, 2011)
Dividend Payments	− (La Porta *et al.*, 2000; Fama and French, 2001)
Leverage	− (Hall *et al.*, 1990; Hirshleifer *et al.*, 2012)
Asset Tangibility	− (Maskus *et al.*, 2012)

Table 4.5 Summary Statistics

This table reports descriptive statistics for variables of interest for the full sample of firms listed in S&P1500 in Panel A, and for a subsample of firms with and without Political Connections in Panel B. The full sample comprises all publicly traded non-financial US firms listed in S&P1500 with non-missing values for total assets in Compustat from 1992-2018. In Panel A, firms with no political contributions are given a value of zero. The dependent variable and the control variables are winsorized at their 1st and 99th percentiles. In Panel B, Non-Connected firms are defined as firms with no hard-money contributions to politicians in year t. The t-tests (Wilcoxon-Mann-Whitney tests) are conducted in Panel B to test for differences between the means (medians) for firms with and firms without political connections. Note that *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively. All numbers, except Size and Political Connections Measures, are in decimal form (e.g., 0.01 is 1%). Variable definitions are reported in Appendix 4.A.

Panel A: full sample

Variable	Mean	S.D.	P25	Median	P75	N
R&D_Assets	0.032	0.058	0.000	0.000	0.038	39,805
Political Connections Measures:						
PC_Candidate(6Y)	1.153	1.968	0.000	0.000	2.485	39,805
PC_Financial(6Y)	3.300	5.388	0.000	0.000	9.801	39,805
Executives' Ownership Measure:						
OWN	0.040	0.083	0.003	0.008	0.031	39,805
Control Variables:						
Size (Ln assets)	7.288	1.654	6.085	7.179	8.396	39,805
ROA	0.133	0.101	0.088	0.131	0.183	39,732
Growth Opportunity (Q)	2.019	1.384	1.171	1.565	2.315	39,805
Industry Concentration (HI)	0.232	0.190	0.096	0.178	0.296	39,805
Cash_Assets	0.148	0.172	0.023	0.079	0.213	39,797
Div_Assets	0.012	0.020	0.000	0.002	0.018	39,722
Leverage	0.230	0.183	0.062	0.222	0.352	39,805
Asset_Tangibility	0.299	0.236	0.108	0.227	0.444	39,750

Panel B: Subsample of Firms with Political Connections vs. Firms without Political Connections

Variable	Politically Connected Firms				Non-Politically Connected Firms				Diff-in-means	Diff-in-medians Z-statistic for (Wilcoxon-Mann-Whitney U tests)
	Obs	Mean	S.D.	Median	Obs	Mean	S.D.	Median		
R&D_Assets	10,015	0.017	0.034	0.000	29,790	0.036	0.063	0.000	-0.019***	19.096***
OWN	10,015	0.020	0.059	0.003	29,790	0.046	0.088	0.012	-0.027***	57.883***
Control Variables:										
Size (Ln assets)	10,015	8.787	1.397	8.804	29,790	6.784	1.411	6.706	2.003***	-101.963***
ROA	10,011	0.139	0.074	0.130	29,721	0.131	0.108	0.132	0.008***	-1.292
Growth Opportunity (Q)	10,015	1.755	1.074	1.413	29,790	2.108	1.463	1.627	-0.354***	22.115***
Industry Concentration (HI)	10,015	0.226	0.198	0.167	29,790	0.234	0.187	0.181	-0.008***	8.595***
Cash_Assets	10,009	0.081	0.101	0.044	29,788	0.170	0.184	0.100	-0.089***	43.592***
Div_Assets	9,987	0.017	0.020	0.013	29,735	0.010	0.019	0.000	0.007***	-52.677***
Leverage	10,015	0.293	0.159	0.288	29,790	0.209	0.185	0.190	0.084***	-44.728***
Asset_Tangibility	10,014	0.382	0.244	0.336	29,736	0.271	0.227	0.200	0.112***	-42.256***

Table 4.6 A Pairwise Correlation Matrix

This table displays the Pearson Correlation among R&D, the control variables, and the variables of interest (the political connections, and the executives' ownership measures). The full sample comprises all publicly traded non-financial S&P1500 US firms with non-missing values for total assets in Compustat from 1992-2018, making 39,805 firm-year observations. Financial variables (the dependent variable and the control variables) are winsorized at their 1st and 99th percentiles. The * indicates statistical significance at the 5% level. R&D positively correlates with Cash_Assets and Growth Opportunity (Q) and negatively correlates with the remaining variables (Size, ROA, Herfindahl Index (HI), Div_Assets, Leverage, Asset_Tangibility, PC_Candidate(6Y), PC_Financial(6Y), and OWN). Variable definitions are reported in Appendix 4.A. All variables have a significant correlation with R&D at a 95% confidence level.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) R&D_Assets	1.000											
Control Variables:												
(2) Size (Ln Assets)	-0.280*	1.000										
(3) ROA	-0.265*	0.086*	1.000									
(4) Growth Opportunity (Q)	0.335*	-0.215*	0.311*	1.000								
(5) Herfindahl Index (HI)	-0.067*	-0.005	0.028*	-0.009	1.000							
(6) Cash_Assets	0.549*	-0.359*	-0.149*	0.419*	-0.058*	1.000						
(7) Div_Assets	-0.121*	0.190*	0.298*	0.149*	0.055*	-0.075*	1.000					
(8) Leverage	-0.267*	0.354*	-0.086*	-0.276*	-0.039*	-0.424*	0.002	1.000				
(9) Asset_Tangibility	-0.334*	0.209*	0.091*	-0.237*	-0.208*	-0.418*	0.065*	0.289*	1.000			
Political Connections Measures:												
(10) PC_Candidate(6Y)	-0.140*	0.595*	0.037*	-0.109*	-0.019*	-0.225*	0.185*	0.202*	0.203*	1.000		
(11) PC_Financial(6Y)	-0.151*	0.574*	0.033*	-0.119*	-0.018*	-0.233*	0.173*	0.214*	0.205*	0.981*	1.000	
Executives' Ownership Measures:												
(12) OWN	-0.037*	-0.246*	0.053*	0.086*	-0.004	0.084*	-0.030*	-0.119*	-0.041*	-0.156*	-0.153*	1.000

Table 4.7 OLS Regressions Estimating the Association between Corporate Political Connections and R&D Investments

$R\&D\_Assets_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ **(Model 1)**

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets in Compustat from 1992- 2018. The dependent variable in all models is R&D to Total assets, setting it to zero if missing. Each model includes a political connections proxy, where PC_Candidate(6Y) in Model 1 (A) is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window. PC_Financial(6Y) in Model 1 (B) is computed as the natural logarithm of one plus the total dollar value of political donations made by a firm to candidates supported by the firm's sponsored PAC over a six-year window. All models control for the common determinants of R&D found in the literature (Size, ROA, Growth Opportunity Q, Herfindahl Index (HI), Cash_Assets, Div_Assets, Leverage, and Asset_Tangibility). All models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables and the dependent variable are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for each model does not exceed 5 (max is 1.94). Variable definitions are reported in Appendix 4.A.

Variables	PC_Candidate(6Y) Model 1 (A)	PC_Financial(6Y) Model 1 (B)
Political Connections Proxy	0.0008***	0.0002***
	(0.0002)	(0.0001)
Size (Ln Assets)	-0.0093***	-0.0092***
	(0.0007)	(0.0007)
ROA	-0.0695***	-0.0696***
	(0.0064)	(0.0064)
Growth Opportunity (Q)	0.0031***	0.0031***
	(0.0004)	(0.0004)
Industry Concentration (HI)	-0.0032	-0.0033
	(0.0026)	(0.0026)
Cash_Assets	-0.0085**	-0.0085**
	(0.0035)	(0.0035)
Div_Assets	0.0273*	0.0281*
	(0.0154)	(0.0154)
Leverage	-0.0094***	-0.0094***
	(0.0024)	(0.0024)
Asset_Tangibility	0.0190***	0.0190***
	(0.0035)	(0.0035)
Constant	0.0716***	0.0713***
	(0.0102)	(0.0102)
Observations	39,606	39,606
R-squared	0.3901	0.3893
Number of Firms	3,073	3,073
Firm FE	No	No
Year FE	Yes	Yes
Industry FE	Yes	Yes

Table 4.8 OLS Regression Estimating the Association between Corporate Political Connections and R&D Investments (Alternative Measure for Political Connections (Dummy_PC))

$$R\&D\_Assets_{it} = \alpha + \beta_1(Dummy\ Political\ Connections\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$$

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets in Compustat from 1992-2018. The dependent variable in all models is R&D to Total assets, set to zero if missing. The model includes an alternative political connections proxy, where Dummy_PC is equal to 1 if firm i has a political contribution in year t, and zero otherwise. The model controls for the common determinants of R&D found in the literature (Size, ROA, Growth Opportunity Q, Herfindahl Index (HI), Cash_Assets, Div_Assets, Leverage, and Asset_Tangibility). The model includes industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables and the dependent variable are winsorized at their 1st and 99th percentiles. The VIF test for the model does not exceed 5 (max is 1.94). Variable definitions are reported in Appendix 4.A.

Variables	Model 1
Political Connections Proxy (Dummy_PC)	0.0022***
	(0.0007)
Size (Ln Assets)	-0.0091***
	(0.0007)
ROA	-0.0696***
	(0.0064)
Growth Opportunity (Q)	0.0031***
	(0.0004)
Industry Concentration (HI)	-0.0033
	(0.0026)
Cash_Assets	-0.0085**
	(0.0035)
Div_Assets	0.0276*
	(0.0154)
Leverage	-0.0095***
	(0.0024)
Asset_Tangibility	0.0190***
	(0.0035)
Constant	0.0712***
	(0.0102)
Observations	39,606
R-squared	0.3892
Number of Firms	3,073
Firm FE	No
Year FE	Yes
Industry FE	Yes

Table 4.9 OLS Regression Estimating the Association between Corporate Political Connections and R&D Investments (Considering only politically connected firms)

$R\&D\_Assets_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$
The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets in Compustat from 1992-2018. The dependent variable in all models is R&D to Total Assets, set to zero if missing. The political connections proxy is PC_Candidate(6Y), which is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window. The model consists only of firms with political contributions (PC_Candidate(6Y) > 0), and controls for the common determinants of R&D found in the literature (Size, ROA, Growth Opportunity Q, Herfindahl Index (HI), Cash_Assets, Div_Assets, Leverage, and Asset_Tangibility). The model includes industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables and the dependent variable are winsorized at their 1st and 99th percentiles. The VIF test for the model does not exceed 5 (max is 3.46). Variable definitions are reported in Appendix 4.A.

Variables	PC_Candidate(6Y) Model 1 (A)
Political Connections Proxy (PC_Candidate(6Y) > 0)	0.0014**
	(0.0007)
Size (Ln Assets)	0.0010
	(0.0008)
ROA	-0.0354**
	(0.0143)
Growth Opportunity (Q)	0.0097***
	(0.0014)
Industry Concentration (HI)	-0.0184***
	(0.0041)
Cash_Assets	0.0774***
	(0.0101)
Div_Assets	-0.0909
	(0.0562)
Leverage	-0.0182***
	(0.0039)
Asset_Tangibility	-0.0044
	(0.0046)
Constant	-0.0086
	(0.0095)
Observations	11,029
R-squared	0.5363
Number of Firms	878
Firm FE	No
Year FE	Yes
Industry FE	Yes

Table 4.10 OLS Regressions Estimating the Association between Corporate Political Connections and R&D Investments (Using firm fixed effect instead of industry fixed effect)

$R\&D\_Assets_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Firm\ \&\ Year\ fixed\ effects + \varepsilon_{it}$

This table is similar to Table 4.7 except that industry fixed effect is alternated with firm fixed effect in this table. The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets in Compustat from 1992-2018. The dependent variable in all models is R&D to Total Assets, set to zero if missing. Each model includes a political connections proxy, where PC_Candidate(6Y) in Model 1 (A) is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window and PC_Financial(6Y) in Model 1 (B) is computed as the natural logarithm of one plus the total dollar value of political donations made by a firm to candidates supported by the firm's sponsored PAC over a six-year window. All models control for the common determinants of R&D in the literature (Size, ROA, Growth Opportunity Q, Herfindahl Index (HI), Cash_Assets, Div_Assets, Leverage, and Asset_Tangibility). Both models include firm and time fixed effects. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables and the dependent variable are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for the model does not exceed 5 (max is 1.94). Variable definitions are reported in Appendix 4. A.

Variables	**PC_Candidate(6Y) Model 1 (A)**	**PC_Financial(6Y) Model 1 (B)**
Political Connections Proxy	0.0007***	0.0002**
	(0.0003)	(0.0001)
Size (Ln Assets)	-0.0101***	-0.0100***
	(0.0008)	(0.0008)
ROA	-0.0616***	-0.0617***
	(0.0066)	(0.0066)
Growth Opportunity (Q)	0.0025***	0.0025***
	(0.0004)	(0.0004)
Industry Concentration (HI)	-0.0004	-0.0004
	(0.0028)	(0.0028)
Cash_Assets	-0.0179***	-0.0179***
	(0.0037)	(0.0037)
Div_Assets	0.0396**	0.0401***
	(0.0155)	(0.0155)
Leverage	-0.0084***	-0.0084***
	(0.0024)	(0.0024)
Asset_Tangibility	0.0233***	0.0233***
	(0.0040)	(0.0040)
Constant	0.0945***	0.0943***
	(0.0057)	(0.0057)
Observations	39,606	39,606
R-squared	0.1081	0.1079
Number of Firms	3,073	3,073
Firm FE	Yes	Yes
Year FE	Yes	Yes
Industry FE	No	No

Table 4.11 OLS Regressions Estimating the Association between Corporate Political Connections and R&D Investments (Using 1-Year lag and 2-Year lag models)

$$R\&D\_Assets_{it} = \alpha + \beta_1(Lagged\ Political\ Connections\ Proxy) + \beta_{t-1}(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$$

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets in Compustat from 1992-2018. The dependent variable in all models is R&D to Total Assets, set to zero if missing. The explanatory variable in columns 1 and 2 is PC_Candidate(6Y), which is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window. Columns 1 and 2 are the one-year lag and the two-years lag of the explanatory and control variables, respectively. Control variables are Size, ROA, Growth Opportunity Q, Herfindahl Index (HI), Cash_Assets, Div_Assets, Leverage, and Asset_Tangibility. Models include industry and time fixed effects. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables and the dependent variable are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for the model does not exceed 5 (max is 3.00). Variable definitions are reported in Appendix 4.A.

Variables	PC_Candidate(6Y) Model 1 (Lag1)	PC_Candidate(6Y) Model 1 (Lag2)
Political Connections Proxy	0.0007**	0.0006*
	(0.0003)	(0.0003)
Size (Ln Assets)	-0.0014**	-0.0010*
	(0.0006)	(0.0006)
ROA	-0.1295***	-0.1246***
	(0.0094)	(0.0097)
Growth Opportunity (Q)	0.0072***	0.0070***
	(0.0006)	(0.0006)
Industry Concentration (HI)	-0.0176***	-0.0168***
	(0.0035)	(0.0035)
Cash_Assets	0.0969***	0.1005***
	(0.0058)	(0.0060)
Div_Assets	-0.1220***	-0.1287***
	(0.0327)	(0.0328)
Leverage	-0.0102***	-0.0096***
	(0.0035)	(0.0037)
Asset_Tangibility	-0.0052	-0.0053
	(0.0034)	(0.0034)
Constant	0.0200**	0.0164**
	(0.0081)	(0.0081)
Observations	36,080	33,117
R-squared	0.5083	0.5066
Number of Firms	2,933	2,818
Firm FE	No	No
Year FE	Yes	Yes
Industry FE	Yes	Yes
1Y lag	Yes	No
2Y lag	No	Yes

Table 4.12 OLS Regressions Estimating the Influence of Corporate Political Connections on the Association between Executives' Ownership and R&D Investments

$R\&D\_Assets_{\ it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(OWN)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ (**Model 2**)

$R\&D\_Assets_{\ it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(OWN)_{it} + \beta_3(Political\ Connections\ Proxy\ X\ OWN)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ (**Model 3**)

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets in Compustat from 1992-2018. The dependent variable in all models is R&D to Total Assets, set to zero if missing. The only difference between Models 2 and 3 is the interaction term in Model 3. Each Model (2 and 3) includes two columns (A and B) where two political connections proxies are applied. In column (A), PC_Candidate(6Y) is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window, and PC_Financial(6Y) in column (B) is computed as the natural logarithm of one plus the total dollar value of political donations made by a firm to candidates supported by the firm's sponsored PAC over a six-year window. Executives' ownership (OWN) is measured by the shares owned by all executive teams, excluding options, divided by total shares outstanding and excluded if missing. Political Connections Proxy X OWN is an interaction term, which consists of the multiplication of political connections and executives' ownership measures. All models control for the common determinants of R&D found in the literature (Size, ROA, Growth Opportunity Q, Herfindahl Index (HI), Cash_Assets, Div_Assets, Leverage, and Asset_Tangibility). All models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The financial variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in all models. The VIF tests do not exceed 5 (max is 1.94). Variable definitions are reported in Appendix 4.A.

	No Interaction Term (Model 2)		**With an Interaction Term (Model 3)**	
Variables	**PC_Candidate(6Y)** **A**	**PC_Financial(6Y)** **B**	**PC_Candidate(6Y)** **A**	**PC_Financial(6Y)** **B**
Political Connections Proxy	0.0008***	0.0002***	0.0008***	0.0002**
	(0.0002)	(0.0001)	(0.0002)	(0.0001)
OWN	-0.0112***	-0.0111***	-0.0121**	-0.0122**
	(0.0042)	(0.0042)	(0.0048)	(0.0048)
Political Connections Proxy X OWN	-	-	**0.0016**	**0.0006**
	-	-	(0.0024)	(0.0007)
Size (Ln Assets)	-0.0094***	-0.0093***	-0.0094***	-0.0093***
	(0.0007)	(0.0007)	(0.0007)	(0.0007)
ROA	-0.0695***	-0.0696***	-0.0695***	-0.0696***
	(0.0064)	(0.0064)	(0.0064)	(0.0064)
Growth Opportunity (Q)	0.0031***	0.0031***	0.0031***	0.0031***
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Industry Concentration (HI)	-0.0033	-0.0033	-0.0033	-0.0033
	(0.0026)	(0.0026)	(0.0026)	(0.0026)
Cash_Assets	-0.0083**	-0.0084**	-0.0083**	-0.0084**
	(0.0035)	(0.0035)	(0.0035)	(0.0035)
Div_Assets	0.0259*	0.0267*	0.0261*	0.0269*
	(0.0154)	(0.0154)	(0.0154)	(0.0154)
Leverage	-0.0091***	-0.0092***	-0.0091***	-0.0092***
	(0.0024)	(0.0024)	(0.0024)	(0.0024)
Asset_Tangibility	0.0187***	0.0187***	0.0187***	0.0188***
	(0.0035)	(0.0035)	(0.0035)	(0.0035)
Constant	0.0730***	0.0726***	0.0731***	0.0727***
	(0.0102)	(0.0102)	(0.0102)	(0.0102)
Observations	39,606	39,606	39,606	39,606
R-squared	0.3923	0.3914	0.3923	0.3915
Number of Firms	3,073	3,073	3,073	3,073
Firm FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 4.13 OLS Regressions Estimating the Influence of Corporate Political Connections on the Association between Executives' Ownership and R&D Investments (An Alternative Measure of Ownership)

$R\&D\_Assets_{\ it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Alternative\_OWN)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ (**Model 2**)

$R\&D\_Assets_{\ it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Alternative\_OWN)_{it} + \beta_3(Political\ Connections\ Proxy\ X\ Alternative\_OWN)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ (**Model 3**)

The dependent variable in all models is R&D to Total Assets, set to zero if missing. The only difference between Models 2 and 3 is the interaction term in Model 3. Each Model (2 and 3) includes two columns (A and B) with two respective political connections proxies applied. In column (A), PC_Candidate(6Y) is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window, and PC_Financial(6Y) in column (B) is computed as the natural logarithm of one plus the total dollar value of political donations made by a firm to candidates supported by the firm's sponsored PAC over a six-year window. Executives' ownership (OWN_Alternative) is measured by the percentage of total shares owned excluding options (SHROWN_EXCL_OPT_PCT), a variable directly available from the ExecuComp database but with more missing values, and excluded if missing. The Political Connections Proxy X OWN_Alternative is an interaction term consisting of the multiplication of political connections and executives' ownership measures. All models control for the common determinants of R&D found in the literature (Size, ROA, Growth Opportunity Q, Herfindahl Index (HI), Cash_Assets, Div_Assets, Leverage, and Asset_Tangibility). All models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The financial variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in all models. The VIF tests do not exceed 5 (max is 1.91). Variable definitions are reported in Appendix 4.A.

Variables	**No Interaction Term (Model 2)**		**With an Interaction Term (Model 3)**	
	PC_Candidate(6Y) A	**PC_Financial(6Y) B**	**PC_Candidate(6Y) A**	**PC_Financial(6Y) B**
Political Connections Proxy	0.0012***	0.0003***	0.0012***	0.0003***
	(0.0003)	(0.0001)	(0.0003)	(0.0001)
OWN_Alternative	-0.0105**	-0.0104**	-0.0115**	-0.0117**
	(0.0048)	(0.0048)	(0.0054)	(0.0055)
Political Connections Proxy X OWN_Alternative	-	-	**0.0017**	**0.0007**
	-	-	(0.0024)	(0.0007)
Size (Ln Assets)	-0.0102***	-0.0101***	-0.0103***	-0.0101***
	(0.0008)	(0.0008)	(0.0008)	(0.0008)
ROA	-0.0785***	-0.0786***	-0.0785***	-0.0786***
	(0.0072)	(0.0072)	(0.0072)	(0.0072)
Growth Opportunity (Q)	0.0033***	0.0033***	0.0033***	0.0033***
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Industry Concentration (HI)	-0.0050*	-0.0050*	-0.0050*	-0.0050*
	(0.0029)	(0.0029)	(0.0029)	(0.0029)
Cash_Assets	-0.0055	-0.0055	-0.0055	-0.0055
	(0.0040)	(0.0040)	(0.0040)	(0.0040)
Div_Assets	0.0225	0.0230	0.0228	0.0233
	(0.0153)	(0.0153)	(0.0153)	(0.0153)
Leverage	-0.0105***	-0.0106***	-0.0105***	-0.0106***
	(0.0027)	(0.0027)	(0.0027)	(0.0027)
Asset_Tangibility	0.0169***	0.0169***	0.0169***	0.0170***
	(0.0044)	(0.0044)	(0.0044)	(0.0044)
Constant	0.0750***	0.0745***	0.0751***	0.0746***
	(0.0099)	(0.0100)	(0.0099)	(0.0100)
Observations	28,965	28,965	28,965	28,965
R-squared	0.4073	0.4064	0.4074	0.4066
Number of Firms	2,821	2,821	2,821	2,821
Firm FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 4.14 OLS Regressions Estimating the Influence of Corporate Political Connections on the Association between Executives' Ownership and R&D Investments (An Alternative (Piecewise) Measure of Ownership)

$R\&D\_Assets_{\ it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(OWN\_05)_{it} + \beta_3(OWN\_0525)_{it} + \beta_4(OWN\_25)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ (**Model 2**)

$R\&D\_Assets_{\ it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(OWN\_05)_{it} + \beta_3(OWN\_0525)_{it} + \beta_4(OWN\_25)_{it} + \beta_5(Political\ Connections\ Proxy\ X\ OWN\_05)_{it} + \beta_6(Political\ Connections\ Proxy\ X\ OWN\_0525)_{it} + \beta_7(Political\ Connections\ Proxy\ X\ OWN\_25)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ (**Model 3**)

The dependent variable in all models is R&D to Total Assets, set to zero if missing. The only difference between Models 2 and 3 is the interaction term in Model 3. The political connections proxy is PC_Candidate(6Y), which is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window. Executives' ownership is measured by using three piecewise-linear specification terms as follows: OWN_05= OWN if OWN < 0.05, and 0.05 otherwise; OWN_0525= zero if OWN ≤ 0.05, OWN minus 0.05 if 0.05 < OWN < 0.25, and 0.20 if OWN ≥ 0.25; and OWN_0525= OWN minus 0.25 if OWN > 0.25 and zero otherwise. OWN used in all three terms is measured by the shares owned by all executive teams, excluding options, divided by total shares outstanding and excluded if missing. All models control for the common determinants of R&D found in the literature (Size, ROA, Growth Opportunity Q, Herfindahl Index (HI), Cash_Assets, Div_Assets, Leverage, and Asset_Tangibility). All models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The financial variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in all models. The VIF tests do not exceed 5 (max is 2.38). Variable definitions are reported in Appendix 4.A.

	No Interaction Term (Model 2)	**With an Interaction Term (Model 3)**
Variables	**PC_Candidate(6Y)**	**PC_Candidate(6Y)**
Political Connections Proxy (PC_Candidate(6Y))	0.0008***	0.0009***
	(0.0002)	(0.0003)
OWN_05	-0.0029	0.0006
	(0.0238)	(0.0264)
Political Connections Proxy X OWN_05	-	**-0.0077**
	-	(0.0095)
OWN_0525	-0.0281***	-0.0309***
	(0.0096)	(0.0109)
Political Connections Proxy X OWN_0525	-	**0.0053**
	-	(0.0062)
OWN_25	0.0097	0.0094
	(0.0124)	(0.0139)
Political Connections Proxy X OWN_25	-	**0.0004**
	-	(0.0054)
Size (Ln Assets)	-0.0094***	-0.0094***
	(0.0007)	(0.0007)
ROA	-0.0696***	-0.0696***
	(0.0064)	(0.0064)
Growth Opportunity (Q)	0.0031***	0.0031***
	(0.0004)	(0.0004)
Industry Concentration (HI)	-0.0034	-0.0033
	(0.0026)	(0.0026)
Cash_Assets	-0.0083**	-0.0084**
	(0.0035)	(0.0035)
Div_Assets	0.0254*	0.0257*
	(0.0154)	(0.0154)
Leverage	-0.0092***	-0.0091***
	(0.0024)	(0.0024)
Asset_Tangibility	0.0187***	0.0188***
	(0.0035)	(0.0035)
Constant	0.0730***	0.0730***
	(0.0103)	(0.0103)
Observations	39,606	39,606
R-squared	0.3924	0.3926
Number of Firms	3,073	3,073
Firm FE	No	No
Year FE	Yes	Yes
Industry FE	Yes	Yes

Appendices to Chapter 4

Appendix 4.A: Variable Definitions

The tables below present the definitions of variables used in the current study. The sources and data items used from each source are also provided. The variables are classified into three segments: political connections variables, managerial ownership variables, and financial variables.

- **Political Connections Variables:**

Variable	Definition	Data Item	Proxy For	Source
$PC\_Candidate_{it}$	The natural logarithm of one plus the total number of candidates supported by a firm over a six-year window. $PC\_Candidate_{it} = Ln\left(1 + \sum_{j=1}^{J} Candidate_{jt,t-5}\right)$ where $Candidate_{jt,t-5}$ is an indicator that equals one if the firm contributed to $Candidate_j$ over the years t-5 to t.	Cand_ID	Political Connections A	Federal Election Commiss-ion (FEC)
$PC\_Financial_{it}$	The natural logarithm of one plus the total amount of dollar contributions to candidates by a firm over a six-year window. $PC\_Financial_{it} = Ln\left(1 + \sum_{j=1}^{J} Amount_{jt,t-5}\right)$ where $Amount_{jt,t-5}$ is the sum of total dollar contributions provided by a firm to $Candidate_j$ over the years t-5 to t.	Transaction_ amt	Political Connections B (Supplementary)	FEC
Dummy_PC	A dummy variable equal to one if firm i contributed to one or more political candidates in year t and zero otherwise.	[Transaction_ amt > 0]	Political Connections (Robustness Check)	FEC

- **Managerial Ownership Variables:**

Variable	Definition	Data Item	Proxy For	Source
OWN_{it}	The sum of overall shares owned by the executives, excluding options, divided by the number of common shares outstanding as reported by the company (drop if zero or missing).	(SHROWN_EXCL_ OPTS /SHRSOUT)/1000	Executives' Equity Ownership	ExecuComp
$OWN\_Alternative_{it}$	A directly available variable, with many missing observations. It is the sum, overall executives, of the percentage of shares owned, excluding option grants outstanding (drop if zero or missing).	(SHROWN_EXCL_ OPTS_PCT)/100	Executives' Equity Ownership (Robustness Check)	ExecuComp
OWN_05 *OWN_0525* *OWN_25*	Equals OWN if OWN < 0.05; 0.05 if OWN ≥ 0.05 Equals 0.00 if OWN ≤ 0.05; OWN minus 0.05 if 0.05 < OWN < 0.25; 0.20 if OWN ≥ 0.25 Equals OWN minus 0.25 if OWN > 0.25; 0.00 if OWN ≤ 0.25	(SHROWN_EXCL_ OPTS /SHRSOUT)/1000	Executives' Equity Ownership (Robustness Check)	ExecuComp

➢ **Financial Variables[43]:**

Variable	Definition	Data Item	Proxy For	Source
R&D_ASSETS	Research and development expenditures scaled by the book value of total assets (any missing value=0).	XRD/AT	R&D Investments	Compustat
Size	The natural logarithm of the book value of total assets.	Ln (AT)	Firm Size	Compustat
ROA	The operating income before depreciation scaled by the book value of total assets.	OIBDP/AT	Profitability	Compustat
Growth Opportunity (Q)	The book value of assets (AT) plus the market value of equity (CSHO*PRCC) minus the book value of equity (CEQ) minus balance sheet deferred taxes (TXDB, is set to zero if missing), all scaled by total assets.	[(AT + CSHO*PRCC – CEQ-TXDB)/AT]	Growth Opportunity	Compustat
Herfindahl Index (HI)	The HI in year t is calculated by squaring the market share of all firms in an industry then summing the squares as: $$HI = \sum_{i=1}^{n} (MS_i)^2$$ The Herfindahl index (HI) of a firm's industry in year t is calculated based on sales at four-digit SIC industries.	SIC, SALE	Industry Concentration	Compustat
Cash_Assets	The cash and short-term investments scaled by total assets.	CHE/AT	Liquidity	Compustat
Div_Assets	The dividend of the current year's net income scaled by total assets.	DVC/AT	Dividend Payment	Compustat
Leverage	The sum of the long-term and short-term debt scaled by total assets.	(DLTT+DLC)/AT	Financial Leverage	Compustat
Asset_Tangibility	The tangible fixed assets as the net book value of property plant and equipment scaled by total assets.	PPENT/AT	Tangibility	Compustat

[43] All financial variables are calculated following Ovtchinnikov *et al.* (2020), except the Liquidity (Cash_Assets), which is added to this study's control variables and calculated following Hirshleifer *et al.* (2012).

Appendix 4.B: Quasi-Natural Experiment

To test the causal effect of corporate political connections on R&D investments and hence address the endogeneity issue, the current study exploits an exogenous change in the political contributions during the sample period. It follows Ovtchinnikov *et al.* (2020) by using the unexpected changes in the House of Representatives' committee assignments in 1994, triggered by the surprise Republican win and the Newt Gingrich promotion to be the Speaker of the House of Representatives. The most important change (for this study) is Newt Gingrich's departure from the traditional Republican practice of assigning congressional committee chairman positions based on seniority to assignments based on party loyalty. Within a week of the November 1994 elections, the new leadership in the House of Representatives announced the appointment of four junior members of Congress to committee chairman positions, bypassing the expected senior candidates' posts[44].

Such an event is considered suitable for analysing the importance of political contributions, especially to powerful positions, on firms' R&D for several reasons. First, this event, which is the new procedure to assign committee chairpersons, was completely unexpected. Second, the changes in the committee chair assignments were clearly exogenous to firms' R&D. Third, the event had an effect on various firms (Ovtchinnikov *et al.*, 2020).

Following Ovtchinnikov *et al.* (2020), the treatment group includes firms contributing to at least one of the four would-be committee chairs during the 1990-1994 period. The

[44] Robert Livingston (LA) was promoted during the first week following the 1994 election to the chairman position on the Appropriations Committee, bypassing John Myers (IN) in a higher-ranking position. Thomas Bliley (VA) and Henry Hyde (IL) were promoted to the chairman positions on the Energy and Judiciary committees, respectively, bypassing Carlos Moorhead (CA), who was in a higher ranking. A house freshman, David McIntosh (IN), was appointed to be the chairman of the Natural Resources, National Economic Growth, and Regulatory Affairs Subcommittee of the Government Reform and Oversight Committee.

control group, firms with chair contributions, includes firms that supported one or more existing committee chairs during the 1990-1994 and 1995-1999 periods[45].

If political contributions to powerful politicians are essential for firms' R&D, the level of R&D of the treatment firms is expected to increase following the 1994 election.

The results are presented in Figure 4.B.1. As shown in this figure, treatment firms have increased their R&D after the event of 1994, compared to pre-event – particularly in 1995 and 1997. A DiD model is applied to compare the R&D between the two groups after the event to gain further understanding. This model includes two years pre-1994 and two years post-1994. As shown in Table 4.B.1, the treatment group has a higher level of R&D after the event (as the interaction of the dummy treatment and the post-1994 is positive), though this difference is not statistically significant. Hence, there is not enough evidence to reject the null hypothesis that there is no difference between the two tested groups. For further investigation, the margin estimations of the DiD test are presented in Table 4.B.2. As shown in Table 4.B.2, the average R&D of the treatment group is higher after the event. The control group had a slight reduction in their R&D after 1994. However, the difference between the two groups (DiD) is not statistically significant, as shown earlier.

Hence, it is concluded from this experiment that while politically connected treatment firms increased their R&D following the 1994 election, they are not statistically different from the control group. Therefore, there is not enough evidence to prove the causal effect of political contribution on R&D based on such an experiment.

[45] This study wanted to include a second control group consisting of firms that supported no existing committee chairs during the 1990-1994 and 1995-1999 periods, similarly to Ovtchinnikov *et al.* (2020). However, the number of firms that supported no existing chairman position during the time of the analysis is minimal in the sample (14 firms). So, this control group has been excluded. The author thanks Charles Stewart III for generously providing the House Committee Assignment data on his website (http://web.mit.edu/17.251/www/data page.html).

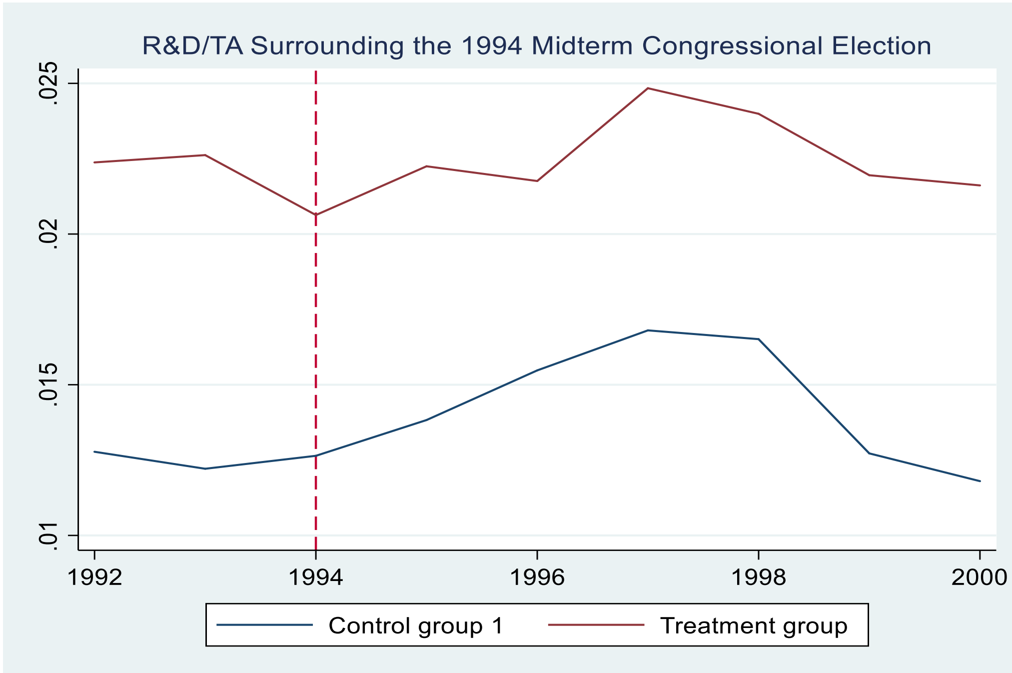

Figure 4.B.1: R&D Surrounding the 1994 Midterm Congressional Election

This figure shows the time-series dynamics of the R&D ratio in S&P1500 firms surrounding the 1994 Midterm congressional election. The sample consists of S&P1500 non-financial firms with political contributions to House Representatives from 1992-1999. The red line tracks the treatment group, consisting of 226 firms that supported four junior politicians who unexpectedly became committee chairs in Nov. 1994. The blue line tracks the control group, consisting of 340 firms that supported one or more existing House committee chairs during the 1990-1994 and 1995-1999 periods. The dashed vertical line presents the sudden event of assigning junior politicians to hold chair positions in the House of Representatives in Nov. 1994.

Table 4.B.1: Difference-in-Differences Regression Results (1992-1996)

$$R\&D\_Assets_{\ it} = \alpha + \beta_1(Treat\_Firms)_i + \beta_2(Post\_1994)_t + \beta_3(Treat\_Firms_i\ X\ Post\_1994_t) + \varepsilon_{it}$$

In the model, Treat_Firms is a dummy variable that takes a value of one if the firm supports one of the four junior politicians who unexpectedly became House committee chairmen in 1994. The Treat_Firms dummy takes a value of zero if the firm belongs to the control group, consisting of firms that supported one or more existing committee chairs during 1990-1994 and 1995-1999. Post_1994 is a dummy variable that takes the value of one if the period is after 1994 and zero otherwise. The model includes two years before and two years after the 1994 midterm congressional election. The final sample consists of 1,657 observations for 398 non-financial firms of the S&P1500.

Variables	**R&D/AT**
Treat_Firms	0.0087***
	(0.0022)
Post_1994	-0.0003
	(0.0025)
Treat_Firms X Post_1994	**0.0014**
	(0.0034)
Constant	0.0132***
	(0.0017)
Observations	1,657
R-squared	0.0182

Table 4.B.2: Difference-in-Differences Margin Estimations (1992-1996)

This table presents the results of the DiD margin estimates. The sample consists of 398 non-financial firms from S&P1500. Treat_Firms comprise 205 firms that supported four junior politicians who unexpectedly became House committee chairmen in Nov. 1994. Control_Firms comprise 193 firms that supported one or more existing House committee chairpersons during the 1990-1994 and 1995-1999 periods. Pre_1994 consists of the two years before the event of 1994 (1992-1993). Post_1994 consists of the two years after the 1994 event (1995-1996). DiD presents the difference-in-differences results followed by its p-value.

	Pre_1994	**Post_1994**	**Difference**
Treat_Firms	0.0219***	0.0230***	0.0011
Control_Firms	0.0132***	0.0129***	-0.0003
		DiD	**0.0014**
		p-value	0.6857

Chapter 5: Corporate Political Connections and ESG Negative Incidents: Implications for Firm Performance[46]

Keywords: political connections; political hard-money contributions; campaign contributions; ESG negative incidents; ESG dimensions; reputational risk; performance; accounting-based performance; market-based performance.

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[46] This chapter was presented at the 14th International Accounting & Finance Doctoral Symposium (IAFDS) 2021. The author thanks the Academic Chair Discussant, Professor Helen Bollaert (Professor of Finance at the School of Knowledge Economy and Management (SKEMA) Business School), and the participants for their valuable feedback. At that time, Professor Bollaert was and had been a reviewer for several international academic journals, including the Journal of Accounting and Finance (2017), European Management Journal (2019), British Journal of Management (2021), and Journal of Corporate Finance (2021). Hence, it was an honour to have her valuable comments and improve the chapter based on them.

5.1 Introduction

Corporate political activities (CPAs) are a motivating strategy complementing corporations' overall business agenda (Suarez, 1998). Corporations are often more politically active when they recognize that their business interests will be influenced by public policy deliberations (Suarez, 2000). Public policymakers are generally concerned about firms' environmental, social, and governance (ESG) practices, and tend to apply policies that better serve such practices. Investors have recently directed their attention to companies' ESG practices (Bernow *et al.*, 2017). When firms' ESG practices falter, the market reacts negatively (e.g., Capelle-Blancard and Petit, 2019; Grewal *et al.*, 2019). This indicates that firms are exposed to risks related to their ESG negative incidents, including reputational risk. Repeated failure of ESG practices also alerts policymakers to form policies that could adversely affect firms' activities and performance.

Corporate political connections literature shows that firms' long-term connections to politicians are considered a strategic resource that helps promote, neutralize, or even manage the external factors that affect their investments (Russo and Fouts, 1997). As forming public policies is considered to be an external factor, firms might use their long-term direct financial support to political candidates as a proactive strategy, helping them obtain access to and/or influence policymakers when needed. This strategy was explained and labelled the "financial-incentive strategy" in Hillman and Hitt's (1999) model of corporate political strategy formulation. Within the context of this study, firms' long-term connections to politicians, i.e., a relational political approach, can be used as a proactive strategy to mitigate the consequences of their negative ESG practices, including the possibility of forming policies that might harm their current business practices. Building on this, the objective of the current chapter is to examine the association between corporate ESG mistakes and corporate political connections, through the number of candidates supported in their (re)election campaigns over a long-term period. It also investigates how each component of the ESG mistakes (**E**nvironmental, **S**ocial, and **G**overnance) is associated with corporate political connections. Furthermore, it tests the impact of long-term corporate political connections on the association between firms' ESG mistakes and their performance, using Tobin's Q and return on assets (ROA).

The current study's importance lies in the fact that the tainted ESG reputation of corporations has become regarded as a business risk (COSO, 2018). Corporate ESG incidents have been the focus of investors and are considered to be one of the main issues that affect firms' reputation and consequently performance (e.g., Capelle-Blancard and Petit, 2019; Grewal *et al.*, 2019). In January 2018, Laurence Fink (Chairman/CEO of BlackRock) set out the significance of ESG factors to investors in a letter addressed to some of the world's biggest companies, indicating that ESG-related risks need to be addressed as this is essential for long-term value creation[47]. The message indicates how investors are concerned about corporations' ESG risks and have considered them in their investment decisions. Like investors, firms' managers are concerned about their ESG shortfalls and how these affect their firms' performance. Studies show that corporate reputational damage resulting from repeated failure of ESG practices adversely affects customers/stakeholders' perceptions of firms, resulting in reduced revenues and operating cashflows (Gatzert, 2015). Additionally, ESG negative incidents are a costly risk for firms in the long run and having media coverage of ESG incidents can raise firms' financial and reputational risk levels. Kölbel *et al.* (2017) documented that the higher media coverage of corporate social irresponsibility (CSI), which is linked to ESG incidents, is associated with higher financial risk and leads to higher compensations required by investors, indicating that ESG incidents influence firms' risk exposure. Negative ESG incidents can affect firms' reputation and increase the potential for public policy pressures arising from poor ESG performance. Hence, firms usually have some strategies to offset the potential changes in policies that can negatively affect their activities. Patten (2002) finds that firms with poor environmental performance have greater positive environmental disclosures in their 10-K reports to counteract the possible increased public policy pressures arising from the former, and use the latter as a proactive policy tool. Patten and Trompeter (2003, p.86)

[47] According to Business Insider, BlackRock manages $6.3 trillion in assets. For details, see https://www.businessinsider.com/blackrock-ceo-larry-fink-just-sent-a-warning-to-ceos-everywhere-2018-1

state "firms may believe that by projecting an image of environmental concern and awareness they can reduce the likelihood of having negative government actions initiated or passed." Additionally, providing direct financial support to legislators' election campaigns can be a financial incentive strategy/tactic used by firms to influence policy outcomes (Hillman and Hitt, 1999).

The literature shows that association between ESG incidents and corporate political contributions to support politicians in their (re)election campaigns is far from complete. For instance, Cho *et al.* (2006) find that firms with poor environmental performance tend to make more political contributions in an attempt to improve their perceived environmental performance by encouraging less strict performance standards; however, their study focused only on environmentally sensitive industries in the 2002 election campaign cycle. This thesis evaluates how corporations' ESG negative incidents from 2007-2018 can be associated with political contributions on a larger scale; it examines whether long-term political contributions by corporations to candidates in their (re)election campaigns (relational approach) can be used as a *proactive* and *preemptive* strategy that helps in the case of such incidents. It is expected that firms with higher ESG incidents participate more in the financial support of legislators in their (re)election campaigns to offset the possible increase in public policy pressure and change in standards. While Cho *et al.* (2006) only tackled the bad environmental performance of firms, this thesis expands this by looking at how the aggregate tainted ESG score and each individual factor of ESG negative incidents are associated with firms' political connections[48]. This is because ESG incidents are not only related to environmental, but also social (e.g., human rights violation) and governance incidents (e.g., fraud), which add to the ESG risk exposure score that firms receive. Given the hitherto absence of mandatory disclosure of ESG mistakes in the US, media coverage and reach, along with other information sources on ESG news (e.g., NGOs), are considered one way to alert corporations about potential reputational problems (Asante-Appiah, 2020).

[48] The differences between this work and Cho *et al.* (2006) were explained in detail in Section 2.4.1.

Overall, this chapter examines the relationship between tainted ESG incidents and corporate political connections and assesses the association between each factor of those incidents and corporate political connections. It also tests the impact of corporate political connections on the association between tainted ESG incidents and firm performance using Tobin's Q and ROA. These examinations are conducted using fixed effects OLS regression models on panel data of publicly-listed US firms from 2007-2018. The main sample was derived from three main sources – one for each different data type: the negative ESG incidents data were obtained from the RepRisk database; the corporate political contributions data from the FEC datasets; and the financial variables from the Compustat database. The final sample consists of 23,053 firm-year observations during the period 2007-2018.

This work's findings suggest that firms' tainted ESG incidents are positively associated with their political connections. It further adds that the intensity of those connections, when compared to the likelihood of forming them, has a more positive association with corporate negative ESG incidents. This agrees with Snyder (1992) who found that an essential aspect of the success of corporate political strategies is to have multi-period political investments, where firms can cultivate relationships with key policymakers.

This study also suggests that when examining each factor of ESG negative incidents and its association with corporate political connections, the results vary: Environmental issues have the highest positive and consistent association, compared to governance and social issues; Governance-related incidents have a positive association, but this is not always statistically significant; Social issues have the lowest positive association and this association is not significant in most of the tests. This indicates that governance and social issues do not have a direct association with corporate political connections when taken individually. However, they have an essential role when taken jointly (overall ESG incidents score) as firms have greater political connections when they have greater overall negative ESG incidents. Moreover, governance failure can be the root of any other social and/or environmental failures, indicating the essential role of governance issues. Analysis of tainted ESG components also indicates that environmental incidents create the greatest concern for managers, who use their political strategies more when their incidents are environmentally related. There are two possible reasons. First, environmental incidents are more tangible and have a greater damage scope, which increases the possibility of public policy pressures. Second, compared to the reversal of social and governance incidents, the reversal of damage resulting from environmental incidents is extremely difficult, costly, and time-consuming.

The findings also show that corporate political connections have a positive and significant impact on the association between ESG negative incidents and firm performance only when Tobin's Q is used. This is in line with the assumption that corporations are using their financial incentives to politicians to influence policy outcomes (Hillman and Hitt, 1999) or to have access to changes in or continuance of government policies (e.g., Grossman and Helpman, 1994). The findings further suggest that the interaction effect of political connections and ESG negative incidents on the accounting-based financial performance (ROA) is not statistically significant.

This chapter contributes to the literature in several ways. First, it makes a contribution to corporate political connections literature. While the effect of political connections on firms' performance has been widely studied and debatable outcomes have been documented, the effect of such connections, when firms have tainted ESG incidents, on firms' performance has not yet been tackled, to the best of the researcher's knowledge. This study contributes by showing that other non-market factors, e.g., poor ESG practices, can be associated with companies' investments in political strategies. Using RBT, it adds to the extant literature by showing that firms' long-term connections to politicians can be a way to manage reputational risk and result in better firm performance (Tobin's Q).

This chapter also contributes to corporate reputation literature. Several studies have tackled how negative media and public information coverage of corporate incidents has a negative impact on firm reputation. Kothari *et al.* (2009) noted that the credibility of news disclosure by the Press is higher than that for companies or analysts. Other studies examined how positive ESG activities can affect firm performance and value positively (e.g., Lo and Sheu, 2007; Filbeck *et al.*, 2009; Fatemi *et al.*, 2015) or negatively (e.g., Brammer *et al.*, 2006; Lee and Faff, 2009). However, until this thesis, no study investigates how the association between negative reputation generated by media and other public sources' coverage of ESG incidents and firm performance can be influenced by the firm's political connections. This study has a further contribution as it tests the interaction effect of corporate political connections and negative ESG incidents on firm performance using both market-based and accounting-based performance measures.

The current study has several implications. First, it shows how corporations deal with the reputational risk that arises from their ESG negative incidents; one way is by building long-term political connections through hard-money contributions to support candidates in their (re)election campaigns. However, managers first need to consider the ethicality of their practices (Cho *et al.,* 2006). The second implication is for policymakers. It is found that bad corporate ESG incidents are positively associated with corporate political contributions, suggesting a need for regulations. Specifically, the SEC may need to decree that publicly traded corporations disclose ESG factors in their reports. Additionally, as suggested in Chapter 4, the SEC may also mandate the disclosure of political expenditures in the regularly released reports of publicly-listed firms, resulting in better transparency between corporations and their investors.

The remainder of this chapter is organized as follows. Section 5.2 explores the background to this work using prominent pertinent literature and presents the hypotheses development. Section 5.3 covers the sample selection process, data collection, and identification of variables. Section 5.4 presents the results and analyses, and Section 5.5 concludes the chapter.

5.2 Background and Hypotheses Development

Research on organizational legitimacy suggests that organizations need their actions to be socially acceptable as this is essential in obtaining needed resources and contributes to their survival and long-term sustainability (Meyer and Rowan, 1977; Oliver, 1991; Suchman, 1995). Studies show that information on firms disseminated by media and other public sources can affect a firm's legitimacy, reputation, and social acceptance (Fombrun and Shanley, 1990; Fombrun, 1996; Pollock and Rindova, 2003). Literature on corporate negative/adverse ESG incidents documents that such incidents destroy a firm's reputation, resulting in harmful consequences. A bad reputation can reduce a firm's social approval (Zavyalova *et al.*, 2012), turn away major stakeholders (Deephouse and Carter, 2005), lower its market value (Capelle-Blancard and Petit, 2019), increase stock return volatility and capital cost (Kothari *et al.*, 2009), and threaten its legitimacy and survival (Suchman, 1995; Fombrun, 1996), resulting in depleted revenues, higher operating, financing and regulatory costs, and the destruction of shareholder value (Asante-Appiah, 2020).

ESG negative incidents can be defined as harmful environmental, social, and/or governance events arising from a firm's unethical/illegal behaviour (Gloßner, 2018), resulting in reputational damage, compliance failures, and/or financial losses (Brammer *et al.*, 2006)[49]. Examples of how bad practices related to ESG have caused massive economic and financial losses are: Deepwater Horizon's April 2010 oil spill disaster, following which BP lost half its share value (Smith *et al.*, 2011); the Moncler scandal, i.e., the Italian luxury outerwear company, a TV report on which in November 2014, showed geese being mistreated by jacket makers, resulting in a 6% drop in Moncler's market value (Capelle-Blancard and Petit, 2019); the March 2011 Fukushima Daiichi nuclear disaster. While the accident resulted directly from the Great East Japan Earthquake, its extent was related to TEPCO's governance failures, which resulted in a collapse in its market value (Kawashima and Takeda, 2012; Lopatta and Kaspereit, 2014). Moreover, incidents can have cross-sectional issues and are hence related to several of the ESG issues. In October

[49] While the literature does not have a standardized definition of ESG negative incidents, the definition provided here particularly shapes the ESG negative incidents scope used in the current study.

2018 and March 2019, two Boeing 737 Max aircraft crashed, resulting in environmental damage and killing more than 300 people. Undetected failures in software testing caused a weakness in onboard systems, leading to these fatal crashes; both Boeing cases are associated with E, S, and G issues. The crashes caused Boeing's market value to drop by nearly USD 25bn, demonstrating the harmful effect of ESG incidents on firms' market value[50]. Recent empirical works suggest that ESG negative incidents can result in negative market reactions. Gloßner (2018) finds that information on ESG incidents results in negative future returns predictions. Gantchev *et al.* (2021) provide empirical evidence on the exiting strategy applied by institutional investors following E and S incidents, which ultimately harm the firm value. Derrien *et al.* (2021) propose that, following negative ESG incidents, analysts downgrade their earnings forecast significantly and across all horizons, including the long-term. Hence, the evidence indicates the role of ESG negative incidents in harming both the earnings and value of firms.

Beyond anecdotal evidence, the strategies that firms decide to apply to mitigate the impact of ESG negative incidents are incomplete. Cho *et al.* (2006) suggest that firms spending more money in the political arena are likely to have higher levels of environmental disclosure but lower levels of environmental performance, adding that firms use both the disclosure and political spending strategically as complementary tactics to manage environmental public policy pressure. This research is different from theirs in several aspects including the political strategy approach, as it uses firms' long-term political contributions rather than those in a single election cycle. This thesis adds to existing, but incomplete, literature by examining the association between ESG negative incidents and firms' long-term political connections.

Institutional Theory is used to understand whether corporations use their political activities to compensate for their reputation being harmed due to questionable practices. The institutional theory of organization (DiMaggio and Powell, 1983; Scott, 1987; Zucker,

[50] https://www.reprisk.com/news-research/case-studies/reprisk-case-study-boeing

1987) concentrates on the role of the environments within which firms operate on the organizational structures, strategies, and activities. Institutional theorists contend that organizations mainly seek legitimacy (Oliver, 1991) which leads to social acceptance, competitive advantage, and ultimate survival (Scott, 1987; Zucker, 1987; Czinkota *et al.*, 2014). As legitimacy and reputation are mutually useful to acquire social status and competitive advantage[51] (Czinkota *et al.*, 2014), this study explains two different schools of thought on legitimacy. The institutional school assumes that corporations are not autonomous and must adapt to the external environment to survive (Meyer and Rowan, 1977; DiMaggio and Powell, 1983); the strategic school believes the opposite, i.e., that organizations do have control over forming legitimacy standards that help them gain access to resources competitively (Pfeffer and Salancik, 1978). Thus, the latter school expects corporations to be active in shaping their institutional environment instead of passively accepting external norms and values. To shape their institutional environment, firms need to acknowledge any legitimacy gaps/discrepancies between their actions and society's expectations of them (Sethi, 1979). A legitimacy gap often occurs when a firm's practices change while society's norms are unchanged, or vice versa (Wartick and Mahon, 1994). Scherer *et al.* (2013) documented three strategies that firms commonly employ to manage legitimacy gaps: (1) adapt to society's external expectations, (2) engage in open discourses with the focal stakeholders or societal groups who are questioning their legitimacy, or (3) manipulate their stakeholders' perception. Corporations may pursue the first by either changing their practices or engaging in CSR practices (e.g., Bansal and Roth, 2000; Fooks *et al.* 2011, 2013) to enhance their corporate image and reputation without any changes to current practices. The second strategy aims to reach a consensus, i.e., the two parties learn from each other, and a new match between organizational practices and social expectations will (re)establish the organization's legitimacy (Palazzo and Scherer, 2006). The last strategy is more related to this study. Scherer *et al.* (2013) suggest that firms may use a manipulating strategy to overcome their legitimacy gaps, i.e.,

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[51] Deephouse and Carter (2005) differentiated between legitimacy and reputation, stating that legitimacy stresses the social acceptance resulting from adherence to social norms and expectations, whereas reputation focuses on comparisons among organizations. They also refer to organizational legitimacy and reputation as having similar antecedents, social construction processes, and consequences.

firms actively influence social expectations by manipulating key policymakers in their environment (Barley, 2010). Pache and Santos (2010) refer to the concept of 'manipulation' as "the active attempt to alter the content of institutional requirements and to influence their promoters" (p.463). Others (e.g., Hillman *et al.,* 2004; Scherer *et al.*, 2013) suggest that social expectations are mainly shaped by firms' political strategies. Hence, firms attempt to influence social expectations by involving corporate political strategies, i.e., contributions to politicians in their (re)election campaigns (Suchman, 1995), indicating that those strategies are means to manage legitimacy gaps, including those arising from firms' ESG mistakes. This argument supports the economic regulation theory, which views corporate political contributions as a means to gain favours from political candidates rather than to influence the election outcome per se (Stigler, 1971).

