The Effect of Social Capital on Firm Risk, Market Valuation and Risk Shifting Incentives

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Dedicated to

my father, Engr. Md. Hedayet Ullah

and

my mother, Mrs. Mahbuba Begum

Declaration of Authenticity and Author's Rights

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 examination which has led to the award of a degree.

Signed:

Date: 10 September 2021