Corporate political strategies, i.e., contributions to political campaigns, can establish communication channels that help firms influence legislators' policies and decisions (Baysinger, 1984; Keim and Zeithaml, 1986). These strategies can provide the ability to construct norms, beliefs and perceptions related to the social acceptability of firms' practices. Firms will be successful, provided their political strategies lead to policies and laws that favour their businesses (Lux *et al.*, 2012). As the context of this study focuses on evaluating ESG negative records, one could argue that firms with positive ESG records will benefit from engaging in corporate political strategies; however, firms with negative ESG records face legitimacy gaps therefore need to mitigate this problem by either manipulating existing legitimate standards or creating new ones through engaging in political campaign contributions. It is expected that when firms establish long-term political connections through continuous support to politicians in their (re)election campaigns, they can reconstruct public opinion and alter legitimacy standards in their favour. Consequently, they can mitigate the harmful effect of ESG negative incidents on their reputation, and any consequent stringent performance standards. This argument is based on RBT, where firms' long-term connections with politicians can be a strategic resource to help promote, neutralize, or even manage the external factors that affect their investments (Russo and Fouts, 1997). Thus, firms with negative ESG incidents are more likely to support more politicians and increase their political connections to reduce possible reputational damage and the passing of undesired new regulations. It is hypothesized that:

H1: Firms' negative ESG incidents have a positive association with their political connections.

Environmental, Social, and Governance issues are the components of a company's ESG risk score. Scholars are undecided on whether to use the overall ESG negative incidents score or the factors' scores when evaluating firms' ESG risk; some recommend the use of the overall score (e.g., Limkriangkrai *et al.*, 2017), others note that an ESG score is determined by three factors, each of which may have a different relation to and impact on financial performance (Galema *et al.*, 2008; Statman and Glushkov, 2009; Friede *et al.*, 2015) and hence recommend using the individualized score of each dimension. Cho *et al.* (2006) focused on environmental incidents and their association with political contributions. Alakent and Ozer (2014) focused on negative CSR records and their association with corporate engagement in political activities. However, studies have not examined the relationship between the individual dimensions of the ESG reputational risk score and firms' political contributions to support politicians (political connections), and which dimension has the greatest association with those connections. This is important as some studies have shown a variation in the effect of each component of ESG negative incidents. Asante-Appiah (2020) found that auditors tend to increase their efforts when the firm has tainted ESG related to environmental and governance issues, but not with regard to social issues. As the effect of each component could vary, it is interesting to explore the relationship between E, S, and G issues and their associations with firms' political connections. Based on these assertions, the following hypotheses are proposed as constituents of H1:

H1a: Firms' negative Environmental incidents (E_Issues) have a positive association with their political connections.

H1b: Firms' negative Social incidents (S_Issues) have a positive association with their political connections.

H1c: Firms' negative Governance incidents (G_Issues) have a positive association with their political connections.

Studies have shown the negative impact of ESG undesirable incidents on firms' value. In addition to the examples provided earlier in this section, Krüger (2015) studied how stock markets respond to positive and negative ESG events and found that investors react strongly negatively to negative events but weakly negatively to positive ones. Capelle-Blancard and Petit (2019) examined the extent and determinants of the stock market's reaction following ordinary news related to ESG issues; and showed that firms facing media coverage of negative events experience an average market value drop of 0.1% but gain nothing from positive Press announcements. This highlights the value-destroying effects of negative ESG incidents and that the perception of firms is negatively influenced by those incidents, particularly when highlighted by the Press. However, until now, no study has tackled the impact of corporate ESG negative incidents when firms use political connections as a proactive strategy to mitigate at least partially any negative effect of tainted corporate reputation on their performance. When firms have ESG negative incidents and are politically connected, it can result in a greater possibility of stalling the passing of policies that could negatively affect their activities and performance. This is based on Exchange Theory, which suggests that firms tend to use one or more of three general political strategies in an attempt to influence the policy process (Hillman and Hitt, 1999): (1) "information strategy", (2) "financial incentive strategy", (3) "constituency-building strategy"[52]. Within the context of this study, corporations may use the second strategy which is their direct financial incentives to politicians (via political contributions) as a long-term strategy to influence the policy process. The possibility of passing undesirable policies is much greater when firms have ESG negative incidents that reach society; those incidents can result in lower firm performance as firms consequently have

[52] For more details on the definition of each strategy, see (The Exchange Theory) provided in Section 2.6.

poorer reputations. Firms may thus use their contributions to political candidates as a strategy to offset questionable corporate practices that could adversely affect their performance. Accordingly, it is expected that corporate political connections have a positive impact on the association between ESG harmful incidents and firm's performance. Two measurements of firm's performance are used: Tobin's Q, and ROA. The former can reflect the market perception of investors and other market participants, and whether political connections can mitigate the harmful consequences of ESG negative incidents on the firm's valuation. The latter can reflect whether corporate political connections can mitigate the loss in revenues and cashflows from the tainted ESG incidents, as such incidents can adversely affect customers'/stakeholders' perceptions (Gatzert, 2015), resulting in lower accounting-based performance (ROA). Hence, using these two measurements of performance, it is hypothesized that:

H2a: Corporate political connections positively impact the association between firms' negative ESG incidents and market-based performance (Tobin's Q).

H2b: Corporate political connections positively impact the association between firms' negative ESG incidents and accounting-based performance (ROA).

Having presented this study's hypotheses, this work proceeds by presenting the sample, data, and variables used to test these hypotheses.

5.3 Sample Selection, Data Collection, and Variables' Identification

This section is divided as follows. Section 5.3.1 describes the sample selection process. Section 5.3.2 identifies and justifies the approach and data source used to collect corporate negative ESG data; it also explains the ESG measurements used. Section 5.3.3 identifies the approach and data source used to collect corporate political connections data and describes the proxies used to measure those connections. The variables used in each hypothesis are explained in Section 5.3.4.

5.3.1 Sample Selection Process

The sample comprises all US publicly traded companies in the RepRisk database from 2007-2018 with available data in the Compustat database. The dataset is based on firm-year observations.

Three databases are used for data collection and sample establishment: the negative ESG incidents scores are from the RepRisk database; the firm-specific political contributions made to political candidates in their (re)election campaigns are from the FEC datasets; the financial variables are from the Compustat database. After combining them, the final sample consists of 23,053 firm-year observations from 2007-2018; this sample is obtained after excluding firms not found in the RepRisk and Compustat databases, financial firms, and firms with missing total assets and/or missing sales (Table 5.1).

5.3.2 Identifying Corporate ESG Negative Incidents

The literature shows that corporate ESG scores can be identified using several databases, including Sustainalytics, Asset4-Thomson Reuters, MSCI (formerly KLD), and RepRisk. The ESG data source for this work and justifications for its selection are described next, then the specific ESG negative incidents measurements are explained.

5.3.2.1 The Data Source for Identifying Corporate ESG Negative Incidents

While addressing corporations' ESG-related risks is gaining growing attention and consequently has derived new regulations mandating ESG disclosure in several countries, public disclosure of ESG factors has not been mandatory in the US, until now (Asante-Appiah, 2020). Within this deficiency, the media and other publicly available information sources release information about corporations' ESG practices, which help evaluate corporations' ESG-related risks.

The RepRisk database is selected for this study because, being incident-based and focused directly on firms' negative incidents, it serves the study's objective. While the ESG scores given by other data sources indicate the most ethical companies, the RepRisk Index (RRI) particularly indicates those exposed to ESG risks. Companies with a high RRI value reflect a higher exposure to ESG bad practices (Dell'Atti and Trotta, 2016).

Several studies make comparisons between KLD and RepRisk when measuring firms' ESG risk. While ESG weaknesses provided by KLD are similar to ESG risk from RepRisk, the latter has many advantages. First, the RepRisk Index (RRI) is constructed based on firms' ESG incidents found through a systematic news search. KLD, however, depends more on firms' own documents, including annual and CSR reports, to assess their ESG. Consequently, firms can manipulate their KLD scores more easily when compared to the RepRisk Index (RRI) (Gloßner, 2017). Second, RepRisk distinguishes between major and minor ESG incidents, unlike KLD, which gives firms' ESG weaknesses the same weight. This brief comparison justifies using RepRisk in this research. Indeed, Duque-Grisales and Aguilera-Caracuel (2021) highlighted the need for using alternative ESG measures in future studies, other than information provided by the KLD and Sustainalytics databases.

RepRisk AG is a Swiss-based business intelligence data provider producing daily indicators about negative ESG-related incidents at the firm-level. Their database contains several measures of ESG issues from 2007. While earlier media literature collects articles from primary news sources, RepRisk screens over 100,000 public sources (i.e., media, stakeholders, government bodies, think tanks, newsletters) for news items criticizing companies for ESG issues and aggregates this information within a single merged metric (RepRisk, 2020). Through using such broad collections, RepRisk is considered an accurate database for overall negative media sentiment (Burke *et al.*, 2019).

The methodology used in the RepRisk database is also worth describing[53]. It uses artificial intelligence and a rules-based methodology to systematically flag and monitor material ESG risks and international standards' violations that can have reputational, compliance, and financial impacts on a company. Hence, the ESG incidents covered include any compliance failure, reputational damage, and/or operational risk (i.e., financial costs/losses). RepRisk's main research scope is to screen public sources for news on negative incidents and link those incidents to 28 distinct/predefined issues. For example, Environmental issues contain news concerning climate change, pollution, etc. Social issues include human rights abuse, child labour use, etc. Governance issues include money laundering, bribery, etc.[54] The 28 predefined issues that RepRisk uses have been selected and defined according to key international standards related to ESG issues and business standards (e.g., The World Bank Group Environmental, Health, and Safety Guidelines). Additionally, the United Nations Global Compact ten principles are captured in those 28 issues (RepRisk, 2020), giving the database scope further validity. Rather than company-driven, RepRisk methodology is issues- and event-driven, i.e., RepRisk screens both sources and stakeholders for ESG incidents according to those predefined 28 issues instead of using a specific list of companies (RepRisk, 2020). This gives the database the advantage of having greater coverage and being less biased, as it captures any company exposed to ESG risks, regardless of size, sector, country of headquarters/operations, and whether listed or not. Once an incident is identified, additional screening is conducted by trained analysts for verification, removal of duplicates, identifying the incident's nature and ensuring it is classified into the correct category within the 28 predefined categories. Besides, each incident is given a score (index) using a proprietary algorithm which calculates the index based on the identified issue, its severity (the harshness of the perceived impact of the incident), its reach (the influence and readership of the source), and the timing and frequency of the information (the appearance of the same incident

[53] For more details, see https://www.reprisk.com/content/static/reprisk-methodology-overview.pdf

[54] The 28 ESG issues covered by the RepRisk database are in Appendix 5.A. They include specific ESG practices examined in prior literature. For example, the illegal bribery examined by Lyon and Maher (2005) would be captured in the RepRisk governance category: "corruption, bribery, extortion, money laundering".

again after six weeks or the emergence of additional issues related to the story) (Burke *et al.*, 2019).

According to RepRisk Methodology (RepRisk, 2020), one incident can be related to multiple issues and, therefore, belongs to two or more E/S/G categories, or only one. Table 5.2 shows the incident type distribution in the current study's sample which indicates that over half the incidents are associated with two or more E/S/G categories (i.e., 2%+18%+12%+31%=63%); when E/S/G categories are taken individually, news about negative environmental incidents is the least (6%) compared to social (15%) and governance (16%).

After providing the justifications for using the RepRisk database and its methodology, the following explains the specific measurements used to identify corporate ESG negative incidents.

5.3.2.2 Measurements of Corporate ESG Negative Incidents

The RepRisk data manual[55] recommends using the peak value when comparing firms' ESG risk exposure. This variable presents the highest level of media and stakeholder exposure of a firm related to ESG issues during the previous two years. The RepRisk manual also suggests that an annual peak value can be calculated using the current RepRisk Index (Current_RRI) and selecting the highest score over the year. Accordingly, the first variable of corporate ESG negative incidents is (Peak_RRI_12M), which denotes the highest level of tainted ESG reputation (RRI) of firm i in year t. So, if firm i has an ESG rating (Current_RRI) of "50" in November 2000, and this was the maximum rate in that year, then the Peak RRI_12M of firm i in 2000 is "50".

Each month, RepRisk also calculates the current RRI, which denotes the current level of firms' media and stakeholder exposure to ESG-related issues. The peak and current RRIs

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[55] For more details see https://wrds-www.wharton.upenn.edu/documents/1475/RepRisk_-_Guidance_on_data_packages_and_elements_2021_version.pdf

typically range from zero (lowest exposure) to 100 (highest exposure). In the RepRisk data manual, the following risk exposure categorization is given based on the rate of RRI:

RRI Score	**Risk Exposure Level**
0-25	low
26-49	medium
50-59	high
60-74	very high
75-100	extremely high

For further investigation, there are three more variables, each of which is related to E, S, and G incidents, respectively. The RepRisk database indicates whether the RRI score has environmental, social, or governance mentions. However, unlike the current and peak RRI scores of a firm, which are issued relative to peers' scores, each component's percentage score reflects only the number of links/mentions of that component in proportion to the total number of links/mentions in the current RRI. For instance, according to the RepRisk manual, a higher percentage of environmental links for a firm does not suggest a worse environmental risk exposure, relative to peers; it only suggests the composition of news for the firm. Therefore, to compute a firm's tainted peak environmental reputation (E_ISSUES) relative to peers, the firm's average environmental percentage for the fiscal year is multiplied by its peak RRI in that year. The same is applied to S and G incidents. The three variables are calculated thus:

(E_ISSUES) = Peak_RRI_12M X Environmental_Avg_Percentage

(S_ISSUES) = Peak_RRI_12M X Social_Avg_Percentage

(G_ISSUES) = Peak_RRI_12M X Governance_Avg_Percentage

This approach in calculating each of the three variables is used following Asante-Appiah (2020), who used ESG data to examine the effect of firms' negative ESG reputation on audit effort and audit quality.

Overall, this work has a main variable of ESG negative incidents (Peak_RRI_12M), calculated based on the highest risk score given to the firm in the year. The three sub-variables, (E_ISSUES), (S_ISSUES), and (G_ISSUES), present the firm's tainted peak E/S/G reputations, respectively.

5.3.3 Identifying Corporate Political Connections

As discussed in Chapter 3, the current study uses the corporate political contributions to support political candidates in their (re)election campaigns through firms' PACs as a proxy to identify corporate political connections[56].

5.3.3.1 The Data Source for Identifying Corporate Political Connections

The data on corporate contributions to political candidates through PACs are obtained from the FEC datasets; although available these data are not straightforward. Hence, matching firms' contributions through their PACs with firms' identification in the Compustat database (GVKEY) was done manually. This study uses qualified PACs where 50 or more of the corporation members contributed to support political candidates[57], following Pham (2019).

5.3.3.2 Measurements of Corporate Political Connections

This work's main measure of corporate political connections is firms' number of supported candidates via a multi-period time horizon (six-year window). Similarly to Cooper *et al.* (2010), Wellman (2017), Pham (2019) and Ovtchinnikov *et al.* (2020), the main measure is *PC_Candidate*, which is the natural logarithm of one plus the total number of candidates a firm supports over a six-year window, defined as:

$$PC\_Candidate_{it} = Ln\left(1 + \sum_{j=1}^{J} Candidate_{jt,t-5}\right)$$

[56] The reasons for selecting firms' PACs as a proxy are explained in Section 3.2.
[57] Details regarding guidelines and regulations relating to corporate PACs' activities (i.e., ceiling limits of contributions) are provided in Section 3.2.1.

where $Candidate_{jt,t-5}$ is an indicator that equals one if the firm contributed to $Candidate_j$ over the years t-5 to t.

A supplementary proxy concerns the total dollar contributions to each candidate over a six-year window. As a robustness check, *PC_Financial*, is employed and defined as:

$$PC\_Financial_{it} = Ln\left(1 + \sum_{j=1}^{J} Amount_{jt,t-5}\right)$$

where $Amount_{jt,t-5}$ is the sum of total dollar contributions a firm provides to $Candidate_j$ over the years t-5 to t. This proxy was also used as an alternative to the number of supported candidates in several studies (e.g., Cooper *et al.*, 2010; Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020), and will be used in the current study's sensitivity analysis.

5.3.4 Variables' Identification

Since the dependent variable in the first hypothesis is different from the second, this section classifies each hypothesis' variables (dependent, explanatory, and control) separately.

5.3.4.1 The Dependent Variable of the First Hypothesis

The first hypothesis tests the association between corporate ESG negative incidents and corporate political connections. Its constituent hypotheses test the association between each factor of the ESG incidents and political connections. The dependent variable of the first hypothesis and its constituent hypotheses is the corporate political connections proxy (*PC_Candidate(6Y)*), which is the natural logarithm of one plus the total number of candidates a firm supports over a six-year window.

5.3.4.2 The Explanatory Variable of the First Hypothesis

The main explanatory variable of the first hypothesis is *Peak_RRI_12M*, which denotes the highest level of tainted ESG reputation of firm i in year t; for further analysis, it is substituted with each ESG component (i.e., (*E_ISSUES*), (*S_ISSUES*), and (*G_ISSUES*)) in separate models. The variable (*E_ISSUES)* is calculated as the firm's average environmental percentage for the fiscal year multiplied by its peak RRI in that year; the same is applied to S and G issues.

5.3.4.3 The Control Variables of the First Hypothesis

Most common variables considered in the literature as factors affecting corporate political activities at firm-level are controlled for in this work. All variables are obtained from the Compustat database. When testing the first hypothesis, Ozer and Alakent (2013) and Alakent and Ozer (2014) are mainly followed by controlling for these variables: *Size*, *Leverage*, and *Past_Performance*.

It was found that there are more firm-level variables that can influence firms' political contributions, e.g., Cash implies a pool of resources available for corporate donations (Seifert *et al.*, 2003), including political contributions (Boubakri *et al.*, 2013; Hill *et al.*, 2014). Hence, (*Cash_Assets*) is a control variable in this study. Studies also document that firm business diversification (Cooper *et al.*, 2010), growth opportunities (Lux *et al.*, 2011; Mathura and Singh, 2011; Sutton *et al.*, 2021), and corporate international operations (Hillman *et al.*, 2004) are essential determinants that affect firms' PACs' formation and political activities; indicating the necessity for controlling them. Overall, the control variables of the first hypothesis and its constituents are *Size, Leverage, Past_Perf, Cash_Assets, Buss_Seg, Assets_Growth*, and *International_Op*.

A brief explanation follows on how each control variable is calculated and associated with corporate political connections; square brackets indicate the data items used from the Compustat database to calculate each variable.

Firm size (*Size*) has a great influence on firms' political contributions, and is measured by the natural logarithm of the book value of total assets [Ln (AT)] (Mitchell *et al.*, 1997; Mathura and Singh, 2011). The Leverage ratio (*Leverage*) is also a control variable as it is an essential factor that affects a firm's tendencies towards investing in political strategies (Schuler and Rehbein, 1997; Hillman and Hitt, 1999). *Leverage* is calculated as the sum of the long-term and short-term debt scaled by the book value of total assets [(DLTT+DLC)/AT] (Lin *et al.*, 2015). Prior firm performance (*Past_Perf*) is another control variable following the prior literature, as better performing firms are believed to have additional resources that could be used for political purposes (Hillman, 2003; Hadani and Schuler, 2013; Ozer and Alakent, 2013). However, some studies (e.g., Chen *et al.*, 2015) argue that lower-performing firms are involved more in political activities to alleviate the problems causing their poor performance and consequently to improve future performance. *Past_Perf* is calculated as the average ROA during the past three years, which is the operating income before depreciation divided by the book value of total assets (Ave$[(\mathrm{OIBDP}/\mathrm{AT})_{\mathrm{t-1,t-2,t-3}}]$). Cash holdings (*Cash_Assets*) is also controlled and calculated as cash and cash equivalents divided by book assets (CHE/AT). The growth rate in assets (*Assets_Growth*) is the proxy used to control for growth opportunity, and calculated as the change in the book value of total assets between year t and year t-1 $[(\mathrm{AT_t}/AT_{t-1}) - 1]$ (Chen C. R. *et al.*, 2017). Following Cooper *et al.* (2010) and Smith (2016), firm diversification (*Buss_Seg*) is a proxy for business diversification and measured as the number of business segments the firm has in year t[58]. Having international operations (*International_Op*) can influence firms' dependence on government (e.g., export licences), and consequently, their political activities (Hillman *et al.*, 2004). Therefore, *International_Op* is included as a control variable, and measured by a dummy variable equal to one if a firm has operations outside the US in year t, and zero if operating only domestically. All variable definitions are summarized in Appendix 5.B.

Firm size is expected to be positively associated with political connections, where large firms tend to engage politically to a greater degree compared to small ones (Cooper *et al.*, 2010; Mathura and Singh, 2011). A positive association between political connections and the Leverage ratio is also expected; this is based on Faccio *et al.* (2006) who claim that

[58] Industry concentration is not included as several studies found it has no significant effect on PAC formation and activity (Boies, 1989; Humphries, 1991; Rehbein, 1995; Hansen and Mitchell, 2000).

lenders take into account the higher likelihood of politically connected borrowers being bailed out, thus rationally providing them with more leverage. Firm business diversification is also expected to be positively associated with political connections (Esty and Caves, 1983; Kim, 2008). US firms with international operations are expected to have greater dependence on government policies, making them more likely to have ongoing, long-term relationships with politicians (Hillman and Hitt, 1999); hence, a positive association is expected. Studies have inconclusive results about the direction of the relationship between the remaining variables (Past_Perf, Cash_Assets, and Growth opportunity) and corporate political connections, making it difficult to be predicted in the current study. Table 5.3 summarizes the literature view on the direction (positive or negative) of the relationship between the control variables of the first hypothesis and corporate political connections.

After explaining the dependent, independent, and control variables of the first hypothesis, these need to be described with regard to the second.

5.3.4.4 The Dependent Variables of the Second Hypothesis

The second hypothesis tests the role of corporate political connections in influencing the association between ESG harmful incidents and firm performance. The dependent variable is, therefore, firm performance.

Firm performance is measured using a market-based (Tobin's Q) and an accounting-based (ROA) measurement. Using both is suggested by Choi and Wang (2009) and used in several studies (e.g., Cui and Mak, 2002; Velte, 2017; Cao *et al.*, 2018). Hence, the second hypothesis is subdivided into two: (H2a) tests the impact of corporate political connections on the association between ESG harmful incidents and the firm's market-based performance (Tobin's Q), and (H2b) tests the same impact on the firm's accounting-based performance (ROA).

Tobin's Q as a measure of firm performance is commonly used (e.g., Lee *et al.*, 2014; Guerra Pérez *et al.*, 2015; Chen C. R. *et al.*, 2017; Cao *et al.*, 2018), and calculated as the ratio of market value of a firm's total assets to its book value. Following Grieser and Hadlock (2019) and others, Tobin's Q is calculated as the book value of assets (AT) plus the market value of equity (CSHO*PRCC) minus the book value of equity (CEQ), all scaled by the book value of total assets (AT). The primary dependent variable for this study's second hypothesis is Tobin's Q. A benefit of using Tobin's Q is the easier comparison across firms when compared to other measurements, such as stock returns or accounting measurements, where normalizations and risk adjustments are required (Lang and Stulz, 1994). In addition, it is a forward-looking measurement and reflects future profitability, which is more suitable for this study's context. ESG negative incidents are more likely to influence a firm's future, rather than current, profitability and performance, so using Tobin's Q can be a better measurement in this context. Finally, Tobin's Q is robust to accounting manipulations, which gives the usage of such a proxy for firm performance a further advantage (Jayachandran *et al.*, 2013).

While Tobin's Q has many advantages, in this study it is alternated with an accounting-based performance measure. This study uses ROA, defined as a firm's operating income (OIBDP) divided by total assets (AT). ROA is a commonly used accounting-based performance measurement (e.g., Roberts and Dowling, 2002) as it presents a company's profitability in relation to its total assets and reflects managers' effectiveness in generating profits/returns for shareholders (Megginson *et al.*, 2008).

Since both Tobin's Q and ROA are considered as firm performance measurements, each will be the dependent variable in separate tests. The primary dependent variable is Tobin's Q which will be alternated with ROA to evaluate how the interaction between ESG negative incidents and political connections will affect each performance measurement. According to Dubofsky and Varadarajan (1987), while both market and accounting-based measures are purported to measure a firm's performance, they might give conflicting results. Hence, it is essential to investigate the results using both measurements.

5.3.4.5 The Explanatory Variables of the Second Hypothesis

The second hypothesis explanatory variables are corporate political connections and ESG negative records, measured as follows:

Corporate Political Connections

PC_Candidate(6Y) is the proxy of political connections and calculated as the natural logarithm of one plus the total number of candidates a firm supports over a six-year window. The main source of political contributions is the FEC.

ESG Negative Records

The ESG negative records are measured using *Peak_RRI_12M*, which denotes the highest level of a firm's tainted ESG reputation in year t. Data are from the RepRisk database.

5.3.4.6 The Control Variables of the Second Hypothesis

The dependent variable of the second hypothesis is firm performance. A set of control variables is employed. Following Cao *et al.* (2018) and others, this study controls for firm size, leverage, firm business diversification, R&D expenditures, intangibles, and firm-level risk. Also, the growth rate of assets (proxy for growth opportunity) is controlled for, as it is considered to be a major contributor to a firm's performance (Cui and Mak, 2002; Kim and Bettis, 2014). Moreover, a firm's international operations (proxy for global diversification) are considered to influence firm performance (e.g., Rugman, 1979; Geringer *et al.*, 1989), so are controlled for. Overall, the control variables are *Size*, *Leverage*, *Buss_Seg*, *R&D_Assets*, *Intangibles*, *Cashflow_Volatility*, *Assets_Growth*, and *International_Op.*

A brief explanation follows of how each control variable is calculated and associated with firm performance. The data items used from the Compustat database to calculate the variables are in brackets.

Size, Leverage, Buss_Seg, Growth in Assets, and International_Op are calculated in the same way as for the control variables of the first hypothesis. R&D expenditures is used as a proxy for investment opportunities (Myers, 1977) and calculated as the R&D expenditures (XRD) scaled by the book value of total assets (AT). A firm's R&D is given a value of zero if it is missing (e.g., Hall, 1993; Grieser and Hadlock, 2019; Xu, 2020). Intangibility of assets (proxy for intangible capital) is measured as one minus the ratio of net property, plant and equipment (PPENT) to total assets (AT). Cashflow volatility (proxy for firm-level risk) is calculated as a rolling standard deviation for the annual cashflows in the previous three years (Houqe *et al.*, 2020), where the availability of at least a one-year observation is required. The calculations of all variables are given in Appendix 5.B.

Regarding the association between firm size and performance, it is difficult to predict the direction of the association as the literature offers an inconclusive prediction. Prior research suggests that a firm's size may positively influence its performance (measured by Tobin's Q/ROA), as larger firms have a greater visibility, maturity, variety of capabilities, and enjoy economies of scale. Several studies show a positive association between both firm size and Tobin's Q (e.g., Cao *et al.*, 2018) and firm size and ROA (e.g., Chi and Su, 2021). However, to the extent that the Market-to-Book ratio of assets (Tobin's Q) gauges a firm's growth opportunities, and consistent with the idea that growth firms are generally smaller (Cui and Mak, 2002), the size could negatively relate to Tobin's Q (McConnell and Servaes, 1990; Jayachandran *et al.*, 2013). Firm size can also be negatively associated with ROA (Jayachandran *et al.*, 2013) as larger firms are more likely to have higher agency costs and other costs associated with the management of larger firms, resulting in lower ROA.

The second control variable is the Leverage ratio. While many works have demonstrated the impact of the Leverage ratio on firm performance (e.g., Baker, 1973; Opler and Titman, 1994), the effect's direction is inconclusive. Using Tobin's Q, some studies reported a negative relationship (e.g., Wang *et al.*, 2014); others documented a positive one (e.g., Cui and Mak, 2002). Even when using ROA, positive (e.g., Lin *et al.*, 2015) and negative associations (e.g., Barton and Gordon, 1988; Cui and Mak, 2002) exist between the Leverage ratio and ROA.

The third control variable is firm diversification (*Buss_Seg*), and contradictory views exist on its association with performance, making it difficult to be predicted in this study. Some show that a firm's diversification leads to higher firm performance[59] (e.g., Grant and Thomas, 1986; Jose *et al.*, 1986); others suggest it is negatively associated with firm performance (e.g., Montgomery, 1985; Wernerfelt and Montgomery, 1988; Lang and Stulz, 1994). Firm diversification can be positively associated with firm performance (Tobin's Q/ROA), as diversification is associated with merits such as operating efficiency, greater debt capacity, and lower taxes (Porter, 1989; Kaplan and Weisbach, 1992; Fluck and Lynch, 1999). However, it can be negatively associated with performance (Tobin's Q/ROA) as diversified firms might have insufficient investment allocation between segments (Berger and Ofek, 1995).

The fourth control variable is R&D expenditures ratio. R&D is expected to be positively associated with Tobin's Q as such investments are its primary determinants. However, R&D is expected to be negatively associated with ROA as R&D expenditures will reduce current profitability (Cui and Mak, 2002).

The study also controls for assets intangibility and, similarly to R&D, it is expected that it will be positively correlated with Tobin's Q and negatively with ROA (Cao *et al.*, 2018).

Cashflow (CF) volatility is the next control variable and its association with Tobin's Q is inconclusive in the literature. Some studies, including Chi and Su (2021) and Rajkovic (2020), documented a positive association between CF volatility and Tobin's Q; the explanation for this is that younger and smaller firms have higher CF volatility and higher

[59] Firm performance is measured by Tobin's Q and/or ROA.

firm value. When these firms become older and larger, their CF volatility and Tobin's Q decreases, and the simultaneous decline in both variables results in a positive association between them (Chi and Su, 2021). However, Rountree *et al.* (2008) argue that CF volatility is negatively associated with Tobin's Q. Froot *et al.* (1993) also support this view; they claim that when external financing is constrained, CF volatility hinders the firm's ability to forgo projects with a positive NPV, resulting in lower Tobin's Q. Because of the inconclusive views, this study could not predict the association between CF volatility and Tobin's Q. CF volatility is, however, expected to be negatively associated with ROA (Huang *et al.*, 2018), as such volatility reduces the firm's investments and results in higher external financing cost (Minton and Schrand, 1999), ultimately affecting the firm's ROA negatively.

The growth opportunity (measured by the growth in assets) is also a control variable when testing the second hypothesis. This variable is expected to be positively related to Tobin's Q as growth induces the Tobin's Q value (Abel and Eberly, 2011). While capturing the growth opportunities can increase a firm's current profitability (ROA) (Cui and Mak, 2002), it can result in reducing the current ROA (Lemmon and Zender, 2010). Hence, the direction of the association between the growth rate of assets and ROA in the current study is difficult to predict.

The last control variable is global diversification (*International_Op*), which can affect firm performance positively or negatively. Some studies indicate that having international operations increases the firm's real and financial dimensions, resulting in greater firm performance (Tobin's Q) (Gande *et al.*, 2009). Others argue that global diversification increases the firm's complexity, particularly if the firm already has highly diversified products, resulting in lower Market-to-Book value (Denis *et al.*, 2002). Even with regard to ROA, the results are mixed. Several authors explained that the association between international diversification and ROA could depend on other factors, such as a firm's governance quality. Salama and Putnam (2013) found that firms with poor (high) quality of governance have lower (higher) financial performance (ROA) attributable to global diversification. Hence, the direction of the association between international operations and performance is difficult to predict.

Overall, it is expected to find a positive association between R&D_Assets, Intangibles, and Growth opportunity with Tobin's Q, and a negative one between R&D_Assets, Intangibles, and CF volatility and ROA. However, it is difficult to predict the direction of the association between the remaining control variables and firm performance (Tobin's Q/ROA) due to the mixed findings in the literature. Table 5.4 summarizes the literature view on the direction (positive/negative) of the relationship between the control variables of the second hypothesis and Tobin's Q/ROA (as proxies for firm performance).

After discussing the sample selection process, data collection, and variables' identification, the following section presents the results and analyses.

5.4 Results and Analyses

This study's first hypothesis and its constituents test the relationship between corporate negative ESG incidents and political connections, and between each component of the ESG incidents and political connections, respectively, where a positive association is expected. The second hypothesis tests the impact of corporate political connections on the association between ESG negative incidents and firm performance measured by Tobin's Q (H2a) and ROA (H2b), where a positive impact is expected.

This section analyses the previous sections' data to investigate these hypotheses, using univariate and multivariate analyses.

5.4.1 Univariate Analysis

Table 5.5 provides summary statistics of the final sample. The mean value of PC_Candidate(6Y), calculated as the natural logarithm of one plus the number of supported candidates over a six-year window, is 1.001. This can be translated as: a typical firm in the sample supports around 28 political candidates on average over a six-year window[60]. The average annual Peak_RRI_12M, which is the proxy of ESG negative incidents, is 14.167. According to the RepRisk data manual, peak RRI below 26 indicates low risk exposure, suggesting that the sample firms, on average, have low ESG risk exposure. However, in untabulated statistics, the minimum and maximum of the annual peak RRI are 0 and 81 respectively, indicating a wide variability among the sample firms. The descriptive statistics of Peak_RRI_12M agree with those reported by Asante-Appiah (2020). The table also shows that the environmental, social, and governance issues averages are 2.976, 5.020, and 3.777, respectively. Regarding the average of each factor of ESG incidents, social issues have greater contributions to the overall ESG risk score compared to environmental and governance issues; however, this might change using multivariate analysis.

Regarding the performance measures used in the current study, Table 5.5 shows that the mean Tobin's Q is 1.958, i.e., similar to the average Q ratio reported by Cao *et al.* (2018). The average ROA is 9.7%, i.e., similar to the ROA average documented by Chen and Zheng (2014).

With regard to the control variables, Table 5.5 shows that the average firm size for the full sample is 7.7 and the average leverage ratio is 26.8%, in line with averages reported by Asante-Appiah (2020). The average firm business diversification (No. of business segments) is 2.8, i.e., similar to the average reported by Gruca and Rego (2005). This indicates that firms in the sample have an average of around three business segments. The average firm past performance is 10.1%, i.e., similar to the average reported by Barker and Mueller (2002). The average Cash to Assets ratio of a typical firm in the sample is 15.4%, comparable to the average cash ratio reported by Boubakri *et al.* (2013) for US firms. The average R&D to assets, and intangibility of assets are 2.9% and 6.8%, respectively – consistent with Cao *et al.* (2018). Cashflow volatility has a mean of 4.8% in the sample, parallel to that documented by Harford *et al.* (2008). The growth rate of

[60] In untabulated statistics, the average number of supported political candidates over a six-year window (before applying the ln (1+number of supported candidates) used in the PC_Candidate proxy) is 27.8≈28.

firms' assets in the sample is 13.8% on average, consistent with the percentage reported by Chen C. R. *et al.* (2017). Finally, Table 5.5 shows that around 60% of sample firms have international operations (Global diversification). Overall, the descriptive statistics for all variables are consistent with the literature.

Table 5.6's correlation matrix tests relationships among variables. The first hypothesis uses PC_Candidate(6Y) as the dependent variable. Table 5.6 shows that this variable is positively correlated with the ESG negative incidents measures (Peak RRI_12M, E_ISSUES, S_ISSUES, and G_ISSUES), indicating initial support for the first hypothesis, which assumes a positive association between ESG negative incidents' measures and political connections. In the first hypothesis, the control variables are Size, Leverage, Past Performance, Cash to Assets, Growth in Assets, Business Diversification, and International Operations. The political connections measure is positively associated with most of these (i.e., Size, Leverage, Past Performance, Business Diversification, and International Operations); however, it is negatively associated with the liquidity proxy (Cash_Assets) and the growth opportunity proxy (Assets_Growth).

Table 5.6 also shows that Tobin's Q, i.e., the first dependent variable in the second hypothesis, is negatively associated with the measure of political connections and the primary measure of ESG negative incidents (Peak_RRI_12M). In hypotheses H2a and H2b, the following variables are controlled for: Size, Leverage, Business Diversification, RD to Assets, Assets Intangibility, Cashflow Volatility, Growth in Assets, and International Operations. The table shows Tobin's Q is negatively correlated with the following control variables: firm Size, Leverage ratio, Business Diversification, and International Operations but positively correlated with RD to Assets, Assets Intangibility, Cashflow Volatility, and Growth in Assets.

Table 5.6 shows that ROA, i.e., the second dependent variable in the second hypothesis, is positively associated with the proxy of political connections and the major ESG negative incidents measure (Peak_RRI_12M); such correlations are the opposite when using Tobin's Q. Hence, it is interesting to evaluate the political connections impact on the association between ESG negative incidents and a firm's performance using both measures. ROA positively correlates with firm Size, Leverage ratio, Business Diversification, and International Operations, but negatively with RD to Assets, Assets Intangibility, Cashflow Volatility, and Growth in Assets.

Table 5.6 also shows that each dependent variable significantly correlates with its explanatory and control variables at a 95% confidence level, except the association between ROA and Leverage and between Tobin's Q and International Operations. Noticeably, the correlations among the variables are not high, implying no multicollinearity issues[61]. Additionally, Variance Inflation Factor (VIF) tests are performed after each regression, when possible, to double-check that multicollinearity does not exist (Neter *et al.*, 1985; Ryan, 1997)[62].

Overall, the provided correlation matrix presents only the individual association between variables. The association between dependent variables and the variables of interest might differ when applying multivariate analysis.

5.4.2 Multivariate Analysis

Before conducting the multivariate analysis, the methods used for its empirical tests are explained. All models are estimated using fixed effects OLS regressions on a large unbalanced panel dataset comprising 23,053 publicly-listed US firms (available at the RepRisk and Compustat databases) from 2007-2018. The unbalanced form of the dataset is because the data cover a lengthy time period (over ten years) where new firms frequently enter the database, or might be delisted/acquired/merged during this time. If a balanced panel data analysis is conducted, the sample would be reduced to an undesirable size

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[61] The correlation between Past Performance and ROA is high, but this is not an issue as each is used in a separate model.
[62] As shown later in the regression tables, the VIF tests are less than five, indicating that the models do not suffer from multicollinearity.

(Hillier *et al.*, 2011); therefore, including firms that ceased to exist using unbalanced panel data analysis is more suitable for the current research.

The multivariate analysis consists of two subsections: the first examines the relationship between corporate ESG negative incidents and corporate political connections; the second examines the impact of corporate political connections on the association between ESG negative incidents and firm performance (measured by Tobin's Q and ROA).

5.4.2.1 The Relationship between Corporate ESG Negative Incidents and Corporate Political Connections

The following OLS regression relates the ESG negative incidents proxy to corporate political connections:

$$PC\_Candidate_{it} = \alpha + \beta_1(ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_2(Size)_{it} + \beta_3(Leverage)_{it} + \beta_4(Past\_Perf)_{it} + \beta_5(Cash\_Assets)_{it} + \beta_6(Assets\_Growth)_{it} + \beta_7(Buss\_Seg)_{it} + \beta_8(International\_Op)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it}$$

(Model 1)

where the dependent variable is $PC\_Candidate_{it}$, calculated as the natural logarithm of one plus the number of supported political candidates by firm i over a six-year window. $(ESG\ Negative\ Incidents\ Proxy)_{it}$ is the Peak_RRI_M12, which denotes the highest level of tainted ESG reputation score of firm i in year t. The rest, in brackets, are control variables.

Model 1 is the main model to test the first hypothesis, which assumes that ESG negative incidents (measured by the peak RRI) are positively related to corporate political connections; its constituent hypotheses test the association between each factor of the ESG negative incidents and corporate political connections. So, (Peak_RRI_M12) is supplemented with environmental (E_ISSUES), social (S_ISSUES), and governance (G_ISSUES) in three separate models. The dependent variable and control variables are those used in Model 1. The following OLS regressions relate each factor of the ESG negative incidents to corporate political connections:

$$PC\_Candidate_{it} = \alpha + \beta_1(E\_ISSUES)_{it} + \beta_2(Size)_{it} + \beta_3(Leverage)_{it} + \beta_4(Past\_Perf)_{it} + \beta_5(Cash\_Assets)_{it} + \beta_6(Assets\_Growth)_{it} + \beta_7(Buss\_Seg)_{it} + \beta_8(International\_Op)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it}$$

(Model 1_A)

$$PC\_Candidate_{it} = \alpha + \beta_1(S\_ISSUES)_{it} + \beta_2(Size)_{it} + \beta_3(Leverage)_{it} + \beta_4(Past\_Perf)_{it} + \beta_5(Cash\_Assets)_{it} + \beta_6(Assets\_Growth)_{it} + \beta_7(Buss\_Seg)_{it} + \beta_8(International\_Op)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it}$$

(Model 1_B)

$$PC\_Candidate_{it} = \alpha + \beta_1(G\_ISSUES)_{it} + \beta_2(Size)_{it} + \beta_3(Leverage)_{it} + \beta_4(Past\_Perf)_{it} + \beta_5(Cash\_Assets)_{it} + \beta_6(Assets\_Growth)_{it} + \beta_7(Buss\_Seg)_{it} + \beta_8(International\_Op)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it}$$

(Model 1_C)

In all models, the industry effect is controlled as the political connections literature highlights that effect on political contributions and how some industries make higher contributions than others (Martin *et al.*, 2018). Corporate ESG literature highlights that firms' ESG practices have a strong industry component (Gillan *et al.*, 2021); controlling for this effect is essential in the provided models. Following the literature, controlling for the industry fixed effect in this study is based on the SIC two-digit classification (Burke *et al.*, 2019; Asante-Appiah, 2020). Applying a time fixed effect is also essential in this work for controlling for business cycle shocks and macroeconomic variables. Controlling for industry and year fixed effects follows the standard approach in the literature to political connections and ESG (e.g., Lee *et al.*, 2014; Croci *et al.*, 2017; Aouadi and Marsat, 2018; Burke *et al.*, 2019; Asante-Appiah, 2020).

While controlling for industry fixed effects is common in the literature, there are some firm-specific unabsorbed effects that might influence political connections. To control for that, this work alternates the industry fixed effect with a firm fixed effect in the sensitivity analysis.

Since this is a panel dataset, the residuals might highly correlate across its two dimensions. Thus, clustered standard errors at firm-level are estimated to correct for heteroskedasticity and correlation within firms (Petersen, 2009). In all models, the financial variables are winsorized at the 1% and 99% levels to mitigate outliers. Also, firms without PACs are assigned a value of zero for the political connection variable (*PC_Candidate*).

5.4.2.1.1 Main Results

Table 5.7 reports the main results of the first hypothesis and its constituent hypotheses. The dependent variable of all four models is the political connections proxy (*PC_Candidate*). The only difference between the four models presented in Table 5.7 is the ESG Negative Incidents proxy. In Model 1, the overall ESG peak level of firm i in year t is used as a proxy for ESG negative incidents; in Model 1_A, the proxy is for environmental incidents (E_ISSUES), in Model 1_B, (S_ISSUES) is used for social incidents, and in Model 1_C, it is the governance incidents calculated score (G_ISSUES).

Table 5.7 shows the coefficient of the ESG negative incidents proxy is positive and significant at the 99% confidence level in Model 1. This finding is consistent with H1, which assumes that corporate ESG negative incidents are positively related to corporate political connections. Model 1 implies that firms with more ESG bad practices support more political candidates. This parallels the assumptions that firms establish long-term political connections through continuous support to politicians' (re)election campaigns to gain favours from those politicians and reduce the possibility of stringent performance standards being passed, thus affecting firms' activities.

Table 5.7 also shows the results of the constituent hypotheses which test the association between each component of ESG and corporate political connections. All three components (E, S, and G issues) are positively associated with those connections; however, only environmental and governance issues show a statistically significant relationship with corporate political connections. Based on these results, only H1a and H1c, which predict a positive association both between environmental issues and corporate political connections and between governance issues and those connections, can be accepted. When comparing the coefficient of each factor of ESG (E_ISSUES, S_ISSUES, and G_ISSUES), the strongest association is between environmental issues and corporate political connections, where the coefficient is highest and significant at the 99% confidence level; for the governance issues, the significance is at 95%. These results are similar to those of Asante-Appiah (2020) but in a different context; they examined how each component of the corporate negative ESG issues is related to audit effort and found that only environmental and governance issues are positively and significantly related to audit effort, while social issues are not. Within this study's context, since the environmental issues (E_ISSUES) have the highest coefficient and the greatest statistical significance level compared to the other two (S_ISSUES and G_ISSUES) in the provided tests, it implies that firms' environmental incidents have a greater influence on managers when it comes to their use of political contributions as a tactic to reduce the bad effects of ESG incidents. However, the social and governance issues are also considered essential because they contribute to the overall ESG score (Peak_RRI_12M), although not as much as the environmental issues[63].

To validate the results and ensure their consistency, some robustness tests are applied in the following subsection. They aim to ensure the primary model using the overall negative ESG score (Peak_RRI_12M) has a positive and significant association with political connections, and evaluate which ESG components show a consistently positive and significant association with corporate political connections.

[63] The regressions in Table 5.7 were replicated but without the industry fixed effect; the results are found to be qualitatively similar.

5.4.2.1.2 Sensitivity Analysis

To examine the main results' reliability, several robustness checks are conducted. The first evaluates the sensitivity of the main results to the political connections proxy used in the main analysis. Although the applied measurement of political connections, which is based on the number of supported political candidates, has frequently been used in the literature, the results may be driven by the political measurement. Several authors supplement the number of supported candidates by the dollar amount of political contributions (Cooper *et al.*, 2010; Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020). While the FEC does not require a ceiling limit on the number of supported political candidates by PACs of corporations, it mandates a ceiling limit on the dollar amount of contributions made by these PACs to each candidate. So, if a firm reaches that limit in terms of contribution amount, the only way for it to gain political capital is to support more candidates. This might create a sensitivity issue with regard to this study's results, as it uses the number of supported candidates. Thus, as a robustness check, PC_Candidate is substituted for PC_Financial which is calculated as the natural logarithm of one plus the total dollar amount of contributions to politicians by firm i over a six-year window; Table 5.8 presents the check results.

As shown in Model 1 (Table 5.8), the results are not sensitive to the political connections proxy as the positive and significant association between Peak_RRI_12M and the alternative political connections proxy (*PC_Financial*) still exists. Regarding the components of the ESG, as shown in Model 1_A, only environmental negative incidents (E_ISSUES) have a positive and significant association with the alternative political connections proxy.

Second, this research investigates the results' sensitivity to the measurements of ESG negative incidents. In the main analysis, the annual peak RRI, takes the highest level of tainted ESG reputation of firm i in the whole year. This peak is also used for calculating the individual ESG components but because it reflects the highest level, there is a possibility that a firm has some lower monthly levels of tainted ESG not captured in the main analysis, i.e., they might be enhancing their ESG practices during the remaining months of the year. To address this issue, the average yearly current RRI is calculated as an alternative to the annual peak RRI (Asante-Appiah, 2020). The components of the ESG negative incidents are also re-calculated using the average yearly current RRI:

(*E_ISSUES_ALT*) = Current_RRI_12M_Avg X Environmental_Avg_Percentage
(*S_ISSUES_ALT*) = Current_RRI_12M_Avg X Social_Avg_Percentage
(*G_ISSUES_ALT*) = Current_RRI_12M_Avg X Governance_Avg_Percentage

Table 5.9 shows that when alternating the negative ESG proxies from peak level to annual average, the results in Model 1 confirm that the overall ESG negative incidents proxy is positively and significantly associated with the firm's political connections at the 99% confidence level, thereby supporting H1. It also shows that for each factor of ESG negative incidents (Models 1_A, 1_B, and 1_C), the results are positive and significant, supporting the three constituent hypotheses. In other words, each component of the ESG incidents has a positive and significant association with political connections. However, the positive and significant association between both social and governance issues and political connections is not consistent in all the tests provided, until now. Hence, there is not enough evidence to generalize these associations. In contrast, the environmental issues variable is so far showing a consistent positive and significant association with political connections. Similarly, the overall ESG negative incidents proxy, which is tested in H1, is so far showing a consistent positive and significant association with political connections.

The third robustness check tests the results' sensitivity to firm-specific unobserved effects. Although applying the industry fixed effect in models explaining the variations in corporate political connections is common, unobservable firm characteristics can influence the results. Owing to the collinearity between industry and firm fixed effects, this study applied the former in Table 5.7's models as corporate political connections are highly industry-specific. For a robustness check, industry fixed effect is substituted by firm fixed effect while holding all other conditions used in Table 5.7, such as the dependent variable, explanatory variable, control variables, year fixed effect, and clustering standard error at firm-level. The results are presented in Table 5.10.

As shown in Model 1 (Table 5.10), there is still a consistent positive and significant association between the main proxy for negative ESG incidents (Peak_RRI_12M) and political connections when applying the firm fixed effect, supporting H1. For the components of ESG negative incidents, only environmental issues are showing a positive and significant association with political connections, supporting H1a.

The fourth robustness check is applied to mitigate the possible existence of reverse causality. Reverse causality in this study describes the concern that instead of ESG negative incidents driving political connections, strong political connections may create slack resources, which in turn gives firms a greater possibility of having bad ESG practices. To mitigate this reverse causality issue, the dependent variable is regressed on lagged values of the explanatory variables (Peak_RRI_12M, E_ISSUES, S_ISSUES, and G_ISSUES) and the control variables. These variables are lagged by one year. Table 5.11 presents the results.

Table 5.11 shows the coefficient of the main ESG proxy (Peak_RRI_12M) is positive and significant, consistent with H1. The coefficient of environmental issues is also positive and significant, consistent with H1a. The governance issues show a positive and significant (but weak) association with political connections, using the lag model; the social issues are not showing a significant result using the lag model. These results are similar to the main results in Table 5.7. While governance issues are showing a positive and significant coefficient in some tests, this significance is not consistent in them all. Hence, based on these tests, only the main proxy for ESG incidents (Peak_RRI_12M) and the environmental issues show a consistent positive and significant association with political connections.

From a theoretical perspective, the existence of reverse causality in this study is unlikely for several reasons. First, unlike corporate ESG good practices, the ESG bad incidents of corporations and their media coverage are not under direct managerial control. Although public relations can be used to increase a company's positive media coverage (Bansal and Clelland, 2004), it is more difficult to use the same method to reduce negative media coverage (Westphal and Deephouse, 2011). This is because media outlets compete for stories, and if one of them neglects a particularly compelling negative story, it provides opportunities for others. According to Besiou *et al.* (2013), being in an era that depends heavily on online communications, it is nearly impossible to suppress negative stories. Second, stakeholders' ESG accusations are influenced both by firms' actions, and stakeholder identity (Rowley and Moldoveanu, 2003), the latter being uncontrollable by managers. Reverse causality is, therefore, not considered a substantial concern in the research setting of this study.

The fifth robustness check is to evaluate whether ESG negative incidents are associated with the likelihood of establishing political connections, instead of increasing the number of supported candidates. While the corporate negative ESG incidents are positively related to the intensity of political connections (shown in the provided tests), one might argue that what matters for firms with negative ESG incidents is the formation (to have or not have) of political connections after the incidents happen.

As mentioned in Chapter 2, Hillman and Hitt (1999) differentiate between two approaches that firms pursue when they have political investments: relational and transactional. The former exists when firms tend to build long-term relationships with politicians, so that when issues arise, the vehicle for access/influence is already in place. This approach is similar to the one used in the current study, where the cumulative intensity of political connections is through a long-term period (a six-year window). However, the latter approach exists when firms decide to establish political connections in an ad hoc manner, as they wait until issues arise before establishing political connections.

Theory suggests that an essential aspect for corporate political strategy success is to have multi-period political investments (contributions), which results in cultivating relationships with key policymakers (Snyder, 1992). Most studies of corporate political connections, where the proxy of measuring political connections is the hard-money contributions to political candidates in their (re)election campaigns, used the cumulative contributions to these candidates over a multi-period (e.g., Cooper *et al.*, 2010; Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020). Hence, the relational approach seems to be used in these studies, and also in this thesis, i.e., through the intensity of political connections over a six-year window. However, this study also applies a further test to evaluate whether firms establish these connections in an ad hoc manner (the transactional approach).

To test this assumption, the study alternates the political connections proxy (PC_Candidate) with a dummy variable (Dummy_PC) which is equal to one if the firm formed a PAC and contributed to politicians in their (re)election campaigns in year t, and zero otherwise. All explanatory and control variables are lagged by one year as the transactional approach assumes that firms form political connections after an issue arises. Table 5.12 presents the results.

Table 5.12 shows the overall negative ESG score coefficient is positive and significant when using the dummy variable (Dummy_PC) as the dependent variable. However, the coefficient is much lower when compared to the main results, where the intensity of political connections over a six-year window is used, suggesting that firms are more likely to use a relational than transactional approach. This means they tend to have long-term relationships with politicians as a proactive strategy so that when a negative ESG incident occurs and is captured by the media, they already have access to/influence on policymakers.

For the components of ESG negative incidents and their association with the firm's formation of political connections, or not, the coefficients of E_ISSUES, S_ISSUES, and

G_ISSUES provided in Table 5.12 are positive but very low compared to the coefficients reported in the main results (Table 5.7) where the cumulative long-term support to multiple politicians is used. So, similarly to the main overall negative ESG score, this suggests that even with the components of ESG, firms seem to rely more on a relational (long-term) approach as a political strategy, where they can obtain access/influence if an ESG incident happens.

The last robustness check is conducted to validate the results using a subsample which consists of only firms with political contributions. The reason is that, as shown earlier in Table 5.5's descriptive statistics, the dependent variable (PC_Candidate(6Y)) is highly skewed as it is zero at the 50^{th} and 75^{th} percentiles. To eliminate any concern about the distribution of the data in the main sample, the regressions provided in the main analysis (Table 5.7) are estimated using a subsample consisting of firms with political contributions (i.e., excluding firms with no political contributions). Similarly to the main analysis, time and industry fixed effects are applied. The standard errors are also clustered at the firm-level to correct for heteroskedasticity. Table 5.13 shows the results.

As shown in Table 5.13, given that only firms with political connections are included in the regressions, the negative ESG incidents proxy (Model 1) is positive and highly statistically significant, consistent with H1. When analysing the components of the negative ESG incidents (E, S, G), and given the condition that firms need to have political connections, the environmental issues (E_Issues) show a positive and highly statistically significant association with political connections; the social issues (S_Issues) show a positive and statistically significant association at the 95% confidence level and the governance issues (G_Issues) at a 90% confidence level. Overall, when using a subsample of only firms with political connections, the results show that the overall ESG negative incidents proxy is positive and highly statistically significant. Also, each component of ESG negative incidents is positively associated with corporate political connections, and the associations are statistically significant. However, as mentioned earlier, the S_Issues and G_Issues do not always show consistent significant coefficients. Hence, similarly to the conclusion that was given in the main analysis, there is enough evidence to support H1 and H1a, where consistent results are shown using several robustness checks.

Overall, the multivariate analysis supports H1: *Firms' negative ESG incidents have a positive association with their political connections*. The results further show that when comparing the political connections' intensity (measured by the number of supported candidates) over long-term periods with the likelihood of forming a political connection in an ad hoc manner, the former shows a greater positive association with firms' negative ESG incidents. This agrees with Snyder (1992) who suggests that having multi-period political investments (contributions) is an important factor for corporate political strategy success, where firms can cultivate relationships with key policymakers.

The multivariate analysis also examines the association between each component of the negative ESG incidents and corporate political connections. The main results show that environmental and governance issues have a positive and significant association with corporate political connections; social issues, however, show a positive but insignificant association. These results are consistent with Asante-Appiah (2020) who studied the impact of each component of tainted ESG on the audit effort and found that only environmental and governance issues have a positive and significant impact.

However, the statistical significance of the coefficient of the governance issues disappeared in several robustness checks. In contrast, environmental issues show a consistent positive and significant association with corporate political connections in the main analysis and the robustness checks. Hence, it is concluded that, based on the provided tests, there is enough evidence to accept H1a: *Firms' negative Environmental incidents (E_Issues) have a positive association with their political connections*. However, the social issues show an insignificant coefficient in most of the tests. Hence, H1b cannot be accepted. Also, due to the insignificant coefficient of the governance issues in some of the robustness checks, there is insufficient evidence to support H1c.

The ESG component analyses results suggest two important points. First, firms tend to have more political connections when their tainted ESG reputations relate to environmental issues and such issues are the main driver for firms' long-term association with politicians. Second, the other two dimensions of ESG (social and governance issues) do not have a direct association with corporate political connections when taken individually; however, they have an essential role when taken jointly (overall ESG score) as firms with greater overall negative reputational ESG incidents tend to have greater political connections.

An interesting question is: Why do firms increase their political connections' intensity more when their tainted ESG reputations relate to environmental issues? Two possible answers are suggested. First, compared to social and governance incidents, environmental incidents and their consequent damage are more tangible and have a greater damage scope (i.e., human health, species survival, and overall environment continuity). Hence, these corporate environmental damages can be directly captured by regulators/policymakers and increase the potential public policy pressures arising from poor environmental performance (Patten, 2002). Second, when incidents are related to social issues, the reversal of these issues can be quickly repaired by managers (i.e., applying a restorative justice approach in the case of a human rights violation and compensating the affected employees), which can reduce the negative post impact of the events and help the offending firm regain its legitimacy (Schormair and Gerlach, 2020). Similarly, when incidents are related to the governance issue, firms can act quickly to repair the situation (i.e., sacking/turnover of CEO), which can also help in reducing the post impact of the event (Nini *et al.*, 2012). However, when incidents are environmentally related, their reversal means that environmental initiatives are needed to restore the damage (Lee and Xiao, 2020), and these are extremely difficult, costly, and time-consuming. These reasons could be behind the greater concern that firms' have about their tainted ESG reputation relating to environmental issues, compared to social and governance ones. Consequently, within the context of political connections and based on the provided tests, firms tend to have proactive strategies, where they increase their connections to politicians to reduce the harmful consequences of their negative ESG incidents, particularly those related to environmental issues.

After examining the first hypothesis and its constituent hypotheses, the following tests are conducted to examine the impact of corporate political connections on the association between ESG negative incidents and firm performance.

5.4.2.2 The Impact of Corporate Political Connections on the Association between ESG Negative Incidents and Firm Performance

This section tests H2, which predicts that corporate political connections positively impact the association between firms' negative reputational ESG incidents and firms' performance, measured by Tobin's Q (H2a) and ROA (H2b).

Two models are employed here: Model 2 tests the effect of each of the two variables (Political Connections and ESG Negative Incidents) on firm performance with no interaction variable. This model is subdivided into Models 2_A and 2_B; the only difference between them being the performance measure used: Tobin's Q for the former, ROA for the latter.

Model 3 includes an interaction variable between Political Connections and ESG Negative Incidents. Again, the only difference between Models 3_A and 3_B is the performance measure used: Tobin's Q for the former, ROA for the latter.

Models 2 and 3 are presented as:

$$Firm\ Performance_{\ it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_3(Size)_{it} + \beta_4(Leverage)_{it} + \beta_5(Buss\_Seg)_{it} + \beta_6(RD\_Assets)_{it} + \beta_7(Assets\_Intangibility)_{it} + \beta_8(Assets\_Growth)_{it} + \beta_9(CF\_Volatility)_{it} + \beta_{10}(International\_Op)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it} \quad \textbf{(Model 2)}$$

$$Firm\ Performance_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_3(Political\ Connections\ Proxy\ X\ ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_4(Size)_{it} + \beta_5(Leverage)_{it} + \beta_6(Buss\_Seg)_{it} + \beta_7(RD\_Assets)_{it} + \beta_8(Assets\_Intangibility)_{it} + \beta_9(Assets\_Growth)_{it} + \beta_{10}(CF\_Volatility)_{it} + \beta_{11}(International\_Op)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it} \quad \textbf{(Model 3)}$$

In these models, Firm Performance is measured using Tobin's Q and then ROA. In all the models, the political connections proxy is (PC_Candidate), calculated as the natural logarithm of one plus the total number of supported candidates by firm i over a six-year window. The ESG negative incidents proxy is Peak_RRI_12M, denoting the highest level of tainted ESG reputation of firm i in year t.

All models control for *Size, Leverage, Buss_Seg, RD_Assets, Assets_Intangibility, Assets_Growth, CF_Volatility,* and *International_Op*. The models also control for industry and year fixed effects. The standard errors are clustered at firm-level to correct for heteroskedasticity in all models.

5.4.2.2.1 Main Results

Table 5.14 shows the results of the four regressions. The first column shows the results of Model 2_A, which uses Tobin's Q as the measurement of firm performance (with no interaction variable). The second column shows the results of Model 2_B, which uses ROA in the same way. Model 3_A is presented in the third column, where Tobin's Q is the measurement of performance (with interaction variable). Model 3_B is presented in the last column using ROA in the same way (with interaction variable).

As shown in Models 2_A and 2_B of Table 5.14, when looking at the association between each firm performance measurement and the political connections proxy, the direction of the association varies depending on the measurement of performance (Tobin's Q/ROA).

When Tobin's Q is used, political connections show a positive and significant association with Tobin's Q; these results are in line with Cooper *et al.* (2010) who used a market-based measure of performance (stock returns) and found a positive association between corporate political connections and stock returns. However, as shown in Model 2_B, when ROA is the measurement of performance, the association between firm performance (ROA) and political connections is insignificant.

With regard to the ESG negative incidents proxy (Peak_RRI_12M), the results in the models with no interaction variable show that only the accounting measure of performance (ROA) has a significant and a negative association with ESG negative incidents, as presented in Model 2_B (Table 5.14). This negative association is expected as ESG negative incidents result in reputational damage that affects customers' perception of the firm, and hence implies a reduction in revenues and operating cashflows (Gatzert, 2015) ultimately leading to lower profits (ROA). Additionally, bad reputation results in higher operating, financing, and regulatory costs (Asante-Appiah, 2020), which ultimately have a negative effect on firms' performance (ROA). Regarding the market-based measurement (Tobin's Q), while the results in Model 2_A show an insignificant association between negative ESG incidents and Tobin's Q, the literature has shown that such incidents adversely affect a firm's reputation and hence its market value. For example, Gatzert (2015) argues that investors and other market participants, in their assessments, are expected to downgrade the future cashflows of firms with deteriorated reputations. The same author also says that investors may not want to be associated with firms that have a bad reputation (i.e., harmful ESG practices) and tend to sell their stocks, resulting in lower stock price pressure, which can lead to lower market performance of these firms. The analysis provided focuses on the association between each variable of interest (political connections and ESG negative incidents) and firm performance (Tobin's Q and ROA). However, this study's second hypothesis particularly concerns the interaction effect of both political connections and ESG negative incidents on firm performance, which are presented in Models 3_A and 3_B (Table 5.14).

Table 5.14 shows the interaction effect of political connections and ESG negative incidents on firm performance is positive and significant when Tobin's Q is the measure of performance[64]. However, when ROA is used, the coefficient of the interaction variable is almost zero and insignificant[65]. Such results have been confirmed when using F-tests. In other words, considering Tobin's Q as the dependent variable, the results of an F-test confirm that the coefficient on political connections proxy and ESG negative incidence proxy interaction is statistically significant at the 95% level (p-value=0.02) and this coefficient is significantly greater than zero (F=4.81). However, when ROA is the dependent variable, the F-statistics show that the coefficient on political connections proxy and ESG negative incidence proxy interaction is not statistically significant (p-value=0.84) and it is almost zero (F=0.04). Hence, based on the provided tests, only H2a is accepted.

The positive interaction between political connections and ESG negative incidents on firm market performance (Tobin's Q) can be further investigated using the margins plot (see Figure 5.1). This figure shows how the association between ESG negative incidents[66] and Tobin's Q varies for certain levels of political connections when using a linear prediction margins plot.

The blue line in Figure 5.1 shows the relationship between Tobin's Q and tainted ESG for firms that do not support any political candidates over a six-year window (no political connections); it indicates that the ESG negative incidents have a negative (a downward

[64] One possible limitation is that 24% of firms are politically connected (PC_Candidate > 0), and 50% have ESG negative incidents (Peak_RRI_12M > 0), which makes the interaction between the two variables non-zero for only about 18% of the observations in the sample.

[65] The ROA in the main analysis has been calculated as the ratio of operating income before depreciation (OIBDP) to the book value of a firm's total assets (AT). The same regressions applied in Table 5.14 are re-conducted, but using two other ROA measures: (the ratio of EBIT to total assets and the ratio of Income Before (IB) Extraordinary Items to total assets). The coefficients obtained using ROA alternative measures are qualitatively similar to those reported in the main analysis presented in Table 5.14.

[66] ESG negative incidents can range from zero to 100, where zero means that the firm had no bad incidents and 100 indicates a severe ESG incident.

slope) association with Tobin's Q when firms have no political connections, and that the more severe the ESG incidents, the lower the Tobin's Q. The maroon line shows the association between ESG negative incidents and Tobin's Q for firms that support one political candidate over a six-year window; when they support only one, the association between ESG negative practices and Tobin's Q starts to have a flat slope, indicating that political connections mitigate the negative association between ESG negative incidents and Tobin's Q. The green line presents the mean of the number of supported political candidates over a six-year window (1.72 candidates)[67]. Since the green line is almost flat, this suggests that the average number of supported political candidates in this study's sample mitigates the negative association between ESG negative incidents and Tobin's Q. The yellow line represents firms that support a large number of political candidates over a six-year window (91.99 candidates), identified as the 90th percentile of the distribution[68]. Interestingly, the association between ESG negative incidents and Tobin's Q becomes an upward slope when firms support a large number of political candidates. Finally, the grey line shows the 95th percentile of the distribution of the number of supported political candidates over a six-year window (184 candidates). Similarly to the 90th percentile, an upward and even higher slope exists between ESG negative incidents and Tobin's Q when firms support a higher number of candidates (the slope is even above the one that represents the 90th percentile of number of supported candidates). This further adds to this study's findings that the intensity of the supported candidates matters, and that high intensity of political connections tend to increase (improve) Tobin's Q when a firm has ESG negative incidents.

[67] This number is calculated using the reverse of the ln (1.001), where 1.001 is the mean of PC_Candidate(6Y) presented in the descriptive statistics. So, $e^{1.001}$ -1 = 1.72 political candidates. The untabulated variable that calculates the number of supported candidates over a six-year window without the ln (1+x) cannot be used in the marginal plots. The reason is that the marginal plots need to come right after the regression in the statistical software used in the current study (Stata), and the political connections proxy used in the regression is ln (1+number of supported candidates over a six-year window).
[68] The choice of the 90th percentile is because over 75% of the sample firms have no support for political candidates (zero value in the PC proxy).

Overall, the margins plot shows that corporate political connections mitigate the impact of ESG negative incidents on Tobin's Q, and it further improves Tobin's Q if the intensity of those connections (measured by the number of supported candidates) is high.

Since the results show that the interaction between political connections and ESG negative incidents has a positive and significant association with the market-based measure of performance (Tobin's Q) only, the following subsection validates these results using several robustness checks.

5.4.2.2.2 Sensitivity Analysis

This section focuses particularly on validating the significant results obtained in the multivariate analysis of H2a. In other words, the positive association between the interaction of political connections and ESG negative incidents, and firm's market-based performance (Tobin's Q) is validated through several robustness checks; four are presented in Table 5.15. The first is conducted by alternating the political connections proxy to ensure the results are not sensitive to the one used in the main analysis. Following several studies (e.g., Cooper *et al.*, 2010; Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020), the number of political candidates over a six-year window (PC_Candidate) is supplemented with PC_Financial, which is calculated as the natural logarithm of one plus the total dollar amount of contributions to politicians by firm i over a six-year window. The first column of Table 5.15 shows the results are still consistent with the main ones as the interaction variable has a positive and significant association with Tobin's Q, even when alternating the political connections proxy.

Second, the study alternates the ESG Negative Incidents Proxy, which was in the main analysis (Peak_RRI_12M), that takes the highest (peak) ESG level of firm i in year t, to validate that the results are not sensitive to this proxy. Following the robustness check of Asante-Appiah (2020), the ESG negative incidents proxy is alternated from being the peak to the average yearly current RRI (Current_RRI_12M_Avg), which addresses any possibility that the firm enhanced their practices during the year. The second robustness test in Table 5.15 shows the results are still consistent when alternating the ESG Negative Incidents Proxy, i.e., the positive association between the interaction variable (Political Connections X ESG Negative Incidents) and Tobin's Q still exists, even with a higher coefficient.

Third, the results' sensitivity to firm-specific unobserved effects is tested using firm fixed effect. Owing to the collinearity between industry and firm fixed effects, this study applied the industry fixed effect in the main results provided in Table 5.14's models and alternates it with firm fixed effect as a robustness check. The third test in Table 5.15 shows the positive association between the interaction variable (Political Connections X ESG Negative Incidents) and Tobin's Q still exists when fixing for firm effect.

Fourth, to mitigate the reverse causality issue, a one-year lag of all the explanatory and control variables is applied in the last test provided in Table 5.15. The results are also consistent with the assumption that a positive association exists between the interaction variable and Tobin's Q. Overall, these four robustness checks in Table 5.15 validate the results obtained earlier, of a positive and significant association between the interaction of (Political Connections X Negative ESG Incidents) and Tobin's Q, hence supporting H2a.

A final robustness check is applied by alternating the corporate political connections from a continuous variable to a dummy one. Dummy_PC is used, which is equal to one if the firm formed a PAC and contributed to politicians in their (re)election campaigns in year t, and zero otherwise. In the robustness check, two tests are applied: the first is without lagging the explanatory and control variables, the second uses a one-year lag of all the explanatory and control variables. Table 5.16 shows there is a positive and significant association between the interaction of (Political Connections X Negative ESG Incidents) and Tobin's Q (using the non-lagged and one-year lagged approaches).

Overall, the multivariate analysis provided in this section aims to test the impact of corporate political connections on the association between ESG negative incidents and firm performance, using accounting-based (ROA) and market-based (Tobin's Q) measurements. The results show that the impact of political connections on the association between ESG negative incidents and accounting-based performance (ROA) is not statistically significant. Hence, there is insufficient evidence to support H2b. A possible explanation would be that, compared to investors, customers (who are the main influencers of firms' sales, revenues, and consequently profits) would not have as deep assessments of the firm as investors do. Hence, customers might not know about the firm's connections to politicians and if they do, it is unlikely to affect their purchasing decisions. However, the results also show that political connections have a positive impact on the association between ESG negative incidents and firm's market-based performance (Tobin's Q). Such results have been validated through several robustness checks. Therefore, based on the tests conducted, we have enough evidence to support H2a. Such findings are in line with the assumption that corporations may be using their financial incentives to politicians to influence policy outcomes (Hillman and Hitt, 1999) or to at least have access to changes in or continuance of government policies (Grossman and Helpman, 1994; Faccio, 2006), which, within the context of this study, results in the positive impact of such connections on the association between ESG negative incidents and firm market-based performance (Tobin's Q).

5.5 Conclusion

The risks related to corporate ESG bad practices have been an area of concern for corporations and investors as they can harm firm reputation, performance, and sustainability (Bernow *et al.*, 2017). A further harmful effect of these incidents on firms is policymakers' actions, as they may pass public policies that can hinder firms' activities. Hence, firms may be using some proactive strategies, such as their continuous contributions to politicians (financial incentives), whereby they can influence public policy outcomes through their long-term connections to politicians (Hillman and Hitt, 1999). This argument is based on RBT, where firms' long-term connections with politicians can be a strategic resource that can help in promoting, neutralizing, or even managing the external factors that affect their investments (Russo and Fouts, 1997).

Building on the provided evidence, that corporate ESG negative incidents harm firms and that political connections can be a proactive strategy taken by firms to manage the external factors affecting their investments, this study investigated the following: First, it examined the association between firms' negative reputational ESG incidents and their political connections. It considered the number of supported political candidates on a long-term basis (a six-year rolling window) as the main measure of political connectedness. For firms' negative reputational ESG incidents, public information sources including the media criticisms of those incidents are used (Asante-Appiah, 2020). Second, it tested whether each component of ESG negative incidents is positively associated with corporate political connections. Third, the impact of corporate political connections on the association between ESG negative incidents and firm performance is examined, using both an accounting-based (ROA) and a market-based (Tobin's Q) measure of performance.

Using a sample that consists of all publicly traded non-financial US firms available in the RepRisk and Compustat databases, for the period 2007-2018, this research produced several findings. First, corporate adverse/negative ESG incidents have a positive association with corporate political connections, and this finding holds under several robustness checks. Second, analyses of each of the three components of ESG negative incidents (Environmental, Social, and Governance) showed that the association between each component and political connections varies. While the three components showed a positive association with political connections, the only statistically significant component in the main results and the robustness checks is Environmental bad incidents. This indicates that tainted ESG reputations related to environmental issues is the main driver for firms' long-term connections with politicians. The remaining two dimensions (Social and Governance related incidents), only have a joint impact, as they contribute to the overall tainted ESG score. Third, the analysis showed that corporate political connections have a positive impact on the association between ESG negative incidents and firm performance, particularly when using a market-based measurement (Tobin's Q). This means corporations use their financial contributions to politicians as a strategy to mitigate the effect of ESG negative incidents on their market performance.

This study's findings have some implications for corporate decision-makers. Despite the consequent costs and drawbacks of corporate political connections, this research provides new insights on how connections to politicians through long-term hard-money contributions can significantly reduce the influence of the ESG negative incidents on firms' market performance. Hence, corporate political connections can be a means for firms to mitigate the reputational risk related to those incidents. However, corporate decision-makers need first to consider the ethicality of their activities. The findings also have some implications for policymakers. Since ESG negative incidents are positively associated with corporate contributions to politicians, applying new regulations is recommended. In other words, the SEC may mandate the disclosure both of corporate ESG factors and political expenditures in the reports of publicly-listed firms; this would enhance the transparency between corporations and their investors.

This work, like any research, has some limitations, though these nevertheless lead to useful recommendations for future research. First, it particularly focused on negative ESG incidents. Future studies can examine whether positive ESG events are associated with corporate political strategies and whether those strategies have an impact on firm performance when the firm has positive ESG news. Second, this work focused on hard-money contributions to politicians as a measurement of political connections, so did not specifically target other aspects such as lobbying. Studying the association between ESG negative incidents and corporate lobbying activities and comparing the results with the current research can be considered in future research. Third, several studies indicate that the match between the political ideology (i.e., Democratic or Republican) of both the firm and the supported candidates strengthens the favours that firms can generate from their political connections. Studies also highlighted that firms' favours from their political connections are stronger when firms are located in the same State as the supported political candidates. For instance, Wellman (2017) found that the information leverage a politically connected firm generates is more substantial when it shares the same political ideology as the political candidates it supports. Moreover, Wellman (2017) also highlighted that the benefit gained (i.e., information leverage) from being a politically connected firm is even greater when the firm supports candidates located in the same State as where the headquarters of the firm is located. Hence, future studies may investigate whether ESG negative incidents are associated with shared political ideology and geographical location between the firm and the supported candidates. Fourth, this study examined the combined effect of ESG negative incidents and political connections on firm performance, measured by ROA and Tobin's Q. Future studies may consider other performance measures (i.e., stock returns) and compare the results with this study to further enrich the understanding of this still growing subject. The last recommendation for future study is based on the current study's findings, which suggest a positive association exists between ESG negative incidents and corporate political connections. Future studies can facilitate this result by conducting an event study to explore firms' behaviour after their first ESG negative incident and examining whether their contributions to political candidates increase, decrease, or remain the same after their first ESG incident.

Despite these limitations, this study has enriched our understanding of how two non-market factors are associated (ESG negative incidents and political connections) and how these factors are related to firms' performance.

Tables of Chapter 5

Table 5.1 Sample Selection Process for the period of 2007-2018

Sample Selection Process:	**No. of Observations**
All US public companies covered in the RepRisk database (2007-2018)	44,011
Merge with Political Connections data (Observations with missing political contributions are given a value of zero)	44,011
Merge with the Compustat database	31,161
Final Sample	
(After excluding financial firms and firms with missing total asset and/or sales)	**23,053**

Table 5.2 The Distribution of ESG Incidents by Type

This table reports ESG incidents by type for the final sample consisting of 23,053 from 2007-2018. E, S, G refers to environmental, social, and governance negative incidents (issues), respectively. Data are obtained from the RepRisk database. The calculations of E_ISSUES (E), S_ISSUES (S), and G_ISSUES (G) are presented in Appendix 5.B.

E	**S**	**G**	**Percent**	**Two or more E/S/G Categories**
1	0	0	6%	No
0	1	0	15%	No
0	0	1	16%	No
1	0	1	2%	Yes
1	1	0	18%	Yes
0	1	1	12%	Yes
1	1	1	31%	Yes

Table 5.3 The Literature View on the Direction of Association between the Control Variables and Political Connections

This table summarizes the studies that reported the association between the control variables of H1 and Political Connections. The (+) indicates a positive association while the (-) implies a negative association.

Control Variable	Direction of its Association with Political Connections (Example of Studies)
Size	+ (Cooper *et al.*, 2010; Mathura and Singh, 2011)
Leverage	+ (Faccio *et al.*, 2006; Cooper *et al.*, 2010)
Past_Performance	+ (Ozer and Alakent, 2013) **-** (Cooper *et al.*, 2010; Chen *et al.*, 2015)
Cash holdings	+ (Boubakri *et al.*, 2013) **-** (Hill *et al.*, 2014)
Growth Opportunity	+ (Lin *et al.*, 2015) **-** (Chen C. R. *et al.*, 2017)
Business Diversification	+ (Esty and Caves, 1983; Kim, 2008)
International_Op	+ (Hillman and Hitt, 1999)

Table 5.4 The Literature View on the Direction of Association between the Control Variables and Firm Performance Measurements (Tobin's Q and ROA)

This table summarizes the studies that reported the association between the control variables of H2 and firm performance measured by Tobin's Q/ROA. The (+) indicates a positive association while the (-) implies a negative association.

Control Variable	Direction of its Association with Firm Tobin's Q (Examples of Studies)	Direction of its Association with Firm ROA (Examples of Studies)
Size	+ (Cao *et al.*, 2018) **-** (McConnell and Servaes, 1990; Jayachandran *et al.*, 2013)	+ (Chi and Su, 2021) **-** (Jayachandran *et al.*, 2013)
Leverage	+ (Cui and Mak, 2002) **-** (Wang *et al.*, 2014)	+ (Lin *et al.*, 2015) **-** (Barton and Gordon, 1988; Cui and Mak, 2002)
Business Diversification	+ (Jose *et al.*, 1986). **-** (Wernerfelt and Montgomery, 1988; Lang and Stulz, 1994)	+ (Grant and Thomas, 1986) **-** (Montgomery, 1985)
R&D Expenditures	+ (Cui and Mak, 2002; Cao *et al.*, 2018).	**-** (Cui and Mak, 2002)
Assets Intangibility	+ (Cao *et al.*, 2018)	- (Cao *et al.*, 2018)
CF Volatility	+ (Rajkovic, 2020; Chi and Su, 2021). **-** (Rountree *et al.*, 2008)	**-** (Huang *et al.*, 2018)
Growth Opportunity: Growth of Assets	+ (Cui and Mak, 2002)	+ (Cui and Mak, 2002) **-** (Lemmon and Zender, 2010)
Internationalization: International_Op	+ (Gande *et al.*, 2009) **-** (Denis *et al.*, 2002)	+ (Salama and Putnam, 2013), if high corporate governance quality exists **-** (Salama and Putnam, 2013), if low corporate governance quality exists

Table 5.5 Summary Statistics

This table reports the descriptive statistics for variables of interest for the full sample of firms from 2007-2018. The full sample comprises all publicly traded non-financial US firms available in the RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales. Firms with no political contributions are given a value of zero in the political connections proxy. The financial variables are winsorized at their 1st and 99th percentiles. All numbers are in decimal form (e.g., 0.01 is 1%) except the following variables: Size, PC_Candidate(6Y), Peak_RRI_12M, E_ISSUES, S_ISSUEs, G_ISSUES, and Buss_Seg. Variable definitions are reported in Appendix 5.B.

Variables	**Mean**	**S.D.**	**P25**	**Median**	**P75**	**N**
PC_Candidate(6Y)	1.001	1.873	0.000	0.000	0.000	23,053
Peak_RRI_12M	14.167	16.724	0.000	1.000	26.000	23,053
E_ISSUES	2.976	6.368	0.000	0.000	1.100	23,053
S_ISSUES	5.020	8.746	0.000	0.000	8.333	23,053
G_ISSUES	3.777	8.225	0.000	0.000	2.188	23,053
Tobin's Q	1.958	1.429	1.146	1.498	2.193	21,440
ROA	0.097	0.165	0.072	0.114	0.166	23,040
Size	7.701	2.024	6.369	7.752	9.068	23,053
Leverage	0.268	0.207	0.100	0.253	0.390	23,053
Buss_Seg	2.832	1.959	1.000	3.000	4.000	22,034
Past_Perf	0.101	0.162	0.077	0.118	0.169	21,933
Cash_Assets	0.154	0.181	0.029	0.087	0.204	23,053
RD_Assets	0.029	0.072	0.000	0.000	0.023	23,053
Intangibility	0.684	0.258	0.496	0.765	0.904	23,047
CF_Volatility	0.048	0.101	0.009	0.019	0.043	21,415
Assets_Growth	0.138	0.415	-0.028	0.047	0.153	22,536
International_Op	0.601	0.490	0.000	1.000	1.000	23,053

Table 5.6 A Pairwise Correlation Matrix

This table displays the Pearson Correlation among the individual variables of this study. The full sample comprises all publicly traded non-financial US firms available in the RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales, from 2007-2018, making 23,053 firm-year observations. Financial variables are winsorized at their 1st and 99th percentiles. The * indicates statistical significance at the 5% level. The dependent variable of the first hypothesis is PC_Candidate(6Y), while the dependent variables in the second hypothesis are Tobin's Q and ROA (alternately). The control variables of the first hypothesis are Size, Leverage, Diversification (Buss_Seg), Past_Perf, Cash_Assets, Assets_Growth, and International_Op. The control variables of the second hypothesis are Size, Leverage, Diversification (Buss_Seg), RD_Assets, Intangibility, CF_Volatility, Assets_Growth, and International_Op. Variable definitions are reported in Appendix 5.B. Each dependent variable significantly correlates with its explanatory and control variables at a 95% confidence level, except the association between ROA and Leverage, and between Tobin's Q and International Operations.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) PC_Candidate(6Y)	1.000																
(2) Peak_RRI_12M	0.367*	1.000															
(3) E_ISSUES	0.297*	0.578*	1.000														
(4) S_ISSUES	0.307*	0.721*	0.386*	1.000													
(5) G_ISSUES	0.212*	0.577*	0.049*	0.165*	1.000												
(6) Tobin's Q	-0.073*	-0.065*	-0.120*	-0.049*	0.004	1.000											
(7) ROA	0.106*	0.102*	0.048*	0.098*	0.058*	-0.089*	1.000										
(8) Size	0.468*	0.561*	0.410*	0.444*	0.350*	-0.238*	0.345*	1.000									
(9) Leverage	0.111*	0.075*	0.064*	0.043*	0.049*	-0.149*	0.006	0.229*	1.000								
(10) Diversification (Business Segments)	0.179*	0.215*	0.209*	0.168*	0.116*	-0.188*	0.128*	0.371*	0.050*	1.000							
(11) Past_Perf	0.107*	0.114*	0.060*	0.107*	0.069*	-0.137*	0.772*	0.353*	0.022*	0.141*	1.000						
(12) Cash_Assets	-0.167*	-0.130*	-0.175*	-0.113*	-0.004	0.431*	-0.304*	-0.351*	-0.362*	-0.216*	-0.348*	1.000					
(13) RD_Assets	-0.088*	-0.095*	-0.128*	-0.099*	0.016*	0.365*	-0.503*	-0.286*	-0.180*	-0.180*	-0.490*	0.565*	1.000				
(14) Intangibility	-0.073*	-0.082*	-0.262*	-0.080*	0.103*	0.223*	-0.088*	-0.177*	-0.249*	-0.008	-0.090*	0.411*	0.297*	1.000			
(15) CF_Volatility	-0.128*	-0.122*	-0.080*	-0.107*	-0.071*	0.317*	-0.506*	-0.383*	-0.037*	-0.178*	-0.594*	0.314*	0.341*	0.050*	1.000		
(16) Assets_Growth	-0.087*	-0.104*	-0.071*	-0.084*	-0.066*	0.216*	-0.049*	-0.107*	-0.061*	-0.084*	-0.140*	0.196*	0.054*	0.069*	0.221*	1.000	
(17) International_Op	0.044*	0.141*	0.037*	0.100*	0.150*	-0.006	0.126*	0.187*	-0.134*	0.145*	0.138*	0.086*	0.044*	0.327*	-0.131*	-0.046*	1.000

Table 5.7 OLS Regressions Estimating the Association between ESG Negative Incidents and Corporate Political Connections

$$PC\_Candidate_{it} = \alpha + \beta_1(ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry \,\&\, Year\ fixed\ effects + \varepsilon_{it}$$
(Model 1)

The sample presents all publicly traded non-financial US firms available in the RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales, from 2007-2018. The dependent variable in all models is the political connections proxy (PC_Candidate) which is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window. The difference between the four models is the proxy used to measure the ESG negative incidents. In Model 1, the annual peak of the overall ESG score (Peak_RRI_12M) is the proxy for ESG negative incidents. In Model 1_A, the proxy for ESG negative incidents is the Environmental incidents (E_ISSUES). In Model 1_B, the Social incidents score is the proxy for ESG negative incidents. In Model 1_C, the Governance incidents calculated score (G_ISSUES) is the proxy for ESG negative incidents. All models control for the common firm-level variables affecting corporate political connections (Size, Leverage, Past_Perf, Cash_Assets, Assets_Growth, Buss_Seg, and International_Op). All models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. All numbers are in decimal form (e.g., 0.01 is 1%) except the following variables: Size, PC_Candidate(6Y), Peak_RRI_12M, E_ISSUES, S_ISSUES, G_ISSUES, and Buss_Seg. The VIF test for each model does not exceed 5 (max is 2.2). Variable definitions are reported in Appendix 5.B.

Variables	**Dependent Variable: PC_Candidate(6Y)**			
	Peak_RRI_12M	**E_ISSUES**	**S_ISSUES**	**G_ISSUES**
	Model 1	Model 1_A	Model 1_B	Model 1_C
ESG Negative Incidents Proxy	0.0015***	0.0039***	0.0018	0.0026**
	(0.0005)	(0.0015)	(0.0012)	(0.0013)
Size	0.2108***	0.2109***	0.2124***	0.2111***
	(0.0217)	(0.0214)	(0.0216)	(0.0216)
Leverage	-0.0341	-0.0325	-0.0343	-0.0339
	(0.0736)	(0.0737)	(0.0737)	(0.0738)
Past_Perf	-0.2731***	-0.2718***	-0.2717***	-0.2731***
	(0.0766)	(0.0765)	(0.0768)	(0.0768)
Cash_Assets	-0.0081	-0.0065	-0.0045	-0.0082
	(0.0614)	(0.0612)	(0.0613)	(0.0616)
Assets_Growth	-0.0563***	-0.0571***	-0.0572***	-0.0560***
	(0.0112)	(0.0110)	(0.0111)	(0.0113)
Buss_Seg	0.0046	0.0044	0.0045	0.0042
	(0.0141)	(0.0141)	(0.0141)	(0.0141)
International_Op	-0.0121	-0.0116	-0.0115	-0.0117
	(0.0323)	(0.0324)	(0.0324)	(0.0323)
Constant	-0.9956***	-0.9967***	-1.0032***	-0.9714***
	(0.2587)	(0.2577)	(0.2592)	(0.2597)
Observations	21,009	21,009	21,009	21,009
R-squared	0.2444	0.2434	0.2428	0.2413
Number of Firms	2,378	2,378	2,378	2,378
Firm FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 5.8 OLS Regressions Estimating the Association between ESG Negative Incidents and Corporate Political Connections (Alternative Proxy for Political Connections)

$$PC\_Financial_{it} = \alpha + \beta_1(ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$$

The sample presents all publicly traded non-financial US firms available in the RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales, from 2007-2018. The dependent variable in all models is the political connections proxy (PC_Financial) which is constructed as the natural logarithm of one plus the total dollar amount of contributions to political candidates by firm i over a six-year window. The difference between the four models is the proxy used to measure the ESG negative incidents. In Model 1, the annual peak of the overall ESG score (Peak_RRI_12M) is the proxy for ESG negative incidents. In Model 1_A, the proxy for ESG negative incidents is the Environmental incidents (E_ISSUES). In Model 1_B, the Social incidents score is the proxy for ESG negative incidents. In Model 1_C, the Governance incidents calculated score (G_ISSUES) is the proxy for ESG negative incidents. All models control for the common firm-level variables affecting corporate political connections (Size, Leverage, Past_Perf, Cash_Assets, Assets_Growth, Buss_Seg, and International_Op). All models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. All numbers are in decimal form (e.g., 0.01 is 1%) except the following variables: Size, PC_Financial(6Y), Peak_RRI_12M, E_ISSUES, S_ISSUES, G_ISSUES, and Buss_Seg. The VIF test for each model does not exceed 5 (max is 2.2). Variable definitions are reported in Appendix 5.B.

Variables	Dependent Variable: PC_Financial(6Y)			
	Peak_RRI_12M	**E_ISSUES**	**S_ISSUES**	**G_ISSUES**
	Model 1	**Model 1_A**	**Model 1_B**	**Model 1_C**
ESG Negative Incidents Proxy	0.0035**	0.0108**	0.0042	0.0059
	(0.0015)	(0.0044)	(0.0034)	(0.0038)
Size	0.5867***	0.5871***	0.5909***	0.5884***
	(0.0603)	(0.0595)	(0.0600)	(0.0598)
Leverage	-0.0254	-0.0214	-0.0260	-0.0252
	(0.2153)	(0.2155)	(0.2154)	(0.2157)
Past_Perf	-0.7777***	-0.7748***	-0.7751***	-0.7792***
	(0.2238)	(0.2232)	(0.2244)	(0.2241)
Cash_Assets	-0.1253	-0.1222	-0.1160	-0.1236
	(0.1852)	(0.1847)	(0.1852)	(0.1860)
Assets_Growth	-0.1476***	-0.1493***	-0.1497***	-0.1470***
	(0.0343)	(0.0339)	(0.0341)	(0.0346)
Buss_Seg	0.0174	0.0170	0.0171	0.0167
	(0.0401)	(0.0401)	(0.0402)	(0.0402)
International_Op	-0.0213	-0.0202	-0.0197	-0.0201
	(0.1044)	(0.1045)	(0.1046)	(0.1046)
Constant	-2.6343***	-2.6453***	-2.6530***	-2.5849***
	(0.7594)	(0.7560)	(0.7603)	(0.7617)
Observations	21,009	21,009	21,009	21,009
R-squared	0.2307	0.2308	0.2294	0.2284
Number of Firms	2,378	2,378	2,378	2,378
Firm FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 5.9 OLS Regressions Estimating the Association between ESG Negative Incidents and Corporate Political Connections (Alternative measures for ESG Negative Incidents)

$$PC\_Candidate_{it} = \alpha + \beta_1(Alternative\ ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$$

The sample presents all publicly traded non-financial US firms available in the RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales, from 2007-2018. The dependent variable in all models is the political connections proxy (PC_Candidate) which is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window. The difference between the four models is the proxy used to measure the ESG negative incidents. In Model 1, the overall ESG (Current_RRI_12M_Avg) is the proxy for ESG negative incidents, which is calculated as the average annual current RRI. In Model 1_A, the proxy for ESG negative incidents is E_ISSUES_ALT, which is calculated as the average annual current RRI multiplied by the average annual environmental incidents' percentage. In Model 1_B, S_ISSUES_ALT is the proxy for ESG negative incidents, which is calculated as the average annual current RRI multiplied by the average social incidents' percentage. In Model 1_C, G_ISSUES_ALT is the proxy for ESG negative incidents, which is calculated as the average annual current RRI multiplied by the average governance incidents' percentage. All models control for the common firm-level variables affecting corporate political connections (Size, Leverage, Past_Perf, Cash_Assets, Assets_Growth, Buss_Seg, and International_Op). All models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. All numbers are in decimal form (e.g., 0.01 is 1%) except the following variables: Size, PC_Candidate(6Y), Current_RRI_12M_Avg, E_ISSUES_ALT, S_ISSUES_ALT, G_ISSUES_ALT, and Buss_Seg. The VIF test for each model does not exceed 5 (max is 2.3). Variable definitions are reported in Appendix 5.B.

Variables	Dependent Variable: PC_Candidate(6Y)			
	Current_RRI_12M_Avg	**E_ISSUES_ALT**	**S_ISSUES_ALT**	**G_ISSUES_ALT**
	Model 1	**Model 1_A**	**Model 1_B**	**Model 1_C**
ESG Negative Incidents Proxy (Annual Current RRI)	0.0037***	0.0068***	0.0035*	0.0042**
	(0.0011)	(0.0024)	(0.0019)	(0.0021)
Size	0.2088***	0.2105***	0.2123***	0.2112***
	(0.0216)	(0.0214)	(0.0216)	(0.0216)
Leverage	-0.0340	-0.0324	-0.0341	-0.0342
	(0.0735)	(0.0738)	(0.0737)	(0.0738)
Past_perf	-0.2714***	-0.2705***	-0.2715***	-0.2733***
	(0.0766)	(0.0763)	(0.0768)	(0.0768)
Cash_Assets	-0.0132	-0.0068	-0.0052	-0.0091
	(0.0612)	(0.0611)	(0.0612)	(0.0615)
Assets_Growth	-0.0550***	-0.0571***	-0.0570***	-0.0561***
	(0.0112)	(0.0110)	(0.0111)	(0.0113)
Buss_Seg	0.0045	0.0044	0.0044	0.0042
	(0.0141)	(0.0141)	(0.0141)	(0.0141)
International_Op	-0.0128	-0.0116	-0.0118	-0.0117
	(0.0323)	(0.0324)	(0.0324)	(0.0323)
Constant	-0.9921***	-0.9982***	-1.0074***	-0.9715***
	(0.2577)	(0.2572)	(0.2589)	(0.2597)
Observations	21,009	21,009	21,009	21,009
R-squared	0.2496	0.2447	0.2444	0.2423
Number of Firms	2,378	2,378	2,378	2,378
Firm FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 5.10 OLS Regressions Estimating the Association between ESG Negative Incidents and Corporate Political Connections (Alternating industry fixed effect with firm fixed effect)

$$PC\_Candidate_{it} = \alpha + \beta_1(ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Firm\ \&\ Year\ fixed\ effects + \varepsilon_{it}$$

The sample presents all publicly traded non-financial US firms available in the RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales, from 2007-2018. The dependent variable in all models is the political connections proxy (PC_Candidate) which is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window. The difference between the four models is the proxy used to measure the ESG negative incidents. In Model 1, the annual peak of the overall ESG score (Peak_RRI_12M) is the proxy for ESG negative incidents. In Model 1_A, the proxy for ESG negative incidents is the Environmental incidents (E_ISSUES). In Model 1_B, the Social incidents score is the proxy for ESG negative incidents. In Model 1_C, the Governance incidents calculated score (G_ISSUES) is the proxy for ESG negative incidents. All models control for the common firm-level variables affecting corporate political connections (Size, Leverage, Past_Perf, Cash_Assets, Assets_Growth, Buss_Seg, and International_Op). All models include firm fixed and time fixed effects. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. All numbers are in decimal form (e.g., 0.01 is 1%) except the following variables: Size, PC_Candidate(6Y), Peak_RRI_12M, E_ISSUES, S_ISSUES, G_ISSUES, and Buss_Seg. The VIF test for each model does not exceed 5 (max is 2.2). Variable definitions are reported in Appendix 5.B.

Variables	**Dependent Variable: PC_Candidate(6Y)**			
	Peak_RRI_12M	**E_ISSUES**	**S_ISSUES**	**G_ISSUES**
	Model 1	**Model 1_A**	**Model 1_B**	**Model 1_C**
ESG Negative Incidents Proxy	0.0019***	0.0029*	0.0009	0.0020
	(0.0006)	(0.0015)	(0.0012)	(0.0013)
Size	0.1665***	0.1221***	0.1236***	0.1238***
	(0.0246)	(0.0268)	(0.0269)	(0.0268)
Leverage	0.0403	-0.0087	-0.0099	-0.0102
	(0.0765)	(0.0769)	(0.0768)	(0.0769)
Past_Perf	-0.3059***	-0.2264***	-0.2267***	-0.2284***
	(0.0780)	(0.0804)	(0.0807)	(0.0805)
Cash_Assets	0.0005	-0.0154	-0.0133	-0.0164
	(0.0629)	(0.0632)	(0.0633)	(0.0636)
Assets_Growth	-0.0511***	-0.0340***	-0.0342***	-0.0335***
	(0.0109)	(0.0115)	(0.0115)	(0.0117)
Buss_Seg	-0.0157	-0.0109	-0.0110	-0.0109
	(0.0161)	(0.0164)	(0.0164)	(0.0164)
International_Op	0.0002	-0.0073	-0.0072	-0.0075
	(0.0345)	(0.0343)	(0.0343)	(0.0342)
Constant	-0.2190	0.0567	0.0479	0.0483
	(0.1798)	(0.1901)	(0.1909)	(0.1902)
Observations	21,009	21,009	21,009	21,009
R-squared	0.2295	0.2138	0.2109	0.2109
Number of Firms	2,378	2,378	2,378	2,378
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No

Table 5.11 OLS Regressions Estimating the Association between ESG Negative Incidents and Corporate Political Connections (Using a 1-Year lag of all explanatory and control variables)

$$PC\_Candidate_{it} = \alpha + \beta_1(ESG\ Negative\ Incidents\ Proxy)_{it-1} + \beta_{t-1}(Controls)\ + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$$

The sample presents all publicly traded non-financial US firms available in the RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales, from 2007-2018. These tests are conducted to mitigate the reverse causality issue. The dependent variable in all models is the political connections proxy (PC_Candidate) which is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window. All models use a one-year lag of all the explanatory and control variables. The difference between the four models is the proxy used to measure the ESG negative incidents. In Model 1, the overall ESG peak tainted ESG level (Peak_RRI_12M) is the proxy for ESG negative incidents. In Model 1_A, the proxy for ESG negative incidents is the peak Environmental incidents (E_ISSUES). In Model 1_B, the peak Social incidents is the proxy for ESG negative incidents. In Model 1_C, the peak Governance incidents (G_ISSUES) is the proxy for ESG negative incidents. All models control for the common variables affecting corporate political connections found in the literature (Size, Leverage, Past_Perf, Cash_Assets, Assets_Growth, Buss_Seg, and International_Op). All models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. All numbers are in decimal form (e.g., 0.01 is 1%) except the following variables: Size, PC_Candidate(6Y), Peak_RRI_12M, E_ISSUES, S_ISSUES, G_ISSUES, and Buss_Seg. The VIF test for each model does not exceed 5 (max is 2.2). Variable definitions are reported in Appendix 5.B.

	Dependent Variable: PC_Candidate(6Y)			
Variables	**Peak_RRI_12M**	**E_ISSUES**	**S_ISSUES**	**G_ISSUES**
	Model 1	**Model 1_A**	**Model 1_B**	**Model 1_C**
ESG Negative Incidents Proxy	0.0016***	0.0044***	0.0015	0.0027*
	(0.0006)	(0.0015)	(0.0012)	(0.0014)
Size	0.2289***	0.2289***	0.2313***	0.2297***
	(0.0235)	(0.0232)	(0.0234)	(0.0234)
Leverage	-0.0644	-0.0632	-0.0649	-0.0657
	(0.0865)	(0.0866)	(0.0866)	(0.0866)
Past_Perf	-0.2277***	-0.2263***	-0.2274***	-0.2279***
	(0.0803)	(0.0801)	(0.0805)	(0.0806)
Cash_Assets	0.0022	0.0047	0.0067	0.0026
	(0.0671)	(0.0672)	(0.0672)	(0.0672)
Assets_Growth	-0.0596***	-0.0605***	-0.0607***	-0.0595***
	(0.0121)	(0.0119)	(0.0120)	(0.0122)
Buss_Seg	0.0038	0.0038	0.0037	0.0034
	(0.0144)	(0.0144)	(0.0144)	(0.0144)
International_Op	-0.0119	-0.0111	-0.0111	-0.0117
	(0.0311)	(0.0311)	(0.0311)	(0.0311)
Constant	-1.1260***	-1.1278***	-1.1335***	-1.1017***
	(0.2742)	(0.2731)	(0.2748)	(0.2757)
Observations	18,546	18,546	18,546	18,546
R-squared	0.2541	0.2534	0.2517	0.251
Number of Firms	2,283	2,283	2,283	2,283
Firm FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
1Y lag	Yes	Yes	Yes	Yes

Table 5.12 OLS Regressions Estimating the Association between ESG Negative Incidents and Corporate Political Connections (Using a dummy variable as the political connections proxy and a 1-Year lag of all explanatory and control variables)

$$Dummy\_PC_{it} = \alpha + \beta_1 (ESG\ Negative\ Incidents\ Proxy)_{it-1} + \beta_{t-1}(Controls)\ + \beta_t\ Industry\ \&\ Year\ fixed\ effects +\ \varepsilon_{it}$$

The sample presents all publicly traded non-financial US firms available in RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales, from 2007-2018. The dependent variable in all models is the political connections proxy (Dummy_PC) which is a dummy variable equal to one if the firm formed a PAC and contributed to politicians in their (re)election campaigns in year t, and zero otherwise. All models use a one-year lag of all the explanatory and control variables. The difference between the four models is the proxy used to measure the ESG negative incidents. In Model 1, the annual peak of the overall ESG score (Peak_RRI_12M) is the proxy for ESG negative incidents. In Model 1_A, the proxy for ESG negative incidents is the Environmental incidents (E_ISSUES). In Model 1_B, the Social incidents score is the proxy for ESG negative incidents. In Model 1_C, the Governance incidents calculated score (G_ISSUES) is the proxy for ESG negative incidents. All models control for the common firm-level variables affecting corporate political connections (Size, Leverage, Past_Perf, Cash_Assets, Assets_Growth, Buss_Seg, and International_Op). All models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. All numbers are in decimal form (e.g., 0.01 is 1%) except the following variables: Size, Dummy_PC, Peak_RRI_12M, E_ISSUES, S_ISSUES, G_ISSUES, and Buss_Seg. The VIF test for each model does not exceed 5 (max is 2.2). Variable definitions are reported in Appendix 5.B.

Variables	Dependent Variable: Dummy_PC			
	Peak_RRI_12M Model 1	E_ISSUES Model 1_A	S_ISSUES Model 1_B	G_ISSUES Model 1_C
ESG Negative Incidents Proxy	0.0003*	0.0008*	0.0001	0.0005
	(0.0001)	(0.0004)	(0.0003)	(0.0003)
Size	0.0530***	0.0532***	0.0537***	0.0533***
	(0.0051)	(0.0051)	(0.0051)	(0.0051)
Leverage	-0.0063	-0.0061	-0.0064	-0.0066
	(0.0209)	(0.0209)	(0.0210)	(0.0210)
Past_perf	-0.0537***	-0.0536***	-0.0541***	-0.0539***
	(0.0200)	(0.0199)	(0.0200)	(0.0200)
Cash_Assets	-0.0109	-0.0105	-0.0099	-0.0107
	(0.0172)	(0.0172)	(0.0173)	(0.0173)
Assets_Growth	-0.0141***	-0.0143***	-0.0144***	-0.0141***
	(0.0034)	(0.0033)	(0.0034)	(0.0034)
Buss_Seg	0.0018	0.0018	0.0018	0.0018
	(0.0035)	(0.0035)	(0.0035)	(0.0035)
International_Op	-0.0030	-0.0029	-0.0029	-0.0030
	(0.0088)	(0.0088)	(0.0088)	(0.0088)
Constant	-0.2484***	-0.2502***	-0.2501***	-0.2452***
	(0.0653)	(0.0651)	(0.0654)	(0.0655)
Observations	18,546	18,546	18,546	18,546
R-squared	0.2218	0.2221	0.2200	0.2203
Number of Firms	2,283	2,283	2,283	2,283
Firm FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
1Y lag	Yes	Yes	Yes	Yes

Table 5.13 OLS Regressions Estimating the Association between ESG Negative Incidents and Corporate Political Connections (Using a subsample of only firms with political connections)

$$PC\_Candidate_{it} = \alpha + \beta_1(ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$$

The sample presents all publicly traded non-financial US firms available in the RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales, from 2007-2018. The dependent variable in all models is the political connections proxy (PC_Candidate) which is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window. Only firms with political contributions (PC_Candidate(6Y) > 0) are included in the models. The difference between the four models is the proxy used to measure the ESG negative incidents. In Model 1, the annual peak of the overall ESG score (Peak_RRI_12M) is the proxy for ESG negative incidents. In Model 1_A, the proxy for ESG negative incidents is the Environmental incidents (E_ISSUES). In Model 1_B, the Social incidents score is the proxy for ESG negative incidents. In Model 1_C, the Governance incidents calculated score (G_ISSUES) is the proxy for ESG negative incidents. All models control for the common firm-level variables affecting corporate political connections (Size, Leverage, Past_Perf, Cash_Assets, Assets_Growth, Buss_Seg, and International_Op). All models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. All numbers are in decimal form (e.g., 0.01 is 1%) except the following variables: Size, PC_Candidate(6Y), Peak_RRI_12M, E_ISSUES, S_ISSUES, G_ISSUES, and Buss_Seg. The VIF test for each model does not exceed 5 (max is 2.2). Variable definitions are reported in Appendix 5.B.

Variables	**Dependent Variable: PC_Candidate(6Y) > 0**			
	Peak_RRI_12M	**E_ISSUES**	**S_ISSUES**	**G_ISSUES**
	Model 1	**Model 1_A**	**Model 1_B**	**Model 1_C**
ESG Negative Incidents Proxy	0.0021***	0.0113***	0.0025**	0.0023*
	(0.0007)	(0.0037)	(0.0012)	(0.0013)
Size	0.3829***	0.5255***	0.3890***	0.3871***
	(0.0376)	(0.0267)	(0.0373)	(0.0376)
Leverage	-0.0828	-0.2904	-0.0820	-0.0864
	(0.1418)	(0.2018)	(0.1420)	(0.1422)
Past_perf	-0.3983	0.3571	-0.3877	-0.3845
	(0.2877)	(0.4314)	(0.2887)	(0.2891)
Cash_Assets	0.2465	0.6766**	0.2551	0.2285
	(0.1820)	(0.3109)	(0.1822)	(0.1833)
Assets_Growth	-0.1760***	-0.2655***	-0.1765***	-0.1769***
	(0.0256)	(0.0503)	(0.0255)	(0.0256)
Buss_Seg	-0.0009	0.0288	-0.0009	-0.0011
	(0.0209)	(0.0198)	(0.0210)	(0.0210)
International_Op	0.0163	-0.0850	0.0194	0.0176
	(0.0675)	(0.1022)	(0.0679)	(0.0680)
Constant	-0.2772	-1.4502***	-0.3250	-0.2673
	(0.6087)	(0.3879)	(0.6127)	(0.6221)
Observations	5,246	5,246	5,246	5,246
R-squared	0.4292	0.4563	0.4285	0.4243
Number of Firms	584	584	584	584
Firm FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 5.14 OLS Regressions Estimating the Influence of Corporate Political Connections on the Association Between ESG Negative Incidents and Firm Performance

$Firm\_Performance_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ **(Model 2)**

$Firm\_Performance_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_3(Political\ Connections\ Proxy\ X\ ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ **(Model 3)**

The sample presents all publicly traded non-financial US firms available in the RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales, from 2007-2018. The dependent variable in Models 2_A and 3_A is the market-based performance measurement (Tobin's Q). The dependent variable in Models 2_B and 3_B is the accounting-based performance measurements (ROA). In all models, the political connections proxy is (PC_Candidate) which is constructed as the natural logarithm of one plus the total number of candidates supported by the firm over a six-year window. In all models, the ESG Negative Incidents proxy is (Peak_RRI_12M) which denotes the highest level of tainted ESG reputation of firm i in year t. The difference between Models 2 and 3 is that the former does not include the interaction variable (PC_Candidate(6Y) X ESG Negative Incidents Proxy), while the latter does include this interaction variable. All models control for the common firm-level variables affecting firm performance (Size, Leverage, Buss_Seg, RD_Assets, Assets_Intangibility, Assets_Growth, CF_Volatility, and International_Op). All models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. All numbers are in decimal form (e.g., 0.01 is 1%) except the following variables: Size, PC_Candidate(6Y), ESG Negative Incidents Proxy, and Buss_Seg. The VIF tests do not exceed 5 (max is 2.3). Variable definitions are reported in Appendix 5.B.

Dependent Variable:	**Tobin's Q**	**ROA**	**Tobin's Q**	**ROA**
	With no Interaction Variable		**With Interaction Variable**	
Variables	**Model 2_A**	**Model 2_B**	**Model 3_A**	**Model 3_B**
PC_Candidate(6Y)	0.0419**	-0.0000	0.0270	-0.0007
	(0.0168)	(0.0012)	(0.0183)	(0.0013)
ESG Negative Incidents Proxy	0.0002	-0.0001**	-0.0005	-0.0002**
	(0.0006)	(0.0001)	(0.0007)	(0.0001)
PC_Candidate(6Y) X ESG Negative Incidents Proxy	-	-	**0.0006****	**0.0000**
	-	-	(0.0003)	(0.0000)
Size	-0.2191***	0.0130***	-0.2183***	0.0131***
	(0.0214)	(0.0022)	(0.0213)	(0.0022)
Leverage	-0.3228***	-0.0992***	-0.3236***	-0.0993***
	(0.1123)	(0.0110)	(0.1122)	(0.0110)
Buss_Seg	-0.0355***	-0.0022*	-0.0357***	-0.0022*
	(0.0120)	(0.0012)	(0.0120)	(0.0012)
RD_Assets	3.3966***	-0.9960***	3.3915***	-0.9963***
	(0.5759)	(0.0559)	(0.5760)	(0.0559)
Assets_Intangibility	0.5772***	-0.0397**	0.5767***	-0.0397**
	(0.1628)	(0.0161)	(0.1627)	(0.0161)
Assets_Growth	0.3233***	0.0206***	0.3221***	0.0205***
	(0.0330)	(0.0033)	(0.0330)	(0.0033)
CF Volatility	1.4955***	-0.2952***	1.4947***	-0.2952***
	(0.2791)	(0.0329)	(0.2789)	(0.0329)
International_Op	0.0301	0.0139***	0.0310	0.0139***
	(0.0459)	(0.0048)	(0.0459)	(0.0048)
Constant	3.6608***	-0.0266	3.6671***	-0.0264
	(0.3367)	(0.0367)	(0.3367)	(0.0367)
Observations	19,459	20,467	19,459	20,467
R-squared	0.242	0.4112	0.2427	0.4112
Number of Firms	2,289	2,339	2,289	2,339
Firm FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 5.15 OLS Regressions Estimating the Influence of Corporate Political Connections on the Association between ESG Negative Incidents and Firm Performance (Using Alternative PC_Proxy, Alternative Negative ESG Proxy, Firm Fixed Effect, and a 1-Year lag of all explanatory and control variables, respectively)

$Firm\_Performance_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_3(Political\ Connections\ Proxy\ X\ ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ **(Model 3)**

The sample presents all publicly traded non-financial US firms available in the RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales, from 2007-2018. Four robustness checks are conducted, where the dependent variable in all checks is the market-based performance measurement (Tobin's Q). In the first robustness check, the political connections (PC) proxy is supplemented from being (PC_Candidate(6Y)) to being (PC_Financial(6Y)) which is constructed as the natural logarithm of one plus the total dollar amount of contributions to political candidates by firm i over a six-year window. In the second robustness check, the ESG Negative Incidents proxy is alternated from being (Peak_RRI_12M) to being (Current_RRI_12M_Avg), which is calculated as the average annual current RRI. The third robustness check uses the same model (Model 3), but the industry fixed effect is alternated with the firm fixed effect. The fourth robustness check also uses Model 3, but a one-year lag of all the explanatory and control variables is applied. All models control for the common firm-level variables affecting the firm performance (Size, Leverage, Buss_Seg, RD_Assets, Assets_Intangibility, Assets_Growth, CF_Volatility, and International_Op). All models include the industry fixed effect (except the third one), which is based on SIC two digits. All models include the time fixed effect. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for each model does not exceed 5 (max is 2.4). Variable definitions are reported in Appendix 5.B.

	Dependent Variable: Tobin's Q with Interaction Variable Model 3_A			
	Column (1)	**Column (2)**	**Column (3)**	**Column (4)**
Variables	**Alternating the PC Proxy** (PC_Financial(6Y))	**Alternating the ESG Negative Incidents Proxy** (Current_RRI_12M_Avg)	**Firm Fixed Effect**	**1_Y Lag**
PC_Proxy(6Y)	0.0060	0.0261	0.0045	0.0468***
	(0.0058)	(0.0185)	(0.0256)	(0.0178)
ESG Negative Incidents Proxy	-0.0005	-0.0006	-0.0011	-0.0006
	(0.0008)	(0.0012)	(0.0008)	(0.0008)
PC_Proxy(6Y) X ESG Negative Incidents Proxy	**0.0002****	**0.0010****	**0.0005***	**0.0005***
	(0.0001)	(0.0004)	(0.0003)	(0.0003)
Size	-0.2142***	-0.2190***	-0.4611***	-0.2502***
	(0.0210)	(0.0214)	(0.0429)	(0.0215)
Leverage	-0.3258***	-0.3240***	-0.2673**	0.0147
	(0.1123)	(0.1121)	(0.1294)	(0.1110)
Buss_Seg	-0.0356***	-0.0358***	-0.0499**	-0.0259**
	(0.0120)	(0.0120)	(0.0198)	(0.0117)
RD_Assets	3.3998***	3.3889***	2.3765***	2.7198***
	(0.5766)	(0.5760)	(0.7347)	(0.5603)
Assets_Intangibility	0.5776***	0.5761***	0.7702***	0.5968***
	(0.1628)	(0.1627)	(0.2257)	(0.1414)
Assets_Growth	0.3211***	0.3220***	0.3370***	0.1360***
	(0.0330)	(0.0330)	(0.0344)	(0.0283)
CF Volatility	1.5028***	1.4932***	1.0088***	0.6113**
	(0.2789)	(0.2790)	(0.3034)	(0.2594)
International_Op	0.0300	0.0312	0.0384	0.0658
	(0.0459)	(0.0459)	(0.0554)	(0.0480)
Constant	3.6419***	3.6716***	5.0921***	2.8692***
	(0.3361)	(0.3368)	(0.3761)	(0.2721)
Observations	19,459	19,459	19,459	17,493
R-squared	0.2421	0.2431	0.1357	0.2046
Number of Firms	2,289	2,289	2,289	2,218
Firm FE	No	No	Yes	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	No	Yes
1Y lag	No	No	No	Yes

Table 5.16 OLS Regressions Estimating the Influence of Corporate Political Connections on the Association between ESG Negative Incidents and Firm Performance (Using Alternative PC_Proxy (Dummy_PC))

$Firm\_Performance_{it} = \alpha + \beta_1(Dummy\ Political\ Connections\ Proxy)_{it} + \beta_2(ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_3(Dummy\ Political\ Connections\ Proxy\ X\ ESG\ Negative\ Incidents\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ **(Model 3)**

The sample presents all publicly traded non-financial US firms available in the RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales, from 2007-2018. The dependent variable in both tests is the market-based performance measurement (Tobin's Q). The political connections proxy is alternated from (PC_Candidate(6Y)) to (Dummy_PC), which is a dummy variable equal to one if the firm formed a PAC and contributed to politicians in their (re)election campaigns in year t, and zero otherwise. The ESG Negative Incidents proxy (Peak_RRI_12M) denotes the highest level of tainted ESG reputation of firm i in year t. The only difference between the two tests is that the second test (model) uses a one-year lag of all the explanatory and control variables while the first does not. Both models control for the common firm-level variables affecting the firm performance (Size, Leverage, Buss_Seg, RD_Assets, Assets_Intangibility, Assets_Growth, CF_Volatility, and International_Op). Both models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. All numbers are in decimal form (e.g., 0.01 is 1%) except the following variables: Size, Dummy_PC, ESG Negative Incidents Proxy (Peak_RRI_12M), and Buss_Seg. The VIF test for each model does not exceed 5 (max is 2.2). Variable definitions are reported in Appendix 5.B.

	Dependent Variable: Tobin's Q with Interaction Variable Model 3_A	
Variables	**Alternating the PC Proxy** (Dummy_PC) (Annual)	**Alternating the PC Proxy** (Dummy_PC) (Annual_Lag1)
Dummy_PC=1	0.0166	0.0421
	(0.0504)	(0.0485)
ESG Negative Incidents Proxy	-0.0005	-0.0005
	(0.0007)	(0.0008)
Dummy_PC=1 X ESG Negative Incidents Proxy	**0.0032*** **	**0.0028** **
	(0.0011)	(0.0011)
Size	-0.2100***	-0.2351***
	(0.0206)	(0.0209)
Leverage	-0.3247***	0.0113
	(0.1124)	(0.1112)
Buss_Seg	-0.0355***	-0.0249**
	(0.0120)	(0.0117)
RD_Assets	3.3991***	2.7376***
	(0.5769)	(0.5623)
Assets_Intangibility	0.5785***	0.6050***
	(0.1629)	(0.1418)
Assets_Growth	0.3198***	0.1317***
	(0.0329)	(0.0282)
CF Volatility	1.5096***	0.6279**
	(0.2791)	(0.2593)
International_Op	0.0294	0.0135
	(0.0459)	(0.0441)
Constant	3.6195***	2.8036***
	(0.3353)	(0.2696)
Observations	19,459	17,493
R-squared	0.2419	0.2038
Number of Firms	2,289	2,218
Firm FE	No	No
Year FE	Yes	Yes
Industry FE	Yes	Yes
1Y lag	No	Yes

Chapter 5 Figure

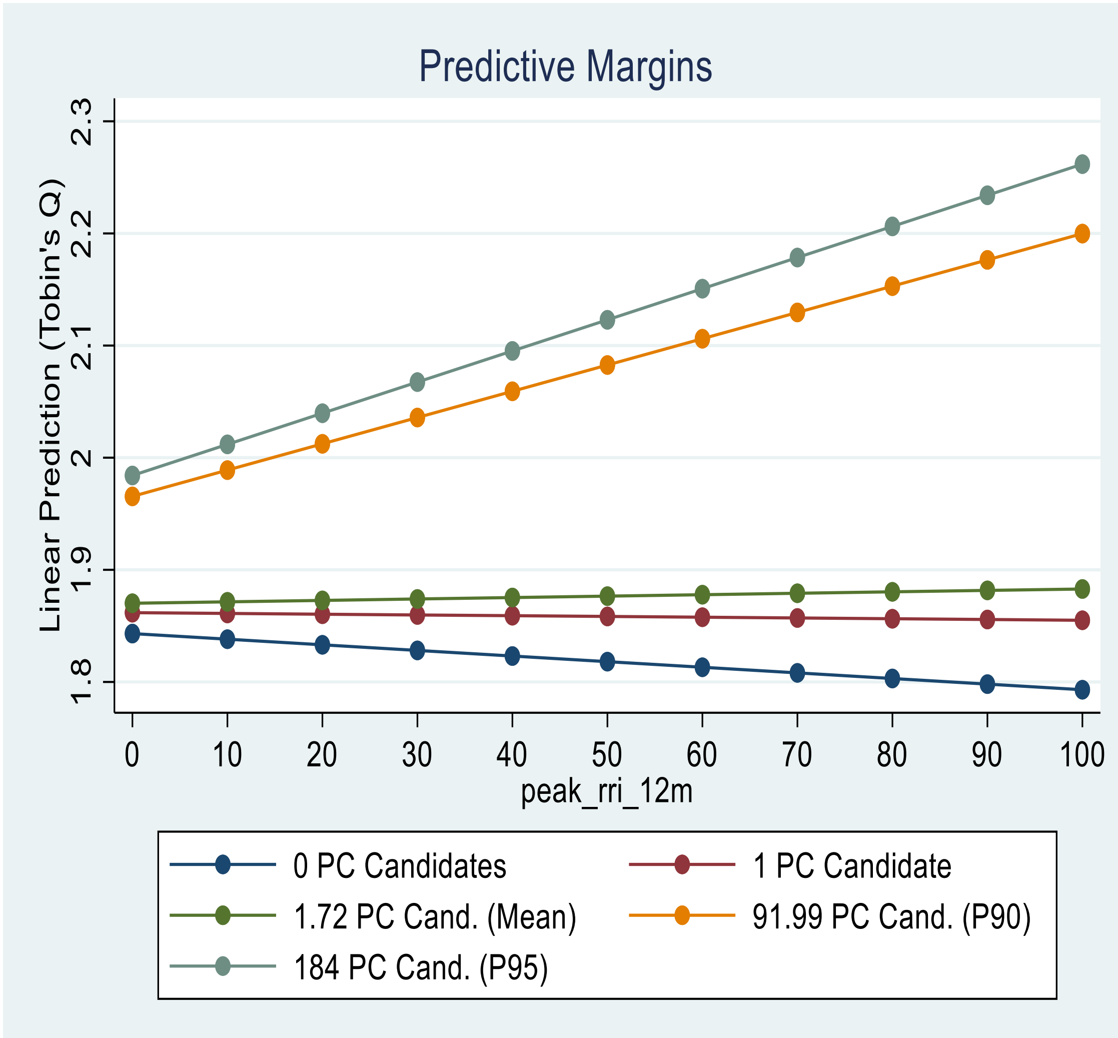

Figure 5.1 Predictive Margins (Political Connections, ESG Negative Incidents, and Tobin's Q)

This graph shows a linear prediction, where the relationship between ESG negative incidents and Tobin's Q is shown for certain levels of political connections. The sample presents all publicly traded non-financial US firms available in the RepRisk and Compustat databases, with non-missing or zero values for total assets and/or sales, from 2007-2018.

Appendices to Chapter 5

Appendix 5.A: RepRisk Data: ESG Issues Examined

Environment	Social		Governance
Environmental footprint	***Community relations***	***Employee relations***	***Corporate governance***
• Global pollution, climate change, and GHG emissions • Local pollution • Impacts on ecosystems and landscapes • Overuse and wasting of resources • Waste issues • Animal mistreatment	• Human rights abuses and corporate complicity • Impacts on communities • Local participation issues • Social discrimination	• Forced labour • Child labour • Freedom of association and collective bargaining[69] • Discrimination in employment • Occupational health and safety issues • Poor employment conditions	• Corruption, bribery, extortion, money laundering • Executive compensation issues • Misleading communication • Fraud • Tax evasion • Tax optimization[70] • Anti-competitive practices
Cross-cutting issues: • Controversial products and services • Product-related health and environmental issues • Violation of international standards • Violation of national legislation • Supply chain issues			

Information in this table was obtained from https://www.reprisk.com/content/static/reprisk-methodology-overview.pdf as of March 2021. The data categories were consistent during the sample period.

[69] "Freedom of association and collective bargaining" refers to violations of workers' rights to organize and collectively bargain. Examples would include interfering with union formation and participation, retaliation against striking workers, refusal to comply with union agreements, etc.

[70] "Tax optimization" refers to the practice of minimizing tax liability through tax planning. While this may not be illegal, it may be associated with abuse of the law and often criticized for robbing a state of potential tax revenues, particularly in developing countries. For more information on the definition of each of the 28 ESG issues, see https://www.reprisk.com/media/pages/static/2738025864-1634541719/reprisk-esg-issues-definitions.pdf

Appendix 5.B: Variable Definitions

The tables below present the definitions of variables used in the current study. The sources and data items used from each source are also provided. The variables are classified into three segments: ESG negative incidents variables, political connections variables, and financial variables.

- **ESG Negative Incidents Variables:**

Variable	Definition	Data Item	Proxy For	Source
$Peak\_RRI\_12M_{it}$	The highest (peak) level of tainted ESG reputation (Current RRI) in year t.	Current RRI	ESG negative incidents	RepRisk
E_ISSUES_{it}	The firm's highest (peak) level of tainted ESG reputation (Current RRI) in year t multiplied by the firm's average environmental issues percentage: Peak_RRI_12M X Environmental_Avg_PCT	Current RRI, E Percentage	Environmental incidents	RepRisk
S_ISSUES_{it}	The firm's highest (peak) level of tainted ESG reputation (Current RRI) in year t multiplied by the firm's average social issues percentage: Peak_RRI_12M X Social_Avg_PCT	Current RRI, S Percentage	Social incidents	RepRisk
G_ISSUES_{it}	The firm's highest (peak) level of tainted ESG reputation (Current RRI) in year t multiplied by the firm's average governance issues percentage: Peak_RRI_12M X Governance_Avg_PCT	Current RRI, G Percentage	Governance incidents	RepRisk

- **ESG Negative Incidents Variables (cont.):**

Variable	Definition	Data Item	Proxy For	Source
$Current\_RRI\_12M\_Avg_{it}$	The average annual tainted ESG reputation (Current RRI) in year t.	Current RRI	ESG negative incidents (Robustness Check)	RepRisk
$E\_ISSUES\_ALT_{it}$	The firm's average annual tainted ESG reputation (Current RRI) in year t multiplied by the firm's average environmental issues percentage: Current_RRI_12M_Avg X Environmental_Avg_PCT	Current RRI, E Percentage	Environmental incidents (Robustness Check)	RepRisk
$S\_ISSUES\_ALT_{it}$	The firm's average annual tainted ESG reputation (Current RRI) in year t multiplied by the firm's average social issues percentage: Current_RRI_12M_Avg X Social_Avg_PCT	Current RRI, S Percentage	Social incidents (Robustness Check)	RepRisk
$G\_ISSUES\_ALT_{it}$	The firm's average annual tainted ESG reputation (Current RRI) in year t multiplied by the firm's average governance issues percentage: Current_RRI_12M_Avg X Governance_Avg_PCT	Current RRI, G Percentage	Governance incidents (Robustness Check)	RepRisk

➢ **Political Connections Variables:**

Variable	Definition	Data Item	Proxy For	Source
$PC\_Candidate_{it}$	The natural logarithm of one plus the total number of candidates supported by a firm over a six-year window. $PC\_Candidate_{it} = \text{Ln}\left(1 + \sum_{j=1}^{J} \text{Candidate}_{jt,t-5}\right)$ where $\text{Candidate}_{jt,t-5}$ is an indicator that equals one if the firm contributed to Candidate_j over the years t-5 to t.	Cand_ID	Political Connections	Federal Election Commissi-on (FEC)
$PC\_Financial_{it}$	The natural logarithm of one plus the total amount of dollar contributions to candidates by a firm over a six-year window. $PC\_Financial_{it} = \text{Ln}\left(1 + \sum_{j=1}^{J} \text{Amount}_{jt,t-5}\right)$ where $\text{Amount}_{jt,t-5}$ is the sum of total dollar contributions provided by a firm to Candidate_j over the years t-5 to t.	Transaction_amt	Political Connections (Robustness Check)	FEC
Dummy_PC	A dummy variable equal to one if firm i contributed to one or more political candidates in year t and zero otherwise.	[Transaction_amt > 0]	Political Connections (Robustness Check)	FEC

- **Financial Variables:**

Variable	Definition	Data Item	Proxy For	Source	Citation
Size	The natural logarithm of the book value of total assets.	Ln (AT)	Firm Size	Compustat	(Lo and Sheu, 2007; Mathura and Singh, 2011)
Leverage	The sum of the long-term and short-term debt scaled by the book value of total assets.	(DLTT+DLC)/ AT	Firm Debt	Compustat	(Mathura and Singh, 2011)
Past Performance	The average of ROA over the past three years as: Ratio of operating income before depreciation (OIBDP) to the book value of a firm's total assets (AT) (if data are not available for two years, this variable is recorded as missing).	$\mathrm{Ave}[(\mathrm{OIBDP}/\mathrm{AT})_{t-1,t-2,t-3}]$	Past Performance	Compustat	(Duan and Niu, 2019)
Cash_Assets	Cash and cash equivalents divided by the book value of total assets.	CHE/AT	Liquidity	Compustat	(Boubakri *et al.*, 2013)
Tobin's (Q)	The book value of assets (AT) plus the market value of equity (CSHO*PRCC) minus the book value of equity (CEQ) all scaled by total assets.	$(\mathrm{AT} + (\mathrm{CSHO} * \mathrm{PRCC}) - \mathrm{CEQ})/\mathrm{AT}$	Performance	Compustat	(Grieser and Hadlock, 2019; Unsal, 2020)
Buss_Seg	The number of business segments.	Segment Name-ISID Counts	Diversification	Compustat	(Cooper *et al.*, 2010)
International_Op	A dummy variable equal to one if the firm has international operations outside the US, and zero otherwise (i.e., operates only domestically).	Geographic Segment Type	US firms with international operations	Compustat	(Cuervo-Cazurra *et al.*, 2018)
R&D Expenditures	Research and development expenditures scaled by the book value of total assets (any missing value=0).	XRD/AT	Investment Opportunities	Compustat	(Cao *et al.*, 2018)
Assets Intangibility	One minus (net property plant & equipment/total assets).	1-(PPENT/AT)	Intangible Capital	Compustat	(Cao *et al.*, 2018)
Growth Rate of Assets	The growth in assets from year t-1 to year t.	$[\,(\mathrm{AT}_t/AT_{t-1}) - 1]$	Growth Opportunities	Compustat	(Cui and Mak, 2002)

➢ **Financial Variables (cont.):**

Variable	**Definition**	**Data Item**	**Proxy For**	**Source**	**Citation**
ROA	Ratio of operating income before depreciation (OIBDP) to the book value of a firm's total assets (AT).	OIBDP/AT	Performance	Compustat	(Cao *et al.*, 2018; Duan and Niu, 2019)
Cashflow Volatility	The rolling standard deviation of annual cashflows over the past 3 years, requires a minimum of 1-year availability of this variable.	$\mathrm{S.D.}\,[(\mathrm{OIBDP} - \mathrm{XINT} - \mathrm{TXT} - \mathrm{DVP} - \mathrm{DVC}) / \mathrm{AT}]_{it,t-2}$	Firm-level Risk	Compustat	(Houqe *et al.*, 2020)

Chapter 6: Corporate Political Connections and Females in the Top Management Team: Implications for Corporate Risk Management

Keywords: corporate political connections; political hard-money contributions; campaign contributions; female representation in the TMT; gender diversity; total risk; equity risk; stock returns volatility; systematic risk; idiosyncratic risk.

6.1 Introduction

Corporate political connections and the favours they generate are well documented in the literature. Favours include preferential access to external finance (e.g., Claessens *et al.*, 2008), increased likelihood of bailouts during financial distress (e.g., Faccio *et al.,* 2006), and access to government policy information (e.g., Grossman and Helpman, 1994). Such advantages are claimed to reduce some types of risk including corporate financial/credit risk (e.g., Houston *et al.*, 2014), and policy uncertainty risk (e.g., Wellman, 2017). However, corporate political connections increase other types of risk such as agency risk (e.g., Den Hond *et al.*, 2014; Torres-Spelliscy, 2016). While studies have considered the influence of corporate political connections on different risk types, the impact of such connections on firms' total (equity) risk (hereafter total risk) is less investigated. This study examines the existence of an association between corporate political connections and firms' total risk, and between those connections and the two sub-divisions of total risk: systematic and idiosyncratic.

A firm's total risk is commonly proxied in the literature by stock returns volatility (e.g., Core and Guay, 1999, 2002; Coles *et al.*, 2006; Cao and Wang, 2013). High stock returns volatility is a major threat to corporations, as it lowers the market demand for such stocks. Several studies are dedicated to identifying factors that can help in managing total risk. Perryman *et al.* (2016) find that gender diversity (i.e., the proportion of female executives in the Top Management Team (TMT)) reduces firm total risk (stock returns volatility). In support, Jeong and Harrison (2017) argue that female representation in CEO and TMT positions reduces stock returns volatility, therefore total risk. This work further examines the existence of an impact by corporate political connections on the association between female presence in the TMT and firms' total risk.

Studies have continuously investigated the impact of political connections on firms' outcomes; however, little is known about whether corporate political connections established through continuous contributions to political candidates can be associated with firms' total risk. This is particularly important, as Bagley *et al.* (2015) stated "Despite the prevalence of corporate political spending, our conversations with company leaders have revealed a knowledge gap on the depth and breadth of risks involved as well as the oversight needed."[71] This indicates that managers, who are responsible for and therefore worry about their firms' risk levels, need to understand whether corporate political connections are associated with the firm's total risk (i.e., the stock returns volatility) to better evaluate whether these connections can be a tool to mitigate firm total risk or if they result in greater total risk and hence become a cost not an advantage when related to total risk management. Even for stock market investors, evaluating corporate political connections' impact on the total firm risk can be essential in their screening process. Cooper *et al.*'s (2010) findings suggest that politically connected firms have higher stock returns. Thus, investors may better evaluate firms' stocks when both the risks and returns of such stocks are clear. Examining the association between such connections and the two sub-divisions of total risk, enriches the understanding of this subject.

This study also considers the increasing attention given to female representation on corporations' TMTs and how gender diversity can result in better risk management and lower stock returns volatility (e.g., Perryman *et al.*, 2016; Jeong and Harrison, 2017). Studies have been dedicated to identifying the factors that can affect the association between female executives and firms' outcomes. For example, Ren and Wang (2011) examined the moderating effects of level of education and political connections, on the association between female participation and firm performance in Chinese private companies. They found that the positive association between the female proportion of the TMT and firm performance is stronger when those females have a higher level of education and are politically connected. While their study focuses on the effect of political connections on the association between female executives and performance, the results might differ regarding firm risk rather than performance. This study investigates the possible impact of corporate political connections on the association between female

[71] https://hbr.org/2015/10/a-board-members-guide-to-corporate-political-spending (Accessed in August 2020).

representation in the TMT and firm total risk in the US[72]. This is important as authors have called for the examination of factors that might influence (strengthen or weaken) the association between female executives and firms' outcomes. Particularly, Perryman *et al.* (2016), who found that gender diversity (the proportion of female executives in the TMT) reduces firm risk, called for further analysis on what factors can influence this association. This study responds to this call by examining the possible existence of an impact by corporate political connections on the association between the female proportion in the TMT and firm total risk. If an impact exists, will political connections complement the female presence in the TMT and result in further reduction in total risk, or will such connections mitigate, at least partially, the reduction in firm risk generated by the female presence in the TMT?

Very few studies have examined the association between corporate political connections and firm risk. Specifically, Kim *et al.* (2019) examined how employing various political strategies (e.g., the presence of former politicians on the boards of directors, contributions to political campaigns, and lobbying activities) interacts with the reduction of policy uncertainty (generated from political connections), and how such interaction mitigates corporate systematic but not idiosyncratic risk. This study differs as it uses a single political strategy (political campaign contributions) on a long-term basis, considers the aggregate advantages of corporate political connections instead of a single favour generated (i.e., reduction in policy uncertainty), and uses three risk measures. Importantly, it adds a further dimension that has not yet been tackled by any other study, to the best of the researcher's knowledge, which is examining the possible existence of an impact by corporate political connections on the relationship between a corporate governance variable (Female in TMT) and firm total risk. The results/findings will add to the body of literature on the subject and fill this gap.

[72] Corporate political connections in the current study refer to the contributions provided by any corporation member through their firm's PAC. It does not focus only on females' connections to politicians.

This study examines the presence of an association between corporate political connections and firms' total risk including its two sub-divisions: systematic and idiosyncratic. It also tests the possible impact of corporate political connections on the association between female participation in the TMT and firm total risk. It uses fixed effects OLS regression models on panel data of publicly-listed US firms (S&P1500) from 1992-2018. The main sample was derived from four main sources. First, the corporate political contributions data were obtained from the FEC datasets[73]. Second, the female proportion of the TMT data were obtained from the ExecuComp database. Third, risk measures (total, systematic, and idiosyncratic) data were obtained from the Beta Suite platform in Wharton Research Data Services (WRDS). Last, the corporate financial data were obtained from the Compustat database. The final sample consists of 30,524 firm-year observations from 1992-2018.

This work's findings suggest that firms' political connections are associated with their stock returns volatility (total risk), systematic risk, and idiosyncratic risk; and those political connections are negatively associated with these three risks' measures. Hence, corporate political connections in the US context are associated with a lower firm (total, systematic, and idiosyncratic) risk. The findings also show that the interaction between corporate political connections and female proportion in the TMT on firms' total risk is negative and statistically significant. This means corporate political connections strengthen and complement female representation in the TMT, and the presence of both political connections and gender diversity strategies results in a further reduction in firms' total risk. Analysis shows that this further reduction in total risk is driven by the reduction in idiosyncratic risk. The results of this study have been validated through several robustness checks.

[73] As explained in Chapter 3, the FEC requires that corporate political contributions should come from restricted individuals, namely firms' executive and administrative personnel and their families in addition to stockholders and their families. Notably, decisions regarding PACs and distributing contributions typically come from firms' top executives (Federal Election Commission, 2018).

This study contributes to corporate political connections literature in several ways. First, its findings reconcile the contradictory views on the association between corporate political connections and a firm's outcomes. Cheung *et al.* (2010) note that connections to politicians can be both a helping and a grabbing hand in business. Aggarwal *et al.* (2012) explain that corporate political contributions could be an investment or an agency cost for firms. By exploring the economic consequences of such connections on firms' risk, this study contributes to the literature by finding that those connections are considered an investment and a helping hand in terms of reducing firms' (total, systematic, and idiosyncratic) risk. Second, it presents illustrative evidence showing that corporate political connections can have more profound effects by influencing asset prices, adding to academia's continuous effort to forecast the outcomes of firms' strategies in the capital market. It shows that non-market strategies, particularly long-term connections to politicians, are indeed associated with and influence firms' stock returns volatility in the capital market. Third, its findings complement some earlier research, by showing that politically connected firms through hard-money contributions in the US enjoy not only higher stock returns (e.g., Cooper *et al.*, 2010) but also lower stock returns volatility (total risk), lower systematic risk, and lower idiosyncratic risk. Last, studies argue that corporate political connections increase innovation, whether measured by R&D investments (Chapter 4) or by patent counts and citations (Ovtchinnikov *et al.*, 2020). This chapter adds to the findings that corporate political connections not only reduce policy uncertainty, which increases innovation, but also relate to lower overall firm risk.

This work also contributes to the risk management literature. Studies have been committed to identifying factors and strategies that can mitigate stock returns volatility. Diamond and Verrecchia (1991) and Healy *et al.* (1999) argue that improving the quality of financial reporting and disclosures helps firms to reduce stock returns volatility. Harjoto *et al.* (2015) argue that CSR activities reduce stock returns volatility, and institutional ownership mediates such a reduction. Although studies have tackled some non-market strategies (e.g., CSR) and their association with stock returns volatility (firm total risk), little is known about whether corporate political connections, a form of non-market strategy, can be associated with such volatility. This work shows that non-market strategies, particularly companies' political connections, can be a means to mitigate/reduce stock returns volatility.

This research also contributes to the gender diversity literature, which encourages female participation in the TMT of corporations. Female presence in TMTs has been associated with broader cognitive perspectives, allowing firms to recognize strategic opportunities, find alternatives, and deal with environmental changes (Wiersema and Bantel, 1992). Studies argue that female representation in the TMT reduces firms' riskiness (e.g., Perryman *et al.*, 2016; Jeong and Harrison, 2017); however, little is known on whether non-market strategies (i.e., corporate political connections) can influence the role of the female proportion of TMT in reducing firms' riskiness. This study contributes by examining the possible impact of corporate political connections on the association between the female proportion of the TMT and firm total risk; it also contributes by testing which of the two sub-divisions of total risk (systematic and idiosyncratic) is more influenced by the interaction between those connections and the female proportion in the TMT, hence affecting the firm total risk.

The study's findings have implications for corporations, investors, and policymakers. Corporate decision-makers and managers have been concerned about stock returns volatility and the increase in their firm's perceived riskiness. High stock returns volatility decreases liquidity (Chordia *et al.*, 2005), increases the cost of capital (Froot *et al.*, 1993), increases the likelihood of CEO turnover (Engel *et al.*, 2003) and lawsuit filings (Kim and Skinner, 2012), and results in more costly/less effective stock price-based compensation (Baiman and Verrecchia, 1995). Therefore, stock returns volatility has received much attention since it is an important issue in practice (Billings *et al.*, 2015). The increase in stock volatility in the US (Campbell *et al.*, 2001) and the expected impact of political connections on stock prices have raised questions about whether corporate political connections can be a strategy to mitigate stock returns volatility; this study shows that this is the case. Based on the tests conducted in this research, managers may consider long-term connections to politicians as a strategy that can reduce total, systematic, and idiosyncratic risks.

This work provides corporate decision-makers with new insights into considering the interaction between their strategies. While female participation in the TMT is associated with lower firm risk, the integration of this gender diversity strategy with other non-market strategies, particularly political contributions, is found to influence (strengthen) the reduction in firm total risk. This interaction can be an ultimate goal for some firms but it might be less desired by others. Hence, corporate decision-makers may need to consider the end effect of their overall strategies, including their non-market ones, on their firms' riskiness.

This study also has some implications for investors and stock market participants. By documenting an incremental explanatory power of political connections on reducing stock returns volatility risk, it provides an additional screening technique for investors to consider when selecting potential stocks for their portfolios.

Finally, the current work has implications for policymakers. While corporate political connections can be a useful technique to mitigate firm (total, systematic, and idiosyncratic) risk, the absence of their mandatory disclosure in the public reports of US firms can result in less transparency between corporations and investors. Hence, policymakers may mandate the disclosure of political expenditures in the reports of public US firms to enhance that transparency.

This chapter is organized as follows. Section 6.2 explores the background to this work using pertinent literature and presents the hypotheses development. Section 6.3 covers the sample selection process, data collection, and identification of variables, Section 6.4 presents the results and analyses, and Section 6.5 concludes the chapter.

6.2 Background and Hypotheses Development

Corporate political connections have been an area of concern in both practice and academia; they can generate several advantages for firms, but can also raise costs and disadvantages. Numerous studies have therefore been dedicated to examining whether those connections are helping or grabbing hands, supporting an investment or agency view, by testing some of their economic consequences.

The grabbing hands hypothesis, developed initially by Shleifer and Vishny (1998), suggests that corporate political connections are channels through which politicians can serve their political goals and seek rents from corporations; even if these can harm the connected firm's value and outcomes. The helping hands hypothesis, however, suggests that corporate political connections can be a way for firms to obtain favours from politicians (Shleifer and Vishny, 1998) and, hence, positively influence firms' outcomes. These two-sided hypotheses have been widely used in the Chinese context (e.g., Cheung *et al.*, 2010; Wang, 2015; Chen C. R. *et al.*, 2017). Studies that used the US context have focused on testing whether corporate political connections can be an agency or investment for companies. Aggarwal *et al.* (2012) documented that, based on the agency view, US corporate political contributions may be undertaken to serve managers' preferences, increasing agency problems, even though such contributions may harm firms' outcomes and lower their value. While the grabbing hands hypothesis focuses on the politicians' side and how they seek rents from corporations connected to them, the agency view focuses on firms' managers and how they may seek connections to serve their own interests; both views have a similar expected result from firms' political connections: harming the connected firms' value and outcomes. However, from the investment view, corporate political contributions can be an investment in political capital resulting in positive firm outcomes (Aggarwal *et al.*, 2012). This view is similar to the helping hands hypothesis, particularly in expecting positive outcomes for firms with connections to politicians.

While several studies have examined the economic consequences of corporate political connections generated by hard-money contributions to political candidates in their (re)election campaigns (e.g., Cooper *et al.*, 2010), little is known about whether such connections can be associated with firm risk. Lee and Wang (2016) examined the influence of political connections, generated by assigning a politician to the Board in Chinese firms, on the price crash risk and found a controversial impact depending on ownership structure. They found that price crash risk reduces when listed, privately controlled firms hire politicians as directors but is exacerbated when State-controlled firms do that. However, the absence of State ownership classifications in the wider US corporate sector makes their findings difficult to be applied, especially as they found contradicting results, depending on ownership structure. This study investigates whether corporate political connections, through hard-money contributions to politicians in their (re)election campaigns in the US, have an association with firm total risk. In this regard, the null hypothesis expects that those connections are not associated with firm total risk, whereas the alternative hypothesis (H1) assumes they are. However, the direction of the association (positive or negative) is difficult to predict as two possible arguments exist. On the one hand, corporate political connections may support the agency view and the grabbing hands hypothesis by increasing firm risk. So, based on the agency view, firms' long-term connections to politicians may increase agency problems resulting in more fluctuations in stock returns. Additionally, based on the grabbing hands hypothesis, corporate political connections can increase the possibility of politicians' external control over connected companies' activities, resulting in over-investment problems to satisfy the political agenda, consequently higher firm total risk (Wang, 2015). According to the agency view and grabbing hands hypothesis, corporate political connections are expected to be positively associated with firm total risk. On the other hand, those connections may support the investment view, where they are considered a helping hand in reducing several types of risk. Studies argue that building long-term connections to legislators and politicians reduces policy uncertainty risk through benefits such as better access to information (e.g., Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020). Others show that corporate political connections reduce credit risk, where politically connected firms enjoy preferential access to external finance (e.g., Claessens *et al.*, 2008). Empirical evidence also shows that corporate political connections can reduce bankruptcy risk, as politically connected firms are more likely to bail out during financial distress/crisis (e.g., Faccio *et al.*, 2006). The reduction of several types of risk can hence be reflected in the firm's total risk and reduce it. In that case, such connections will support the investment view, where connecting to politicians results in reducing firms' total risk. This argument supports the economic regulation theory, which views corporate political contributions as a means to gain favours from political candidates rather than to influence the election outcome per se (Stigler, 1971). According to this investment view and helping hands hypothesis, corporate political connections are expected to negatively associate with (reduce) firm total risk. The two views indicate an association (positive or negative) between corporate political connections and firm total risk, although the direction of the association is difficult to be predicted. Hence, the first hypothesis can be stated as:

H1: Corporate political connections are associated with firm total risk.

Firm total risk is commonly defined as the degree to which a firm's stock returns fluctuate over time (total stock volatility) and can be measured by the standard deviation of those returns over a period of time (Ruefli *et al.*, 1999; Orlitzky and Benjamin, 2001; Ross *et al.*, 2011; Jo and Na, 2012; Bouslah *et al.*, 2013)[74]. Financial theory disaggregates firm total risk into two sub-components: systematic and idiosyncratic (Jo and Na, 2012). The former is the sensitivity of a firm to the overall market movements/changes relevant to all industry stocks; the latter is specific to the firm and includes corporate operating strategy, financial policy, and investment strategy (Helfat and Teece, 1987). Given these two sub-divisions, it is interesting to investigate whether an association exists between corporate political connections and each sub-component; this is essential to evaluate whether or not such connections are associated with either, or both risks.

Concerning systematic risk, several studies argue that it is highly influenced by policies and regulations (e.g., Norton, 1985). According to Hillman and Hitt (1999), firms may

[74] Some studies refer to stock return volatility as a market-based measure of firm total risk to differentiate it from other accounting-based risk measures such as fluctuations in ROA.

provide direct financial support to legislators' election campaigns as a 'financial incentive' strategy to influence policy outcomes. Others argue that firms contribute to political candidates to gain access to information about future government policies, which reduces those firms' policy uncertainty (Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020). If political contributions are used as an influencing or information leverage strategy, both cases can allow the firm to reduce its sensitivity to systematic risk. For instance, influencing policy outcomes can allow politically connected firms to reduce undesired regulations, consequently reducing their systematic risk. Also, accessing information about future government policies can allow those firms to customize their decisions according to forthcoming policies, hence reducing their sensitivity to systematic risk[75]. However, it could be that most firms within an industry are connected to the same politicians. Hence, influencing the policy outcomes or accessing information regarding future policies might not affect the systematic risk of these firms as changes in policies will be captured by the market. So, the null hypothesis is that corporate political connections are not associated with firm systematic risk. On the other hand, even though it is possible that most firms within an industry are connected to the same politicians, this might not be the case in all industries. Moreover, it is quite difficult to predict that most firms within an industry are connected to politicians because politically connected firms are only 10% of the overall listed firms in the US (Cooper *et al.*, 2010). Hence, when controlling for industry effect, corporate political connections are expected to be associated with the firm's systematic risk, and the following hypothesis is proposed as the first constituent of H1:

H1a: Corporate political connections are associated with the systematic risk of the firm.

Corporate political connections might be associated with idiosyncratic risk in two possible ways, and debates exist in this regard. Kim *et al.* (2019) argue that the lower policy uncertainty generated by political connections of firms is associated with higher

[75] For example, if firms have information leverage that their industry taxes will increase, they can apply tax-sheltering strategies in anticipation, reducing their sensitivity to the overall market movement generated by the new tax policy.

idiosyncratic risk. They explain this positive association by relying on Ovtchinnikov *et al.*'s (2020) findings, that politically active firms can reduce policy uncertainty risk, and hence foster their innovations. Based on the assumption that innovation is a risky investment, Kim *et al.* (2019) suggest that corporate political connections are associated with higher idiosyncratic risk; accordingly, those connections are expected to be positively associated with firm-specific (idiosyncratic) risk. In contrast, several studies argue that the advantages generated by political connections are numerous and not limited to reducing policy uncertainty risk. For example, politically connected firms gain preferential access to external financing (e.g., Claessens *et al.*, 2008), lower equity capital cost (e.g., Boubakri *et al.*, 2012), and increased bailout likelihood during financial distress (e.g., Faccio *et al.*, 2006), all of which lower idiosyncratic risk. Other studies argue that not all kinds of innovation increase idiosyncratic risk, as some (e.g., green innovations) tend to reduce it (Lin *et al.*, 2020). Several studies support the negative association between corporate political connections and idiosyncratic risk (Francis *et al.*, 2009; Braun and Raddatz, 2010; Lee and Wei, 2014). Braun and Raddatz (2010) documented that political connections allow banks at a country-level to gain more profit without greater risk, and that they have less idiosyncratic risk. Francis *et al.* (2009) argue that shares of politically connected firms in China provide a less risky investment opportunity (lower idiosyncratic risk) due to the bailing out advantage. Lee and Wei (2014) state that shares of politically connected firms in Hong Kong have lower idiosyncratic risk due to possessing political connection benefits. Hence, the overall favours and protections generated from firms' political connections can result in reducing idiosyncratic risk. These positive vs. negative arguments might cancel each other out, resulting in no significant association between corporate political connections and idiosyncratic risk, which is the null hypothesis. However, one of the provided arguments (positive or negative association) might exist between corporate political connections and firm idiosyncratic risk. Hence, politically connected firms in the US context are expected to be (positively or negatively) associated with idiosyncratic risk, and the following hypothesis is proposed as the second constituent of H1:

H1b: Corporate political connections are associated with the idiosyncratic risk of the firm.

Stock returns volatility (total risk) is an area of concern in the governance literature. The theories of workplace demographics and diversity suggest that female presence in the TMT generates many advantages (Joshi *et al.*, 2011), such as improving the integration/exchange of unique information and enhancing strategic decisions' quality (Milliken and Martins, 1996; Van Knippenberg *et al.*, 2004; Joshi and Roh, 2009). Dezsö and Ross (2012) suggest that female representation in the TMT brings information and social diversity benefits, and improves managers' behaviours. Such strategic advantages are supported by UET, which suggests that top executives' demographics are thought to reflect managers' values and attitudes, and consequently play an essential role in influencing corporate strategic decisions and choices (Hambrick and Mason, 1984); the same authors also demonstrated that studying the TMT, instead of the CEO alone, can give greater strength to the theory. Female appearance in the TMT is associated with different perceptions in evaluating issues and potential solutions for problems (Dutton and Duncan, 1987). Accordingly, more females in the TMT is considered essential for firms to broaden their cognitive perspectives (Wiersema and Bantel, 1992).

Studies provide evidence on gender differences in risk-taking behaviour, arguing that males are greater risk-takers, either because females are more risk-averse (e.g., Croson and Gneezy, 2009; Charness and Gneezy, 2012) or males are overconfident (e.g., Barber and Odean, 2001; Huang and Kisgen, 2013). Other studies investigated particularly the effect of female executives on firm's riskiness, most agreeing that they reduce it. For instance, Faccio *et al.* (2016) found that firms with female CEOs have lower earnings volatility (total risk), lower leverage ratio, and higher survival chance; Perryman *et al.* (2016) and Jeong and Harrison (2017) provided empirical evidence that female presence in the TMT reduces stock returns volatility (total risk); however, little is known about how the role of female presence in the TMT in reducing firm total risk can be influenced by other corporate strategies, particularly long-term corporate political connections. Perryman *et al.* (2016) called for extending their findings by examining how the reduction in firm's riskiness generated by female representation in executive positions can be influenced by specific aspects. To the best of the researcher's knowledge, the impact of corporate political connections on the association between female representation in the TMT and firm total risk has yet to be investigated.

Given the evidence that females' representation in the TMT is associated negatively with (reduces) firm total risk (e.g., Perryman *et al.*, 2016; Jeong and Harrison, 2017)[76], corporate political connections might influence this association. Hence, this study examines whether or not corporate political connections impact the association between females in the TMT and firm total risk. The null hypothesis predicts that corporate politician connections do not influence the negative association between females in the TMT and firm total risk; however, it is possible that corporate political connections influence (weaken or strengthen) this negative association. As shown earlier, corporate political connections can generate many favours and reduce several types of risks, including policy uncertainty risk (e.g., Wellman, 2017), credit risk (e.g., Claessens *et al.*, 2008), and bankruptcy risk during financial distress/crisis (e.g., Faccio *et al.*, 2006). Due to such protections and favours, female executives may view their firms' connections to politicians as a buffer that can be used to reduce their risk-aversion and encourage them to reduce their over-conservative decisions. Accordingly, corporate political connections are expected to *weaken* the negative association between the female proportion in the TMT and firm total risk. However, female executives may persist in having conservative risk-taking behaviour, even if their firms are politically connected. Ozer and Alakent (2013) argue that a firm's long-term political contribution "requires significant resource commitments without guaranteeing a favourable policy change" (p. 1). So, female

[76] Perryman *et al.* (2016) and Jeong and Harrison (2017) provided empirical evidence of a negative association between female representation in the TMT and firm total risk (stock returns volatility). The current study uses a similar method used by both studies to measure female representation in the TMT and firm total risk. Hence, this study assumes that a negative association exists between the two and therefore a specific hypothesis is not required to be tested. However, in the multivariate analysis, before examining the interaction effect of corporate political connections and female representation in the TMT on firm total risk, the association between each variable separately (corporate political connections and females in the TMT) and firm total risk will be tested to confirm the existence of a negative association between females in the TMT and firm total risk within the current study's sample.

executives may not be interested in taking more additional risks if they perceive their firms' political connections as a possible but not guaranteed way to provide favours and protections for their firms. Accordingly, corporate political connections are expected to *strengthen and complement* the female representation in the TMT and result in a further reduction in the firm's total risk. Based on these two arguments, corporate political connections are expected to impact (*weaken or strengthen*) the negative association between the female proportion in the TMT and firm total risk. This can be hypothesized as:

H2: Corporate political connections impact the negative association between female representation in the TMT and firm total risk.

Having presented this study's hypotheses, this work proceeds by presenting the sample, data, and variables used to test these hypotheses.

6.3 Sample Selection, Data Collection, and Variables' Identification

This section is divided as follows. Section 6.3.1 describes the sample selection process. Section 6.3.2 identifies the approach and sources used to collect corporate political connections data, and also describes the proxies used to measure those connections. Section 6.3.3 identifies the approach and data sources used to collect the female proportion of the TMT. Section 6.3.4 identifies and justifies the approach and the sources used to collect risk measurements data. Finally, the variables used in each hypothesis are explained in Section 6.3.5.

6.3.1 Sample Selection

The sample selection process starts by generating the corporate political contributions from the FEC datasets. The second step is to limit the sample to S&P1500 by merging the obtained political contributions data with S&P1500 firms available in the ExecuComp database; the sample is reduced to 53,006 firm-year observations from 1992-2018. Firms with no political contributions from the S&P1500 are assigned a value of zero in the political connections' variables. After merging the political contributions data with firms available in the ExecuComp database, the dataset obtained was merged with the required financial variables from the Compustat database, which reduced the sample to 52,710 firm-year observations. This study excluded firms without financial data in the Compustat database (identified by missing/zero values in total assets/sales) and financial firms (identified by SIC 6000–6999). Firm-year observations with missing values for main financial variables (i.e., Closing price, Book value of equity, and Total debt) were also excluded. The final sample consists of 30,524 firm-year observations of S&P1500 from 1992-2018. Table 6.1 shows the sample screening process.

Table 6.2 classifies the final sample as having political connections or not; and having females in the TMT or not. In the table, the unique number of politically connected (PC) firms is 653. When classifying the sample based on the existence or not of females in the TMT, the table shows that the unique number of firms that have at least one female in their TMT is 1,605. The table also shows that firm-year observations with political connections represent 23% of the full sample, and the firm-year observations of firms with females in the TMT is 35% of the overall sample.

6.3.2 The Selected Approach to Identify Corporate Political Connections

As discussed in detail in Chapter 3, the current study uses the corporate political contributions to support political candidates in their (re)election campaigns through firms' PACs as a proxy to identify corporate political connections[77].

6.3.2.1 Data Source of Corporate Political Connections

The corporate hard-money contributions to political candidates in their (re)election campaigns are obtained from the FEC datasets; although available, the data are not straightforward. Hence, matching the corporations' contributions provided through their

[77] The reasons for selecting firms' PACs as a proxy are explained in Section 3.2.

PACs with firms' identification in Compustat (GVKEY) was done manually. This study uses qualified PACs where 50 or more of the corporation members contributed to support political candidates[78], following Pham (2019).

6.3.2.2 Measurements of Corporate Political Connections

This work's main measure of corporate political connections is firms' number of supported candidates via a multi-period time horizon (six-year window). Similarly to Cooper *et al.* (2010), Wellman (2017), Pham (2019) and Ovtchinnikov *et al.* (2020), this measure is *PC_Candidate*, which is the natural logarithm of one plus the total number of political candidates a firm supports over a six-year window, defined as follows:

$$PC\_Candidate_{it} = Ln\left(1 + \sum_{j=1}^{J} Candidate_{jt,t-5}\right)$$

where $Candidate_{jt,t-5}$ is an indicator that equals one if the firm contributed to $Candidate_j$ over the years t-5 to t.

A supplementary proxy concerns the total dollar contributions to each candidate over a six-year window. Specifically, as a robustness check, *PC_Financial* is employed and defined as follows:

$$PC\_Financial_{it} = Ln\left(1 + \sum_{j=1}^{J} Amount_{jt,t-5}\right)$$

where $Amount_{jt,t-5}$ is the sum of total dollar contributions a firm provides to $Candidate_j$ over the years t-5 to t. Such a proxy was also used as an alternative to the number of supported candidates in several studies (e.g., Cooper *et al.*, 2010; Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020), and will be used in the sensitivity analysis of this study.

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[78] Details regarding guidelines and regulations relating to corporate PACs' activities (i.e., ceiling limits of contributions) are provided in Section 3.2.1.

6.3.3 The Selected Approach to Identify the Proportion of Females in the Firm

This study uses the approach of measuring the proportion of females in the TMT rather than being in the CEO position. It follows the UET, which suggests that studying the TMT instead of the CEO alone is essential as the TMT has a significant role in influencing corporate strategic decisions and choices (Hambrick and Mason, 1984).

Several studies preferred using the proportion of women in the TMT as a proxy rather than those holding CEO positions (e.g., Ren and Wang, 2011; Dezsö and Ross, 2012; Baixauli-Soler *et al.*, 2015; Perryman *et al.*, 2016; Triana *et al.*, 2019; Fernando *et al.*, 2020). Following these studies, the female proportion of the TMT of firm i in year t, as reported in the ExecuComp database, is used in the current study (Pct_Female). The variable is alternated with (Third_Female), a dummy equal to one if females represent 30% or more of the firm's TMT, and it will be used in the robustness checks.

6.3.3.1 Data Source of Female Proportion of the Firm

Data on the gender of executives come from S&P's ExecuComp database, which has been widely used in the gender diversity and other executives' information for its various advantages (Chapter 4). First, it provides reliable executives' data that are easily integrated with the financial variables and political connections data required herein. Second, it provides a level of heterogeneity as it includes large-, medium-, and small-sized firms. Third, it comprises about 88% of the market capitalization of publicly traded US firms (Cadman *et al.*, 2010), giving a good representation of executives' demographics data for these firms. However, it has limitations, especially in providing data only from 1992 onwards and only for firms in the S&P1500 index. As such, this study's collected data on corporate political contributions are reduced to cover the available time-period and the available firms in the ExecuComp database.

6.3.4 The Selected Approach to Measuring Firm Risk

This study's approach to measuring firm *total risk* is to use the natural logarithm of the annualized standard deviation of monthly stock returns over a five-year window. It also uses the two sub-divisions of total risk (systematic and idiosyncratic) to evaluate the association between corporate political connections and firm systematic risk (H1a) and between those connections and firm idiosyncratic risk (H1b). These three risk measures are obtained from the Beta Suite platform, which will be explained in the following subsection, but the formula for calculating each risk measure is worth describing[79].

Systematic risk is measured using the beta estimation of the market excess return ($\beta_1(RM_t - Rf_t)$) generated from regressing the monthly stocks' excess returns ($R_{it} - Rf_t$) of the past 60 months (5 years) on the Fama and French (1993) three-factor (FF3) model. This is an asset pricing model that expands the capital asset pricing model (CAPM) by adding size risk and value risk factors to the market risk factor (Fama and French, 1993). The model is the result of an econometric regression of historical stock prices. The formula of the FF3 model is expressed as follows:

$$R_{it} - Rf_t = \propto_{it} + \beta_1(RM_t - Rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \in_{it}$$

where R_{it} is the total return of a stock or portfolio at time *t*. Rf_t is the risk-free rate of return at time *t*. RM_t is the total market portfolio return at time *t*. $R_{it} - Rf_t$ is the expected excess return. $(RM_t - Rf_t)$ is the excess return on the market portfolio (index). SMB_t is the size premium (small minus big). HML_t is the value premium (high minus low). $\beta_{1,2,3}$ are the factor coefficients, and t in the current study is the monthly returns over the past 60 months.

[79] The calculation of total risk was explained at the beginning of this subsection.

Systematic risk in this work is the beta coefficient of the stock market portfolio (β_1) generated from regressing the firm monthly excess returns over the past 60 months on the FF3 model.

Idiosyncratic risk is measured as the annualized standard deviation of the residuals from the regression of monthly stock excess returns over the past 60 months on the FF3 model. A minimum of 12 months of observations on the monthly stock excess returns is required to calculate the total, systematic, and idiosyncratic risks.

The reason behind measuring each risk proxy using the monthly returns over a five-year rolling window (60 months) is the evidence provided by Alford and Boatsman (1995), who argued that using this frequency provides the most accurate volatility estimator when using historical data. Moreover, several studies used the monthly frequency of returns over the prior 60 months in their calculation of risk measures (e.g., May, 1995; Jin, 2002; Armstrong and Vashishtha, 2012; Cao and Wang, 2013; Baixauli-Soler *et al.*, 2015; Chi and Su, 2021).

The FF3 model was selected for measuring the systematic and idiosyncratic risk, as has been extensively used in the literature. While the market model (CAPM) was used in the past to calculate the risk exposure of an asset, in recent years the FF3 model is more frequently used (e.g., Serfling, 2014; Doan and Iskandar-Datta, 2020). There are two main benefits of regression with the FF3 model compared to the simpler CAPM version. First, the FF3 model explains much more of the variation observed in realized returns, displaying R^2 of 0.95 and higher (Bello, 2008). In contrast, the R^2 generated from CAPM is sometimes not precisely estimated, as the differences between sample R^2s are not reliably different from zero (Kan *et al.*, 2013). Second, the FF3 model often reveals that a positive alpha observed in a CAPM regression is purely a result of exposure to either HML or SMB factors rather than actual investor performance (Bello, 2008). Hence, using the FF3 model gives rise to more accurate factor representations and improved asset pricing predictions compared to the CAPM model. Several studies have used the FF3 model when predicting firms' systematic and idiosyncratic risk (e.g., Serfling, 2014; Milidonis *et al.*, 2019). However, some studies still favour the CAPM model when predicting the systematic and unsystematic risk of individual stocks (not a portfolio) (e.g., Lafond and Roychowdhury, 2008; Cadman *et al.*, 2010). Hence the systematic and idiosyncratic risk of the current study will be calculated using the CAPM model as an alternative to the FF3 model in the robustness checks. Carhart (1997) developed a four-factor model by adding to the FF3 model the winners minus losers (WML) factor which is the momentum factor. While this model can be used to estimate the systematic and idiosyncratic risk in the current study, a very limited number of studies use it to measure these risks (e.g., Kim *et al.*, 2019 when measuring idiosyncratic risk). Bello (2008) adds that there are no statistically significant differences between these three models (FF3, CAPM, and Carhart) in terms of goodness of fit. In the robustness checks, FF3 will also be alternated with the Fama and French five-factor (FF5) model (Fama and French, 2015), which adds profitability (RMW) and investment (CMA) factors to their FF3 model.

6.3.4.1 The Data Sources of Firm Risk Measures

The three risk measures are obtained from the Beta Suite platform. This powerful web-based platform was released in August 2019 by WRDS and has been used by several recent studies to calculate the stock's loading on various risk factors in a timely way (e.g., Cheng *et al.*, 2020; Bardos *et al.*, 2021). A further advantage of this Beta Suite tool is its flexible design, which can handle daily, weekly, and monthly rolling regression on a common set of market risk factors. In the Beta Suite platform, the researcher selected the following: time range (1992-01-01 to 2018-12-31), frequency (monthly), estimation window (60 months), minimum window (12 months), risk model (FF3 Factor), and Return Type (Log Return). After that, the platform automatically generated the stock returns and calculated the total, systematic, and idiosyncratic risk based on the selected specifications. The only issue was that the Beta Suite platform provides these risk measures based on the PERMNO of the firm, not the GVKEY (the main identifier in Compustat). So, the conversion of PERMNO to GVKEY was done using the Compustat CRSP link available in the Compustat/CRSP merged database.

After obtaining the three risk measurements from Beta Suite, total and idiosyncratic risk are multiplied by the square root of 12 for the purpose of annualization, following the literature (e.g., Bernile *et al.*, 2018). Also, in the regressions, the natural logarithm of the annualized total volatility and idiosyncratic risk is used following the literature (e.g., Serfling, 2014; Sila *et al.*, 2016).

So, the three measures of risk are summarized as follows:

Total Risk (Total_risk) = the log of (the standard deviation of the monthly stocks returns over the past 60 months) X (the square root of 12).

Systematic Risk (Sys_risk) = the beta coefficient of the market excess monthly returns from the FF3 model, over the past 60 months.

Idiosyncratic Risk (Idio_risk) = the log of (the standard deviation of the residuals from the regression of monthly stock excess returns over the past 60 months on the FF3 model) X (the square root of 12).

To ensure that the three measures of risk obtained mainly from the Beta Suite platform are accurate, the monthly stock returns data and three factors of the FF3 model (RM-Rf, SMB, HML) monthly data were extracted[80], and the total, systematic, and idiosyncratic measures of risk were calculated using a 60 months rolling window with a requirement of at least 12 months' data availability. It was found that the descriptive statistics of these three measures of risk are qualitatively similar to those generated by the Beta Suite platform. Appendix 6.C shows the descriptive statistics obtained using the traditional way employed by several studies to calculate the three measures of risk before the Beta Suite platform was released. Additionally, the descriptive statistics of the three measures of risk obtained using the Beta Suite platform are comparable to those documented in previous studies, indicating the platform's accuracy[81].

[80] The FF3 data are obtained from Kenneth R. French Data Library (Fama/French 3 Factors): https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html (Accessed in July 2021).
[81] Examples of previous studies will be discussed in the Univariate Analysis Section.

6.3.5 Variables' Identification

This section identifies the dependent, explanatory and control variables used in the current study.

6.3.5.1 Dependent Variables

The first hypothesis investigates if there is an association between corporate political connections and firm total risk. Hence, the first dependent variable is Total_Risk_{it} which is, as mentioned earlier, measured as the natural logarithm of the annualized standard deviation of monthly stock returns over the previous 60 months with a requirement of a minimum availability of 12 months' observations. This variable is multiplied by the square root of 12 for annualization purposes.

Total_Risk_{it} is also the dependent variable when testing the second hypothesis, which investigates whether corporate political connections impact the association between female representation in the TMT and firm total risk.

For a robustness check, the Total_Risk_{it} measure is alternated, to be calculated based on daily instead of monthly returns. So, in the robustness checks, D_Total_Risk_{it} is used, and calculated as the natural logarithm of (the standard deviation of the daily stocks returns over the past 252 days, with a minimum requirement of 126 days) X (the square root of 252).

For hypotheses H1a and H1b, the dependent variables are Sys_Risk_{it} and Idio_Risk_{it}, respectively. Sys_Risk_{it} is the firm's systematic risk, measured as the beta coefficient of the market excess monthly returns (β_1) generated by regressing the monthly excess returns on the FF3 model over the past 60 months (with a minimum requirement of 12 months). Idio_Risk_{it} is the firm's idiosyncratic risk, calculated as the natural logarithm of the standard deviation of the residuals from the regression of monthly stock excess returns over the past 60 months on the FF3 factors, which is multiplied by the square root of 12 (for annualization purposes).

For robustness checks, Sys_Risk and $Idio\_Risk$ are alternated with $(Alt\_Sys\_Risk\_CAPM)$ and $(Alt\_Idio\_Risk\_CAPM)$, and also with $(Alt\_Sys\_Risk\_FF5)$ and $(Alt\_Idio\_Risk\_FF5)$. Those alternatives use the same calculation for their main proxies, except that the CAPM and FF5 models are used instead of the FF3 model in calculating the alternative proxies.

6.3.5.2 Explanatory Variables

The main variable of interest in this work is corporate political connections in all hypotheses. As mentioned earlier, the proxy used in this regard is $PC\_Candidate_{it}$, calculated as the natural logarithm of one plus the total number of candidates a firm supports over a six-year window.

This work has another variable of interest when testing H2, which is the female proportion of the TMT. Pct_Female_{it} is calculated as the ratio of female executives to the total number of firms' executives available in the ExecuComp database.

6.3.5.3 Control Variables

The current study follows the existing literature in controlling for firm-level variables and some managerial-level ones that affect firm risk. All the former are obtained from the Compustat database, the latter from the ExecuComp database.

While the selected control variables have been widely controlled for in several studies, this study mainly follows the model of Perryman *et al.* (2016), who examined the influence of gender diversity (female proportion of TMT) on the riskiness of the firm (total, systematic, and idiosyncratic) by controlling for Firm Size, Level of Debt, Earnings Variability, and Firm Age. Chandra *et al.* (2002) controlled for the first three of these variables, and also have firm risk as a dependent variable. However, it was found that some additional firm-level variables influence firm risk and need to be controlled. Following Sila *et al.* (2016), who examined the effect of board diversification on the different firm risk measures, this study controls for Market-to-Book (MtB) ratio, Capex ratio, Sales Growth, Surplus Cash, ROA, Intangible assets, and Diversification; they also controlled for some managerial-level variables related to the board, but the one that is applied and controlled in this study is Management Tenure. This work also controls for Managerial Ownership as it has been considered a substantial factor influencing firm risk (Chen and Steiner, 1999).

Overall, 13 control variables are used: *Firm Size, Level of Debt, Earnings Variability, Firm Age, Growth opportunities (MtB ratio), Investment Opportunities (Capex ratio), Actual Growth (Sales Growth), Free cashflow (Surplus Cash), Profitability (ROA), Intangible Capital (Intangible assets), Diversification (number of business segments),* and *two Managerial risk-related attributes (Average Management Tenure,* and *Average Managerial Ownership*).

A brief explanation follows of how each control variable is associated with firm risk and the approach used to calculate them. The square brackets show the variables used from the databases for calculation; a summary of their definitions and calculations is provided in Appendix 6.A.

Firm-level Control Variables:

Firm size (Size) is considered a major determinant of firm risk in the literature. A large body of research has documented a negative relationship between firm size and its riskiness (e.g., Ben-Zion and Shalit, 1975; Perryman *et al.*, 2016). Smaller firms usually suffer from collateral issues (Perez-Quiros and Timmermann, 2000), and less-diversification issues (Nazir *et al.*, 2010), which make investors less attracted to them, resulting in their stock prices being more volatile. Hence, firm size is expected to be negatively associated with the risk measures in this study. Following Perryman *et al.* (2016), Sila *et al.* (2016), and many others, firm size is measured as the natural logarithm of the firm's book value of total assets [Ln (AT)].

Level of debt is also considered an essential determinant of firm risk; however, the association between this variable and firm risk is inconclusive in the literature. Christie (1982) finds that stock return volatility (proxy of risk) is an increasing function of financial leverage. Modigliani and Miller (1958) suggest that as the amount of debt in the firm's capital structure increases, risk also increases. Koutmos and Saidi (1995) explain that a decline in the value of equity, relative to the value of bonds, automatically results in a higher debt-to-equity ratio and higher volatility (risk). Alternatively, some studies reported a negative (inverse) relationship between firm leverage and risk (volatility) (e.g., Pástor and Pietro, 2003; Brandt *et al.*, 2010). This can be explained as when leverage is low, investors consider such firms to have lower default risk, which means they keep their stocks in those firms, resulting in lower firm risk (volatility). Due to these inconclusive findings, it is difficult to anticipate the direction of the association between these two variables in this study. Several studies used the natural logarithm of debt-to-equity ratio as a proxy to control for the level of debt (e.g., Perryman *et al.*, 2016; Chen *et al.*, 2020)[82]. Accordingly, this study's level of debt (Ln_DBEQ) is calculated as the natural logarithm of the ratio of total debt to the book value of equity [Ln_DBEQ = Ln (DT/CEQ)][83].

Earnings variability is also a determinant of firm risk. Studies show that higher earnings variability is associated with greater firm risk (e.g., Chandra *et al.*, 2002; Perryman *et al.*, 2016). Beaver *et al.* (1970) and Turnbull (1977) provided empirical evidence that earnings variability is a major determinant that affects systematic risk of firms. Pástor and Pietro (2003) and Brown and Kapadia (2007) argued that firms' idiosyncratic risk tends to be higher for firms with more volatile earnings. Hence, higher earnings variabilities can be an indicator for investors of being risky firms, and a positive association between the two variables is expected in the current study. Following Chandra *et al.* (2002) and Perryman

[82] The log form is used to avoid outliers such as observations with negative debt or negative value in book value of equity.

[83] For robustness checks, the empirical tests are replicated using an alternative debt proxy, i.e., the main regressions are repeated using an alternative proxy for the level of debt, (Alt_debt1), which is total liabilities (LT) divided by the book value of equity, following Sila *et al.* (2016). Another alternative proxy is also used (Alt_debt2), which is the total debt divided by the total assets, following Serfling (2014). The results are qualitatively similar using both alternatives and are reported in Appendix 6.B.

et al. (2016), the proxy used in this study to control for earnings variability is the standard deviation of the earnings per share (EPS) over the previous three years [Std_EPS = Std ($EPS_{t,t-2}$)].

Firm age is an essential factor that affects firm risk. Young firms are considered immature as they are in the early stages of their life cycle, which increases the ambiguity about their future cashflows and profits, resulting in an increase in their riskiness. Pástor and Pietro (2003) suggest that younger firms tend to have higher idiosyncratic risk and Saravia *et al.* (2021) found, after controlling for other determinants of systematic risk (beta), that risk tends to fall in magnitude following a non-linear pattern as firm age increases. Hence, according to these studies, the association between firm age and firm risk is negative, where older firms tend to have lower firm risk when compared to younger ones. Following the literature (e.g., Serfling, 2014; Perryman *et al.*, 2016), firm age (Log_Firm_Age) is measured as the natural logarithm of firm age, where firm age is the time between the observation and the year that the firm was first listed on Compustat.

Growth opportunities are considered to be a firm characteristic that influences firm risk, but with mixed findings. Some documented that higher expected growth of the firm (MtB ratio) increases the firm's idiosyncratic risk (Brown and Kapadia, 2007) and systematic risk (Hong and Sarkar, 2007) (positive association); however, others argue that growth opportunities can reduce a firm's risk, particularly systematic risk, as those opportunities are related to greater market power resulting in larger economic rents, which ultimately reduces systematic risk (e.g., Subrahmanyam and Thomadakis, 1980). According to the market power perspective, a negative association between growth opportunities and firm risk is expected. Since the literature has inconclusive findings regarding the association between growth opportunities and firm risk, it is difficult to predict its direction in this study. Following the literature (e.g., Serfling, 2014; Sila *et al.*, 2016), the MtB ratio of assets is used in the current study as a proxy for growth opportunities. The MtB is defined as: the book value of total assets (AT) plus the market value of equity (CSHO*PRCC) minus the book value of equity (CEQ), all divided by the book value of total assets (AT), i.e., [MtB = (AT + (CSHO ∗ PRCC) – CEQ)/AT].

Investment opportunities measured by Capital expenditures (Capex ratio) have also been considered as a factor that influences firm risk, but the direction of the effect is inconclusive in the literature. When systematic risk is examined, Koussis and Makrominas (2013) argue that the Capex ratio reduces the systematic risk (a negative association). In contrast, Jacquier *et al.* (2010) found that growth options require more future discretionary investment expenditures than assets in place, and are similar to out-of-the-money options; as these options increase, the beta (systematic risk) increases, hence, the authors documented a positive association between investments opportunities and beta. Kogan and Papanikolaou (2010) also documented that firms with better investment opportunities have higher systematic risk and tend to invest more. When the idiosyncratic risk is used as a measure of risk, studies also have mixed findings. Cao *et al.* (2008) linked idiosyncratic volatility to the investment decisions taken by managers; they concluded that Capex ratio is positively related to idiosyncratic volatility due to moral hazard problems. In contrast, Panousi and Papanikolaou, (2012) found a negative association between investment opportunities and firms' idiosyncratic risk. These studies indicate that the association between investment opportunities and firm risk is inconclusive, making it difficult to predict in this study. Following Sila *et al.* (2016), the proxy for investment opportunities is (Capex_Ratio), calculated as Capex minus sale of property divided by total assets, i.e., [Capex_Ratio = (CAPX-SPPE/AT)], set to zero if CAPX is missing.

Actual growth of the firm is also considered a determinant of firm's risk. Some studies argue that firms with higher actual growth (sales growth) have lower firm risk measured by beta and volatility (e.g., Jo and Na, 2012), because actual growth presents firms' cashflows, and hence is negatively associated with (reduces) firm risk (Ang *et al.*, 2006; Tzouvanas *et al.*, 2020). However, actual growth can be combined with a greater need for resources (Roh, 2002) which can increase firms' costs and require them to obtain debt, and might increase their firm risk. So, a positive association between actual growth and firm risk may exist. As the literature findings are mixed, the direction of the association between actual growth and firm risk is also unpredictable in this study. Actual growth is proxied by the sales growth of the firm. Following Sila *et al.* (2016), sales growth (Ln_Sales_Growth) is measured as the natural logarithm of one plus the growth in sales from year t-1 to year t [Ln_Sales_Growth = Ln (1+ ($Sale_t/Sale_{t-1}$) −1)].

Free cashflow (surplus cash) influences firms' riskiness in two possible directions. First, firms usually keep surplus cash for precautionary reasons as it allows them to avoid unexpected events and costly forgone investment opportunities (Boubakri *et al.*, 2013). According to this view, free cashflow is negatively associated with firm risk. Second, an increase in free cashflow can increase agency costs, where managers may have a greater incentive to waste the excess cash on unprofitable investments such as acquisitions (Jensen, 1986). Accordingly, surplus cash can result in higher firm risk. Due to the possibility of both arguments existing, it is difficult to predict the association between surplus cash and firm risk in the current study. Following Sila *et al.* (2016), surplus cash is measured as the net cashflow from operating activities less depreciation and amortization plus R&D expenditure divided by the book value of total assets [Surplus_Cash = (OANCF)-(DP)+(XRD)/AT], where DP and XRD are set to zero if missing.

Profitability is a crucial factor that influences firm risk. Many studies in the literature view more profits as being associated with lower firm risk (total, systematic, and idiosyncratic). Jo and Na (2012) documented that greater profitability is associated with lower firm risk measured by both volatility and beta. Moreover, higher profitability can signal both to investors and creditors a firm's good management quality (Faccio *et al.*, 2016; Sila *et al.*, 2016), which ultimately reduces firm risk. Hence, a negative association is expected between profitability and firm risk in the current study. Following Serfling (2014) and Sila *et al.* (2016), Return on Assets (ROA) is the proxy used for profitability. ROA is computed as income before (IB) extraordinary items divided by the book value of total assets (AT).

Assets' intangibility is another element that influences firm risk but has mixed findings in the literature. Some studies argue that firms with more intangibles have fewer assets to pledge as collateral, reducing their ability to obtain external finance (Falato *et al.*, 2014). Also, intangible-intensive firms are more exposed to the difficulty of valuing their intangibles (Wu and Lai, 2020). Accordingly, intangibility is positively associated with firm risk. However, some studies argue that higher intangibility reduces firm risk (e.g., Tzouvanas *et al.*, 2020) as such intangibles are related to brand name, customer base, and other firm criteria (Wu and Lai, 2020) and enhancing them results in lower firm risk. Due to these mixed findings, it is difficult to predict the direction of the association between intangibles and firm risk in the current study. Assets' intangibility (Intang) is calculated as Intangible assets scaled by total assets [Intang = INT/AT)], following Wu and Lai (2020).

Firm diversification has always been related to firm risk. A large body of research has documented that the higher the diversification, the lower the firm risk (e.g., Coles *et al.*, 2006; Baixauli-Soler *et al.*, 2015). Hence, the association between the level of diversification and the firm risk is expected to be negative. Following Serfling (2014) and Baixauli-Soler *et al.* (2015), firm diversification is measured by the number of business segments (Buss_Seg) that a firm has in a certain year.

Managerial-Level Control Variables:

Managerial tenure can be a factor that affects managers' risk-taking and consequently firm risk. Pan *et al.* (2015) suggest that stock return volatility (firm risk) decreases with CEO tenure. Their explanation for this relationship is that when CEOs are seasoned (tenured), stock return volatility declines because investors are more certain of the CEO's ability and hence do not need to modify their previous assessment to the same extent (Pan *et al.*, 2015). The dominant literature supports this negative association between managerial tenure and firm risk as longer managerial tenure increases managerial power (Yim, 2013), accumulates managerial experience (Simsek, 2007), and is associated with greater undiversified human capital invested in the firm (Berger *et al.*, 1997). These characteristics result in less risky decisions, which consequently are expected to lower firm risk. Accordingly, the association between managerial tenure and firm risk is expected to be negative in this study. In line with the UET (Hambrick and Mason, 1984), managerial tenure is measured in the current study as the natural logarithm of the average tenure of the TMT members (Log_Avg_Tenure). Tenure is identified based on the ExecuComp data item "Joined Co", which states the year in which the executive joined the firm; when this item is missing in the database, the first year when the executive of a firm appeared in the ExecuComp database is assumed to be the joining year, following Serfling (2014).

Managerial ownership is a substantial managerial factor that can influence firm risk (Chen and Steiner, 1999). Some studies argue that based on the risk-aversion hypothesis, managerial ownership is negatively associated with firm risk. Kim and Lu (2011) documented that when executives own shares in their firms, their wealth becomes both closely tied and more sensitive to firm performance. Hence, such managers tend to make overly conservative risk choices, which consequently lowers firm risk. However, based on the incentive alignment hypothesis, equity ownership of executives encourages them to be more long-term oriented, which better serves the maximization of shareholders' wealth objective (Baysinger *et al.*, 1991). Accordingly, executives with significant ownership are more likely to undertake risky investments, as these are expected to maximize their wealth through rewards from the capital market (May, 1995). According to this view, managerial ownership can be positively associated with firm risk (Chen and Steiner, 1999; Downs and Sommer, 1999). As there may be either a positive or negative association between managerial ownership and firm risk, predicting the direction of the association between the two variables in the current study is difficult. Executives' equity ownership *(TMT_Own)* is measured as the sum of the total shares owned by the total executives, excluding options, divided by the total common shares outstanding, following several studies (e.g., Hong *et al.*, 2016). Based on ExecuComp data, [TMT_Own = $(\sum \text{SHROWN\_EXCL\_OPTS}_{it} / \text{SHRSOUT}_{it})/1000$].

Overall, after reviewing the literature on each control variable and firm risk, the current study expects a negative association between the following variables and firm risk: Firm Size, Firm Age, Profitability, Diversification, and Managerial Tenure; however, a positive association between Earnings Variability and firm risk is expected. Due to the mixed findings concerning the remaining control variables, it is difficult to predict the direction of their association with firm risk.

After discussing the sample selection process, data collection, and variables' identification, the following section presents the results and analyses.

6.4 Results and Analyses

This study's first hypothesis tests whether an association exists between corporate political connections and firm total risk (stock returns volatility). Its constituent hypotheses test whether an association exists between corporate political connections and systematic risk (H1a) and idiosyncratic risk (H1b); the hypotheses expect the existence of an association.

The second hypothesis examines whether those political connections have an impact on the association between the female proportion of the TMT and firm total risk, where an impact is expected.

This section analyses the previous sections' data to investigate these hypotheses, using univariate and multivariate analyses.

6.4.1 Univariate Analysis

Table 6.3 summarizes the current study's sample statistics, consisting of publicly traded non-financial US firms listed in S&P1500 from 1992-2018. The three dependent variables are Total Risk (*Total_Risk*), Systematic Risk (*Sys_Risk*), and Idiosyncratic Risk (*Idio_Risk*); in Table 6.3, the averages of these three risks are 44.5%, 1.18, and 36.8%, respectively. These are comparable to those reported in the literature (e.g., Serfling, 2014; Baixauli-Soler *et al.*, 2015; Sila *et al.*, 2016). All risk measures are calculated based on monthly returns and a five-year window. The natural logarithm of total and idiosyncratic risk will be used in the coming analysis (i.e., Correlation Matrix and Multivariate Analysis). The systematic risk (market coefficient or beta) and idiosyncratic risk (residuals) are calculated using the FF3 model.

The current study's variables of interest are mainly the corporate political connections (*PC_Candidate(6Y)*) and the proportion of females in the TMT (*Pct_Female*). Table 6.3 shows that the mean value of *PC_Candidate(6Y)*, calculated as the natural logarithm of one plus the number of supported candidates over a six-year window, is 1.032. A typical firm in the sample supports around 28 political candidates on average over a six-year window[84]. Regarding the proportion of females in the TMT, Table 6.3 shows that females represent 7.9% of the total TMT, on average; however, the median is 0, signifying that at least half of the sampled firm-years do not employ female executives. Such statistics are similar to those reported in prior studies (e.g., Baixauli-Soler *et al.*, 2015; Fernando *et al.*, 2020).

When describing the statistics of the *firm-level* control variables, Table 6.3 shows that the average firm size (*Size*) for the total sample is 7.3 and the average firm age (*Firm_Age*) is 25 years, in line with averages reported by Sila *et al.* (2016). The natural logarithm of the firm age (*Log_Firm_Age*) will be used in the forthcoming analysis. The provided statistics indicate that firms in the sample are relatively large and old firms.

Table 6.3 shows the debt-to-equity ratio (*DBEQ*) is 64.2%, similar to that of He and Yang (2014). The natural logarithm of the debt-to-equity ratio will be used in the forthcoming analysis (*Ln_DBEQ*).

Table 6.3 also shows that the average earnings variability, proxied by the standard deviation of EPS over the previous three years (*STD_EPS*), is almost 1, similarly to the

[84] In untabulated statistics, the average number of supported political candidates over a six-year window (before applying the ln (1+number of supported candidates) used in the PC_Candidate proxy) is 27.8≈28.

STD_EPS reported by Dou *et al*. (2014). Regarding the growth and investments opportunities, the MtB ratio (*MtB*) of the sample is 2.086, which is similar to Sila *et al.* (2016). The average Capex intensity (*Capex_Ratio*) of a typical firm in the sample is 4.8%, comparable to that reported by Bernile *et al*. (2018).

Also in Table 6.3, the mean (median) firm has year-over-year sales growth of 11.4% (7.2%), comparable to percentages reported by He (2015). The natural logarithm of one plus the sales growth (*Ln_Sales_Growth*) is used in the forthcoming analysis. Regarding the profitability, which is proxied by the ROA, a typical firm in the sample has a mean (median) of 3.1% (4.9%) return on assets (*ROA*), similarly to percentages reported by He (2015), who used the same method as this study to calculate ROA. Like Sila *et al.* (2016), a typical firm in this study's sample holds an average of 8.7% as free cashflow (*Surplus_Cash*). Regarding the diversification, proxied by the number of business segments in which a firm operates (*Buss_Seg*), the average is 2.9, i.e., similar to the average reported by Serfling (2014). This indicates that firms in the sample have an average of around three business segments. The intangibles' intensity (*Intang*) in the sample has a mean of 21.1%, which is parallel to the one documented by Curtis *et al.* (2021).

When evaluating the *managerial-level* control variables statistics, *Avg_Tenure* in Table 6.3 represents the average years of service for the TMT members. The average managerial tenure (*Avg_Tenure)* in the sample is 5.9 years and the median is 5.0 years, comparable to those reported by Perryman *et al.* (2016). Following the literature, the natural logarithm of the average managerial tenure (*Log_Avg_Tenure*) will be used in the forthcoming analysis. Table 6.3 also shows that the average equity ownership by a typical firm's executive team in S&P1500 firms (*TMT_Own*) is 3.7% during the sample period. Executives' ownership exhibits considerable skewness in that the median value is only 0.9%. These results are comparable with those of Lafond and Roychowdhury (2008). Overall, all variables' descriptive statistics are generally consistent with the literature.

Table 6.4's correlation matrix tests relationships among variables. The first and second hypotheses use Total_Risk as the dependent variable. Table 6.4 shows that this variable is negatively correlated with the political connections proxy and female representation in the TMT proxy.

H1a uses systematic risk (Sys_Risk) as the dependent variable, while H1b uses idiosyncratic risk as a measure of risk. In Table 6.4, each sub-component of total risk (systematic and idiosyncratic) is also negatively correlated with the political connections and female proportion of the TMT proxies; hence, these two variables of interest are negatively and significantly correlated to all three measures of risk used in this work.

Regarding the correlation between each risk measure with each control variable, Table 6.4 shows it sometimes has a consistent direction using any of those measures. In other cases, the correlation direction varies depending on the risk measure used. All three are negatively associated with firm size (*Size*) and age (*Log_Firm_Age*), indicating that larger and older firms are correlated with lower risk. Moreover, the correlation between each of the three measures with free cashflow (*Surplus_Cash*) and profitability (*ROA*) is negative, indicating that firms with a greater cash surplus and profitability have a lower risk; also intangibles' intensity (*Intang*) is negatively correlated with each measure which supports the view that intangibles (i.e., granted patents and patent citations) lower the proprietary information costs and enhance investors' confidence by sending positive signals to the market (Ben-Nasr *et al.*, 2021). As expected, firm diversification (*Buss_Seg*) is negatively correlated with each risk measure, supporting the view that diversification lowers firm risk. However, the correlation between diversification and systematic risk is not significant, as diversification usually influences (reduces) firm-specific risk and consequently total firm risk. The earnings variability (*STD_EPS*) is positively associated with each of the three measures, indicating that the higher volatility in earnings increases firm risk. Finally, the average managerial tenure of executives in the TMT (*Log_Avg_Tenure*) is negatively correlated with each of the three risk measures, indicating that firms with longer managerial tenure correlates with lower firm risk.

For the remaining control variables, the direction of the correlations varies, depending on the risk measure used. As shown in Table 6.4, the level of debt (*Ln_DBEQ*) is negatively correlated with firms' total and idiosyncratic risk, in line with Pástor and Pietro (2003) and Brandt *et al.* (2010). However, the level of debt (*Ln_DBEQ*) positively correlates with systematic risk, supporting the view that higher debt increases firm risk as investors and creditors have a greater fear of the firm's ability to repay that debt (Koutmos and Saidi, 1995).

Table 6.4 shows that growth opportunities (*MtB*) negatively correlate with total and systematic risk, supporting the view that firms with higher growth opportunities have greater market power therefore larger economic rents, which reduces firms' risk (e.g., Subrahmanyam and Thomadakis, 1980). While the MtB ratio is positively correlated with idiosyncratic risk, it is not statistically significant. The remaining three control variables are: investment opportunities (*Capex_Ratio*), actual growth (*Ln_Sales_Growth*), and managerial equity ownership (*TMT_Own*). Each of these positively correlates with total and idiosyncratic risk but all are negatively associated with systematic risk. The difference in the direction of the correlation between the mentioned variables, depending on the risk measures, is expected as the literature similarly reports mixed findings (see Section 6.3.5.3).

The correlation matrix in Table 6.4 shows that each of the control variables included in this study has a significant correlation (95% confidence level) with each of the three risk measures, except those between systematic risk and diversification and between idiosyncratic risk and the MtB ratio. Importantly, the correlation matrix helped to check for multicollinearity; noticeably, the correlations among the variables are not high, implying no such issue[85]. When possible, Variance Inflation Factor (VIF) tests will be

[85] The correlation between the three risk measures is high, but this is not an issue as each will be used as a dependent variable in a separate model.

performed after each regression, to double-check that a multicollinearity problem does not exist (Neter *et al.*, 1985; Ryan, 1997)[86].

The provided correlation matrix presents only the individual association between variables. Thus, the association between dependent variables and the variables of interest might differ when applying multivariate analysis.

6.4.2 Multivariate Analysis

Before conducting the multivariate analysis, the methods used for its empirical tests are explained. All models are estimated using fixed effects OLS regressions on a large unbalanced panel dataset comprising 30,524 firm-year observations of publicly-listed US firms (in the S&P1500 index) from 1992-2018. The unbalanced dataset form is because the data cover over ten years during which time new firms enter the database, or are delisted/acquired/merged. If a balanced panel data analysis is conducted the sample would be reduced to an inappropriate size (Hillier *et al.*, 2011); therefore, including firms that ceased to exist using unbalanced panel data analysis is appropriate for this work.

In all models, the effect of the industry is controlled as the political connections literature highlights both the industry effect on political contributions and how some industries make higher contributions than others (e.g., Martin *et al.*, 2018). The literature also highlights that firms' equity risk has a strong industry component (e.g., Ruefli *et al.*, 1999). Thus, controlling for this effect is essential in the provided models. Following the literature, controlling for the industry fixed effect in the current study is based on the SIC two-digit classification (e.g., Ferreira and Paul, 2007). Applying a time fixed effect is also essential in the current study to control for business cycle shocks and macroeconomic variables. Controlling for industry and year fixed effects follows the common approach in the literature to political connections (e.g., Lee *et al.*, 2014) and firm equity risk (e.g., Jo and Na, 2012).

[86] As shown later in the regression tables, the VIF tests are less than five, indicating that the models do not suffer from multicollinearity.

While controlling for industry fixed effects is common in the literature, some firm-specific unabsorbed effects might influence a firms' risk, particularly total and idiosyncratic risks. To control for that, this work alternates the industry fixed effect with a firm fixed effect in the sensitivity analysis.

Since this is a panel dataset, the residuals might highly correlate across its two dimensions. Thus, clustered standard errors at the firm-level are estimated, to correct for heteroskedasticity and correlation within firms (Petersen, 2009). Also, the financial variables are winsorized at the 1% and 99% levels in all models to mitigate outliers, and firms without PACs are assigned a value of zero for the political connections' variable (*PC_Candidate(6Y)*).

The multivariate analysis is divided into four subsections: the first three examine the relationship between corporate political connections and firms' total, systematic, and idiosyncratic risk, respectively. The fourth examines the impact of corporate political connections on the association between the female proportion of the TMT and firms' total risk.

6.4.2.1 The Relationship between Corporate Political Connections and Total Risk

The following OLS regression relates the corporate political connections proxy to total risk:

$$Total\_Risk_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Size)_{it} + \beta_3(Ln\_DBEQ)_{it} + \beta_4(STD\_EPS)_{it} + \beta_5(Log\_Firm\_Age)_{it} + \beta_6(MtB)_{it} + \beta_7(Capex\_Ratio)_{it} + \beta_8(Ln\_Sales\_Growth)_{it} + \beta_9(Surplus\_Cash)_{it} + \beta_{10}(ROA)_{it} + \beta_{11}(Intang)_{it} + \beta_{12}(Buss\_Seg)_{it} + \beta_{13}(Log\_avg\_Tenure)_{it} + \beta_{14}(TMT\_Own)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it} \quad \textbf{(Model 1)}$$

where $Total\_Risk_{it}$ is the dependent variable, calculated as the natural logarithm of the annualized standards deviation of the monthly stock returns over the past 60 months.

$(Political\ Connections\ Proxy)_{it}$ is a measure of the firm's political connectedness to politicians. The remaining variables, in brackets, are control variables. Model 1 tests H1, which assumes that corporate political connections are associated with firm's total risk.

6.4.2.1.1 Main Results (H1)

Table 6.5 presents the results from the regression test applied to examine the existence of an association between corporate political connections and total risk. The corporate political connections' coefficient is significant at a 99% confidence level, in line with H1. Also, the coefficient of corporate political connections is negative, indicating that those connections are negatively associated with firm total risk. So, based on these results, the intensity of corporate political connections is related to lower firm total risk. Hence, it can be said that corporate political connections support the helping hands and the investment view[87], where such connections help firms to reduce their total risk. Therefore, based on the assumption that firms establish a long-term political connection through continuous support to various politicians in their (re)election campaigns to gain favours, the results include a further favour: the reduction of firm total risk (stock returns volatility). Interestingly, the results obtained can add to those documented by Cooper *et al.* (2010), i.e., firms with political connections in the US have higher stock returns. The current research adds to such findings, that politically connected firms enjoy both higher stock returns and lower stock returns volatility (Total Risk).

As the coefficient of corporate political connections is highly statistically significant, there is enough evidence to accept H1, which assumes that corporate political connections are associated with firm total risk. Hence, the null hypothesis is rejected. The results further add that the association between corporate political connections and firm total risk is negative.

To validate the results and ensure their consistency, robustness tests are now applied.

[87] The grabbing hands vs. the helping hands hypotheses and agency vs. investment views are explained in detail in Section 6.2.

6.4.2.1.2 Sensitivity Analysis (H1)

To examine the reliability of the main results, four robustness checks are conducted, and the results are presented in Table 6.6.

The first check is applied to mitigate the possible existence of reverse causality. Reverse causality in the context of this study describes the concern that instead of corporate political connections affecting and resulting in lower firm total risk, a firm's total risk (stock returns volatility) may affect the firm's decisions, including their connections and support of political candidates. To mitigate this issue, the dependent variable is regressed on the one-year *lagged values* of the explanatory variable (Corporate Political Connections) and the control variables. In the first column of Table 6.6, the Corporate Political Connections proxy coefficient is negative and significant after applying a one-year lag model, i.e., consistent with the main results and in line with H1.

The second tests the results' sensitivity to firm-specific unobserved effects. Although applying the industry fixed effect in the models to explain the variations in total corporate risk is common, unobservable firm characteristics can influence the results. This study applied industry fixed effect in Table 6.5's model as total corporate risk is highly industry-specific. For a robustness check, the industry fixed effect is substituted by the firm fixed effect while holding all other conditions used in Table 6.5, such as the dependent variable, explanatory variable, control variables, year fixed effect, and clustering standard error at the firm-level. The results of this robustness check are presented in the second column of Table 6.6 and show that there is still a consistent significant (negative) association between corporate political connections and firm total risk when applying the firm fixed effect, supporting H1.

The third evaluates the sensitivity of the main results to the *political connections proxy* used in the main analysis. Although the applied proxy of political connections in the main results, which is based on the number of supported political candidates, has been frequently used in the literature, the results may be driven by such a proxy. Numerous authors supplement the number of supported candidates by the dollar amount of political contributions (e.g., Cooper *et al.*, 2010; Wellman, 2017; Pham, 2019; Ovtchinnikov *et al.*, 2020). While the FEC does not require a ceiling limit on the number of supported political candidates by PACs of corporations, it mandates a ceiling limit on the dollar amount of contributions made by these PACs to each candidate. So, if a firm reaches that limit in terms of contribution amount, the only way it can gain political capital is to support more candidates. This might create a sensitivity issue in this study's results, as it uses the number of supported candidates. Thus, as a robustness check, PC_Candidate(6Y) is substituted for PC_Financial(6Y), calculated as the natural logarithm of one plus the total dollar amount of contributions to politicians by firm i over a six-year window. The results of this robustness check are presented in the third column of Table 6.6; they show the results are not sensitive to the political connections proxy as the negative and significant association between the alternative political connections proxy (*PC_Financial(6Y)*) and firm total risk still exists.

The fourth investigates the results' sensitivity to the measurements of Total Risk. In the main analysis, a firm's total risk has been calculated based on the monthly returns over the past 60 months. While several studies support the use of monthly returns over a long period when calculating firm total risk (e.g., May, 1995; Jin, 2002; Armstrong and Vashishtha, 2012; Cao and Wang, 2013; Baixauli-Soler *et al.*, 2015; Chi and Su, 2021), others have favoured annualized daily stock returns (e.g., Serfling, 2014; Cain and McKeon, 2016). Although daily stock returns have a greater noise when compared to monthly ones, daily frequency is argued to better capture the information effect on stock price (Morse, 1984). Hence, to validate the results obtained in the main analysis, the dependent variable (*Total_Risk*), which is calculated based on the monthly stock returns, is alternated with (*D_Total_Risk*); the latter is calculated as the natural logarithm of the annualized standard deviation of the daily stock returns over the past 252 days, with a minimum requirement of 126 days' data availability, following the specifications provided by Cadman *et al.* (2010). In the fourth column of Table 6.6, there is still a consistent significant (negative) association between corporate political connections and firm total risk when using daily stock returns to calculate firm total risk, supporting H1.

Overall, the multivariate analysis supports H1, which assumes that corporate political connections are associated with firm total risk. The results are consistent when applying several robustness checks; they also show that the direction of the association between the two examined variables is negative, indicating that the intensity of corporate political connections, measured by the number of supported candidates over a six-year rolling window, is related to lower firm total risk (stock returns volatility).

6.4.2.2 The Relationship between Corporate Political Connections and Corporate Systematic Risk

Hypothesis H1a tests the existence of an association between corporate political connections and firms' systematic risk. To test H1a, Model 1 is replicated, but the dependent variable (Total_Risk) used in Model 1 is supplemented with Systematic risk (Sys_Risk). The explanatory variable and control variables are those used in Model 1. So, the following OLS regression (Model 1_A) relates corporate political connections to the systematic risk of the firm:

$$Sys\_Risk_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Size)_{it} + \beta_3(Ln\_DBEQ)_{it} + \beta_4(STD\_EPS)_{it} + \beta_5(Log\_Firm\_Age)_{it} + \beta_6(MtB)_{it} + \beta_7(Capex\_Ratio)_{it} + \beta_8(Ln\_Sales\_Growth)_{it} + \beta_9(Surplus\_Cash)_{it} + \beta_{10}(ROA)_{it} + \beta_{11}(Intang)_{it} + \beta_{12}(Buss\_Seg)_{it} + \beta_{13}(Log\_avg\_Tenure)_{it} + \beta_{14}(TMT\_Own)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it} \quad \textbf{(Model 1\_A)}$$

where the dependent variable in Model 1_A is the systematic risk (Sys_Risk), measured as the beta coefficient of the market excess monthly returns (β_1) generated from regressing the monthly excess returns on the FF3 model over the past 60 months. Similarly to Model 1, $(Political\ Connections\ Proxy)_{it}$ is a measure of the firm's political connectedness to politicians. The remaining variables, in brackets, are control variables.

Model 1_A tests H1a, which assumes that corporate political connections are associated with firms' systematic risk.

6.4.2.2.1 Main Results (H1a)

Table 6.7 presents the results from the regression test applied to examine the existence of an association between corporate political connections and systematic risk; it shows that the corporate political connections' coefficient is significant at a 99% confidence level, supporting H1a. Additionally, the coefficient of corporate political connections is shown as negative, indicating that these are negatively associated with firms' systematic risk. From these results, the intensity of corporate political connections is related to lower systematic risk for connected firms. Hence, based on Table 6.7, it can be said that corporate political connections support the helping hands and the investment view, where such connections help firms to reduce their sensitivity to systematic risk. This is explained as firms with political connections having access to politicians, which gives them a greater possibility of accessing information about future government policies, thus reducing the policy uncertainty risk for these firms (Wellman, 2017; Pham, 2019). These advantages allow connected firms to customize their decisions according to anticipated policies and reduce their sensitivity to market movements (systematic risk). The results are commensurate with Kim *et al.* (2019) who found that employing various political strategies (by using a developed index), hedge away firms' systematic risk (beta); however, while they used a combined index of different political strategies on an annual basis, this work focuses on contributions to political campaigns over a six-year rolling window. According to Snyder (1992), having multi-period political investments (contributions) is important for a successful corporate political strategy, where firms can cultivate relationships with key policymakers. Moreover, Kim *et al.* (2019) employed CAPM using daily returns over the year to calculate the beta (systematic risk), while the current study uses the FF3 model using monthly returns over a five-year window when estimating the market beta. This adds dimensions and confirms Kim *et al.*'s (2019) results concerning the association between corporate political connections and firms' systematic risk.

As the coefficient of corporate political connections is highly statistically significant, there is enough evidence to accept H1a, which assumes that corporate political connections are associated with firm systematic risk, hence, the null hypothesis is rejected. The results further show that the association's direction between corporate political connections and firm systematic risk is negative.

To validate the results and ensure their consistency, robustness tests are now applied.

6.4.2.2.2 Sensitivity Analysis (H1a)

To test the reliability of the main results, five robustness checks are conducted, and the results are presented in Table 6.8.

The first is applied to mitigate the possible existence of reverse causality. Reverse causality in this study's context describes the concern that instead of corporate political connections affecting and being associated with firm systematic risk, systematic risk may affect firms' decisions, including their political connections' strategies and support of political candidates. To mitigate this issue, the dependent variable (Sys_Risk) is regressed on a one-year *lagged values* of the explanatory variable (Corporate Political Connections) and the control variables. In the first column of Table 6.8, the Corporate Political Connections proxy coefficient, after applying a one-year lag model, is negative and significant, consistent with the main results and in line with H1a.

The second tests the results' sensitivity to firm-specific unobserved effects. For this check, the industry fixed effect is substituted by the firm fixed effect while holding all other conditions used in Table 6.7 (i.e., the dependent variable, explanatory variable, control variables, year fixed effect, and clustering standard error at the firm-level). It is expected that when applying a firm fixed effect, the significant negative association between corporate political connections and systematic risk will disappear because corporate political connections are unique to a company and firm fixed effect is, by definition, unique to that company. The results are reported in the second column of Table 6.8. As expected, the coefficient is not statistically significant, for the reason provided above.

The third tests the results' sensitivity to the *political connections proxy* used in the main analysis. PC_Candidate(6Y) is substituted for PC_Financial(6Y). The results of this check (third column of Table 6.8) are not sensitive to the political connections proxy as the negative and significant association between the alternative political connections proxy (*PC_Financial(6Y)*) and systematic risk still exists.

The fourth and fifth checks investigate the results' sensitivity to the measurements of Systematic Risk. In the main analysis, firms' systematic risk has been calculated based on the beta from the market coefficient obtained from the FF3 model, using monthly returns over the past 60 months. While several studies support the use of the FF3 model when calculating the systematic risk (e.g., Serfling, 2014), others have favoured the market model (CAPM) (e.g., Sila *et al.*, 2016). Hence, to validate the main analysis results obtained, the dependent variable (Sys_Risk), which is calculated as the beta coefficient of the market excess monthly returns (β_1) generated from regressing the monthly excess returns on the FF3 model over the past 60 months, is alternated with (*Alt_Sys_Risk_CAPM*), which is calculated using the CAPM model. In the fourth column of Table 6.8, there is still a consistent significant (negative) association between corporate political connections and firm systematic risk when using CAPM to calculate firm systematic risk, supporting H1a. In the fifth column of Table 6.8, the systematic risk has been re-calculated using the FF5 model[88], and shows that the results are still consistent when using the FF5 model, supporting H1a.

Overall, the multivariate analysis provided in this subsection supports H1a, which assumes that corporate political connections are associated with firm systematic risk. The results are consistent when applying several robustness checks. The results also show that

[88] The FF5 model is not available in the Beta Suite platform, and hence, the data of FF5 model were extracted from the Kenneth R. French Data Library.

the direction of the association between the two examined variables is negative, indicating that the intensity of corporate political connections, measured by the number of supported candidates over a six-year rolling window, is related to lower firm systematic risk. This is commensurate with Kim *et al.* (2019) who argue that firms' various political strategies reduce their systematic risk and hence can be used as a hedging technique against systematic risk. The following subsection investigates whether corporate political connections are associated with firms' idiosyncratic risk.

6.4.2.3 The Relationship between Corporate Political Connections and Corporate Idiosyncratic Risk

Hypothesis H1b tests the existence of an association between corporate political connections and the firm's idiosyncratic risk. Similarly to the process used for systematic risk, Model 1 is replicated, but the dependent variable (Total_Risk) used in Model 1 is supplemented with Idiosyncratic Risk (Idio_Risk) to test H1b. The explanatory variable and control variables are those used in Model 1. The following OLS regression (Model 1_B) relates corporate political connections to the idiosyncratic risk of the firm:

$$Idio\_Risk_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Size)_{it} + \beta_3(Ln\_DBEQ)_{it} + \beta_4(STD\_EPS)_{it} + \beta_5(Log\_Firm\_Age)_{it} + \beta_6(MtB)_{it} + \beta_7(Capex\_Ratio)_{it} + \beta_8(Ln\_Sales\_Growth)_{it} + \beta_9(Surplus\_Cash)_{it} + \beta_{10}(ROA)_{it} + \beta_{11}(Intang)_{it} + \beta_{12}(Buss\_Seg)_{it} + \beta_{13}(Log\_avg\_Tenure)_{it} + \beta_{14}(TMT\_Own)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it} \quad \textbf{(Model 1\_B)}$$

In Model 1_B, the dependent variable is the idiosyncratic risk (Idio_risk), calculated as the natural logarithm of the annualized standard deviation of the residuals from the regression of monthly stock excess returns over the past 60 months on the FF3 model. Similarly to Model 1 $(Political\ Connections\ Proxy)_{it}$ is a measure of the firm's political connectedness to politicians. The remaining variables (in brackets) are control variables. Model 1_B tests H1b, which assumes that corporate political connections are associated with the firm's idiosyncratic risk.

6.4.2.3.1 Main Results (H1b)

Table 6.9 presents the results from the regression test applied to examine the existence of an association between corporate political connections and Idiosyncratic Risk. It shows the corporate political connections' coefficient is significant at a 99% confidence level, in line with H1b. Additionally, the coefficient of corporate political connections is negative, indicating they are negatively associated with firms' idiosyncratic risk; i.e., based on the results, the intensity of corporate political connections is associated with a lower idiosyncratic risk for connected firms. Hence, it can be said that corporate political connections support the helping hands and the investment view, where such connections help firms to reduce their idiosyncratic risk. These results align with studies that found corporate political connections reduce firms' idiosyncratic risk (Francis *et al.*, 2009; Braun and Raddatz, 2010; Lee and Wei, 2014), although in a different context; however, they do contradict those provided by Kim *et al.* (2019) who found that various corporate strategies increase the firm's idiosyncratic risk. Three possible reasons for the contradicting results found in the current study can be compared to Kim *et al.* (2019). First, as mentioned earlier, they used various corporate political strategies (i.e., former politicians' presence on corporate boards of directors, contributions to political campaigns, and corporate lobbying activities), while this study focuses particularly on the contributions to political campaigns. Second, this work uses a long-term frequency when measuring political connection (six-year window), while they used annual-based political contributions. Third, Kim *et al.* (2019) focused particularly on reducing policy uncertainty as a single favour generated from corporate political connections and used an interaction effect between the two (political connections developed index and policy uncertainty) on idiosyncratic risk. The current study, however, considers a broader perspective, as political connections are claimed to generate several advantages, including preferential access to external financing (e.g., Claessens *et al.*, 2008), and increased likelihood of bailouts during financial distress (e.g., Faccio *et al.*, 2006), all of which are expected to lower idiosyncratic risk. The results support the view that the overall protections generated from firms' political connections make such connections relate to lower idiosyncratic risk.

Overall, as the coefficient of corporate political connections is highly statistically significant, there is enough evidence to accept H1b; hence, the null hypothesis is rejected. The results further add that the association's direction between corporate political connections and firm idiosyncratic risk is negative.

To validate the results and ensure their consistency, robustness tests are now applied.

6.4.2.3.2 Sensitivity Analysis (H1b)

Five robustness checks are conducted and presented in Table 6.10. The first is applied to mitigate the possible existence of reverse causality; to do this, the dependent variable (Idio_Risk) is regressed on a one-year *lagged values* of the explanatory variable (Corporate Political Connections) and the control variables. In the first column of Table 6.10, the Corporate Political Connections proxy coefficient, after applying a one-year lag model, is negative and significant, consistent with the main results and in line with H1b.

The second tests the results' sensitivity to firm-specific unobserved effects. For this check, the industry fixed effect is substituted by the firm fixed effect while holding all other conditions used in Table 6.9, i.e., the dependent variable, explanatory variable, control variables, year fixed effect, and clustering standard error at the firm-level. The results are presented in the second column of Table 6.10 and show there is still a consistent significant (negative) association between corporate political connections and idiosyncratic risk when applying the firm fixed effect, supporting H1b.

The third tests the results' sensitivity to the *political connections proxy* used in the main analysis. Following the previous studies, PC_Candidate(6Y) is substituted for PC_Financial(6Y). The results of this robustness check are presented in the third column of Table 6.10, which shows they are not sensitive to the political connections proxy as the negative and significant association between the alternative political connections proxy (*PC_Financial(6Y)*) and idiosyncratic risk still exists.

The fourth and the fifth investigate the results' sensitivity to the measurements of Idiosyncratic Risk. In the main analysis, a firms' idiosyncratic risk is calculated using the FF3 model. As mentioned earlier, some studies have favoured the market model (CAPM) (Sila *et al.*, 2016). Hence, to validate the results obtained in the main analysis, the dependent variable (Idio_Risk) is alternated with (*Alt_Idio_Risk_CAPM*), which is calculated using the CAPM model. In other words, (*Alt_Idio_Risk_CAPM*) is calculated as the log of the annualized standard deviation of the residuals from the regression of monthly stock excess returns on the market model (CAPM), over the past 60 months. In the fourth column of Table 6.10, there is still a consistent significant (negative) association between corporate political connections and firm idiosyncratic risk when using the CAPM model, supporting H1b. As shown in column 5, the results are also consistent using the FF5 model in calculating the idiosyncratic risk, supporting H1b.

Overall, the multivariate analysis provided in this subsection supports H1b, which assumes that corporate political connections are associated with firm idiosyncratic risk. The results are consistent when applying several robustness checks; they also show that the direction of the association between the two examined variables is negative, indicating that the intensity of corporate political connections, measured by the number of supported candidates over a six-year rolling window, is related to lower firm idiosyncratic risk. Altogether, based on the tests conducted in the multivariate analysis, H1 and its constituents H1a and H1b are supported; hence, corporate political connections are associated with lower firm total, systematic, and idiosyncratic risk.

The following subsection investigates whether corporate political connections impact the association between female representation in the TMT and Total firm Risk.

6.4.2.4 The Impact of Corporate Political Connections on the Association between Females in the TMT and Total Corporate Risk

This section tests H2, which predicts that corporate political connections impact the association between the female representation in the TMT and firm total risk. Two main models are employed.

Model 2 tests the association of each of the two variables (Political Connections and Female representation in the TMT) and the firm total risk with no interaction variable. The main reason for testing such a model is to validate that the findings of Perryman *et al.* (2016) and Jeong and Harrison (2017), i.e., that female representation in the TMT is negatively associated with (reduces) firm total risk, are upheld/demonstrated in this research sample.

Model 3 includes an interaction variable between Political Connections and Female representation in the TMT and tests the association between such an interaction variable and firm total risk. The only difference between Models 2 and 3 is the existence of the interaction variable in the latter.

Models 2 and 3 are presented as:

$$Total\_Risk_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Pct\_Female)_{it} + \beta_3(Size)_{it} + \beta_4(Ln\_DBEQ)_{it} + \beta_5(STD\_EPS)_{it} + \beta_6(Log\_Firm\_Age)_{it} + \beta_7(MtB)_{it} + \beta_8(Capex\_Ratio)_{it} + \beta_9(Ln\_Sales\_Growth)_{it} + \beta_{10}(Surplus\_Cash)_{it} + \beta_{11}(ROA)_{it} + \beta_{12}(Intang)_{it} + \beta_{13}(Buss\_Seg)_{it} + \beta_{14}(Log\_avg\_Tenure)_{it} + \beta_{15}(TMT\_Own)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it}$$ **(Model 2)** [89]

[89] When the model was replicated where only the female proportion of the TMT was the explanatory variable (excluding the political connections proxy), the results were almost the same.

$$Total\_Risk_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Pct\_Female)_{it} + \beta_3(Political\ Connections\ Proxy\ X\ Pct\_Female)_{it} + \beta_4(Size)_{it} + \beta_5(Ln\_DBEQ)_{it} + \beta_6(STD\_EPS)_{it} + \beta_7(Log\_Firm\_Age)_{it} + \beta_8(MtB)_{it} + \beta_9(Capex\_Ratio)_{it} + \beta_{10}(Ln\_Sales\_Growth)_{it} + \beta_{11}(Surplus\_Cash)_{it} + \beta_{12}(ROA)_{it} + \beta_{13}(Intang)_{it} + \beta_{14}(Buss\_Seg)_{it} + \beta_{15}(Log\_avg\_Tenure)_{it} + \beta_{16}(TMT\_Own)_{it} + Industry\ and\ Year\ fixed\ effects + \varepsilon_{it}$$ **(Model 3)**

where the dependent variable in both models is $Total\_Risk_{it}$, calculated as the natural logarithm of the annualized standards deviation of the monthly stock returns over the past 60 months, and $(Political\ Connections\ Proxy)_{it}$ is a measure of the firm's political connectedness to politicians. In both models, $(Pct\_Female)_{it}$ is the female proportion in the TMT proxy, calculated as the percentage of female executives to the total number of executives available in the ExecuComp database for firm i in year t. Both models control for (*Size, Ln_DBEQ, STD_EPS, Log_Firm_Age, MtB, Capex_Ratio, Ln_Sales_Growth, Surplus_Cash*, *ROA*, *Intang, Buss_Seg, Log_Avg_Tenure*, and *TMT_Own*) and also for industry and year fixed effects. In both models, the standard errors are clustered at the firm-level to correct for heteroskedasticity and correlation within firms. The impact of the corporate political connections on the association between females in the TMT and firm total risk is tested using an interaction variable (Political Connections Proxy X Pct_Female), which is used particularly in Model 3.

The following subsection describes the main results obtained after testing both models.

6.4.2.4.1 Main Results (H2)

Table 6.11 shows the results of the two OLS regressions. The first column is the Model 2 results, which do not include an interaction variable between political connections and female representation in the TMT; the second column shows the results of Model 3, which do include the interaction variable.

In the first column of Table 6.11, the coefficient of female representation in the TMT (*Pct_Female*) is negative and statistically significant at a 90% confidence level. Hence, the results of Perryman *et al.* (2016) and Jeong and Harrison (2017) are validated, though at a lower confidence level. This column also shows that the corporate political connections proxy coefficient is negative and highly statistically significant, with almost the same coefficient value obtained in Table 6.5 when political connections are regressed on firm total risk.

The second column of Table 6.11 shows that when examining the interaction effect of political connections and female representation in the TMT on firm total risk, the coefficient of the interaction is statistically significant at a 95% confidence level, supporting H2. In the same column, the coefficient of the interaction variable is negative. This supports the argument that corporate political connections *strengthen and complement* the negative association between female representation in the TMT and firm total risk. Based on the results obtained, the null hypothesis (no impact) is rejected, and H2 is accepted[90].

The existence of a negative interaction between political connections and female representation in the TMT on firm total risk (stock returns volatility) can be further investigated using the margins plot. Figure 6.1 shows how the association between the female representation in the TMT and total risk varies for certain levels of political connections when using a linear prediction margins plot.

The blue line in Figure 6.1 shows the relationship between female proportion of the TMT and total risk for firms that do not support any political candidates over a six-year window (no political connections). This line indicates that the female proportion of the TMT tends to have a negative (downwards slope) association with total risk when firms do not have

[90] One possible limitation is that 23% of firms are politically connected (PC_Candidate > 0), and 35% have females in their TMT (Pct_Female > 0), which makes the interaction between the two variables non-zero for only about 17% of the observations in the sample.

political connections. It further shows that the higher the female proportion of the TMT, the lower the total risk. The maroon line shows the association between the female proportion of the TMT and total risk for firms that support one political candidate over a six-year window. When firms support one political candidate, the association between the female proportion of the TMT and total risk becomes a lower slope, indicating that political connections strengthen the negative association between the female proportion of the TMT and total risk. The green line presents the mean of the number of supported political candidates over a six-year window (1.82 candidates)[91]. Since this line shows a further lower downward slope, it can be said that the average number of supported political candidates in this study's sample results in a further reduction and a further negative association between the female proportion of the TMT and total risk. The yellow line represents firms that support a large number of political candidates over a six-year window (93 candidates), identified as the 90th percentile of the distribution[92]. Interestingly, the association between female proportion of the TMT and total risk becomes a much lower and steeper slope when firms support a large number of political candidates. Finally, the grey line shows the 95th percentile of the distribution of the number of supported political candidates over a six-year window (184 candidates). Similarly to the 90th percentile, a downward and even lower slope exists between female proportion of the TMT and total risk when firms support a higher number of candidates (the slope is even below the one that represents the 90th percentile of the number of supported candidates). This further adds to this study's findings that the intensity of supported candidates does matter, and the high intensity of political connections tends to reduce the total risk further when a firm has females in their TMT.

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[91] This number is calculated using the reverse of the ln (1.032), where 1.032 is the mean of PC_Candidate(6Y) presented in the descriptive statistics. So, $e^{1.032}$-1 = 1.82 political candidates. The untabulated variable that calculates the number of supported candidates over a six-year window without the ln (1+x) cannot be used in the marginal plots because those plots need to come right after the regression in the statistical software used in the current study (Stata), and the political connections proxy used in the regression is ln (1+number of supported candidates over a six-year window).

[92] The choice of the 90th percentile is because more than 75% of the firms in the sample support only one political candidate (0.69 in the PC_Candidate(6Y) proxy). The reverse of the ln (1+0.69) is almost 1 shown in the maroon line of Figure 6.1.

In order to evaluate whether the systematic/idiosyncratic effect is more important (larger) for firm total risk, the existence of a negative interaction between political connections and female representation in the TMT on firm total risk (stock returns volatility) is further investigated using the two sub-divisions of total risk (systematic and idiosyncratic). Hence the firm total risk (stock returns volatility) is alternated with systematic (Sys_Risk) and idiosyncratic (Idio_Risk) risks, respectively (see Table 6.12). Each of these two risk measures is calculated using the FF3, CAPM, and FF5 models, respectively. Table 6.12 also shows that when alternating the total risk in model 3 with each risk measure, the interaction variable is negative and significant only when idiosyncratic risk is used as a risk measure. This is validated through three asset pricing models. Hence, it can be concluded that corporate political connections have a further reduction impact on the association between females in the TMT and firm total risk, which is mainly driven by the reduction in idiosyncratic risk (i.e., the lower idiosyncratic risk is the driver that results in lower firm total risk when the firm has political connections and females in their TMT).

Overall, the results show that corporate political connections have an impact on the negative association that exists between the female proportion of the TMT and firm total risk, supporting H2. Moreover, the results indicate that the interaction between corporate political connections and female proportion of the TMT is negative, indicating that corporate political connections further reduce the firm's total risk when such a firm has females in their TMT.

To validate the results obtained from testing Model 3, the following subsection applies several robustness checks.

6.4.2.4.2 Sensitivity Analysis (H2)

Five robustness checks are conducted and presented in Table 6.13. The first is applied to mitigate the possible existence of reverse causality. To mitigate this issue, the dependent variable (Total_Risk) is regressed on a one-year *lagged values* of the explanatory variables (Corporate Political Connections proxy, Female proportion of the TMT proxy, the interaction between the two mentioned variables) and the control variables. In the first column of Table 6.13, the coefficient of the interaction variable (Political connections Proxy X Pct_Female) is significant (negative) after applying a one-year lag model, consistent with the main results and in line with H2.

The second tests the results' sensitivity to firm-specific unobserved effects. For a robustness check, the industry fixed effect is substituted by the firm fixed effect while holding all other conditions used in Table 6.11, i.e., the dependent variable, explanatory variables, control variables, year fixed effect, and clustering standard error at firm-level. The results of this check are presented in the second column of Table 6.13, in which the interaction variable shows a consistent significant (negative) association with firm total risk, supporting H2.

The third tests the results' sensitivity to the *political connections proxy* used in the main analysis. Following the previous studies, PC_Candidate(6Y) is substituted for PC_Financial(6Y). The results of this check are presented in the third column of Table 6.13, which shows that the results are not sensitive to the political connections proxy as the coefficient of interaction variable (PC_Financial(6Y) X Pct_Female) is still negative and significant.

The fourth investigates the results' sensitivity to the measurements of Total Risk. In the main analysis, firm total risk has been calculated based on the monthly returns over the past 60 months. As mentioned earlier, while several studies support the use of the monthly returns over a long period when calculating the firm total risk (e.g., Chi and Su, 2021), others have favoured the daily stock returns (e.g., Serfling, 2014; Cain and McKeon, 2016). Hence, to validate the results obtained in the main analysis, the dependent variable (Total_Risk), which uses the monthly stock returns over the past 60 months, is alternated with (*D_Total_Risk*), the latter is calculated as the natural logarithm of the annualized standard deviation of the daily stock returns over the past 252 days, with a minimum requirement of 126 days' data availability, following the specifications provided by

Cadman *et al.* (2010). In the fourth column of Table 6.13, there is still a consistent significant (negative) interaction between corporate political connections and female proportion of the TMT on the firm total risk when using daily stock returns in the calculation of firm total risk, a result that supports H2.

The fifth examines the results' sensitivity to the female representation used in the main analysis. While several studies used the female proportion of the total executive team as a proxy for female percentage (e.g., Serfling, 2014; Baixauli-Soler *et al.*, 2015; Perryman *et al.*, 2016), one might argue that the proportion of females is still considered a minority (around 7.9% as shown in the descriptive statistics). To validate the results, the female proportion variable (Pct_Female) is alternated with (Third_Female), a dummy variable equal to one if females represent 30% or more of the firm's TMT. The results are presented in the fifth column of Table 6.13. The 30% is selected based on the 'critical mass' theory (Kanter, 1977a, b); this assumes that when women are in a group, the focus of the group members is not on the different abilities and skills the women would bring to the group until the proportion of women in the total group reaches a critical mass. The critical mass or threshold percentage of women to influence their group (i.e., the TMT or the board room) varied in the literature between 20% and 40%. Several studies used 30% or more of women in a group as their critical mass. For example, Joecks *et al.* (2013) built on the critical mass theory and found that when women represent 30% or more of the board members, their firms enjoy higher performance than completely male boards; the current study uses this critical mass in the robustness check. Hence, the (Third_Female) dummy variable is used, building on the critical mass theory. In column 5 of Table 6.13, when one-third or more of the TMT are females, the interaction between such a variable and the corporate political connections proxy on the firm total risk is still significant and negative, supporting H2.

All the robustness checks conducted validate the results obtained in the main analysis, where corporate political connections are found to impact (strengthen) the negative association between female representation in the TMT and firm total risk; hence, there is enough evidence to accept H2.

Overall, based on the results, there is enough evidence to support all the hypotheses provided in the current study. Moreover, based on the provided tests and their results, long-term corporate political connections support the RBT as such connections are found to be a resource that helps in reducing the firm's riskiness.

6.5 Conclusion

Corporate political connections have been gaining growing global attention in academia. Studies have investigated how such connections can reduce some types of risks (e.g., policy uncertainty (Wellman, 2017) and credit risk (Houston *et al.*, 2014)) but increase other types of risk (e.g., agency risk (Den Hond *et al.*, 2014)). However, the association between corporate political connections, particularly those established through hard-money contributions to political candidates in their (re)election campaign, and firm risk (total, systematic, and idiosyncratic) has been less investigated.

This study examined whether corporate political connections are associated with firm total risk (stock returns volatility), firm systematic risk, and/or idiosyncratic risk. The examinations were conducted using fixed effects OLS regression models on panel data of publicly-listed US firms (S&P1500) from 1992-2018. The findings show that those connections do have a highly statistically significant association with the three risks; furthermore, results indicate that those connections are related to lower firm risk, whether total, systematic, or idiosyncratic. Building on the grabbing hands vs. helping hands hypotheses (Shleifer and Vishny, 1998) and the agency vs. investment views (Aggarwal *et al.*, 2012), this study's findings support the helping hands hypothesis and the investment view, as corporate political connections are found to help firms mitigate the total, systematic, and idiosyncratic risks.

High stock returns volatility has been an area of concern for corporations as it can threaten firms' survival and lower demand for their stocks in the market. Several studies have been dedicated to identifying the factors that help firms manage and mitigate firm total risk. Perryman *et al.* (2016) and Jeong and Harrison (2017) found that gender diversity and a higher female proportion in the TMT tend to reduce firms' total risk. While the influence of the female proportion of the TMT in reducing firms' total risk has been investigated, little is known about whether applying non-market strategies (i.e., long-term connections with politicians) can influence such an association. This study examines whether having long-term connections to politicians impacts the negative association that exists between female representation in the TMT and firm total risk; based on the tests conducted, the findings suggest those connections do have a statistically significant impact on that association, and also strengthen the negative association between females in the TMT and firm total risk. Hence, it is argued that corporate political connections complement the female representation in the TMT, and the interaction between the two strategies is related to lower firm total risk. It was also found that idiosyncratic risk is the one that is mainly influenced (reduced) resulting in this reduction in firm total risk.

This study's findings have implications for corporate decision-makers. Despite the consequent costs and drawbacks of corporate political connections, this work provides new insights on how corporate political connections through long-term hard-money contributions can significantly reduce all three of firms' equity risks, indicating that those connections can be a way to mitigate those risks. Furthermore, this work provides corporate decision-makers with new insights for considering the interaction between their strategies. It is also found that integrating a gender diversity strategy with other non-market strategies, particularly political contributions, results in a further reduction in firms' total risk; while this reduction may be a desired goal for some businesses, it may be less so for others. Hence, corporate decision-makers need to consider the long-term impact of their overall strategies, including non-market ones, on their firms' riskiness.

This work also has implications for investors; it found that long-term connections with politicians are seen as a tool that helps reduce stock returns volatility risk, providing investors with an alternative screening technique to consider in the assessment process of stocks.

Finally, the findings have implications for policymakers. While corporate political connections are found to be providing firms with the advantage of lower firm risk, corporate political expenditures disclosure is not mandated for public firms in the US, that is until now. This can create a transparency issue between corporations and investors. Some investors might prefer to avoid firms with political expenditures regardless of the advantages and favours they can gain from such connections. Hence, policymakers may mandate the disclosure of political expenditures in the frequent reports of publicly-listed firms, which enhances transparency between corporations and investors.

The current research, like any research, has some limitations, though they do lead to useful recommendations for future research. First, this work focused on a particular political connections approach, which is corporate hard-money contributions to politicians in their (re)election campaigns, and found that such connections are associated with lower firm risk (total, systematic, and idiosyncratic). However, Kim *et al.* (2019) employed various political strategies and found that the combined index of these strategies is associated with lower systematic but higher idiosyncratic risk. Hence, future studies may consider examining whether another single political strategy, other than campaign contributions (i.e., lobbying), is associated with these two risks, and if so, in which direction (positive or negative). Second, Wellman (2017) argued that access to information favours, which a politically connected firm can generate from supporting political candidates, is stronger when the firm shares the same political ideology (i.e., Democratic or Republican) as the political candidates they support; and when the firm supports candidates located in the same State where the headquarters of the firm is located. Hence, future studies may consider whether shared political ideology and geographical location between the firm and the supported candidates can be associated with firm equity risk. Third, this study used the FF3 model, CAPM, and FF5 model when measuring the firm's systematic and idiosyncratic risk; future studies may consider other asset pricing models (i.e. the Arbitrage Pricing Theory (APT), Consumption-based CAPM (CCAPM), etc.) when examining the association between corporate political connections and a firm's systematic and idiosyncratic risks.

Despite these limitations, this study has enriched our understanding of how non-market factors (i.e., corporate political connections) are associated with firm risk. It also enhanced our understanding of how the interaction between such connections and other firm strategies (i.e., gender diversity in the TMT) is related to firms' total risk.

Tables of Chapter 6

Table 6.1 Sample Screening Process for the period of 1992-2018

Sample Selection Process:	**No. of Observations**
All S&P1500 firms available in ExecuComp (1992-2018)	53,006
Merged with political connections data (Observations with missing political contributions are given a value of zero) [93]	53,006
Excluding firms that are not available in Compustat	52,710
Excluding financial firms	43,562
Excluding firm-year observations with missing/zero value in total assets/sales	34,191
Excluding firm-year observations with missing value in (Closing Price, Book value of Equity, and Total Debt)	30,524
Final Sample	**30,524**

Table 6.2 Sample Classification

This table presents the number of observations and the unique number of firms in the sample, classified based on (1) the existence or not of political connections (PC), and (2) the existence or not of females in their TMT. The sample consists of firms listed in S&P1500 without missing financials in the Compustat database (1992-2018). The numbers are presented after excluding financial firms.

Sample Classifications:		**No. of Observations**	**%**	**Unique No. of Firms**
(1) PC vs. No PC	Firms with political contributions	6,882	23	653
	Firms without political contributions	23,642	77	1,905
(2) Females in the TMT vs. No Females in the TMT	Firms with Females in their TMT	10,610	35	1,605
	Firms without Females in their TMT	19,914	65	953

[93] The number of firm-year observations with political contributions is 10,533. The remaining (42,473) firm-year observations do not have political contributions, and hence are assigned a value of zero in the proxies of political connections.

Table 6.3 Summary Statistics

This table reports descriptive statistics for variables of interest for the entire sample from 1992-2018. The total sample comprises all publicly traded non-financial US firms listed in S&P1500 with non-missing values for total assets/sales, closing price, book value of equity, and total debt. Firms with no political contributions are given a value of zero in the political connections proxy. The control variables are winsorized at their 1st and 99th percentiles. While some of the control variables (DBEQ, Firm_Age, Sales_Growth, Avg_Tenure) will be in log forms in future analysis, they are not logged in this table for a better description. The dependent variables (Total Risk and Idio_Risk) are also shown without the log in this table for the same reason. All variables' definitions are reported in Appendix 6.A.

	Variable	**Mean**	**SD**	**P25**	**P50**	**P75**	**N**
Dependent Variables	Total_Risk	0.445	0.208	0.297	0.396	0.544	28,749
	Sys_Risk	1.182	0.704	0.737	1.099	1.523	28,749
	Idio_Risk	0.368	0.174	0.242	0.331	0.457	28,749
Explanatory Variables	PC_Candidate(6Y)	1.032	1.888	0.000	0.000	0.693	30,524
	Pct_Female	0.079	0.125	0.000	0.000	0.167	30,524
Firm-level Control Variables	Size	7.337	1.641	6.178	7.242	8.410	30,524
	DBEQ	0.642	2.050	0.011	0.364	0.835	30,524
	STD_EPS	0.996	1.479	0.257	0.502	1.046	29,479
	Firm_Age	25.066	17.179	11.000	20.000	37.000	30,524
	MtB	2.086	1.410	1.227	1.635	2.385	29,816
	Capex_Ratio	0.048	0.050	0.017	0.033	0.060	30,524
	Sales_Growth	0.114	0.288	-0.011	0.072	0.178	30,312
	Surplus_Cash	0.087	0.099	0.031	0.077	0.136	30,512
	ROA	0.031	0.123	0.010	0.049	0.087	30,524
	Intang	0.211	0.204	0.032	0.153	0.337	29,479
	Buss_Seg	2.919	2.091	1.000	3.000	4.000	30,376
Managerial-level Control Variables	Avg_Tenure	5.928	4.194	3.000	5.000	7.800	30,524
	TMT_Own	0.037	0.079	0.003	0.009	0.028	28,993

Table 6.4 A Pairwise Correlation Matrix

This table displays the Pearson Correlation among the dependent, explanatory, and control variables. The total sample comprises all publicly traded non-financial US firms (S&P1500) with non-missing values for total assets/sales, closing price, book value of equity, and total debt from 1992-2018, making 30,524 firm-year observations. Financial variables (control variables) are winsorized at their 1st and 99th percentiles. The * indicates statistical significance at the 5% level. Definitions of all variables are reported in Appendix 6.A. All variables have a significant correlation with the three risk measures at a 95% confidence level, except the correlation between systematic risk and diversification, and the correlation between idiosyncratic risk and the MtB ratio.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Dependent Var:																		
(1) Total_Risk	1.000																	
(2) Sys_Risk	0.517*	1.000																
(3) Idio_Risk	0.961*	0.374*	1.000															
Explanatory Var:																		
(4) PC_Candidate(6Y)	-0.291*	-0.067*	-0.306*	1.000														
(5) Pct_Female	-0.036*	-0.035*	-0.026*	-0.004	1.000													
Control Var:																		
(6) Size	-0.469*	-0.030*	-0.521*	0.582*	-0.012*	1.000												
(7) Ln_DBEQ	-0.113*	0.033*	-0.120*	0.171*	-0.023*	0.322*	1.000											
(8) Std_EPS	0.154*	0.165*	0.126*	0.112*	-0.012*	0.168*	0.134*	1.000										
(9) Log_Firm_Age	-0.380*	-0.084*	-0.406*	0.317*	-0.023*	0.362*	0.135*	0.076*	1.000									
(10) MtB	-0.021*	-0.101*	0.002	-0.079*	0.031*	-0.175*	-0.243*	-0.147*	-0.201*	1.000								
(11) Capex_Ratio	0.048*	-0.019*	0.077*	-0.008	-0.001	-0.004	-0.009	0.017*	-0.110*	0.053*	1.000							
(12) Ln_Sales_Growth	0.046*	-0.053*	0.064*	-0.073*	-0.029*	-0.051*	-0.072*	-0.106*	-0.221*	0.267*	0.125*	1.000						
(13) Surplus_Cash	-0.126*	-0.107*	-0.117*	-0.039*	0.027*	-0.043*	-0.248*	-0.161*	-0.068*	0.461*	0.025*	0.126*	1.000					
(14) ROA	-0.341*	-0.220*	-0.324*	0.069*	0.036*	0.181*	-0.125*	-0.167*	0.076*	0.210*	0.049*	0.217*	0.478*	1.000				
(15) Intang	-0.256*	-0.110*	-0.260*	0.050*	0.028*	0.209*	0.150*	-0.070*	-0.011	-0.093*	-0.337*	0.061*	-0.045*	0.023*	1.000			
(16) Buss_Seg	-0.192*	-0.008	-0.229*	0.245*	-0.058*	0.334*	0.110*	0.061*	0.281*	-0.170*	-0.106*	-0.083*	-0.099*	0.039*	0.141*	1.000		
(17) Log_Avg_Tenure	-0.239*	-0.090*	-0.248*	0.081*	-0.074*	0.166*	-0.005	-0.047*	0.358*	-0.024*	0.014*	-0.050*	0.059*	0.149*	-0.035*	0.082*	1.000	
(18) TMT_Own	0.067*	-0.040*	0.095*	-0.116*	-0.029*	-0.192*	-0.105*	-0.056*	-0.107*	0.032*	0.045*	0.035*	-0.000	0.031*	-0.092*	-0.052*	0.131*	1.000

Table 6.5 OLS Regression Estimating the Association between Corporate Political Connections and Total Risk

$Total\_Risk_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ **(Model 1)**

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets/sales, closing price, book value of equity, and total debt from 1992-2018. The dependent variable in Model 1 is Total_Risk, which is calculated as the natural logarithm of the annualized standard deviation of monthly stock returns over the past 60 months. The explanatory variable is the political connections proxy (PC_Candidate(6Y)), which is constructed as the natural logarithm of one plus the total number of political candidates supported by the firm over a six-year window. The model controls for the common firm-level and managerial-level variables found in the literature to influence the firm risk (Size, Ln_DBEQ, STD_EPS, Log_Firm_Age, MtB, Capex_Ratio, Ln_Sales_Growth, Surplus_Cash, ROA, Intang, Buss_Seg, Log_Avg_Tenure, and TMT_Own). The model includes industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for the model does not exceed 5 (max is 2.2). Variable definitions are given in Appendix 6.A.

Variables	**DV: Total_Risk** **Model 1**
PC_Candidate(6Y)	-0.0114***
	(0.0039)
Size	-0.0848***
	(0.0063)
Ln_DBEQ	0.0064***
	(0.0024)
STD_EPS	0.0421***
	(0.0029)
Log_Firm_Age	-0.1121***
	(0.0104)
MtB	-0.0092***
	(0.0036)
Capex_Ratio	-0.4161***
	(0.0814)
Ln_Sales_Growth	0.0595***
	(0.0079)
Surplus_Cash	-0.3462***
	(0.0374)
ROA	-0.2778***
	(0.0265)
Intang	-0.1886***
	(0.0323)
Buss_Seg	-0.0008
	(0.0022)
Log_Avg_Tenure	-0.0205***
	(0.0062)
TMT_Own	0.0783
	(0.0704)
Constant	0.1233
	(0.0830)
Observations	22,115
R-squared	0.5272
Number of Firms	2,283
Firm FE	No
Year FE	Yes
Industry FE	Yes

Table 6.6 OLS Regressions Estimating the Association between Corporate Political Connections and Total Risk (Using a 1-Year lag of all explanatory and control variables, Firm Fixed Effect, Alternative PC_Proxy, and Alternative Total_Risk Proxy, respectively)

$$Total\_Risk_{it} = \alpha + \beta_1 (PoliticalConnectionsProxy)_{it} + \beta_t (Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$$

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets/sales, closing price, book value of equity, and total debt from 1992-2018. Four robustness checks are conducted to ensure the validity of the results obtained in Table 6.5. The first uses the same model (Model 1), but a one-year lag of all the explanatory and control variables is applied. The second also uses (Model 1), but the industry fixed effect is alternated with the firm fixed effect. In the third, the political connections (PC) proxy is supplemented from being (PC_Candidate(6Y)) to being (PC_Financial(6Y)), which is constructed as the natural logarithm of one plus the total dollar amount of contributions to political candidates by firm i over a six-year window. In the fourth, the Total_Risk proxy is alternated from being the log of the annualized standard deviation of monthly stock returns over the past 60 months (Total_Risk) to being (D_Total_Risk), which is calculated as the log of the annualized standard deviation of daily stock returns over the past 252 days. All models control for the common firm-level and managerial-level variables found in the literature to influence the firm risk (Size, Ln_DBEQ, STD_EPS, Log_Firm_Age, MtB, Capex_Ratio, Ln_Sales_Growth, Surplus_Cash, ROA, Intang, Buss_Seg, Log_Avg_Tenure, and TMT_Own). All models used in the robustness checks include the industry fixed effect (except the second one that applies firm fixed effect), which is based on SIC two digits. All models include the time fixed effect. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for each model does not exceed 5 (max is 2.2). Variable definitions are given in Appendix 6.A.

	Model 1 Robustness Checks			
	Column (1)	**Column (2)**	**Column (3)**	**Column (4)**
Variables	**Lag (1Y)**	**FE**	**Alternative PC_Proxy** PC_Financial(6Y)	**Alternative Total_Risk Proxy** (log STD Daily Returns)
PC_Candidate(6Y)	**-0.0112***** (0.0039)	**-0.0140***** (0.0051)	**-0.0029**** (0.0013)	**-0.0069**** (0.0030)
Size	-0.0752*** (0.0062)	-0.0828*** (0.0110)	-0.0866*** (0.0062)	-0.0808*** (0.0046)
Ln_DBEQ	0.0106*** (0.0024)	0.0071*** (0.0027)	0.0064*** (0.0024)	0.0091*** (0.0020)
STD_EPS	0.0433*** (0.0030)	0.0420*** (0.0030)	0.0420*** (0.0029)	0.0390*** (0.0027)
Log_Firm_Age	-0.0990*** (0.0101)	-0.1346*** (0.0241)	-0.1131*** (0.0104)	-0.0811*** (0.0071)
MtB	-0.0008 (0.0035)	-0.0099** (0.0040)	-0.0093*** (0.0035)	-0.0010 (0.0031)
Capex_Ratio	-0.2561*** (0.0813)	-0.4450*** (0.0881)	-0.4141*** (0.0815)	-0.1885*** (0.0720)
Ln_Sales_Growth	0.0525*** (0.0084)	0.0423*** (0.0080)	0.0601*** (0.0080)	0.0474*** (0.0090)
Surplus_Cash	-0.3974*** (0.0397)	-0.3402*** (0.0400)	-0.3471*** (0.0374)	-0.3615*** (0.0418)
ROA	-0.4391*** (0.0279)	-0.1882*** (0.0276)	-0.2773*** (0.0265)	-0.5912*** (0.0307)
Intang	-0.1822*** (0.0338)	-0.1468*** (0.0410)	-0.1866*** (0.0323)	-0.1816*** (0.0260)
Buss_Seg	0.0018 (0.0023)	0.0014 (0.0026)	-0.0009 (0.0022)	-0.0010 (0.0019)
Log_Avg_Tenure	-0.0211*** (0.0063)	-0.0137** (0.0070)	-0.0203*** (0.0062)	-0.0149*** (0.0051)
TMT_Own	0.1082 (0.0663)	0.1039 (0.0823)	0.0784 (0.0702)	0.0744 (0.0570)
Constant	0.0699 (0.0839)	0.0611 (0.0899)	0.1358* (0.0824)	0.2290*** (0.0756)
Observations	20,367	22,115	22,115	22,283
R-squared	0.5447	0.4612	0.5279	0.6347
Number of Firms	2,152	2,283	2,283	2,293
Firm FE	No	Yes	No	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	No	Yes	Yes
1Y lag	Yes	No	No	No

Table 6.7 OLS Regression Estimating the Association between Corporate Political Connections and Systematic Risk

$Sys\_Risk_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ **(Model 1_A)**

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets/sales, closing price, book value of equity, and total debt from 1992-2018. The dependent variable in Model 1_A is Sys_Risk, which is calculated as the beta coefficient of the market excess monthly returns (β_1) generated from regressing the monthly excess returns on the FF3 model over the past 60 months. The explanatory variable is the political connections proxy (PC_Candidate(6Y)), which is constructed as the natural logarithm of one plus the total number of political candidates supported by the firm over a six-year window. The model controls for the common firm-level and managerial-level variables found in the literature to influence the firm risk (Size, Ln_DBEQ, STD_EPS, Log_Firm_Age, MtB, Capex_Ratio, Ln_Sales_Growth, Surplus_Cash, ROA, Intang, Buss_Seg, Log_Avg_Tenure, and TMT_Own). The model includes industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for the model does not exceed 5 (max is 2.3). Variable definitions are reported in Appendix 6.A.

Variables	**DV: Sys_Risk** **Model 1_A**
PC_Candidate(6Y)	-0.0200***
	(0.0055)
Size	0.0282***
	(0.0086)
Ln_DBEQ	0.0195***
	(0.0053)
STD_EPS	0.0407***
	(0.0073)
Log_Firm_Age	-0.0839***
	(0.0152)
MtB	-0.0293***
	(0.0078)
Capex_Ratio	-0.7586***
	(0.2160)
Ln_Sales_Growth	0.0070
	(0.0258)
Surplus_Cash	-0.2712**
	(0.1101)
ROA	-0.9330***
	(0.0972)
Intang	-0.4792***
	(0.0565)
Buss_Seg	0.0020
	(0.0044)
Log_Avg_Tenure	-0.0187
	(0.0133)
TMT_Own	-0.1767
	(0.1265)
Constant	1.2082***
	(0.1891)
Observations	22,115
R-squared	0.1784
Number of Firms	2,283
Firm FE	No
Year FE	Yes
Industry FE	Yes

Table 6.8 OLS Regressions Estimating the Association between Corporate Political Connections and Systematic Risk (Using a 1-Year lag of all explanatory and control variables, Firm Fixed Effect, Alternative PC_Proxy, and Two Alternative Sys_Risk Proxies, respectively)

$$Sys\_Risk_{it} = \alpha + \beta_1(PoliticalConnectionsProxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$$

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets/sales, closing price, book value of equity, and total debt from 1992-2018. Five robustness checks are conducted to ensure the validity of the results obtained in Table 6.7. The first uses the same model (Model 1_A), but a one-year lag of all the explanatory variables is applied. The second also uses Model 1_A, but the industry fixed effect is alternated with the firm fixed effect. In the third, the political connections (PC) proxy is supplemented from being (PC_Candidate(6Y)) to being (PC_Financial(6Y)), which is constructed as the natural logarithm of one plus the total dollar amount of contributions to political candidates by firm i over a six-year window. In the fourth, the Sys_Risk proxy is alternated from being (Sys_Risk) to being (Alt_Sys_Risk_CAPM), which is calculated using the beta coefficient of the market excess monthly returns generated from regressing the monthly excess returns on the market model (CAPM) over the past 60 months. In the fifth, (Alt_Sys_Risk_FF5) is used where the Sys_Risk is re-calculated using the FF5 model. All models control for the common firm-level and managerial-level variables found in the literature to influence the firm risk (Size, Ln_DBEQ, STD_EPS, Log_Firm_Age, MtB, Capex_Ratio, Ln_Sales_Growth, Surplus_Cash, ROA, Intang, Buss_Seg, Log_Avg_Tenure, and TMT_Own). All models used in these robustness checks include the industry fixed effect (except the second one that applies firm fixed effect), which is based on SIC two digits. All models include the time fixed effect. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for each model does not exceed 5 (max is 2.3). Variable definitions are reported in Appendix 6.A.

	(Model 1_A) Robustness Checks				
	Column (1)	**Column (2)**	**Column (3)**	**Column (4)**	**Column (5)**
Variables	**Lag (1Y)**	**FE**	**Alternative PC_Proxy** PC_Financial(6Y)	**Alternative Sys_Risk Proxy** (Using CAPM Model)	**Alternative Sys_Risk Proxy** (Using FF5 Model)
PC_Candidate(6Y)	**-0.0232*** **	**0.0154**	**-0.0063*** **	**-0.0274*** **	**-0.0201*** **
	(0.0057)	(0.0096)	(0.0019)	(0.0061)	(0.0059)
Size	0.0337***	-0.0154	0.0254***	-0.0063	0.0272***
	(0.0086)	(0.0205)	(0.0083)	(0.0096)	(0.0094)
Ln_DBEQ	0.0179***	0.0165***	0.0198***	0.0088	0.0164***
	(0.0052)	(0.0061)	(0.0053)	(0.0057)	(0.0055)
STD_EPS	0.0450***	0.0413***	0.0408***	0.0641***	0.0511***
	(0.0078)	(0.0065)	(0.0072)	(0.0087)	(0.0085)
Log_Firm_Age	-0.0772***	-0.1391***	-0.0845***	-0.1086***	-0.0442**
	(0.0150)	(0.0479)	(0.0152)	(0.0164)	(0.0172)
MtB	-0.0188**	-0.0204**	-0.0297***	0.0021	-0.0240**
	(0.0081)	(0.0093)	(0.0078)	(0.0088)	(0.0114)
Capex_Ratio	-0.4771**	-0.7652***	-0.7531***	-0.7238***	-0.3841
	(0.2125)	(0.2208)	(0.2162)	(0.2230)	(0.2430)
Ln_Sales_Growth	0.0126	-0.0122	0.0074	0.1016***	0.0278
	(0.0268)	(0.0212)	(0.0258)	(0.0287)	(0.0381)
Surplus_Cash	-0.4447***	-0.2816***	-0.2742**	-0.4872***	-0.4718***
	(0.1163)	(0.0940)	(0.1102)	(0.1252)	(0.1269)
ROA	-1.0445***	-0.2680***	-0.9279***	-1.4219***	-0.2048*
	(0.1024)	(0.0721)	(0.0971)	(0.1092)	(0.1104)
Intang	-0.4387***	-0.1399*	-0.4758***	-0.5217***	-0.4046***
	(0.0562)	(0.0843)	(0.0564)	(0.0616)	(0.0592)
Buss_Seg	0.0025	0.0025	0.0019	-0.0000	0.0075
	(0.0045)	(0.0049)	(0.0044)	(0.0048)	(0.0047)
Log_Avg_Tenure	-0.0243*	0.0016	-0.0182	-0.0307**	-0.0330**
	(0.0138)	(0.0144)	(0.0133)	(0.0144)	(0.0142)
TMT_Own	-0.2021	0.0919	-0.1772	-0.2594*	-0.2474*
	(0.1296)	(0.1561)	(0.1264)	(0.1381)	(0.1367)
Constant	1.1850***	1.5491***	1.2286***	1.4178***	0.9112***
	(0.2066)	(0.1730)	(0.1873)	(0.1822)	(0.2117)
Observations	20,367	22,115	22,115	21,214	21,359
R-squared	0.1964	0.0565	0.1780	0.2704	0.1097
Number of Firms	2,152	2,283	2,283	2,265	2,220
Firm FE	No	No	No	No	No
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
1Y lag	Yes	No	No	No	No

Table 6.9 OLS Regression Estimating the Association between Corporate Political Connections and Idiosyncratic Risk

$Idio\_Risk_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ **(Model 1_B)**

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets/sales, closing price, book value of equity, and total debt from 1992-2018. The dependent variable in the model (Model 1_B) is Idio_Risk, which is calculated as the natural logarithm of the annualized standard deviation of the residuals from the regression of monthly stock excess returns over the past 60 months on the FF3 model. The explanatory variable is the political connections proxy (PC_Candidate(6Y)), which is constructed as the natural logarithm of one plus the total number of political candidates supported by the firm over a six-year window. The model controls for the common firm-level and managerial-level variables found in the literature to influence the firm risk (Size, Ln_DBEQ, STD_EPS, Log_Firm_Age, MtB, Capex_Ratio, Ln_Sales_Growth, Surplus_Cash, ROA, Intang, Buss_Seg, Log_Avg_Tenure, and TMT_Own). The model includes industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for the model does not exceed 5 (max is 2.3). Variable definitions are reported in Appendix 6.A.

Variables	**DV: Idio_Risk** **Model 1_B**
PC_Candidate(6Y)	-0.0112***
	(0.0041)
Size	-0.1048***
	(0.0063)
Ln_DBEQ	0.0068***
	(0.0024)
STD_EPS	0.0401***
	(0.0030)
Log_Firm_Age	-0.0859***
	(0.0104)
MtB	-0.0134***
	(0.0035)
Capex_Ratio	-0.4105***
	(0.0772)
Ln_Sales_Growth	0.0580***
	(0.0079)
Surplus_Cash	-0.2822***
	(0.0375)
ROA	-0.2268***
	(0.0268)
Intang	-0.1665***
	(0.0323)
Buss_Seg	-0.0037
	(0.0023)
Log_Avg_Tenure	-0.0218***
	(0.0062)
TMT_Own	0.0948
	(0.0731)
Constant	0.1489*
	(0.0785)
Observations	22,115
R-squared	0.539
Number of Firms	2,283
Firm FE	No
Year FE	Yes
Industry FE	Yes

Table 6.10 OLS Regressions Estimating the Association between Corporate Political Connections and Idiosyncratic Risk (Using a 1-Year lag of all explanatory and control variables, Firm Fixed Effect, Alternative PC_Proxy, and Two Alternative Idio_Risk Proxies, respectively)

$$Idio\_Risk_{it} = \alpha + \beta_1 (PoliticalConnectionsProxy)_{it} + \beta_t (Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$$

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets/sales, closing price, book value of equity, and total debt from 1992-2018. Five robustness checks are conducted to ensure the validity of the results obtained in Table 6.9. The first of these uses the same model (Model 1_B), but a one-year lag of all the explanatory and control variables is applied. The second also uses Model 1 B, but the industry fixed effect is alternated with the firm fixed effect. In the third, the political connections (PC) proxy is supplemented from being (PC_Candidate(6Y)) to being (PC_Financial(6Y)), which is constructed as the natural logarithm of one plus the total dollar amount of contributions to political candidates by firm i over a six-year window. In the fourth, the Idio_Risk proxy is alternated from being (Idio_Risk), which is calculated using the *FF3* model to be (Alt_Idio_Risk_CAPM), which is calculated as the natural logarithm of the annualized standard deviation of the residuals from the regression of monthly stock excess returns on the *market model (CAPM)* over the past 60 months. In the fifth, (Alt_Idio_Risk_FF5) is used where the Idio_Risk is re-calculated using the FF5 model. All models control for the common firm-level and managerial-level variables found in the literature to influence the firm risk (Size, Ln_DBEQ, STD_EPS, Log_Firm_Age, MtB, Capex_Ratio, Ln_Sales_Growth, Surplus_Cash, ROA, Intang, Buss_Seg, Log_Avg_Tenure, and TMT_Own). All models used in these robustness checks include the industry fixed effect (except the second one that applies firm fixed effect), which is based on SIC two digits. All models include the time fixed effect. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for each model does not exceed 5 (max is 2.3). Variable definitions are reported in Appendix 6.A.

	(Model 1_B) Robustness Checks				
	Column (1)	**Column (2)**	**Column (3)**	**Column (4)**	**Column (5)**
Variables	**Lag (1Y)**	**FE**	**Alternative PC_Proxy** PC_Financial(6Y)	**Alternative Idio_Risk Proxy** (Using CAPM Model)	**Alternative Idio_Risk Proxy** (Using FF5 Model)
PC_Candidate(6Y)	**-0.0109*** **	**-0.0139*** **	**-0.0030** **	**-0.0111*** **	**-0.0107** **
	(0.0042)	(0.0053)	(0.0014)	(0.0041)	(0.0048)
Size	-0.0973***	-0.1013***	-0.1065***	-0.1036***	-0.1143***
	(0.0062)	(0.0108)	(0.0062)	(0.0064)	(0.0074)
Ln_DBEQ	0.0116***	0.0071***	0.0068***	0.0066***	0.0005
	(0.0024)	(0.0027)	(0.0024)	(0.0024)	(0.0028)
STD_EPS	0.0414***	0.0398***	0.0400***	0.0409***	0.0524***
	(0.0031)	(0.0031)	(0.0030)	(0.0030)	(0.0038)
Log_Firm_Age	-0.0810***	-0.0470*	-0.0868***	-0.0947***	-0.0431***
	(0.0100)	(0.0240)	(0.0104)	(0.0102)	(0.0109)
MtB	-0.0082**	-0.0129***	-0.0134***	-0.0114***	0.0113***
	(0.0033)	(0.0040)	(0.0035)	(0.0035)	(0.0041)
Capex_Ratio	-0.2789***	-0.4418***	-0.4085***	-0.4199***	-0.3393***
	(0.0770)	(0.0828)	(0.0774)	(0.0761)	(0.0854)
Ln_Sales_Growth	0.0519***	0.0425***	0.0586***	0.0597***	0.0632***
	(0.0081)	(0.0079)	(0.0079)	(0.0081)	(0.0103)
Surplus_Cash	-0.3204***	-0.2834***	-0.2830***	-0.3092***	-0.3287***
	(0.0392)	(0.0401)	(0.0375)	(0.0368)	(0.0454)
ROA	-0.3898***	-0.1435***	-0.2263***	-0.2432***	-0.0967***
	(0.0283)	(0.0279)	(0.0268)	(0.0268)	(0.0316)
Intang	-0.1650***	-0.1272***	-0.1646***	-0.1817***	-0.1160***
	(0.0338)	(0.0405)	(0.0323)	(0.0332)	(0.0357)
Buss_Seg	-0.0006	-0.0014	-0.0038	-0.0022	-0.0055**
	(0.0024)	(0.0026)	(0.0023)	(0.0023)	(0.0026)
Log_Avg_Tenure	-0.0237***	-0.0182***	-0.0217***	-0.0206***	-0.0187**
	(0.0062)	(0.0069)	(0.0062)	(0.0062)	(0.0075)
TMT_Own	0.1256*	0.1170	0.0948	0.0959	0.0333
	(0.0692)	(0.0856)	(0.0729)	(0.0745)	(0.0786)
Constant	0.1497*	-0.1671*	0.1605**	0.1756**	0.0511
	(0.0793)	(0.0892)	(0.0780)	(0.0783)	(0.0944)
Observations	20,367	22,115	22,115	21,214	21,247
R-squared	0.5549	0.4734	0.5399	0.5532	0.4664
Number of Firms	2,152	2,283	2,283	2,265	2,207
Firm FE	No	Yes	No	No	No
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	No	Yes	Yes	Yes
1Y lag	Yes	No	No	No	No

Table 6.11 OLS Regressions Estimating the Impact of Corporate Political Connections on The Association Between Females in the TMT and Firm Total Risk

$Total\_Risk_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Pct\_Female)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ (**Model 2**)

$Total\_Risk_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Pct\_Female)_{it} + \beta_3(Political\ Connections\ Proxy\ X\ Pct\_Female)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ (**Model 3**)

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets/sales, closing price, book value of equity, and total debt from 1992-2018. The dependent variable in Models 2 and 3 is Total_Risk, which is calculated as the natural logarithm of the annualized standard deviation of monthly stock returns over the past 60 months. In both models, the political connections proxy is (PC_Candidate(6Y)), which is constructed as the natural logarithm of one plus the total number of political candidates supported by the firm over a six-year window, and the female representation in the TMT proxy is (Pct_Female), which is calculated as the percentage of female executives to the total number of executives available in the ExecuComp database for firm i in year t. The interaction variable (Political Connections Proxy X Pct_Female) is only included in Model 3. Both models control for the common firm-level and managerial-level variables found in the literature to influence the firm risk (Size, Ln_DBEQ, STD_EPS, Log_Firm_Age, MtB, Capex_Ratio, Ln_Sales_Growth, Surplus_Cash, ROA, Intang, Buss_Seg, Log_Avg_Tenure, and TMT_Own). Both models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for each model does not exceed 5 (max is 2.2). Variable definitions are reported in Appendix 6.A.

	DV: Total_Risk	
Variables	**Column (1) Model 2**	**Column (2) Model 3**
PC_Candidate(6Y)	**-0.0114*** **	-0.0094**
	(0.0039)	(0.0041)
Pct_Female	**-0.0608***	-0.0239
	(0.0318)	(0.0383)
PC_Candidate(6Y) X Pct_Female	-	**-0.0265** **
	-	(0.0131)
Size	-0.0847***	-0.0847***
	(0.0063)	(0.0063)
Ln_DBEQ	0.0062**	0.0063***
	(0.0024)	(0.0024)
STD_EPS	0.0421***	0.0422***
	(0.0029)	(0.0029)
Log_Firm_Age	-0.1120***	-0.1125***
	(0.0104)	(0.0104)
MtB	-0.0092***	-0.0092**
	(0.0036)	(0.0036)
Capex_Ratio	-0.4163***	-0.4155***
	(0.0814)	(0.0811)
Ln_Sales_Growth	0.0592***	0.0591***
	(0.0079)	(0.0079)
Surplus_Cash	-0.3456***	-0.3468***
	(0.0373)	(0.0374)
ROA	-0.2772***	-0.2767***
	(0.0265)	(0.0265)
Intang	-0.1898***	-0.1907***
	(0.0323)	(0.0323)
Buss_Seg	-0.0009	-0.0010
	(0.0022)	(0.0023)
Log_Avg_Tenure	-0.0215***	-0.0217***
	(0.0062)	(0.0062)
TMT_Own	0.0769	0.0794
	(0.0704)	(0.0706)
Constant	0.1251	0.1244
	(0.0833)	(0.0833)
Observations	22,115	22,115
R-squared	0.5272	0.5272
Number of Firms	2,283	2,283
Firm FE	No	No
Year FE	Yes	Yes
Industry FE	Yes	Yes

Table 6.12 OLS Regressions Estimating the Impact of Corporate Political Connections on The Association Between Females in the TMT and Firm Risk (Substituting Total Risk with Systematic and Idiosyncratic Risks)

$$Total\_Risk_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Pct\_Female)_{it} + \beta_3(Political\ Connections\ Proxy\ X\ Pct\_Female)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}\ (\textbf{Model 3})$$

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets/sales, closing price, book value of equity, and total debt from 1992-2018. The dependent variable (DV) in model 3 (Total_Risk) is substituted with its two-subdivisions (Systematic and Idiosyncratic risks). The DV in Column 1 is Systematic_Risk, which is calculated using the FF3, CAPM, and FF5 models, respectively. The DV in Column 2 is Idiosyncratic Risk, which is calculated in the same way. In all models, the political connections proxy is (PC_Candidate(6Y)), which is constructed as the natural logarithm of one plus the total number of political candidates supported by the firm over a six-year window, and the female representation in the TMT proxy is (Pct_Female), which is calculated as the percentage of female executives to the total number of executives available in the ExecuComp database for firm i in year t. All models control for the common firm-level and managerial-level variables found in the literature to influence the firm risk (Size, Ln_DBEQ, STD_EPS, Log_Firm_Age, MtB, Capex_Ratio, Ln_Sales_Growth, Surplus_Cash, ROA, Intang, Buss_Seg, Log_Avg_Tenure, and TMT_Own). All models include industry and time fixed effects, where industry fixed effect is based on SIC two digits. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for each model does not exceed 5 (max is 2.3). Variable definitions are reported in Appendix 6.A.

	Model 3 Further Analysis					
	Column (1) DV: Sys_Risk			**Column (2) DV: Idio_Risk**		
Variables	*FF3*	*CAPM*	*FF5*	*FF3*	*CAPM*	*FF5*
PC_Candidate(6Y)	-0.0221***	-0.0291***	-0.0214***	-0.0090**	-0.0083**	-0.0076
	(0.0060)	(0.0066)	(0.0063)	(0.0042)	(0.0042)	(0.0050)
Pct_Female	-0.1140	-0.0943	-0.1394*	-0.0040	-0.0067	-0.0071
	(0.0805)	(0.0881)	(0.0841)	(0.0380)	(0.0390)	(0.0443)
PC_Candidate(6Y) X Pct_Female	**0.0290**	**0.0245**	**0.0174**	**-0.0297****	**-0.0382*****	**-0.0397****
	(0.0257)	(0.0291)	(0.0275)	(0.0131)	(0.0137)	(0.0173)
Size	0.0281***	-0.0064	0.0273***	-0.1047***	-0.1034***	-0.1142***
	(0.0086)	(0.0096)	(0.0094)	(0.0063)	(0.0063)	(0.0074)
Ln_DBEQ	0.0192***	0.0086	0.0162***	0.0068***	0.0067***	0.0005
	(0.0053)	(0.0057)	(0.0055)	(0.0024)	(0.0024)	(0.0028)
STD_EPS	0.0408***	0.0641***	0.0512***	0.0402***	0.0411***	0.0525***
	(0.0073)	(0.0087)	(0.0085)	(0.0030)	(0.0030)	(0.0038)
Log_Firm_Age	-0.0840***	-0.1087***	-0.0442**	-0.0864***	-0.0954***	-0.0437***
	(0.0152)	(0.0164)	(0.0172)	(0.0104)	(0.0102)	(0.0109)
MtB	-0.0294***	0.0020	-0.0242**	-0.0133***	-0.0114***	0.0113***
	(0.0078)	(0.0088)	(0.0114)	(0.0035)	(0.0035)	(0.0041)
Capex_Ratio	-0.7580***	-0.7236***	-0.3850	-0.4098***	-0.4192***	-0.3394***
	(0.2160)	(0.2230)	(0.2428)	(0.0770)	(0.0758)	(0.0851)
Ln_Sales_Growth	0.0062	0.1011***	0.0262	0.0577***	0.0594***	0.0627***
	(0.0258)	(0.0287)	(0.0382)	(0.0078)	(0.0081)	(0.0103)
Surplus_Cash	-0.2703**	-0.4865***	-0.4706***	-0.2831***	-0.3105***	-0.3299***
	(0.1101)	(0.1252)	(0.1269)	(0.0374)	(0.0368)	(0.0453)
ROA	-0.9316***	-1.4210***	-0.2015*	-0.2258***	-0.2417***	-0.0949***
	(0.0971)	(0.1092)	(0.1103)	(0.0267)	(0.0267)	(0.0315)
Intang	-0.4798***	-0.5221***	-0.4061***	-0.1684***	-0.1843***	-0.1187***
	(0.0565)	(0.0616)	(0.0591)	(0.0323)	(0.0332)	(0.0357)
Buss_Seg	0.0020	-0.0000	0.0074	-0.0039*	-0.0024	-0.0058**
	(0.0044)	(0.0048)	(0.0047)	(0.0023)	(0.0023)	(0.0026)
Log_Avg_Tenure	-0.0192	-0.0311**	-0.0343**	-0.0228***	-0.0218***	-0.0200***
	(0.0134)	(0.0145)	(0.0142)	(0.0062)	(0.0063)	(0.0075)
TMT_Own	-0.1782	-0.2607*	-0.2486*	0.0965	0.0985	0.0358
	(0.1263)	(0.1380)	(0.1363)	(0.0733)	(0.0747)	(0.0787)
Constant	1.2122***	1.4212***	0.9141***	0.1495*	0.1762**	0.0504
	(0.1892)	(0.1823)	(0.2119)	(0.0786)	(0.0785)	(0.0942)
Observations	22,115	21,214	21,359	22,115	21,214	21,247
R-squared	0.1787	0.2706	0.1101	0.5392	0.5533	0.4672
Number of Firms	2,283	2,265	2,220	2,283	2,265	2,207
Firm FE	No	No	No	No	No	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 6.13 OLS Regressions Estimating the Impact of Corporate Political Connections on The Association Between Females in the TMT and Firm Total Risk (Using a 1-Year lag, Firm Fixed Effect, Alternative PC_Proxy, Alternative Total_Risk Proxy, and Alternative Female Proxy, respectively)

$Total\_Risk_{it} = \alpha + \beta_1(Political\ Connections\ Proxy)_{it} + \beta_2(Pct\_Female)_{it} + \beta_3(Political\ Connections\ Proxy\ X\ Pct\_Female)_{it} + \beta_t(Controls) + \beta_t\ Industry\ \&\ Year\ fixed\ effects + \varepsilon_{it}$ (**Model 3**)

The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets/sales, closing price, book value of equity, and total debt from 1992-2018. Five robustness checks are conducted to ensure the validity of the results obtained in Model 3 of Table 6.11. The first uses the same model (Model 3), but a one-year lag of all the explanatory and control variables is applied. The second also uses the same model (Model 3), but the industry fixed effect is alternated with the firm fixed effect. In the third, the political connections (PC) proxy is supplemented from being (PC_Candidate(6Y)) to being (PC_Financial(6Y)), which is constructed as the natural logarithm of one plus the total dollar amount of contributions to political candidates by firm i over a six-year window. In the fourth, the Total_Risk proxy is alternated from being the log of the annualized standard deviation of monthly stock returns over the past 60 months (Total_Risk) to being (D_Total_Risk), which is calculated as the log of the annualized standard deviation of daily stock returns over the past 252 days. The fifth alternates the female proxy (Pct_Female) from being the percentage of females in the TMT to be (Third_Female), a dummy variable equal to one if the females represent 30% or more of the TMT. All models control for the common firm-level and managerial-level variables found in the literature to influence the firm risk (Size, Ln_DBEQ, STD_EPS, Log_Firm_Age, MtB, Capex_Ratio, Ln_Sales_Growth, Surplus_Cash, ROA, Intang, Buss_Seg, Log_Avg_Tenure, and TMT_Own). All models used in the robustness checks include the industry fixed effect (except the second one which applies firm fixed effect), which is based on SIC two digits. All models include the the time fixed effect. Standard errors (reported in parentheses) are clustered by firm. Note that ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The control variables are winsorized at their 1st and 99th percentiles. Firms with no political contributions are given a value of zero in the political connections proxy. The VIF test for each model does not exceed 5 (max is 2.2). Variable definitions are reported in Appendix 6.A.

	Model 3 Robustness Checks				
	Column (1)	**Column (2)**	**Column (3)**	**Column (4)**	**Column (5)**
Variables	**Lag (1Y)**	**FE**	**Alternative PC_Proxy** PC_Financial(6Y)	**Alternative Total_Risk Proxy** (log STD *Daily* Returns)	**Alternative Female Proxy** (Dummy)
PC_Candidate(6Y)	-0.0094**	-0.0119**	-0.0022	-0.0051	-0.0110***
	(0.0040)	(0.0052)	(0.0014)	(0.0031)	(0.0040)
Pct_Female	-0.0332	-0.0303	-0.0226	-0.0322	-0.0206
	(0.0402)	(0.0429)	(0.0385)	(0.0315)	(0.0149)
PC_Candidate(6Y) X Pct_Female	**-0.0255***	**-0.0292****	**-0.0094****	**-0.0237****	**-0.0097****
	(0.0133)	(0.0141)	(0.0047)	(0.0114)	(0.0047)
Size	-0.0751***	-0.0828***	-0.0865***	-0.0807***	-0.0850***
	(0.0062)	(0.0109)	(0.0062)	(0.0046)	(0.0063)
Ln_DBEQ	0.0106***	0.0071***	0.0064***	0.0091***	0.0064***
	(0.0024)	(0.0027)	(0.0024)	(0.0020)	(0.0024)
STD_EPS	0.0434***	0.0420***	0.0421***	0.0390***	0.0421***
	(0.0030)	(0.0030)	(0.0029)	(0.0027)	(0.0029)
Log_Firm_Age	-0.0993***	-0.1368***	-0.1135***	-0.0813***	-0.1120***
	(0.0101)	(0.0242)	(0.0104)	(0.0070)	(0.0104)
MtB	-0.0008	-0.0100**	-0.0093***	-0.0009	-0.0092***
	(0.0035)	(0.0040)	(0.0036)	(0.0031)	(0.0035)
Capex_Ratio	-0.2552***	-0.4441***	-0.4137***	-0.1882***	-0.4172***
	(0.0810)	(0.0878)	(0.0813)	(0.0719)	(0.0813)
Ln_Sales_Growth	0.0521***	0.0419***	0.0597***	0.0469***	0.0594***
	(0.0084)	(0.0079)	(0.0079)	(0.0090)	(0.0079)
Surplus_Cash	-0.3984***	-0.3407***	-0.3478***	-0.3619***	-0.3466***
	(0.0397)	(0.0400)	(0.0375)	(0.0418)	(0.0373)
ROA	-0.4374***	-0.1873***	-0.2761***	-0.5900***	-0.2770***
	(0.0279)	(0.0276)	(0.0265)	(0.0307)	(0.0265)
Intang	-0.1846***	-0.1494***	-0.1885***	-0.1834***	-0.1899***
	(0.0337)	(0.0410)	(0.0323)	(0.0260)	(0.0323)
Buss_Seg	0.0016	0.0012	-0.0011	-0.0012	-0.0009
	(0.0023)	(0.0026)	(0.0023)	(0.0019)	(0.0022)
Log_Avg_Tenure	-0.0223***	-0.0150**	-0.0214***	-0.0161***	-0.0209***
	(0.0063)	(0.0070)	(0.0062)	(0.0051)	(0.0062)
TMT_Own	0.1094*	0.1054	0.0794	0.0746	0.0775
	(0.0664)	(0.0824)	(0.0704)	(0.0570)	(0.0706)
Constant	0.0713	0.0693	0.1367*	0.2294***	0.1237
	(0.0843)	(0.0899)	(0.0827)	(0.0760)	(0.0830)
Observations	20,367	22,115	22,115	22,283	22,115
R-squared	0.5447	0.4615	0.5279	0.6349	0.5274
Number of Firms	2,152	2,283	2,283	2,293	2,283
Firm FE	No	Yes	No	No	No
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	No	Yes	Yes	Yes
1Y lag	Yes	No	No	No	No

Chapter 6 Figure

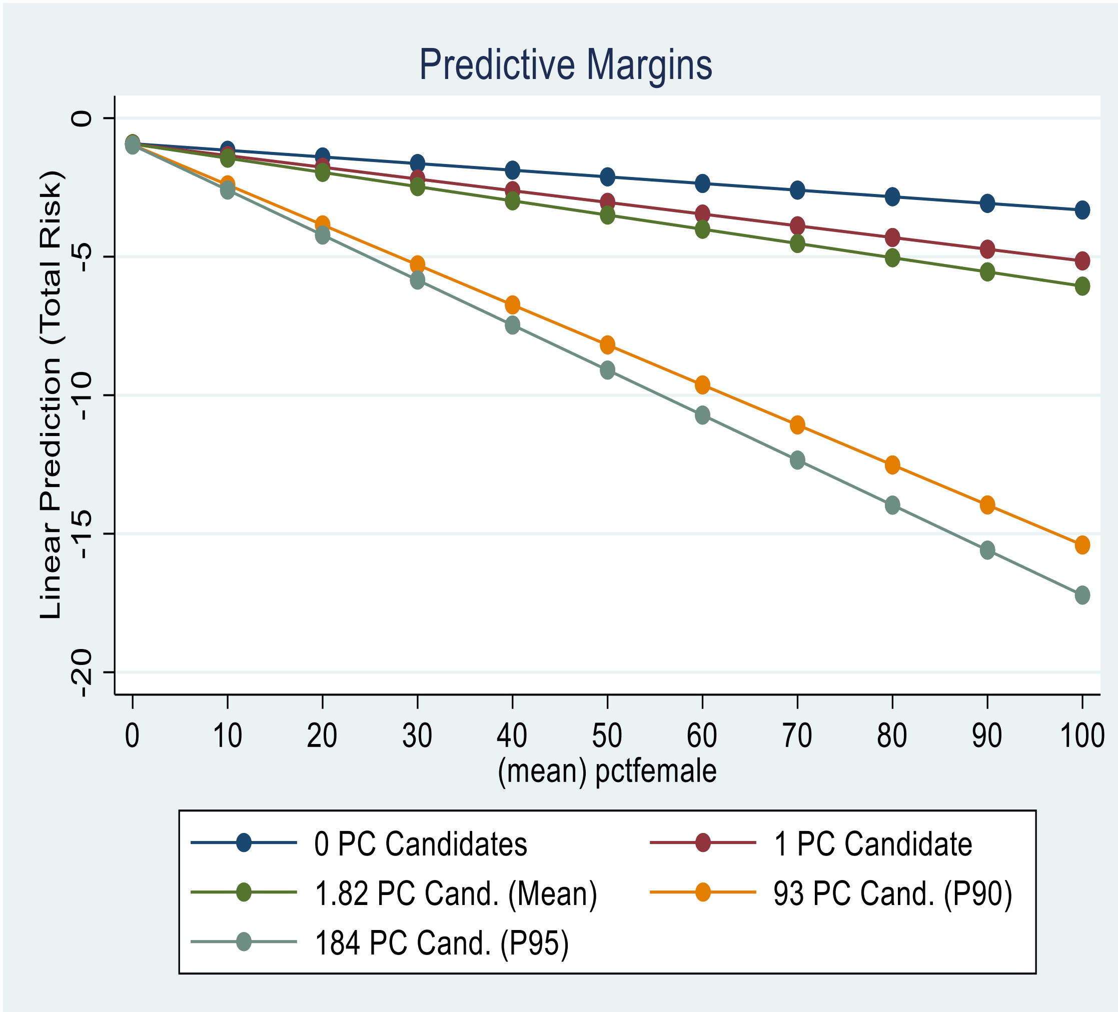

Figure 6.1 Predictive Margins (Political Connections, Female Proportion of the TMT, and Total Risk)

This graph shows a linear prediction, where the relationship between the Female Proportion of the TMT and Total Risk is shown for certain levels of political connections. The sample presents non-financial US firms listed in S&P1500 with non-missing values for total assets/sales, closing price, book value of equity, and total debt from 1992-2018.

Appendices to Chapter 6

Appendix 6.A: Variable Definitions

The tables below present the definitions of variables used in the current study. The sources and data items used from each source are also provided. The variables are classified into four segments: political connections variables, risk variables, female representation in the TMT variables, and financial variables.

- **Political Connections Variables:**

Variable	Definition	Data Item	Proxy For	Source
$PC\_Candidate_{it}$	The natural logarithm of one plus the total number of candidates supported by a firm over a six-year window. $\text{PC\_Candidate}_{it} = \text{Ln}\left(1 + \sum_{j=1}^{J} \text{Candidate}_{jt,t-5}\right)$ where $\text{Candidate}_{jt,t-5}$ is an indicator that equals one if the firm contributed to Candidate_j over the years t-5 to t.	Cand_ID	Political Connections	Federal Election Commiss-ion (FEC)
$PC\_Financial_{it}$	The natural logarithm of one plus the total amount of dollar contributions to candidates by a firm over a six-year window. $\text{PC\_Financial}_{it} = \text{Ln}\left(1 + \sum_{j=1}^{J} \text{Amount}_{jt,t-5}\right)$ where $\text{Amount}_{jt,t-5}$ is the sum of total dollar contributions provided by a firm to Candidate_j over the years t-5 to t.	Transaction_ amt	Political Connections (Robustness Check)	FEC

➢ **Risk Variables:**

Variable	Definition	Data Item	Proxy For	Source
Total_Risk $_{it}$	The natural logarithm of (the standard deviation of the monthly stocks returns over the past 60 months, with a minimum requirement of 12 months) X (the square root of 12).	TVOL	Total risk	Beta Suite (WRDS)
Sys_Risk $_{it}$	The beta coefficient of the market excess monthly returns (β_1) generated from regressing the monthly excess returns on the FF3 model, over the past 60 months (with a minimum requirement of 12 months).	B_MKT	Systematic risk	Beta Suite (WRDS)
Idio_Risk $_{it}$	The natural logarithm of (the standard deviation of the residuals from the regression of monthly stock excess returns over the past 60 months on the FF3, with a minimum requirement of 12 months) X (the square root of 12).	IVOL	Idiosyncratic risk	Beta Suite (WRDS)
D_Total_Risk $_{it}$	The natural logarithm of (the standard deviation of the daily stocks returns over the past 252 days, with a minimum requirement of 126 days) X (the square root of 252).	TVOL	Alternative proxy for Total risk using daily returns	Beta Suite (WRDS)
Alt_Sys_Risk_CAPM $_{it}$	The beta coefficient of the market excess monthly returns (β_1) generated from regressing the monthly excess returns on the market model (CAPM), over the past 60 months (with a minimum requirement of 12 months).	B_MKT	Alternative proxy for Systematic risk using CAPM	Beta Suite (WRDS)
Alt_Idio_Risk_CAPM $_{it}$	The natural logarithm of (the standard deviation of the residuals from the regression of monthly stock excess returns over the past 60 months on the market model (CAPM), with a minimum requirement of 12 months) X (the square root of 12).	IVOL	Alternative proxy for Idiosyncratic risk using CAPM	Beta Suite (WRDS)
Alt_Sys_Risk_FF5 $_{it}$	The beta coefficient of the market excess monthly returns (β_1) generated from regressing the monthly excess returns on the FF5, over the past 60 months (with a minimum requirement of 12 months).	PRCCM	Alternative proxy for Systematic risk using FF5	Kenneth R. French Data Library + Compustat
Alt_Idio_Risk_FF5 $_{it}$	The natural logarithm of (the standard deviation of the residuals from the regression of monthly stock excess returns over the past 60 months on the FF5, with a minimum requirement of 12 months) X (the square root of 12).	PRCCM	Alternative proxy for Idiosyncratic risk using FF5	Kenneth R. French Data Library + Compustat

- **Female Proportion Variables:**

Variable	Definition	Data Item	Proxy For	Source
Pct_Female $_{it}$	Percentage of female executives to total number of executives available in the database.	Gender	Female proportion of the TMT	ExecuComp
Third_Female $_{it}$	A dummy equal to one if females represent 30% or more of the firm's TMT.	Gender	Alternative proxy for Female proportion of the TMT	ExecuComp

- **Financial Variables:**

Variable	Definition	Data Item	Proxy For	Source	Citation
Size	The natural logarithm of the book value of total assets.	Ln (AT)	Firm Size	Compustat	(Perryman *et al.*, 2016; Sila *et al.*, 2016)
Ln_DBEQ	The natural logarithm of the ratio of total debt to the book value of equity.	Ln (DT/CEQ)	Level of Debt	Compustat	(Perryman *et al.*, 2016; Chen *et al.*, 2020)
Std_EPS	The standard deviation of earnings (EPS) over the previous three years.	Std ($EPS_{t,t-2}$)	Earnings Variability	Compustat	(Chandra *et al.*, 2002; Perryman *et al.*, 2016)
Log_Firm_Age	The natural logarithm of firm age, which is the time between the observation and the year when the firm was first listed on Compustat.	First year listed in Compustat	Firm Age	Compustat	(Serfling, 2014; Perryman *et al.*, 2016)
MtB	The book value of assets (AT) plus the market value of equity (CSHO*PRCC) minus the book value of equity (CEQ) all scaled by total assets.	(AT + (CSHO ∗ PRCC) – CEQ)/ AT)	MtB ratio (Growth Opportuni-ties)	Compustat	(Serfling, 2014; Sila *et al.*, 2016)
Capex_Ratio	Capex minus sale of property divided by total assets. Such a variable is recorded as zero if Capex value is missing.	(CAPX-SPPE/AT), recorded as zero if CAPX is missing	Investment Opportuni-ties	Compustat	(Sila *et al.*, 2016)
Ln_Sales_Growth	The natural logarithm of one plus the growth in sales from year t-1 to year t.	Ln [1+ (($Sale_t$/ $Sale_{t-1}$) −1)]	Actual Growth	Compustat	(Sila *et al.*, 2016)
Surplus_Cash	The net cashflow from operating activities less depreciation and amortization plus R&D expenditure divided by the book value of total assets.	[(OANCF)-(DP)+(XRD)/ AT], where DP and XRD are recorded as zero if missing	Free Cashflow	Compustat	(Sila *et al.*, 2016)
ROA	Income before (IB) extraordinary items divided by the book value of total assets (AT).	IB/AT	Profitabili-ty	Compustat	(Chi and Su, 2021)
Intang	Intangible assets scaled by total assets.	INT/AT	Intangible Capital	Compustat	(Wu and Lai, 2020)

➢ **Financial Variables (cont.):**

Variable	Definition	Data Item	Proxy For	Source	Citation
Buss_Seg	The number of business segments.	Segment Name- ISID Counts	Diversifica-tion	Compustat	(Serfling, 2014; Baixauli-Soler *et al.*, 2015)
Log_Avg_Tenure	The natural logarithm of the average tenure of all TMT members.	Joined Co	Managerial Tenure	ExecuComp	(Serfling, 2014)
TMT_OWN	The sum of overall shares owned by the executives, excluding options, divided by the number of common shares outstanding as reported by the company.	(SHROWN_ EXCL_ OPTS /SHRSOUT)/ 1000	Executives' Equity Ownership	ExecuComp	(Carlson and Lazrak, 2010)

Appendix 6.B: Replicating the Main Regressions with Alternative Leverage Proxies

The two tables below replicate the OLS regressions that have been conducted in the main analysis after alternating the natural logarithm of debt-to-equity ratio with two other leverage proxies. In Table 6.B.1, the leverage ratio used is the total liabilities to the book value of equity (without the log), following Sila *et al.* (2016) and is named (*Alt_Debt1*). In Table 6.B.2, the alternative leverage ratio (*Alt_Debt2*) is the total debt divided by the book value of total assets, following Serfling (2014). Columns 1, 2, and 3 in both tables represent the OLS regression estimation of the association between corporate political connections and firm total, systematic, and idiosyncratic risk, respectively. Column 4 in both tables presents the OLS regression estimation of the interaction effect of corporate political connections (PC) and females in the TMT on the firm total risk. All the control variables used in the main analysis are replicated in both tables, except for the level of debt proxy.

In both these tables, the coefficient of the political connections proxy in the three models (1, 1_A, and 1_B) (highlighted in grey) is significant and provides similar results to the one reported in the main analysis, even after alternating the leverage proxy. Additionally, the interaction coefficient between the political connections proxy and the female proportion in the TMT (highlighted in grey) in Model 3 is also significant in both tables. Hence, the results provided in the main analysis do not seem to be sensitive to the proxy used to measure the level of debt (leverage).

Table 6.B.1: Replicating Regressions in the Main Analysis, using an alternative Leverage proxy (Total liabilities/BV of Equity)

Variables	PC and Firm Risk			Interaction of PC and Female on Firm Total Risk
	Model 1	Model 1_A	Model 1_B	Model 3
	DV: Total Risk	DV: Sys_Risk	DV: Idio_Risk	DV: Total Risk
PC_Candidate(6Y)	**-0.0120*** **	**-0.0215*** **	**-0.0119*** **	-0.0100**
	(0.0039)	(0.0055)	(0.0041)	(0.0040)
Pct_Female	-	-	-	-0.0220
	-	-	-	(0.0381)
PC_Candidate(6Y)) X Pct_Female	-	-	-	**-0.0262** **
	-	-	-	(0.0133)
Size	-0.0833***	0.0288***	-0.1032***	-0.0832***
	(0.0062)	(0.0084)	(0.0062)	(0.0062)
Alt_Debt1	0.0076***	0.0178***	0.0079***	0.0075***
	(0.0014)	(0.0032)	(0.0014)	(0.0013)
Std_EPS	0.0411***	0.0383***	0.0390***	0.0411***
	(0.0029)	(0.0072)	(0.0029)	(0.0029)
Log_Firm_Age	-0.1131***	-0.0845***	-0.0870***	-0.1135***
	(0.0104)	(0.0152)	(0.0104)	(0.0104)
MtB	-0.0109***	-0.0349***	-0.0151***	-0.0109***
	(0.0036)	(0.0078)	(0.0035)	(0.0036)
Capex_Ratio	-0.3974***	-0.6878***	-0.3912***	-0.3969***
	(0.0813)	(0.2161)	(0.0773)	(0.0810)
Ln_Sales_Growth	0.0577***	0.0070	0.0563***	0.0573***
	(0.0079)	(0.0256)	(0.0079)	(0.0079)
Surplus_Cash	-0.3466***	-0.2681**	-0.2828***	-0.3472***
	(0.0370)	(0.1091)	(0.0369)	(0.0370)
ROA	-0.2623***	-0.9070***	-0.2111***	-0.2614***
	(0.0268)	(0.0966)	(0.0270)	(0.0267)
Intang	-0.1727***	-0.4339***	-0.1497***	-0.1747***
	(0.0322)	(0.0560)	(0.0321)	(0.0322)
Buss_Seg	-0.0007	0.0027	-0.0036	-0.0008
	(0.0022)	(0.0044)	(0.0023)	(0.0022)
Log_Avg_Tenure	-0.0198***	-0.0161	-0.0211***	-0.0209***
	(0.0062)	(0.0133)	(0.0061)	(0.0062)
TMT_Own	0.0758	-0.1961	0.0924	0.0770
	(0.0692)	(0.1258)	(0.0717)	(0.0694)
Constant	0.0983	1.1642***	0.1224	0.0994
	(0.0829)	(0.1877)	(0.0784)	(0.0832)
Observations	22,115	22,115	22,115	22,115
R-squared	0.5301	0.1818	0.5419	0.5301
Number of Firms	2,283	2,283	2,283	2,283
Firm FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 6.B.2: Replicating Regressions in the Main Analysis, using an alternative Leverage proxy (Total debt/Total Assets)

Variables	PC and Firm Risk			Interaction of PC and Female on Firm Total Risk
	Model 1	Model 1_A	Model 1_B	Model 3
	DV: Total Risk	DV: Sys_Risk	DV: Idio_Risk	DV: Total Risk
PC_Candidate(6Y)	**-0.0112*** **	**-0.0197*** **	**-0.0110*** **	-0.0092**
	(0.0039)	(0.0055)	(0.0041)	(0.0041)
Pct_Female	-	-	-	-0.0234
	-	-	-	(0.0381)
PC_Candidate(6Y) X Pct_Female	-	-	-	**-0.0265** **
	-	-	-	(0.0131)
Size	-0.0859***	0.0275***	-0.1059***	-0.0858***
	(0.0063)	(0.0085)	(0.0063)	(0.0063)
Alt_Debt2	0.1254***	0.3137***	0.1288***	0.1251***
	(0.0294)	(0.0599)	(0.0293)	(0.0294)
Std_EPS	0.0418***	0.0403***	0.0398***	0.0419***
	(0.0029)	(0.0072)	(0.0030)	(0.0029)
Log_Firm_Age	-0.1117***	-0.0803***	-0.0854***	-0.1121***
	(0.0104)	(0.0151)	(0.0104)	(0.0104)
MtB	-0.0091**	-0.0294***	-0.0133***	-0.0091**
	(0.0036)	(0.0078)	(0.0035)	(0.0036)
Capex_Ratio	-0.4098***	-0.7605***	-0.4040***	-0.4092***
	(0.0813)	(0.2155)	(0.0773)	(0.0811)
Ln_Sales_Growth	0.0593***	0.0068	0.0579***	0.0589***
	(0.0080)	(0.0257)	(0.0079)	(0.0080)
Surplus_Cash	-0.3292***	-0.2332**	-0.2651***	-0.3299***
	(0.0379)	(0.1112)	(0.0379)	(0.0379)
ROA	-0.2669***	-0.9168***	-0.2162***	-0.2659***
	(0.0265)	(0.0967)	(0.0266)	(0.0265)
Intang	-0.1960***	-0.4951***	-0.1738***	-0.1980***
	(0.0321)	(0.0564)	(0.0321)	(0.0321)
Buss_Seg	-0.0006	0.0028	-0.0035	-0.0008
	(0.0022)	(0.0044)	(0.0023)	(0.0022)
Log_Avg_Tenure	-0.0206***	-0.0194	-0.0220***	-0.0218***
	(0.0062)	(0.0132)	(0.0062)	(0.0062)
TMT_Own	0.0744	-0.1719	0.0909	0.0755
	(0.0698)	(0.1255)	(0.0724)	(0.0700)
Constant	0.0954	1.1100***	0.1196	0.0965
	(0.0822)	(0.1875)	(0.0776)	(0.0825)
Observations	22,115	22,115	22,115	22,115
R-squared	0.5288	0.1806	0.5408	0.5288
Number of Firms	2,283	2,283	2,283	2,283
Firm FE	No	No	No	No
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Appendix 6.C: Checking the Accuracy of the Risk Measures

Table 6.C.1 presents the descriptive statistics of the three risk measures using the traditional way in the literature instead of the Beta Suite platform, which automatically runs the required regressions and calculates the three risk measures (total, systematic, and idiosyncratic). The monthly closing price of the stocks in the sample is generated from the Compustat database, and the risk factors are obtained from the FF3 model dataset. In Table 6.C.1, the descriptive statistics obtained when using the traditional way of calculating the risk measures are qualitatively similar to those obtained from the Beta Suite platform presented in Table 6.3. This indicates the accuracy of the Beta Suite platform.

Table 6.C.1: Checking the Accuracy of the Risk Measures

This table reports descriptive statistics for variables of interest for the entire sample from 1992-2018. The total sample comprises all publicly traded non-financial US firms listed in S&P1500 with non-missing values for total assets/sales, closing price, book value of equity, and total debt. Similarly to Table 6.3, the presented Total risk is the annualized standard deviation of the monthly stock returns over the past 60 months. However, the monthly closing price (PRCCM) is used in the calculation in this table instead of being generated from the Beta Suite platform. The Sys_Risk is the systematic risk, and is calculated as the beta coefficient of the market excess monthly returns generated from regressing the monthly excess returns on the FF3 model over the past 60 months. The Idio_Risk is the idiosyncratic risk. Similarly to Table 6.3, it is measured as the annualized standard deviation of the obtained residuals from the regression of monthly stock excess returns over the past 60 months using the FF3. The variables presented in this table are a replication of the ones presented in Table 6.3. The only difference is that those in Table 6.3 are obtained from the Beta Suite platform (which automatically runs the regressions and obtains the risk measures) while those presented in this table are calculated based on the manually extracted monthly returns and the FF3 monthly data (rf, b-mkt, smb, hml) from the Kenneth R. French Data Library.

	Variable	**Mean**	**SD**	**P25**	**P50**	**P75**	**N**
Dependent Variables	Total_Risk (Check)	0.485	0.247	0.323	0.422	0.574	28,054
	Sys_Risk (Check)	1.163	0.715	0.729	1.090	1.499	28,054
	Idio_Risk (Check)	0.411	0.224	0.266	0.358	0.488	27,877

Chapter 7: Conclusion

Corporate political connections have been gaining growing global attention in both practice and academia. Studies have been widely investigating both the favours that can be generated from those connections (e.g., preferential access to external finance (e.g., Claessens *et al.*, 2008)), and the drawbacks of being connected to politicians (e.g., risk of expropriation (Wang, 2015)). Moreover, a massive body of research has focused on the end effect of these connections on firm value and performance being positive (e.g., Cooper *et al.*, 2010) or negative (e.g., Faccio *et al.*, 2006).

Two motives underlie the analysis of corporate political connections in particular. First, corporations' involvement in the political environment has been increasing in the last decade, and the consequences of these connections on firm strategies and performance/value are still not fully understood. This is particularly the case as corporate political activities are considered a non-market strategy, making the subject difficult to investigate and evaluate. Hence, there is a need for further investigation in this area. Second, considering the end effect of corporate political strategies when combined with other corporate strategies on the firm outcomes is essential. This is because a firm's outcome reflects its overall strategies, including its non-market ones (i.e., long-term connections with politicians). Hence, this thesis considers the combined effect of corporate political connections with some other firm strategies (i.e., gender diversity through female representation in the TMT) to extend the literature in this still growing area.

This thesis mainly focuses on the relational approach (long-term) of corporate political connections and (re)election campaign contributions in the US to investigate its association with some of the firms' strategies and outcomes using three empirical chapters (i.e., Chapters 4, 5, and 6).

Overall, the main findings suggest that corporate political connections in the US through long-term hard-money contributions to political candidates in their (re)election campaigns are considered a valuable resource that is associated with higher investments in R&D (economic growth), and lower firm risk (total, systematic, and idiosyncratic). Such political connections can also be considered as a means to mitigate the reputational risk arising from the firm's negative ESG incidents.

The findings also show, particularly in Chapter 4, that corporate political connections, when combined with executives' equity ownership, have a statistically insignificant impact on R&D investments. This insignificant impact might be due to the small within-firm changes in executive ownership concentration from year to year (Zhou, 2001); however, it could be due to the cancelling effect resulting from the interaction of political connections and executive ownership. Moreover, in Chapter 5, the end effect of having corporate political connections and adverse ESG incidents is positive on Tobin's Q, indicating that those connections mitigate the adverse effect of ESG harmful incidents on firm market-performance. In Chapter 6, concerning the corporate political connections when combined with the female proportion of the TMT, it is found that the interaction is related to lower firm total risk. This suggests that corporate political connections complement the female representation in the TMT in lowering the firm total risk.

The following three subsections provide a brief conclusion for each empirical chapter included in the current thesis.

7.1 Corporate Political Connections and Executive Equity Ownership: Implications for Research and Development

Chapter 4 examines whether corporate political connections are positively associated with R&D investments. It also examines the effect of political connections on the association between executives' equity ownership and R&D investments, by considering three segments: (1) the literature stating that R&D investments are risky (Hud and Hussinger, 2015) and that decisions regarding investing in R&D are usually made by the top managers (Barker and Mueller, 2002); (2) the literature recommending that managers' equity ownership influences their level of risk-aversion (Green, 1995; Barker and Mueller, 2002); and (3) the information acquisition hypothesis, which suggests that acquiring information can reduce costs. Also, this information can allow those firms that are politically active to be better informed about lawmakers' political costs, which in turn reduces the policy uncertainty risk (Ovtchinnikov *et al.*, 2020).

Using fixed effects OLS regression models on panel data consisting of S&P1500 for the period 1992-2018, this research has produced two main findings. The first is that corporate political connection is positively associated with R&D investments. This finding holds following several robustness checks and is consistent with the view that politically active firms tend to have better information gain, which consequently reduces policy uncertainty and encourages managers to invest more in R&D. Second, it was found that corporate political connections do not have a statistically significant impact on the association between managerial equity ownership and R&D investments. There are two possible explanations for this insignificant impact: the first is the small within-firm changes in executive ownership concentration from year to year (Zhou, 2001); the second is the cancelling effect resulting from the interaction of political connections and executive ownership.

7.2 Corporate Political Connections and ESG Negative Incidents: Implications for Firm Performance

Chapter 5 analyses the association between firms' negative ESG incidents and their political connections. It also examines the association between each component of ESG incidents and corporate political connections and investigates the impact of corporate political connections on the association between ESG negative incidents and firm performance; to do this it uses both a market-based measure (Tobin's Q) and an accounting-based measure (ROA) of performance.

This research produced several findings by using fixed effects OLS regression models on a sample consisting of all publicly traded non-financial US firms available in the RepRisk and Compustat databases, for the period 2007-2018. First, corporate negative ESG incidents have a positive association with corporate political connections, and this holds under several robustness checks. Second, the analyses of the three components of ESG negative incidents (Environmental, Social, and Governance issues) showed that the association between each component and political connections varies. Although these three components showed a positive association with political connections, the only statistically significant component in the main results and the robustness checks is that of environmentally bad incidents. This indicates that tainted ESG reputations related to environmental issues is the main driver for firms' long-term connections with politicians. The other two dimensions (i.e., Social, and Governance related incidents), only have a joint impact, as they contribute to the overall tainted ESG score. Third, the analysis showed that corporate political connections have a positive impact on the association between ESG negative incidents and firm performance, particularly when using Tobin's Q. This means that corporations use their financial contributions to politicians as a strategy to mitigate the effect of ESG negative incidents on their market performance.

7.3 Corporate Political Connections and Females in The Top Management Team: Implications for Corporate Risk Management

Chapter 6 investigates whether corporate political connections are associated with firm total risk (stock returns volatility) and if those connections are associated with firm systematic risk and/or idiosyncratic risk.

Although the influence of the female proportion of the TMT in reducing the firm total risk has been investigated (e.g., Perryman *et al.*, 2016; Jeong and Harrison, 2017), there is scant information about whether applying non-market strategies (i.e., long-term connections with politicians) can influence such an association. This thesis examines whether having long-term connections with politicians impacts the negative association that exists between female representation in the TMT and firm total risk.

These examinations have been conducted using fixed effects OLS regression models on panel data of publicly-listed US firms (S&P1500) from 1992-2018. The findings show that there is a highly statistically significant association between corporate political connections and firm total, systematic, and idiosyncratic risk. Furthermore, the results indicate that these connections are related to lower firm risk, whether total, systematic, or idiosyncratic. Building on the grabbing hands vs. helping hands hypotheses (Shleifer and Vishny, 1998) and the agency vs. investment views (Aggarwal *et al.*, 2012), the findings from this research support the helping hands hypothesis and the investment view, as the intensity of the corporate political connections are found to help firms in their mitigation of total, systematic, and idiosyncratic risks. Based on the tests conducted, the findings also suggest that corporate political connections do have a statistically significant impact on this association between females in the TMT and firm total risk and such connections strengthen the negative association between females in the TMT and firm total risk. Hence, it can be argued that corporate political connections complement female representation in the TMT, and the interaction between the two strategies is related to lower firm total risk. Idiosyncratic risk is shown to be the one that is mainly influenced (reduced) resulting in this reduction in firm total risk when the firm has both political connections and females in their TMT.

7.4 Implications and Future Research

The findings from the three empirical chapters have important implications for corporate decision makers, investors, and policymakers. First, despite the consequent costs and drawbacks of corporate political connections, this thesis' findings provide new insights on how implicit connections to politicians through long-term hard-money contributions can be associated with higher R&D investments, and lower firms' equity risks (total, systematic, and idiosyncratic). Political connections can also be considered as a means to mitigate the reputational risk arising from the firm's negative ESG incidents. Hence, based on the political connections proxy used, corporate decision makers may consider their long-term political connections as a risk management tool that helps their firms to reduce some types of risk (i.e., policy uncertainty, equity, and reputational risks). However, firms need to consider the ethicality of their practices in the first place, particularly when it comes to their ESG negative incidents.

For investors, the findings from the third empirical chapter (Chapter 6) suggest that long-term connections with politicians are considered to be a tool that helps to reduce stock returns volatility risk and consequently provides investors with an additional screening technique to consider in the evaluation process of stocks traded in the market.

There are also some implications for policymakers. While corporate political contributions are recorded and managed by the FEC, firms are not obliged to disclose their political investments in their publicly available reports in the US. This can induce information asymmetry issues (i.e., moral hazard problems) between managers and investors, especially as the latter may have wider concerns, including staying away from any externalities. Policymakers could thus mandate the disclosure of corporate political activities in firms' publicly available reports. This would enhance corporate transparency, investor protection, and thus the firm's value to outsiders. The absence of mandatory disclosure of corporate ESG practices in the US can also raise transparency issues between corporations and their investors. Hence, policymakers, and particularly the SEC, may need to mandate the disclosure of corporate ESG factors in the public reports of listed US firms in the future.

The findings of this thesis also point to avenues for future research. First, it focused on hard-money contributions to politicians as a measurement for political connections so did not look at other aspects, for example lobbying. Corporate lobbying activities can therefore be considered in future research. This can help firms that are involved in political money contributions and those not, in order to reappraise their political investments from a more informed perspective. Moreover, while the findings of this thesis are robust, they might be sample-specific (i.e., the American context). Applying similar investigations to other countries where campaign contributions by corporations are quite usual can enhance our understanding of this still growing area.

Second, a number of studies have argued that access to favours (i.e., information leverage) which a politically connected firm enjoy from supporting political candidates, is stronger when the firm shares the same political ideology as those they support (e.g., Wellman, 2017). Additionally, the benefit gained (i.e., information leverage) from being a politically connected firm is argued by some studies to be even greater when the firm supports candidates located in the same State as their headquarters (e.g., Wellman, 2017). Studies also highlighted political contributions to winning candidates result in further advantages to politically connected firms (Claessens *et al.*, 2008; Goldman *et al.*, 2009). Hence, future studies may consider whether shared political ideology and geographical location between the firm and the supported candidates, and contributing to winning candidates, can be associated with R&D investments, firm risk, and firm performance when the firm has negative ESG incidents.

Third, this thesis investigates whether corporate political connections impact the association between executive equity ownership and R&D investments (Chapter 4). Considering other corporate governance mechanisms, (e.g., institutional ownership), and examining their interactive effect with corporate political connections on R&D investments could provide additional perspectives to this issue.

Fourth, it is suggested in Chapter 5 that a positive association exists between ESG negative incidents and corporate political connections. In future an event study could be undertaken to explore firms' behaviour after their first ESG negative incidents. In other words, such an event study may examine whether their contributions to political candidates increase, decrease, or remain the same after their first ESG incidents.

Finally, when measuring the firm risk in Chapter 6, the FF3 model, CAPM, and FF5 model were used when calculating the firm systematic and idiosyncratic risk. Future studies may consider using other asset pricing models, (i.e., APT, CCAPM, etc.) when examining the association between corporate political connections and a firm's systematic and idiosyncratic risks.

Clearly there is scope for much future research and it is hoped that this thesis provides the basis for this.

References[94]

Abel, A. B. and Eberly, J. C. (2011) ‘How Q and Cash Flow Affect Investment without Frictions: An Analytic Explanation’, *Review of Economic Studies*, 78, pp. 1179–1200.

Acharya, V. and Xu, Z. (2017) ‘Financial dependence and innovation : The case of public versus private firms’, *Journal of Financial Economics,* 124(2), pp. 223–243.

Agarwal, S., Amromin, G., Ben-David, I. and Dinc, S. (2018) ‘The Politics of Foreclosures’, *The Journal of Finance,* 73(6), pp. 2677–2717.

Aggarwal, R. K., Wang, T. Y. and Meschke, F. (2012) ‘Corporate Political Donations: Investment or Agency?’, *Business and Politics,* 14(1), pp. 1–38.

Akey, P. (2015) ‘Valuing Changes in Political Networks: Evidence from Campaign Contributions to Close Congressional Elections’, *The Review of Financial Studies,* 28(11), pp. 3188–3223.

Alakent, E. and Ozer, M. (2014) ‘Can companies buy legitimacy? Using corporate political strategies to offset negative corporate social responsibility records’, *Journal of Strategy and Management,* 7(4), pp. 318–336.

Alford, A. W. and Boatsman, J. R. (1995) ‘Predicting Long-Term Stock Return Volatility: Implications for Accounting and Valuation of Equity Derivatives’, *The Accounting Review,* 70(4), pp. 599–618.

Amore, M. and Bennedsen, M. (2013) ‘The value of local political connections in a low-corruption environment’, *Journal of Financial Economics,* 110(2), pp. 387–402.

Ang, A., Hodrick, R. J., Xing, Y. and Zhang, X. (2006) ‘The Cross-Section of Volatility and Expected Returns’, *The Journal of Finance,* 61(1), pp. 259–299.

Ang, J. S., Cole, R. A. and Lin, J. W. (2000) ‘Agency Costs and Ownership Structure’, *Jouranl of Finance,* 55(1), pp. 81–106.

Antia, M., Kim, I. and Pantzalis, C. (2013) ‘Political geography and corporate political strategy’, *Journal of Corporate Finance,* 22, pp. 361–374.

Aouadi, A. and Marsat, S. (2018) ‘Do ESG Controversies Matter for Firm Value? Evidence from International Data’, *Journal of Business Ethics,* 151(4), pp. 1027–1047.

[94] The list of references was compiled following the Strathclyde/Harvard Referencing Guide, provided at: https://guides.lib.strath.ac.uk/ld.php?content_id=33346935

Armstrong, C. S. and Vashishtha, R. (2012) ‘Executive stock options, differential risk-taking incentives, and firm value’, *Journal of Financial Economics*, 104(1), pp. 70–88.

Asante-Appiah, B. (2020) ‘Does the severity of a client's negative environmental, social and governance reputation affect audit effort and audit quality?’, *Journal of Accounting and Public Policy*, 39(3).

Bagley, C. E., Freed, B. and Sandstrom, K. (2015) ‘A Board Member's Guide to Corporate Political Spending’, *Harvard Business Review*. Available at: https://hbr.org/2015/10/a-board-members-guide-to-corporate-political-spending (Accessed: 4 August 2021).

Baiman, S. and Verrecchia, R. E. (1995) ‘Earnings and price-based compensation contracts in the presence of discretionary trading and incomplete contracting’, *Journal of Accounting and Economics*, 20(1), pp. 93–121.

Baixauli-Soler, J. S., Belda-Ruiz, M. and Sanchez-Marin, G. (2015) ‘Executive stock options, gender diversity in the top management team, and firm risk taking’, *Journal of Business Research*, 68(2), pp. 451–463.

Baker, S. H. (1973) ‘Risk, Leverage and Profitability: An Industry Analysis’, *The Review of Economics and Statistics*, 55(4), pp. 503–507.

Banerji, S., Duygun, M. and Shaban, M. (2018) ‘Political connections, bailout in financial markets and firm value’, *Journal of Corporate Finance*, 50, pp. 388–401.

Bansal, P. and Clelland, I. (2004) ‘Talking Trash: Legitimacy, Impression Management, and Unsystematic Risk in the Context of the Natural Environment’, *Academy of Management Journal*, 47(1), pp. 93–103.

Bansal, P. and Roth, K. (2000) ‘Why companies go green: A model of ecological responsiveness’, *Academy of Management Journal*, 43(4), pp. 717–736.

Barber, B. M. and Odean, T. (2001) ‘Boys Will be Boys: Gender, Overconfidence, and Common Stock Investment’, *The Quarterly Journal of Economics*, 116(1), pp. 261–292.

Bardos, K., Kozlowski, S. E. and Puleo, M. R. (2021) ‘Entrenchment or efficiency? CEO-to-employee pay ratio and the cost of debt’, *Financial Review*, 56(3), pp. 511–533.

Barker, V. L. and Mueller, G. C. (2002) ‘CEO Characteristics and Firm R&D Spending’, *Management Science*, 48(6), pp. 782–801.

Barley, S. R. (2010) ‘Building an institutional field to corral a government: A case to set an agenda for organization studies’, *Organization Studies*, 31(6), pp. 777–805.

Barney, J. (1991) ‘Firm Resources and Sustained Competitive Advantage’, *Journal of Management*, 17(1), pp. 99–120.

Barney, J. B. (1986) 'Strategic Factor Markets: Expectations, Luck, and Business Strategy', *Management Science*, 32(10), pp. 1231–1241.

Barton, S. L. and Gordon, P. J. (1988) 'Corporate strategy and capital structure', *Strategic Management Journal*, 9(6), pp. 623–632.

Baysinger, B. D. (1984) 'Domain Maintenance as an Objective of Business Political Activity: An Expanded Typology', *The Academy of Management Review*, 9(2), pp. 248–258.

Baysinger, B. D., Kosnik, R. D. and Turk, T. A. (1991) 'Effects of Board and Ownership Structure on Corporate R&D Strategy', *Academy of Management Journal*, 34(1), pp. 205–214.

Beaver, W., Kettler, P. and Scholes, M. (1970) 'The Association between Market Determined and Accounting Determined Risk Measures', *The Accounting Review*, 45(4), pp. 654–682.

Becker, B. and Pain, N. (2008) 'What Determines Industrial R&D Expenditure in The UK?', *The Manchester School*, 76(1), pp. 66–87.

Bello, Z. Y. (2008) 'A statistical comparison of the CAPM to the Fama-French Three Factor Model and the Carhart's Model', *Global Journal of Finance and Banking Issues*, 2(2).

Ben-Nasr, H., Bouslimi, L. and Zhong, R. (2021) 'Do Patented Innovations Reduce Stock Price Crash Risk?', *International Review of Finance*, 21(1), pp. 3–36.

Ben-Zion, U. and Shalit, S. S. (1975) 'Size, Leverage, and Dividend Record as Determinants of Equity Risk', *The Journal of Finance*, 30(4), pp. 1015–1026.

Berger, A. and Udell, G. (1998) 'The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle', *Journal of Banking & Finance*, 22(6), pp. 613–673.

Berger, P. G. and Ofek, E. (1995) 'Diversification's effect on firm value', *Journal of Financial Economics*, 37(1), pp. 39–65.

Berger, P. G., Ofek, E. and Yermack, D. L. (1997) 'Managerial entrenchment and capital structure decisions', *The Journal of Finance*, 52(4), pp. 1411–1438.

Bernile, G., Bhagwat, V. and Yonker, S. (2018) 'Board diversity, firm risk, and corporate policies', *Journal of Financial Economics*, 127(3), pp. 588–612.

Bernow, S., Klempner, B. and Magnin, C. (2017) *From 'why' to 'why not': Sustainable investing as the new normal*, *McKinsey & Company*. Available at: https://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/from-why-to-why-not-sustainable-investing-as-the-new-normal (Accessed: 20 April 2021).

Bertrand, M. and Schoar, A. (2003) ‘Managing with Style: The Effect of Managers on Firm Policies’, *The Quarterly Journal of Economics*, 118(4), pp. 1169–1208.

Besiou, M., Hunter, M. L. and Van Wassenhove, L. N. (2013) ‘A Web of Watchdogs: Stakeholder Media Networks and Agenda-Setting in Response to Corporate Initiatives’, *Journal of Business Ethics*, 118(4), pp. 709–729.

Beyer, M., Czarnitzki, D. and Kraft, K. (2012) ‘Managerial ownership, entrenchment and innovation’, *Economics of Innovation and New Technology*, 21(7), pp. 679–699.

Bhattacharya, M. and Bloch, H. (2004) ‘Determinants of innovation’, *Small Business Economics*, 22(2), pp. 155–162.

Bhattacharya, U., Hsu, P. H., Tian, X. and Xu, Y. (2017) ‘What Affects Innovation More: Policy or Policy Uncertainty?’, *Journal of Financial and Quantitative Analysis*, 52(5), pp. 1869–1901.

Billings, M. B., Jennings, R. and Lev, B. (2015) ‘On guidance and volatility’, *Journal of Accounting and Economics*, 60(2–3), pp. 161–180.

Blanes i Vidal, J., Draca, M. and Fons-Rosen, C. (2012) ‘Revolving Door Lobbyists’, *The American Economic Review*, 102(7), pp. 3731–3748.

Boddewyn, J. (1994) ‘Political Resources and Markets in International Business: Beyond Porter's Generic Strategies’, in *Research in Global Strategic Management*. Emerald Group Publishing Limited, pp. 83–99.

Boies, J. L. (1989) ‘Money, Business, and the State: Material Interests, Fortune 500 Corporations, and the Size of Political Action Committees’, *American Sociological Review*, 54(5), pp. 821–833.

Bombardini, M. and Trebbi, F. (2012) ‘Competition and political organization: Together or alone in lobbying for trade policy?’, *Journal of International Economics*, 87, pp. 18–26.

Borisov, A., Goldman, E. and Gupta, N. (2016) ‘The Corporate Value of (Corrupt) Lobbying’, *Review of Financial Studies*, 29(4), pp. 1039–1071.

Boubakri, N., Guedhami, O., Mishra, D. and Saffar, W. (2012) ‘Political connections and the cost of equity capital’, *Journal of Corporate Finance*, 18(3), pp. 541–559.

Boubakri, N., El Ghoul, S. and Saffar, W. (2013) ‘Cash holdings of politically connected firms’, *Journal of Multinational Financial Management*, 23(4), pp. 338–355.

Bouslah, K., Kryzanowski, L. and M'Zali, B. (2013) ‘The impact of the dimensions of social performance on firm risk’, *Journal of Banking & Finance*, 37(4), pp. 1258–1273.

Bracker, K. and Ramaya, K. (2011) ‘Examining The Impact of Research and Development Expenditures on Tobin's Q’, *Academy of Strategic Management Journal*, 10, pp. 63-79.

Brammer, S., Brooks, C. and Pavelin, S. (2006) ‘Corporate Social Performance and Stock Returns: UK Evidence from Disaggregate Measures’, *Financial Management*, 35(3), pp. 97–116.

Brandt, M. W., Brav, A., Graham, J. R. and Kumar, A. (2010) ‘The Idiosyncratic Volatility Puzzle: Time Trend or Speculative Episodes?’, *The Review of Financial Studies*, 23(2), pp. 863–899.

Braun, M. and Raddatz, C. (2010) ‘Banking on Politics: When Former High-ranking Politicians Become Bank Directors’, *The World Bank Economic Review*, 24(2), pp. 234–279.

Brown, G. and Kapadia, N. (2007) ‘Firm-specific risk and equity market development’, *Journal of Financial Economics*, 84(2), pp. 358–388.

Brown, J. R., Fazzari, S. M. and Petersen, B. C. (2009) ‘Financing Innovation and Growth: Cash Flow, External Equity, and the 1990s R&D Boom’, *The Journal of Finance*, 64(1), pp. 151–185.

Brown, J. R., Martinsson, G. and Petersen, B. C. (2013) ‘Law , Stock Markets , and Innovation’, *The Journal of Finance*, 68(4), pp. 1517–1549.

Brown, J. R. and Petersen, B. C. (2011) ‘Cash holdings and R&D smoothing’, *Journal of Corporate Finance*, 17(3), pp. 694–709.

Bui, D. G., Chen, Y., Lin, C. Y. and Lin, T. C. (2019) *R&D Expenditure as a Response to Peer Influence*, working paper. Available at SSRN: http://dx.doi.org/10.2139/ssrn.3412770 (Accessed: 7 June 2020).

Bunkanwanicha, P., Fan, J. P. H. and Wiwattanakantang, Y. (2013) ‘The Value of Marriage to Family Firms’, *The Journal of Financial and Quantitative Analysis*, 48(2), pp. 611–636.

Bunkanwanicha, P. and Wiwattanakantang, Y. (2009) ‘Big Business Owners in Politics’, *The Review of Financial Studies*, 22(6), pp. 2133–2168.

Burke, J. J., Hoitash, R. and Hoitash, U. (2019) ‘Auditor response to negative media coverage of client environmental, social, and governance practices’, *Accounting Horizons*, 33(3), pp. 1–23.

Cadman, B., Klasa, S. and Matsunaga, S. (2010) ‘Determinants of CEO Pay: A Comparison of ExecuComp and Non-ExecuComp Firms’, *The Accounting Review*, 85(5), pp. 1511–1543.

Cain, M. D. and McKeon, S. B. (2016) ‘CEO Personal Risk-Taking and Corporate Policies’, *The Journal of Financial and Quantitative Analysis*, 51(1), pp. 139–164.

Campbell, J. Y., Lettau, M., Malkiel, B. G. and Xu, Y. (2001) ‘Have Individual Stocks Become More Volatile? An Empirical Exploration of Idiosyncratic Risk’, *The Journal of Finance*, 56(1), pp. 1–43.

Canil, J. and Karpavičius, S. (2018) ‘Are employee stock option proceeds a source of finance for investment?’, *Journal of Corporate Finance*, 50, pp. 468–483.

Cao, C., Simin, T. and Zhao, J. (2008) ‘Can Growth Options Explain the Trend in Idiosyncratic Risk?’, 21(6), pp. 2599–2633.

Cao, M. and Wang, R. (2013) ‘Optimal CEO Compensation with Search: Theory and Empirical Evidence’, *The Journal of Finance*, 68(5), pp. 2001–2058.

Cao, X., Pan, X., Qian, M. and Tian, G. (2017) ‘Political capital and CEO entrenchment: Evidence from CEO turnover in Chinese non-SOEs’, *Journal of Corporate Finance*, 42, pp. 1–14.

Cao, Z., Fernando, G. D., Tripathy, A. and Upadhyay, A. (2018) ‘The economics of corporate lobbying’, *Journal of Corporate Finance*, 49, pp. 54–80.

Capelle-Blancard, G. and Petit, A. (2019) ‘Every Little Helps? ESG News and Stock Market Reaction’, *Journal of Business Ethics*, 157(2), pp. 543–565.

Carboni, M. (2017) *The Financial Impact of Political Connections: Industry-Level Regulation and the Revolving Door*. Switzerland: Springer International Publishing.

Carhart, M. M. (1997) ‘On Persistence in Mutual Fund Performance’, *The Journal of Finance*, 52(1), pp. 57–82.

Carlson, M. and Lazrak, A. (2010) ‘Leverage Choice and Credit Spreads when Managers Risk Shift’, *The Journal of Finance*, 65(6), pp. 2323–2362.

Chan, S. H., Martin, J. D. and Kensinger, J. W. (1990) ‘Corporate research and development expenditures and share value’, *Journal of Financial Economics*, 26(2), pp. 255–276.

Chandra, U., Childs, B. D. and Ro, B. T. (2002) ‘The Association between LIFO Reserve and Equity Risk: An Empirical Assessment’, *Journal of Accounting, Auditing, and Finance*, 17(3), pp. 185–207.

Charness, G. and Gneezy, U. (2012) ‘Strong Evidence for Gender Differences in Risk Taking’, *Journal of Economic Behavior and Organization,* 83(1), pp. 50–58.

Chen, C. R., Li, Y., Luo, D. and Zhang, T. (2017) ‘Helping hands or grabbing hands? An analysis of political connections and firm value’, *Journal of Banking and Finance,* 80, pp. 71–89.

Chen, C. R. and Steiner, T. L. (1999) ‘Managerial Ownership and Agency Conflicts: A Nonlinear Simultaneous Equation Analysis of Managerial Ownership, Risk Taking, Debt Policy, and Dividend Policy’, *Financial Review,* 34(1), pp. 119–136.

Chen, D. and Zheng, Y. (2014) ‘CEO Tenure and Risk-Taking’, *Global Business & Finance Review,* 19(1), pp. 1–20.

Chen, H., Parsley, D. and Yang, Y. W. (2015) ‘Corporate Lobbying and Firm Performance’, *Journal of Business Finance & Accounting,* 42(3–4), pp. 444–481.

Chen, J., Leung, W. S. and Goergen, M. (2017) ‘The impact of board gender composition on dividend payouts’, *Journal of Corporate Finance,* 43, pp. 86–105.

Chen, Y., Kelly, B. and Wu, W. (2020) ‘Sophisticated investors and market efficiency: Evidence from a natural experiment’, *Journal of Financial Economics,* 138(2), pp. 316–341.

Chen, Y., Shen, C. and Lin, C. (2014) ‘The Benefits of Political Connection : Evidence from Individual Bank-Loan Contracts’, *The Journal of Financial Services Research,* 45(3), pp. 287–305.

Cheng, H., Huang, D. and Luo, Y. (2020) ‘Corporate disclosure quality and institutional investors' holdings during market downturns’, *Journal of Corporate Finance,* 60.

Cheung, Y.-L., Rau, P. R. and Stouraitis, A. (2010) ‘Helping Hand or Grabbing Hand? Central vs. Local Government Shareholders in Chinese Listed Firms’, *Review of Finance,* 14(4), pp. 669–694.

Chi, J. D. and Su, X. (2021) ‘The Dynamics of Performance Volatility and Firm Valuation’, *Journal of Financial and Quantitative Analysis,* 52(1), pp. 111–142.

Cho, C. H., Patten, D. M. and Roberts, R. W. (2006) ‘Corporate political strategy: An examination of the relation between political expenditures, environmental performance, and environmental disclosure’, *Journal of Business Ethics,* 67(2), pp. 139–154.

Choi, J. and Wang, H. (2009) ‘Stakeholder relations and the persistence of corporate financial performance’, *Strategic Management Journal*, 30(8), pp. 895–907.

Chordia, T., Sarkar, A. and Subrahmanyam, A. (2005) ‘An Empirical Analysis of Stock and Bond Market Liquidity', *The Review of Financial Studies*, 18(1), pp. 85–129.

Christie, A. A. (1982) 'The stochastic behavior of common stock variances: Value, leverage and interest rate effects', *Journal of Financial Economics*, 10(4), pp. 407–432.

Claessens, S., Feijen, E. and Laeven, L. (2008) 'Political connections and preferential access to finance: The role of campaign contributions', *Journal of Financial Economics*, 88(3), pp. 554–580.

Clegg, S., Hardy, C. and Nord, W. (1996) *Handbook of Organization Studies*. London: Sage Publications.

Coate, S. (2004) 'Pareto-Improving Campaign Finance Policy', *The American Economic Review*, 94(3), pp. 628–655.

Coles, J. L., Daniel, N. D. and Naveen, L. (2006) 'Managerial incentives and risk-taking', *Journal of Financial Economics*, 79(2), pp. 431–468.

Coles, J. L., Lemmon, M. L. and Felix Meschke, J. (2012) 'Structural models and endogeneity in corporate finance: The link between managerial ownership and corporate performance', *Journal of Financial Economics*, 103(1), pp. 149–168.

Connolly, R. A. and Hirschey, M. (1984) 'R&D, Market Structure and Profits: A Value-Based Approach', *The Review of Economics and Statistics*, 66(4), pp. 682–686.

Cooper, M. J., Gulen, H. and Ovtchinnikov, A. V (2010) 'Corporate Political Contributions and Stock Returns', *The Journal of Finance*, 65(2), pp. 687–724.

Core, J. and Guay, W. (1999) 'The use of equity grants to manage optimal equity incentive levels', *Journal of Accounting and Economics*, 28(2), pp. 151–184.

Core, J. and Guay, W. (2002) 'Estimating the Value of Employee Stock Option Portfolios and Their Sensitivities to Price and Volatility', *Journal of Accounting Research*, 40(3), pp. 613–630.

Core, J. E. and Larcker, D. F. (2002) 'Performance consequences of mandatory increases in executive stock ownership', *Journal of Financial Economics*, 64(3), pp. 317–340.

Correia, M. M. (2014) 'Political connections and SEC enforcement', *Journal of Accounting and Economics*, 57(2–3), pp. 241–262.

COSO (2018) *Applying enterprise risk management to environmental, social and governance-related risks*. Committee of Sponsoring Organizations of the Treadway Commission. Available at: https://docs.wbcsd.org/2018/10/COSO_WBCSD_ESGERM_Guidance.pdf (Accessed: 15 May 2020).

Croci, E., Pantzalis, C., Park, J. C. and Petmezas, D. (2017) 'The role of corporate political strategies in M&A', *Journal of Corporate Finance*, 43, pp. 260–287.

Croson, R. and Gneezy, U. (2009) 'Gender Differences in Preferences', *Journal of Economic Literature*, 47(2), pp. 448–474.

Cuervo-Cazurra, A., Ciravegna, L., Melgarejo, M. and Lopez, L. (2018) 'Home country uncertainty and the internationalization-performance relationship: Building an uncertainty management capability', *Journal of World Business*, 53(2), pp. 209–221.

Cui, H. and Mak, Y. T. (2002) 'The relationship between managerial ownership and firm performance in high R&D firms', *Journal of Corporate Finance*, 8(4), pp. 313–336.

Cull, R. and Xu, L. C. (2005) 'Institutions, ownership, and finance: the determinants of profit reinvestment among Chinese firms', *Journal of Financial Economics*, 77(1), pp. 117–146.

Cumming, D. J. and Macintosh, J. G. (2000) 'The determinants of R and D expenditures: A study of the Canadian biotechnology industry', *Review of Industrial Organization*, 17(4), pp. 357–370.

Curtis, A., Li, V. and Patrick, P. H. (2021) 'The use of adjusted earnings in performance evaluation', *Review of Accounting Studies*, pp. 1–33. doi: 10.1007/S11142-021-09580-1.

Czinkota, M., Kaufmann, H. R. and Basile, G. (2014) 'The relationship between legitimacy, reputation, sustainability and branding for companies and their supply chains', *Industrial Marketing Management*, 43(1), pp. 91–101.

Dahan, N. (2005) 'Can There Be a Resource-Based View of Politics?', *International Studies of Management and Organization*, 35(2), pp. 8–27.

Datta, S., Iskandar-Datta, M. and Raman, K. (2005) 'Managerial Stock Ownership and the Maturity Structure of Corporate Debt', *The Journal of Finance*, 60(5), pp. 2333–2350.

Davis, L. (2016) *Policy uncertainty discourages innovation and hurts the environment*, *Energy Institute Blog*. Available at: http://theconversation.com/policy-uncertainty-discourages-innovation-and-hurts-the-environment-70261 (Accessed: 15 March 2020).

Deephouse, D. L. and Carter, S. M. (2005) 'An examination of differences between organizational legitimacy and organizational reputation', *Journal of Management Studies*, pp. 329–360. doi: 10.1111/j.1467-6486.2005.00499.x.

Dell'Atti, S. and Trotta, A. (2016) *Managing Reputation in The Banking Industry: Theory and Practice*. Switzerland: Springer International Publishing.

Del Monte, A. and Papagni, E. (2003) 'R&D and the growth of firms: Empirical analysis of a panel of Italian firms', *Research Policy*, 32(6), pp. 1003–1014.

Den Hond, F., Rehbein, K. A., de Bakker, F. G. and Lankveld, H. K. V. (2014) 'Playing on Two Chessboards: Reputation Effects between Corporate Social Responsibility (CSR) and Corporate Political Activity (CPA)', *Journal of Management Studies*, 51(5), pp. 790–813.

Denis, D. J., Denis, D. K. and Yost, K. (2002) 'Global Diversification, Industrial Diversification, and Firm Value', *The Journal of Finance*, 57(5), pp. 1951–1979.

Derrien, F., Krueger, P., Landier, A. and Yao, T. (2021) *How Do ESG Incidents Affect Firm Value?,* working paper. Available at SSRN: http://dx.doi.org/10.2139/ssrn.3903274 (Accessed: 18 August 2021).

Deyoung, R., Gron, A., Torna, G. and Winton, A. (2015) 'Risk Overhang and Loan Portfolio Decisions: Small Business Loan Supply before and during the Financial Crisis', *The Journal of Finance*, 70(6), pp. 2451–2488.

Dezsö, C. L. and Ross, D. G. (2012) 'Does female representation in top management improve firm performance? A panel data investigation', *Strategic Management Journal*, 33(9), pp. 1072–1089.

Diamond, D. W. and Verrecchia, R. E. (1991) 'Disclosure, Liquidity, and the Cost of Capital', *The Journal of Finance*, 46(4), pp. 1325–1359.

Dierickx, I. and Cool, K. (1989) 'Asset Stock Accumulation and Sustainability of Competitive Advantage', *Management Science*, 35(12), pp. 1504–1511.

DiMaggio, P. J. and Powell, W. W. (1983) 'The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields', *American Sociological Review*, 48(2), pp. 147–160.

Dinç, I. S. (2005) 'Politicians and banks: Political influences on government-owned banks in emerging markets', *Journal of Financial Economics*, 77(2), pp. 453–479.

Dixit, A. K. and Pindyck, R. S. (1994) *Investment under uncertainty*. Princeton, NJ: Princeton University Press.

Doan, T. and Iskandar-Datta, M. (2020) 'Are female top executives more risk-averse or more ethical? Evidence from corporate cash holdings policy', *Journal of Empirical Finance*, 55, pp. 161–176.

Dorion, C., François, P., Grass, G. and Jeanneret, A. (2014) 'Convertible debt and shareholder incentives', *Journal of Corporate Finance*, 24, pp. 38–56.

Dou, Y., Liu, Y., Richardson, G. and Vyas, D. (2014) 'The risk-relevance of securitizations during the recent financial crisis', *Review of Accounting Studies*, 19(2), pp. 839–876.

Downs, D. H. and Sommer, D. W. (1999) 'Monitoring, Ownership, and Risk-Taking: The Impact of Guaranty Funds', *The Journal of Risk and Insurance*, 66(3), pp. 477–497.

Duan, X. and Niu, X. (2019) 'The Role of Founder-CEOs and Founder-Families in IPOs', *Quarterly Journal of Finance & Accounting*, 57(3–4), pp. 59–102.

Dubofsky, P. and Varadarajan, P. R. (1987) 'Diversification and Measures of Performance: Additional Empirical Evidence', *The Academy of Management Journal*, 30(3), pp. 597–608.

Duchin, R. and Sosyura, D. (2012) 'The politics of government investment', *Journal of Financial Economics*, 106(1), pp. 24–48.

Duque-Grisales, E. and Aguilera-Caracuel, J. (2021) 'Environmental, Social and Governance (ESG) Scores and Financial Performance of Multilatinas: Moderating Effects of Geographic International Diversification and Financial Slack', *Journal of Business Ethics*, 168(2), pp. 315–334.

Dutton, J. E. and Duncan, R. B. (1987) 'The influence of the strategic planning process on strategic change', *Strategic Management Journal*, 8(2), pp. 103–116.

Eberhart, A. C., Maxwell, W. F. and Siddique, A. R. (2004) 'An Examination of Long-Term Abnormal Stock Returns and Operating Performance Following R&D Increases', *The Journal of Finance*, 59(2), pp. 623–650.

Ehie, I. C. and Olibe, K. (2010) 'The effect of R&D investment on firm value: An examination of US manufacturing and service industries', *International Journal of Production Economics*, 128(1), pp. 127–135.

Engel, E., Hayes, R. M. and Wang, X. (2003) 'CEO turnover and properties of accounting information', *Journal of Accounting and Economics*, 36(1–3), pp. 197–226.

Epstein, E. M. (1969) *The Corporation in American Politics*. Englewood Cliffs, NJ: Prentice Hall.

Esty, D. C. and Caves, R. E. (1983) 'Market structure and political influence: New data on political expenditures, activity, and success', *Economic Inquiry*, 21(1), pp. 24–38.

Faccio, M. (2006) 'Politically connected firms', *American Economic Review*, 96(1), pp. 369–386.

Faccio, M., Marchica, M. T. and Mura, R. (2016) 'CEO gender, corporate risk-taking, and the efficiency of capital allocation', *Journal of Corporate Finance*, 39, pp. 193–209.

Faccio, M., Masulis, R. W. and McConnell, J. J. (2006) ‘Political Connections and Corporate Bailouts’, *The Journal of Finance*, 61(6), pp. 2597–2635.

Facher, L. (2020) ‘Pharma is showering Congress with cash, even amid coronavirus’, *Stat News*. Available at: https://www.statnews.com/feature/prescription-politics/prescription-politics/ (Accessed: 13 January 2021).

Fainsod, M. (1940) ‘Some reflections on the nature of the regulatory process’, *Public Policy*, 1, pp. 297–323.

Falato, A., Kadyrzhanova, D. and Lel, U. (2014) ‘Distracted directors: Does board busyness hurt shareholder value?’, *Journal of Financial Economics*, 113(3), pp. 404–426.

Faleye, O., Hoitash, R. and Hoitash, U. (2011) ‘The costs of intense board monitoring’, *Journal of Financial Economics*, 101(1), pp. 160–181.

Faleye, O., Kovacs, T. and Venkateswaran, A. (2014) ‘Do better-connected CEOs innovate more?’, *Journal of Financial and Quantitative Analysis*, 49(5–6), pp. 1201–1225.

Fama, E. F. and French, K. R. (1993) ‘Common risk factors in the returns on stocks and bonds’, *Journal of Financial Economics*, 33(1), pp. 3–56.

Fama, E. F. and French, K. R. (2001) ‘Disappearing dividends: Changing firm characteristics or lower propensity to pay?’, *Journal of Financial Economics*, 60(1), pp. 3–43.

Fama, E. F. and French, K. R. (2015) ‘A five-factor asset pricing model’, *Journal of Financial Economics*, 116(1), pp. 1–22.

Fang, V. W., Tian, X. and Tice, S. (2014) ‘Does stock liquidity enhance or impede firm innovation?’, *The Journal of Finance*, 69(5), pp. 2085–2125.

Fatemi, A., Fooladi, I. and Tehranian, H. (2015) ‘Valuation effects of corporate social responsibility’, *Journal of Banking and Finance*, 59, pp. 182–192.

Fazzari, S., Hubbard, R. G. and Petersen, B. C. (1988) *Financing Constraints and Corporate Investment*, working paper. Brookings Papers on Economic Activity. Available at: https://www.nber.org/papers/w2387 (Accessed: 10 December 2020).

Federal Election Commission (2018) *Campaign Guide for Corporations and Labor Organizations*. Government Printing Office. Available at: https://www.fec.gov/resources/cms-content/documents/colagui.pdf (Accessed: 27 April 2019).

Fernando, G. D., Jain, S. S. and Tripathy, A. (2020) ‘This cloud has a silver lining: Gender diversity, managerial ability, and firm performance’, *Journal of Business Research*, 117, pp. 484–496.

Ferreira, M. A. and Paul, A. L. (2007) ‘Corporate Governance, Idiosyncratic Risk, and Information Flow’, *The Journal of Finance*, 62(2), pp. 951–989.

Ferrier, W. J. (2001) ‘Navigating the Competitive Landscape: The Drivers and Consequences of Competitive Aggressiveness’, *Academy of Management Journal*, 44(4), pp. 858–877.

Filbeck, G., Gorman, R. and Zhao, X. (2009) ‘The "Best Corporate Citizens": Are They Good for Their Shareholders?’, *The Financial Review*, 44(2), pp. 239–262.

Finkelstein, S. (1988) *Managerial orientations and organizational outcomes: the moderating roles of managerial discretion and power*. PhD thesis. Columbia University, New York.

Finkelstein, S., Hambrick, D. C. and Cannella, A. A. (2008) *Strategic Leadership: Theory and Research on Executives, Top Management Teams, and Boards*. New York, NY: Oxford University Press.

Firth, M., Lin, C., Liu, P. and Wong, S. M. (2009) ‘Inside the black box : Bank credit allocation in China's private sector’, *Journal of Banking and Finance*, 33(6), pp. 1144–1155.

Fisman, R. (2001) ‘Estimating the Value of Political Connections’, *The American Economic Review*, 91(4), pp. 1095–1102.

Fluck, Z. and Lynch, A. W. (1999) ‘Why do firms merge and then divest? A theory of financial synergy’, *Journal of Business*, 72(3), pp. 319–346.

Fombrun, C. (1996) *Reputation: Realizing Value from the Corporate Image*. Boston, MA: Harvard Business Review Press.

Fombrun, C. and Shanley, M. (1990) ‘What's in a name? Reputation building and corporate strategy’, *Academy of Management Journal*, 33(2), pp. 233–258.

Fooks, G., Gilmore, A., Collin, J., Holden, C. and Lee, K. (2013) ‘The Limits of Corporate Social Responsibility: Techniques of Neutralization, Stakeholder Management and Political CSR’, *Journal of Business Ethics*, 112(2), pp. 283–299.

Fooks, G. J., Gilmore, A. B., Smith, K. E., Collin, J., Holden, C. and Lee, K. (2011) ‘Corporate social responsibility and access to policy élites: An analysis of tobacco industry documents’, *PLoS Medicine*, 8(8).

Francis, B. B., Hasan, I. and Sun, X. (2009) ‘Political connections and the process of going public: Evidence from China', *Journal of International Money and Finance*, 28(4), pp. 696–719.

Francis, J. and Smith, A. (1995) 'Agency costs and innovation some empirical evidence', *Journal of Accounting and Economics*, 19(2–3), pp. 383–409.

Friede, G., Busch, T. and Bassen, A. (2015) 'ESG and financial performance: aggregated evidence from more than 2000 empirical studies', *Journal of Sustainable Finance and Investment*, 5(4), pp. 210–233.

Froot, K. A., Scharfstein, D. S. and Stein, J. C. (1993) 'Risk Management: Coordinating Corporate Investment and Financing Policies', *The Journal of Finance*, 48(5), pp. 1629–1658.

Galema, R., Plantinga, A. and Scholtens, B. (2008) 'The stocks at stake: Return and risk in socially responsible investment', *Journal of Banking and Finance*, 32(12), pp. 2646–2654.

Gande, A., Schenzler, C. and Senbet, L. W. (2009) 'Valuation effects of global diversification', *Journal of International Business Studies*, 40(9), pp. 1515–1532.

Gantchev, N., Giannetti, M. and Li, R. (2021) *Does Money Talk? Market Discipline through Selloffs and Boycotts*, working paper. Available at SSRN: http://dx.doi.org/10.2139/ssrn.3409455 (Accessed: 18 September 2021).

Gatzert, N. (2015) 'The impact of corporate reputation and reputation damaging events on financial performance: Empirical evidence from the literature', *European Management Journal*, 33(6), pp. 485–499.

Geringer, J. M., Beamish, P. W. and Dacosta, R. C. (1989) 'Diversification Strategy and Internationalization: Implications for MNE Performance', *Strategic Management Journal*, 10(2), pp. 109–119.

Ghosh, A., Moon, D. and Tandon, K. (2007) 'CEO Ownership and Discretionary Investments', *Journal of Business Finance & Accounting*, 34(5–6), pp. 819–839.

Gillan, S. L., Koch, A. and Starks, L. T. (2021) 'Firms and Social Responsibility: A Review of ESG and CSR Research in Corporate Finance', *Journal of Corporate Finance*. doi: 10.1016/j.jcorpfin.2021.101889.

Gloßner, S. (2017) *ESG Risks and the Cross-Section of Stock Returns*. In Paris December 2017 Finance Meeting EUROFIDAI-AFFI. Available at SSRN: http://dx.doi.org/10.2139/ssrn.2980917 (Accessed: 18 April 2021).

Gloßner, S. (2018) *The Price of Ignoring ESG Risks*, working paper. Available at SSRN: http://dx.doi.org/10.2139/ssrn.3004689 (Accessed: 24 January 2021).

Goldman, E., Rocholl, J. and So, J. (2009) 'Do Politically Connected Boards Affect Firm Value?', *The Review of Financial Studies*, 22(6), pp. 2331–2360.

Golec, J., Hegde, S. and Vernon, J. A. (2010) 'Pharmaceutical R&D spending and threats of price regulation', *Journal of Financial and Quantitative Analysis*, 45(1), pp. 239–264.

Gomez-Mejia, L. R., Larraza-Kintana, M. and Makri, M. (2003) 'The Determinants of Executive Compensation in Family-Controlled Public Corporations', *The Academy of Management Journal*, 46(2), pp. 226–237.

Gomez, E. T. and Jomo, K. S. (1997) *Malaysia's Political Economy: Politics, Patronage and Profits*. Cambridge: Cambridge University Press.

Grant, R. and Thomas, H. (1986) 'The Impact of Diversification Strategy Upon the Profitability of British Manufacturing Firms', in *Academy of Management Proceedings* (Vol. 1986, No. 1, pp. 26-30). Briarcliff Manor, NY 10510: Academy of Management.

Green, S. (1995) 'Top Management Support of R&D Projects: A Strategic Leadership Perspective', *IEEE Transactions on Engineering Management*, 42(3), pp. 223–234.

Grewal, J., Riedl, E. J. and Serafeim, G. (2019) 'Market reaction to mandatory nonfinancial disclosure', *Management Science*, 65(7), pp. 3061–3084.

Grier, K. B. and Munger, M. C. (1993) 'Comparing Interest Group PAC Contributions to House and Senate Incumbents, 1980-1986', *The Journal of Politics*, 55(3), pp. 615–643.

Grier, K. B., Munger, M. C. and Roberts, B. E. (1994) 'The Determinants of Industry Political Activity, 1978-1986', *The American Political Science Review*, 88(4), pp. 911–926.

Grieser, W. D. and Hadlock, C. J. (2019) 'Panel-Data Estimation in Finance: Testable Assumptions and Parameter (In)Consistency', *Journal of Financial and Quantitative Analysis*, 54(1), pp. 1–29.

Griliches, Z. (1986) 'Productivity, R&D, and Basic Research at the Firm Level in the 1970's', *The American Economic Review*, 76(1), pp. 141–154.

Grossman, G. and Helpman, E. (1994) 'Protection for sale', *The American Economic Review*, 84(4), pp. 833–850.

Gruca, T. S. and Rego, L. L. (2005) 'Customer Satisfaction, Cash Flow, and Shareholder Value', *Journal of Marketing*, 69(3), pp. 115–130.

Guerra Pérez, S., Bona Sánchez, C. and Santana Martín, D. J. (2015) 'Politically connected firms in Spain', *Business Research Quarterly*, 18(4), pp. 230–245.

Gulen, H. and Ion, M. (2016) 'Policy uncertainty and corporate investment', *The Review of Financial Studies*, 29(3), pp. 523–564.

Gupta, S. and Swenson, C. W. (2003) 'Rent Seeking by Agents of the Firm', *The Journal of Law & Economics*, 46(1), pp. 253–268.

Hadani, M. and Schuler, D. A. (2013) 'The Elusive Financial Returns on Corporate Political Investments', *Strategic Management Journal*, 34(2), pp. 165–181.

Hagedoorn, J. and Cloodt, M. (2003) 'Measuring innovative performance: is there an advantage in using multiple indicators?', *Research Policy*, 32(8), pp. 1365–1379.

Hall, B. H. (1993) 'The Stock Market's Valuation of R&D Investment During the 1980's', *The American Economic Review*, 83(2), pp. 259–264.

Hall, B. H. and Mairesse, J. (1995) 'Exploring the relationship between R&D and productivity in French manufacturing firms', *Journal of Econometrics*, 65(1), pp. 263–293.

Hall, B. H., Berndt, E. and Levin, R. C. (1990) *The Impact of Corporate Restructuring on Industrial Research and Development*, working paper. National Bureau of Economic Research. Available at: https://www.nber.org/papers/w3216 (Accessed: 11 December 2019).

Hambrick, D. C. and Mason, P. A. (1984) 'Upper Echelons: The Organization as a Reflection of Its Top Managers', *The Academy of Management Review*, 9(2), pp. 193–206.

Hansen, W. L. and Mitchell, N. J. (2000) 'Disaggregating and Explaining Corporate Political Activity: Domestic and Foreign Corporations in National Politics', *The American Political Science Review*, 94(4), pp. 891–903.

Harford, J., Mansi, S. A. and Maxwell, W. F. (2008) 'Corporate governance and firm cash holdings in the U.S.', *Journal of Financial Economics*, 87(3), pp. 535–555.

Harjoto, M., Jo, H. and Kim, Y. (2015) 'Is Institutional Ownership Related to Corporate Social Responsibility? The Nonlinear Relation and Its Implication for Stock Return Volatility', *Journal of Business Ethics*, 146(1), pp. 77–109.

He, G. (2015) 'The effect of CEO inside debt holdings on financial reporting quality', *Review of Accounting Studies*, 20(1), pp. 501–536.

He, L. and Yang, R. (2014) 'Does Industry Regulation Matter? New Evidence on Audit

Committees and Earnings Management', *Journal of Business Ethics*, 123(4), pp. 573–589.

He, Z. and Wintoki, M. B. (2016) 'The cost of innovation : R&D and high cash holdings in US firms', *Journal of Corporate Finance*, 41, pp. 280–303.

Healy, P. M., Hutton, A. P. and Palepu, K. G. (1999) 'Stock Performance and Intermediation Changes Surrounding Sustained Increases in Disclosure', *Contemporary Accounting Research*, 16(3), pp. 485–520.

Helfat, C. E. and Teece, D. J. (1987) 'Vertical Integration and Risk Reduction', *Journal of Law, Economics, & Organization*, 3(1), pp. 47–67.

Herndon, J. F. (1982) 'Access, Record, and Competition as Influences on Interest Group Contributions to Congressional Campaigns', *The Journal of Politics*, 44(4), pp. 996–1019.

Herzlinger, R. E. (2006) 'Why Innovation in Health Care Is So Hard', *Harvard Business Review*, 84(5), p. 58.

Hill, M. D., Fuller, K. P., Kelly, G. W. and Washam, J. O. (2014) 'Corporate cash holdings and political connections', *Review of Quantitative Finance and Accounting*, 42(1), pp. 123–142.

Hillier, D., Pindado, J., De Queiroz, V. and De La Torre, C. (2011) 'The impact of country-level corporate governance on research and development', *Journal of International Business Studies*, 42(1), pp. 76–98.

Hillman, A. J. (2003) 'Determinants of Political Strategies in U.S. Multinationals', *Business & Society*, 42(4), pp. 455–484.

Hillman, A. J. and Hitt, M. A. (1999) 'Corporate Political Strategy Formulation: A Model of Approach, Participation, and Strategy Decisions', *The Academy of Management Review*, 24(4), pp. 825–842.

Hillman, A. J., Keim, G. D. and Schuler, D. (2004) 'Corporate Political Activity: A Review and Research Agenda', *Journal of Management*, 30(6), pp. 837–857.

Himmelberg, C. P. and Petersen, B. C. (1994) 'R&D and Internal Finance: A Panel Study of Small Firms in High-Tech Industries', *The Review of Economics and Statistics*, 76(1), pp. 38–51.

Hirschey, M., Skiba, H. and Wintoki, M. B. (2012) 'The size, concentration and evolution of corporate R&D spending in U.S. firms from 1976 to 2010: Evidence and implications', *Journal of Corporate Finance*, 18(3), pp. 496–518.

Hirshleifer, D. and Suh, Y. (1992) 'Risk, managerial effort, and project choice', *Journal of Financial Intermediation*, 2(3), pp. 308–345.

Hirshleifer, D., Low, A. and Teoh, S. (2012) 'Are Overconfident CEOs Better Innovators ?', *The Journal of Finance*, 67(4), pp. 1457–1498.

Ho, Y. K., Tjahjapranata, M. and Yap, C. M. (2006) 'Size, Leverage, Concentration, and R&D Investment in Generating Growth Opportunities', *The Journal of Business*, 79(2), pp. 851–876.

Hong, B., Li, Z. and Minor, D. (2016) 'Corporate Governance and Executive Compensation for Corporate Social Responsibility', *Journal of Business Ethics*, 136(1), pp. 199–213.

Hong, G. and Sarkar, S. (2007) 'Equity Systematic Risk (Beta) and Its Determinants', *Contemporary Accounting Research*, 24(2), pp. 423–466.

Hottenrott, H. and Peters, B. (2012) 'Innovative Capability and Financing Constraints for Innovation: More Money, More Innovation?', *The Review of Economics and Statistics*, 94(4), pp. 1126–1142.

Houqe, M. N., Ahmed, K. and Richardson, G. (2020) 'The Effect of Environmental, Social, and Governance Performance Factors on Firms' Cost of Debt: International Evidence', *International Journal of Accounting*, 55(3).

Houston, J., Jiang, L., Lin, C. and Ma, Y. (2014) 'Political Connections and the Cost of Bank Loans', *Journal of Accounting Research*, 52(1), pp. 193–243.

Hsiao, C. (2007) 'Panel data analysis-advantages and challenges', *Test*, 16(1), pp. 1–22.

Hsiao, C. and Tahmiscioglu, A. K. (1997) 'A Panel Analysis of Liquidity Constraints and Firm Investment', *Journal of the American Statistical Association*, 92(438), pp. 455–465.

Huang-Meier, W., Lambertides, N. and Steeley, J. M. (2016) 'Motives for corporate cash holdings: the CEO optimism effect', *Review of Quantitative Finance and Accounting*, 47(3), pp. 699–732.

Huang, H. H., Kerstein, J. and Wang, C. (2018) 'The impact of climate risk on firm performance and financing choices: An international comparison', *Journal of International Business Studies*, 49(5), pp. 633–656.

Huang, J. and Kisgen, D. J. (2013) 'Gender and corporate finance: Are male executives overconfident relative to female executives?', *Journal of Financial Economics*, 108(3), pp. 822–839.

Hud, M. and Hussinger, K. (2015) 'The impact of R&D subsidies during the crisis', *Research Policy*, 44(10), pp. 1844–1855.

Hughes, J. P. (2008) 'R&D and dividend payments as determinants of corporate value in the UK: Empirical evidence after controlling for endogeneity', *International Journal of Managerial Finance*, 4(1), pp. 76–91.

Humphries, C. (1991) 'Corporations, Pacs and the Strategic Link between Contributions and Lobbying Activities', *The Western Political Quarterly*, 44(2), pp. 353–372.

Hundley, G., Jacobson, C. K. and Park, S. H. (1996) 'Effects of Profitability and Liquidity on R&D Intensity: Japanese and U.S. Companies', *The Academy of Management Journal*, 39(6), pp. 1659–1674.

Jacquier, E., Titman, S. and Yalçin, A. (2010) 'Predicting systematic risk: Implications from growth options', *Journal of Empirical Finance*, 17(5), pp. 991–1005.

Janakiraman, S., Tsang, A. and Radhakrishnan, S. (2010) 'Institutional Investors, Managerial Ownership, and Executive Compensation', *Journal of Accounting, Auditing, and Finance*, 25(4), pp. 673–707.

Jayachandran, S., Kalaignanam, K. and Eilert, M. (2013) 'Product and environmental social performance: Varying effect on firm performance', *Strategic Management Journal*, 34(10), pp. 1255–1264.

Jens, C. E. (2017) 'Political uncertainty and investment: Causal evidence from U.S. gubernatorial elections', *Journal of Financial Economics*, 124(3), pp. 563–579.

Jensen, M. (1986) 'Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers', *American Economic Review*, 76(2), pp. 323–329.

Jeong, S. and Harrison, D. A. (2017) 'Glass Breaking, Strategy Making, and Value Creating: Meta-Analytic Outcomes of Women as CEOs and TMT Members', *Academy of Management Journal*, 60(4), pp. 1219–1252.

Jin, L. (2002) 'CEO compensation, diversification, and incentives', *Journal of Financial Economics*, 66(1), pp. 29–63.

Jo, H. and Na, H. (2012) 'Does CSR Reduce Firm Risk? Evidence from Controversial Industry Sectors', *Journal of Business Ethics*, 110(4), pp. 441–456.

Joecks, J., Pull, K. and Vetter, K. (2013) 'Gender Diversity in the Boardroom and Firm Performance: What Exactly Constitutes a "Critical Mass?"', *Journal of Business Ethics*, 118(1), pp. 61–72.

Johnson, S. and Mitton, T. (2003) 'Cronyism and capital controls: evidence from Malaysia', *Journal of Financial Economics*, 67(2), pp. 351–382.

Jose, M. L., Nichols, L. M. and Stevens, J. L. (1986) 'Contributions of Diversification, Promotion, and R&D to the Value of Multiproduct Firms: A Tobin's q Approach', *Journal* *of Financial Management*, 15(4), pp. 33–42.

Joshi, A., Liao, H. and Roh, H. (2011) 'Bridging domains in workplace demography research: A review and reconceptualization', *Journal of Management*, 37(2), pp. 521–552.

Joshi, A. and Roh, H. (2009) 'The Role of Context in Work Team Diversity Research: A Meta-Analytic Review', *The Academy of Management Journal*, 52(3), pp. 599–627.

Julio, B. and Yook, Y. (2012) 'Policy Uncertainty and Coporate Investment Cycle', *The Journal of Finance*, 67(1), pp. 45–83.

Kalaycı, E. (2003) 'Foreign Ownership, R&D and Knowledge Spillover in Developing Countries: Evidence from Turkey', *The International Journal of Social Sciences*, 8(1), pp. 29–44.

Kan, R., Robotti, C. and Shanken, J. (2013) 'Pricing Model Performance and the Two-Pass Cross-Sectional Regression Methodology', *The Journal of Finance*, 68(6), pp. 2617–2649.

Kanter, R. M. (1977a) *Men and women of the organization*. New York, NY: Basic Books.

Kanter, R. M. (1977b) 'Some Effects of Proportions on Group Life: Skewed Sex Ratios and Responses to Token Women', *American Journal of Sociology*, 82(5), pp. 965–990.

Kaplan, S. N. and Weisbach, M. S. (1992) 'The Success of Acquisitions: Evidence from Divestitures', *The Journal of Finance*, 47(1), pp. 107–138.

Kawashima, S. and Takeda, F. (2012) 'The effect of the Fukushima nuclear accident on stock prices of electric power utilities in Japan', *Energy Economics*, 34(6), pp. 2029–2038.

Keim, G. D. and Zeithaml, C. P. (1986) 'Corporate Political Strategy and Legislative Decision Making: A Review and Contingency Approach', *The Academy of Management Review*, 11(4), pp. 828–843.

Khwaja, A. I. and Mian, A. (2005) 'Do Lenders Favor Politically Connected Firms? Rent Provision in an Emerging Financial Market', *The Quarterly Journal of Economics*, 120(4), pp. 1371–1411.

Kim, C. and Bettis, R. (2014) 'Cash is surprisingly valuable as a strategic asset', *Strategic Management Journal*, 35(13), pp. 2053–2063.

Kim, C., Kim, I., Pantzalis, C. and Park, J. (2019) 'Policy Uncertainty and the Dual Role of Corporate Political Strategies', *Financial Management*, 48(2), pp. 473–504.

Kim, C., Pantzalis, C. and Chul Park, J. (2012) 'Political geography and stock returns: The value and risk implications of proximity to political power', *Journal of Financial*

Economics, 106(1), pp. 196–228.

Kim, E. H. and Lu, Y. (2011) 'CEO ownership, external governance, and risk-taking', *Journal of Financial Economics*, 102(2), pp. 272–292.

Kim, I. and Skinner, D. J. (2012) 'Measuring securities litigation risk', *Journal of Accounting and Economics*, 53(1–2), pp. 290–310.

Kim, J. H. (2008) 'Corporate lobbying revisited', *Business and Politics*, 10(2), pp. 1–23.

Kim, T. (2018) *Does a Firm's Political Capital Affect Its Investment and Innovation?*, working paper. Available at SSRN: http://dx.doi.org/10.2139/ssrn.2971752 (Accessed: 30 December 2019).

Kogan, L. and Papanikolaou, D. (2010) 'Growth Opportunities and Technology Shocks', *American Economic Review*, 100(2), pp. 532–536.

Koh, P. S., Reeb, D. M. and Zhao, W. (2018) 'CEO Confidence and Unreported R&D', *Management Science*, 64(12), pp. 5725–5747.

Kölbel, J., Busch, T. and Jancso, L. (2017) 'How Media Coverage of Corporate Social Irresponsibility Increases Financial Risk', *Strategic Management Journal*, 38(11), pp. 2266–2284.

Koo, D. S., Ramalingegowda, S. and Yu, Y. (2017) 'The effect of financial reporting quality on corporate dividend policy', *Review of Accounting Studies*, 22(2), pp. 753–790.

Kor, Y. Y. (2003) 'Experience-Based Top Management Team Competence and Sustained Growth', *Organization Science*, 14(6), pp. 707–719.

Kostovetsky, L. (2015) 'Political capital and moral hazard', *Journal of Financial Economics*, 116(1), pp. 144–159.

Kothari, S. P., Li, X. and Short, J. E. (2009) 'The Effect of Disclosures by Management, Analysts, and Business Press on Cost of Capital, Return Volatility, and Analyst Forecasts: A Study Using Content Analysis', *The Accounting Review*, 84(5), pp. 1639–1670.

Koussis, N. and Makrominas, M. (2013) 'Growth options, option exercise and firms' systematic risk', *Review of Quantitative Finance and Accounting*, 44(2), pp. 243–267.

Koutmos, G. and Saidi, R. (1995) 'The leverage effect in individual stocks and the debt to equity ratio', *Journal of Business Finance & Accounting*, 22(7), pp. 1063–1075.

Kroszner, R. S. and Stratmann, T. (1998) 'Interest-Group Competition and the Organization of Congress: Theory and Evidence from Financial Services' Political Action Committees', *The American Economic Review*, 88(5), pp. 1163–1187.

Krueger, A. (1974) ‘The Political Economy of the Rent-Seeking Society’, *The American Economic Review*, 64(3), pp. 291–303.

Krüger, P. (2015) ‘Corporate goodness and shareholder wealth’, *Journal of Financial Economics*, 115(2), pp. 304–329.

Kumar, N. and Aggarwal, A. (2005) ‘Liberalization, outward orientation and in-house R&D activity of multinational and local firms: A quantitative exploration for Indian manufacturing’, *Research Policy*, 34(4), pp. 441–460.

Lafond, R. and Roychowdhury, S. (2008) ‘Managerial Ownership and Accounting Conservatism’, *Journal of Accounting Research*, 46(1), pp. 101–135.

Lang, L. and Stulz, R. (1994) ‘Tobin's q, Corporate Diversification, and Firm Performance’, *Journal of Political Economy*, 102(6), pp. 1248–1280.

La Porta, R., Lopez-de-Silanes, F. and Shleifer, A. (2000) ‘Agency Problems and Dividend Policies around the World’, *The Journal of Finance*, 55(1), pp. 1–33.

Lee, D. D. and Faff, R. W. (2009) ‘Corporate Sustainability Performance and Idiosyncratic Risk: A Global Perspective’, *Financial Review*, 44(2), pp. 213–237.

Lee, G. and Xiao, X. (2020) ‘Voluntary Engagement in Environmental Projects: Evidence from Environmental Violators’, *Journal of Business Ethics*, 164(2), pp. 325–348.

Lee, J., Lee, K. J. and Nagarajan, N. J. (2014) ‘Birds of a feather: Value implications of political alignment between top management and directors’, *Journal of Financial Economics*, 112(2), pp. 232–250.

Lee, J. S. and Wei, C. Y. (2014) ‘Emerging Markets Finance and Trade Types of Shares and Idiosyncratic Risk’, *Emerging Market Finance and Trade*, 48(3), pp. 68–95.

Lee, M.-H. and Hwang, I. J. (2003) ‘Determinants of Corporate R&D Investment: An Empirical Study Comparing Korea's IT Industry with Its Non-IT Industry’, *ETRI Journal*, 25(4), pp. 258–265.

Lee, W. and Wang, L. (2016) ‘Do political connections affect stock price crash risk? Firm-level evidence from China’, *Review of Quantitative Finance and Accounting*, 48(3), pp. 643–676.

Lemmon, M. L. and Zender, J. F. (2010) ‘Debt Capacity and Tests of Capital Structure Theories’, *The Journal of Financial and Quantitative Analysis*, 45(5), pp. 1161–1187.

Leone, R. A. (1977) ‘The real costs of regulation’, *Harvard Business Review*, 55(6).

Lewis, C. M. and Tan, Y. (2016) ‘Debt-equity choices, R&D investment and market timing', *Journal of Financial Economics*, 119(3), pp. 599–610.

Li, D. (2011) 'Financial Constraints, R&D Investment, and Stock Returns', *The Review of Financial Studies*, 24(9), pp. 2974–3007.

Li, F., Minnis, M., Nagar, V. and Rajan, M. (2014) 'Knowledge, compensation, and firm value: An empirical analysis of firm communication', *Journal of Accounting and Economics*, 58(1), pp. 96–116.

Lilienfeld-Toal, U. V. and Ruenzi, S. (2014) 'CEO Ownership, Stock Market Performance, and Managerial Discretion', *The Journal of Finance*, 69(3), pp. 1013–1050.

Lim, J. (2015) *The duality of corporate political activity: impact of institutions on lobbying and campaign contributions*. PhD thesis. University of Illinois at Urbana-Champaign. Available at: https://www.ideals.illinois.edu/handle/2142/89277 (Accessed: 28 August 2021)

Limkriangkrai, M., Koh, S. and Durand, R. B. (2017) 'Environmental, Social, and Governance (ESG) Profiles, Stock Returns, and Financial Policy: Australian Evidence', *International Review of Finance*, 17(3), pp. 461–471.

Lin, K. J., Tan, J., Zhao, L. and Karim, K. (2015) 'In the name of charity: Political connections and strategic corporate social responsibility in a transition economy', *Journal of Corporate Finance*, 32, pp. 327–346.

Lin, W. L., Mohamed, A. B., Sambasivan, M. and Yip, N. (2020) 'Effect of green innovation strategy on firm-idiosyncratic risk: A competitive action perspective', *Business Strategy and the Environment*, 29(3), pp. 886–901.

Lo, S. F. and Sheu, J. (2007) 'Is Corporate Sustainability a Value- Increasing Strategy for Business?', *Corporate Governance: An International Review*, 15(2), pp. 345–358.

Long, W. F. and Ravenscraft, D. J. (1993) 'LBOs, Debt and R&D Intensity', *Strategic Management Journal*, 14(1), pp. 119–135.

Lopatta, K. and Kaspereit, T. (2014) 'The cross-section of returns, benchmark model parameters, and idiosyncratic volatility of nuclear energy firms after Fukushima Daiichi', *Energy Economics*, 41, pp. 125–136.

Low, A. (2009) 'Managerial risk-taking behavior and equity-based compensation', *Journal of Financial Economics*, 92(3), pp. 470–490.

Lux, S., Crook, T. R. and Leap, T. (2012) 'Corporate political activity: The good, the bad, and the ugly', *Business Horizons*, 55(3), pp. 307–312.

Lux, S., Crook, T. R. and Woehr, D. J. (2011) 'Mixing Business With Politics: A Meta-

Analysis of the Antecedents and Outcomes of Corporate Political Activity', *Journal of Management*, 37(1), pp. 223–247.

Lyon, J. D. and Maher, M. W. (2005) 'The Importance of Business Risk in Setting Audit Fees: Evidence from Cases of Client Misconduct', *Journal of Accounting Research*, 43(1), pp. 133–151.

Mahon, J. F. and Murray, E. A. (1981) 'Strategic planning for regulated companies', *Strategic Management Journal*, 2(3), pp. 251–262.

Mankiw, N. G. (2004) *Principles of Economics*. 3rd international student edition. Mason, IA: Thomson.

Mansfield, E. (1985) 'How Rapidly Does New Industrial Technology Leak Out?', *The Journal of Industrial Economics*, 34(2), pp. 217–223.

Martin, K. D., Josephson, B. W., Vadakkepatt, G. G. and Johnson, J. L. (2018) 'Political Management, Research and Development, and Advertising Capital in the Pharmaceutical Industry: A Good Prognosis?', *Journal of Marketing*, 82(3), pp. 87–107.

Maskus, K. E., Neumann, R. and Seidel, T. (2012) 'How national and international financial development affect industrial R&D', *European Economic Review*, 56(1), pp. 72–83.

Masters, M. F. and Keim, G. D. (1985) 'Determinants of PAC Participation Among Large Corporations', *The Journal of Politics*, 47(4), pp. 1158–1173.

Mathura, I. and Singh, M. (2011) 'Corporate Political Strategies', *Journal of Accounting and Finance*, 51, pp. 252–277.

May, D. O. (1995) 'Do Managerial Motives Influence Firm Risk Reduction Strategies?', *The Journal of Finance*, 50(4), pp. 1291–1308.

McConnell, J. J. and Servaes, H. (1990) 'Additional evidence on equity ownership and corporate value', *Journal of Financial Economics*, 27(2), pp. 595–612.

McGuire, J. and Matta, E. (2003) 'CEO Stock Options: The Silent Dimension of Ownership', *The Academy of Management Journal*, 46(2), pp. 255–265.

Megginson, W. L., Lucey, B. M. and Smart, S. B. (2008) *Introduction to Corporate Finance*. Australia: South-Western Cengage Learning.

Meyer, J. and Rowan, B. (1977) 'Institutionalized Organizations: Formal Structure as Myth and Ceremony', *American Journal of Sociology* , 83(2), pp. 340–363.

Milidonis, A., Nishikawa, T. and Shim, J. (2019) 'CEO Inside Debt and Risk Taking:

Evidence From Property–Liability Insurance Firms', *Journal of Risk and Insurance*, 86(2), pp. 451–477.

Milliken, F. J. and Martins, L. L. (1996) 'Searching for Common Threads: Understanding the Multiple Effects of Diversity in Organizational Groups', *The Academy of Management Review*, 21(2), pp. 402–433.

Milyo, J., Primo, D. and Groseclose, T. (2000) 'Corporate PAC Campaign Contributions in Perspective', *Business and Politics*, 2(1), pp. 75–88.

Minton, B. A. and Schrand, C. (1999) 'The impact of cash flow volatility on discretionary investment and the costs of debt and equity financing', *Journal of Financial Economics*, 54(3), pp. 423–460.

Mitchell, N. J., Hansen, W. L. and Jepsen, E. M. (1997) 'The Determinants of Domestic and Foreign Corporate Political Activity', *The Journal of Politics*, 59(4), pp. 1096–1113.

Modigliani, F. and Miller, M. H. (1958) 'The Cost of Capital, Corporation Finance and the Theory of Investment', *The American Economic Review*, 48(3), pp. 261–297.

Montgomery, C. A. (1985) 'Product-Market Diversification and Market Power', *The Academy of Management Journal*, 28(4), pp. 789–798.

Morck, R., Shleifer, A. and Vishny, R. W. (1988) 'Management ownership and market valuation. An empirical analysis', *Journal of Financial Economics*, 20, pp. 293–315.

Morse, D. (1984) 'An Econometric Analysis of the Choice of Daily Versus Monthly Returns in Tests of Information Content', *Journal of Accounting Research*, 22(2), pp. 605–623.

Myers, S. C. (1977) 'Determinants of corporate borrowing', *Journal of Financial Economics*, 5(2), pp. 147–175.

Myers, S. C. (1984) 'The Capital Structure Puzzle', *The Journal of Finance*, 39(3), pp. 574–592.

Myers, S. C. and Majluf, N. S. (1984) 'Corporate financing and investment decisions when firms have information that investors do not have', *Journal of Financial Economics*, 13(2), pp. 187–221.

Nazir, M. S., Nawaz, M. M., Anwar, W. and Ahmed, F. (2010) 'Determinants of Stock Price Volatility in Karachi Stock Exchange: The Mediating Role of Corporate Dividend Policy', *International Research Journal of Finance and Economics*, 55(55), pp. 100–107.

Neter, J., Wasserman, W. and Kutner, M. H. (1985) *Applied Linear Statistical Models*. 2nd edn. Homewood, IL: Irwin.

Nini, G., Smith, D. C. and Sufi, A. (2012) 'Creditor Control Rights, Corporate Governance, and Firm Value', *The Review of Financial Studies*, 25(6), pp. 1713–1761.

Norton, S. W. (1985) 'Regulation and Systematic Risk: The Case of Electric Utilities', *The Journal of Law & Economics*, 28(3), pp. 671–686.

Oliver, C. (1991) 'Strategic Responses to Institutional Processes', *The Academy of Management Review*, 16(1), pp. 145–179.

OpenSecrets (2019) *What is a PAC?*, *Center for Responsive Politics*. Available at: https://www.opensecrets.org/pacs/pacfaq.php (Accessed: 3 August 2019).

Opler, T. C. and Titman, S. (1994) 'Financial Distress and Corporate Performance', *The Journal of Finance*, 49(3), pp. 1015–1040.

Orlitzky, M. and Benjamin, J. D. (2001) 'Corporate Social Performance and Firm Risk: A Meta-Analytic Review', *Business & Society*, 40(4), pp. 369–396.

Ovtchinnikov, A. V. and Pantaleoni, E. (2012) 'Individual political contributions and firm performance', *Journal of Financial Economics*, 105(2), pp. 367–392.

Ovtchinnikov, A. V., Reza, S. W. and Wu, Y. (2020) 'Political Activism and Firm Innovation', *Journal of Financial and Quantitative Analysis*, 55(3), pp. 989–1024.

Ozer, M. and Alakent, E. (2013) 'The Influence of Ownership Structure on How Firms Make Corporate Political Strategy Choices', *Business & Society*, 52(3), pp. 451–472.

Pache, A. C. and Santos, F. (2010) 'When Worlds Collide: The Internal Dynamics of Organizational Responses to Conflicting Institutional Demands', *Academy of Management Review*, 35(3), pp. 455–476.

Palazzo, G. and Scherer, A. G. (2006) 'Corporate legitimacy as deliberation: A communicative framework', *Journal of Business Ethics*, 66(1), pp. 71–88.

Pan, Y., Wang, T. Y. and Weisbach, M. S. (2015) 'Learning About CEO Ability and Stock Return Volatility', *The Review of Financial Studies*, 28(6), pp. 1623–1666.

Panousi, V. and Papanikolaou, D. (2012) 'Investment, Idiosyncratic Risk, and Ownership', *The Journal of Finance*, 67(3), pp. 1113–1148.

Pástor, Ľ. and Pietro, V. (2003) 'Stock Valuation and Learning about Profitability', *The Journal of Finance*, 58(5), pp. 1749–1789.

Pástor, Ľ. and Veronesi, P. (2012) 'Uncertainty about Government Policy and Stock Prices', *The Journal of Finance*, 67(4), pp. 1219–1264.

Patten, D. M. (2002) 'The relation between environmental performance and environmental disclosure: A research note', *Accounting, Organizations and Society*, 27(8), pp. 763–773.

Patten, D. M. and Trompeter, G. (2003) 'Corporate responses to political costs: An examination of the relation between environmental disclosure and earnings management', *Journal of Accounting and Public Policy*, 22(1), pp. 83–94.

Pavitt, K. (1982) 'R&D, patenting and innovative activities. A statistical exploration', *Research Policy*, 11(1), pp. 33–51.

Perez-Quiros, G. and Timmermann, A. (2000) 'Firm Size and Cyclical Variations in Stock Returns', *The Journal of Finance*, 55(3), pp. 1229–1262.

Perryman, A. A., Fernando, G. D. and Tripathy, A. (2016) 'Do gender differences persist? An examination of gender diversity on firm performance, risk, and executive compensation', *Journal of Business Research*, 69(2), pp. 579–586.

Petersen, M. A. (2009) 'Estimating Standard Errors in Finance Panel Sets: Comparing Approaches', *The Review of Financial Studies*, 22(1), pp. 435–480.

Pfeffer, J. and Salancik, G. (1978) *The External Control of Organizations: A Resource Dependence Perspective*. New York, NY: Harper & Row.

Pham, A. V. (2019) 'Political risk and cost of equity: The mediating role of political connections', *Journal of Corporate Finance*, 56, pp. 64–87.

Phua, K., Tham, T. M. and Wei, C. (2018) 'Are overconfident CEOs better leaders? Evidence from stakeholder commitments', *Journal of Financial Economics*, 127(3), pp. 519–545.

Piotroski, J. D. and Zhang, T. (2014) 'Politicians and the IPO decision: The impact of impending political promotions on IPO activity in China', *Journal of Financial Economics*, 111(1), pp. 111–136.

Platikanova, P. (2017) 'Investor-legislators : Tax holiday for politically connected firms', *The British Accounting Review*, 49(4), pp. 380–398.

Pollock, T. G. and Rindova, V. P. (2003) 'Media legitimation effects in the market for initial public offerings', *Academy of Management Journal*, 46(5), pp. 631–642.

Poole, K. T., Romer, T., and Rosenthal, H. (1987) 'The Revealed Preferences of Political Action Committees', *American Economic Association*, 77(2), pp. 298–302.

Porter, M. (1989) 'From Competitive Advantage to Corporate Strategy', in *Readings in Strategic Management*. London: Palgrave, pp. 234–255.

Rajkovic, T. (2020) ‘Lead independent directors and investment efficiency’, *Journal of Corporate Finance*, 64.

Rehbein, K. A. (1995) ‘Foreign-owned Firms' Campaign Contributions in the United States: An Exploratory Study’, *Policy Studies Journal*, 23(1), pp. 41–61.

Ren, T. and Wang, Z. (2011) ‘Female participation in TMT and firm performance: evidence from Chinese private enterprises’, *Business Review International*, 13(5), pp. 2040–8749.

RepRisk (2020) *RepRisk methodology overview*. RepRisk database. Available at: https://www.reprisk.com/content/static/reprisk-methodology-overview.pdf (Accessed: 3 February 2021).

Roberts, P. W. and Dowling, G. R. (2002) ‘Corporate Reputation and Sustained Superior Financial Performance’, *Strategic Management Journal*, 23(12), pp. 1077–1093.

Roh, Y. S. (2002) ‘Size, growth rate and risk sharing as the determinants of propensity to franchise in chain restaurants’, *International Journal of Hospitality Management*, 21(1), pp. 43–56.

Romano, A. (1990) ‘Identifying factors which influence product innovation: a case study approach’, *Journal of Management Studies*, 27(1), pp. 75–95.

Ross, S., Westerfield, R. and Jordan, B. (2011) *Essentials of corporate finance*. 7th edn. Boston, MA: McGraw-Hill Irwin.

Rountree, B., Weston, J. P. and Allayannis, G. (2008) ‘Do investors value smooth performance?’, *Journal of Financial Economics*, 90(3), pp. 237–251.

Rowley, T. J. and Moldoveanu, M. (2003) ‘When will stakeholder groups act? An interest- and identity-based model of stakeholder group mobilization’, *Academy of Management Review*, 28(2), pp. 204–219.

Rudy, B. C. and Johnson, A. F. (2019) ‘The Chief Political Officer: CEO Characteristics and Firm Investment in Corporate Political Activity’, *Business & Society*, 58(3), pp. 612–643.

Ruefli, T. W., Collins, J. M. and Lacugna, J. R. (1999) ‘Risk Measures in Strategic Management Research: Auld Lang Syne?’, *Strategic Management Journal*, 20(2), pp. 167–194.

Rugman, A. (1979) *International diversification and the multinational enterprise*. Lexington, MA: Lexington Books.

Russo, M. V and Fouts, P. A. (1997) ‘A Resource-Based Perspective on Corporate

Environmental Performance and Profitability', *The Academy of Management Journal*, 40(3), pp. 534–559.

Ryan, H. E. and Wiggins, R. A. (2002) 'The Interactions between R&D Investment Decisions and Compensation Policy', *Financial Management*, 31(1), pp. 5–29.

Ryan, T. P. (1997) *Modern Regression Methods*. New York, NY: Wiley.

Salama, F. M. and Putnam, K. (2013) 'The Impact of Corporate Governance on the Financial Outcomes of Global Diversification', *The International Journal of Accounting*, 48(3), pp. 364–389.

Saravia, J. A., García, C. S. and Almonacid, P. M. (2021) 'The determinants of systematic risk: A firm lifecycle perspective', *International Journal of Finance & Economics*, 26(1), pp. 1037–1049.

Scherer, A. G., Palazzo, G. and Seidl, D. (2013) 'Managing Legitimacy in Complex and Heterogeneous Environments: Sustainable Development in a Globalized World', *Journal of Management Studies*, 50(2), pp. 259–284.

Schoenherr, D. (2018) 'Political Connections and Allocative Distortions', *The Journal of Finance*, 74(2), pp. 543–586.

Schormair, M. J. and Gerlach, L. M. (2020) 'Corporate Remediation of Human Rights Violations: A Restorative Justice Framework', *Journal of Business Ethics*, 167(3), pp. 475–493.

Schuler, D. A. and Rehbein, K. (1997) 'The Filtering Role of the Firm in Corporate Political Involvement', *Business & Society*, 36(2), pp. 116–139.

Schumpeter, J. A. (1939) *Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process*. New York, NY: McGraw-Hill.

Schumpeter, J. A. (1947) 'The Creative Response in Economic History', *The Journal of Economic History*, 7(2), pp. 149–159.

Schumpeter, J. A. (1950) *From Capitalism, Socialism and Democracy*. 3rd edn. New York, NY: HarperPerennial.

Scott, R. (1987) 'The Adolescence of Institutional Theory', *Administrative Science Quarterly*, 32(4), pp. 493–511.

Seifert, B., Morris, S. A. and Bartkus, B. R. (2003) 'Comparing Big Givers and Small Givers: Financial Correlates of Corporate Philanthropy', *Journal of Business Ethics*, 45(3), pp. 195–211.

Serfling, M. A. (2014) ‘CEO age and the riskiness of corporate policies’, *Journal of Corporate Finance*, 25, pp. 251–273.

Sethi, S. P. (1979) ‘A Conceptual Framework for Environmental Analysis of Social Issues and Evaluation of Business Response Patterns’, *The Academy of Management Review*, 4(1), pp. 63–74.

Shaikh, I. A. and Peters, L. (2018) ‘The value of board monitoring in promoting R&D: a test of agency-theory in the US context’, *Journal of Management & Governance*, 22(2), pp. 339–363.

Shleifer, A. and Vishny, R. (1998) *The grabbing hand : government pathologies and their cures*. Cambridge: Harvard University Press.

Sila, V., Gonzalez, A. and Hagendorff, J. (2016) ‘Women on board: Does boardroom gender diversity affect firm risk?’, *Journal of Corporate Finance*, 36, pp. 26–53.

Simsek, Z. (2007) ‘CEO tenure and organizational performance: an intervening model’, *Strategic Management Journal*, 28(6), pp. 653–662.

Smith, J. D. (2016) ‘US political corruption and firm financial policies’, *Journal of Financial Economics*, 121(2), pp. 350–367.

Smith, L. C., Smith, M. and Ashcroft, P. (2011) ‘Analysis of Environmental and Economic Damages from British Petroleum's Deepwater Horizon Oil Spill’, *Albany Law Review*, 74(1), pp. 563–585.

Snyder, J. M. (1992) ‘Long-Term Investing in Politicians; Or, Give Early, Give Often’, *The Journal of Law & Economics*, 35(1), pp. 15–43.

Sougiannis, T. (1994) ‘The Accounting Based Valuation of Corporate R&D’, *The Accounting Review*, 69(1), pp. 44–68.

Statman, M. and Glushkov, D. (2009) ‘The wages of social responsibility’, *Financial Analysts Journal*, 65(4), pp. 33–46.

Sterlacchini, A. (2008) ‘R&D, higher education and regional growth: Uneven linkages among European regions’, *Research Policy*, 37(6–7), pp. 1096–1107.

Stigler, G. J. (1971) ‘The Theory of Economic Regulation’, *The Bell Journal of Economics and Management Science*, 2(1), pp. 3–21.

Stiglitz, J. E. (1985) ‘Credit Markets and the Control of Capital’, *Journal of Money, Credit, and Banking*, 17(2), pp. 133–152.

Su, Z., Xiao, Z. and Yu, L. (2019) ‘Do political connections enhance or impede corporate innovation?', *International Review of Economics & Finance*, 63, pp. 94–110.

Suarez, S. L. (1998) 'Lessons learned: Explaining the political behavior of business', *Polity*, 31(1), pp. 160–186.

Suarez, S. L. (2000) *Does Business Learn?: Tax Breaks, Uncertainty, and Political Strategies*. Ann Arbor, MI: University of Michigan Press.

Subrahmanyam, M. G. and Thomadakis, S. B. (1980) 'Systematic Risk and the Theory of the Firm', *The Quarterly Journal of Economics*, 94(3), pp. 437–451.

Suchman, M. C. (1995) 'Managing Legitimacy: Strategic and Institutional Approaches', *The Academy of Management Review*, 20(3), pp. 571–610.

Sun, P., Mellahi, K. and Wright, M. (2012) 'The Contingent Value of Corporate Political Ties', *Academy of Management Perspectives*, 26(3), pp. 68–82.

Sun, R. and Zou, G. (2021) 'Political connection, CEO gender, and firm performance', *Journal of Corporate Finance*. doi: 10.1016/J.JCORPFIN.2021.101918.

Sutton, T., Devine, R. A., Lamont, B. T. and Holmes Jr, R. M. (2021) 'Resource dependence, uncertainty, and the allocation of corporate political activity across multiple jurisdictions', *Academy of Management Journal*, 64(1), pp. 38–362.

Symeonidis, G. (1996) *Innovation, Firm Size and Market Structure: Schumpeterian Hypotheses and Some New Themes*, working paper. OECD Economic Studies. Available at: https://www.oecd-ilibrary.org/economics/innovation-firm-size-and-market-structure_603802238336 (Accessed: 21 December 2019).

Tahoun, A. (2014) 'The role of stock ownership by US members of Congress on the market for political favors', *Journal of Financial Economics*, 111(1), pp. 86–110.

Thomas, D. W., Manly, T. S. and Schulman, C. T. (2003) 'An international investigation of the influence of dividend taxation on research and development tax credits', *Journal of the American Taxation Association*, 25(2), pp. 35–54.

Torres-Spelliscy, C. (2016) 'Shooting your brand in the foot: What Citizens United invites', *Rutgers Law Review*, 68(3), pp. 1297–1365.

Triana, M. del C., Richard, O. C. and Su, W. (2019) 'Gender diversity in senior management, strategic change, and firm performance: Examining the mediating nature of strategic change in high tech firms', *Research Policy*, 48(7), pp. 1681–1693.

Turnbull, S. M. (1977) 'Market Value and Systematic Risk', *The Journal of Finance*, 32(4), pp. 1125–1142.

Tushman, M. L. and Rosenkopf, L. (1996) ‘Executive Succession, Strategic Reorientation and Performance Growth: A Longitudinal Study in the U.S. Cement Industry’, *Management Science*, 42(7), pp. 939–953.

Tzouvanas, P., Kizys, R., Chatziantoniou, I. and Sagitova, R. (2020) ‘Environmental disclosure and idiosyncratic risk in the European manufacturing sector’, *Energy Economics*, 87.

Unsal, O. (2020) ‘Two faces of corporate lobbying: Evidence from the pharmaceutical industry’, *North American Journal of Economics and Finance*, 51.

Unsal, O., Hassan, M. K. and Zirek, D. (2016) ‘Corporate lobbying, CEO political ideology and firm performance’, *Journal of Corporate Finance*, 38, pp. 126–149.

Van Knippenberg, D., De Dreu, C. K. and Homan, A. C. (2004) ‘Work Group Diversity and Group Performance: An Integrative Model and Research Agenda’, *Journal of Applied Psychology*, 89(6), pp. 1008–1022.

Velte, P. (2017) ‘Does ESG performance have an impact on financial performance? Evidence from Germany’, *Journal of Global Responsibility*, 8(2), pp. 169–178.

Wang, L. (2015) ‘Protection or expropriation: Politically connected independent directors in China’, *Journal of Banking and Finance*, 55, pp. 92–106.

Wang, L., Li, S. and Gao, S. (2014) ‘Do greenhouse gas emissions affect financial performance? - An empirical examination of Australian public firms’, *Business Strategy and the Environment*, 23(8), pp. 505–519.

Wang, Y., Wei, Y. and Song, F. M. (2017) ‘Uncertainty and corporate R&D investment: Evidence from Chinese listed firms’, *International Review of Economics and Finance*, 47, pp. 176–200.

Wartick, S. L. and Mahon, J. F. (1994) ‘Toward a Substantive Definition of the Corporate Issue Construct’, *Business & Society*, 33(3), pp. 293–311.

Wellman, L. A. (2017) ‘Mitigating political uncertainty’, *Review of Accounting Studies*, 22(1), pp. 217–250.

Werner, T. (2017) ‘Investor Reaction to Covert Corporate Political Activity’, *Strategic Management Journal*, 38(12), pp. 2424–2443.

Wernerfelt, B. (1984) ‘A resource-based view of the firm’, *Strategic Management Journal*, 5(2), pp. 171–180.

Wernerfelt, B. (1989) ‘From Critical Resources to Corporate Strategy’:, *Journal of General Management*, 14(3), pp. 4–12.

Wernerfelt, B. and Montgomery, C. A. (1988) 'Tobin's q and the Importance of Focus in Firm Performance', *The American Economic Review*, 78(1), pp. 246–250.

Westphal, J. D. and Deephouse, D. L. (2011) 'Avoiding bad press: Interpersonal influence in relations between ceos and journalists and the consequences for press reporting about firms and their leadership', *Organization Science*, 22(4), pp. 1061–1086.

Wiersema, M. F. and Bantel, K. A. (1992) 'Top Management Team Demography and Corporate Strategic Change', *The Academy of Management Journal*, 35(1), pp. 91–121.

Wright, P., Ferris, S. P., Sarin, A. and Awasthi, V. (1996) 'Impact of Corporate Insider, Blockholder, and Institutional Equity Ownership on Firm Risk Taking', *The Academy of Management Journal*, 39(2), pp. 441–463.

Wu, K. and Lai, S. (2020) 'Intangible intensity and stock price crash risk', *Journal of Corporate Finance*. North-Holland, 64.

Xu, N., Yuan, Q., Jiang, X. and Chan, K. C. (2015) 'Founder's political connections, second generation involvement, and family firm performance: Evidence from China', *Journal of Corporate Finance*, 33, pp. 243–259.

Xu, Z. (2020) 'Economic policy uncertainty, cost of capital, and corporate innovation', *Journal of Banking and Finance*. doi: 10.1016/j.jbankfin.2019.105698.

Yim, S. (2013) 'The acquisitiveness of youth: CEO age and acquisition behavior', *Journal of Financial Economics*, 108(1), pp. 250–273.

Yu, F. and Yu, X. (2011) 'Corporate Lobbying and Fraud Detection', *The Journal of Financial and Quantitative Analysis*, 46(6), pp. 1865–1891.

Zavyalova, A., Pfarrer, M. D., Reger, R. K. and Shapiro, D. L. (2012) 'Managing the message: The effects of firm actions and industry spillovers on media coverage following wrongdoing', *Academy of Management Journal*, 55(5), pp. 1079–1101.

Zhang, Y. and Rajagopalan, N. (2004) 'When the Known Devil Is Better than an Unknown God: An Empirical Study of the Antecedents and Consequences of Relay CEO Successions', *The Academy of Management Journal*, 47(4), pp. 483–500.

Zhou, X. (2001) 'Understanding the determinants of managerial ownership and the link between ownership and performance: Comment', *Journal of Financial Economics*, 62(3), pp. 559–571.

Zucker, L. G. (1987) 'Institutional Theories of Organization', *Annual Review of Sociology*, 13 (1), pp. 443–464.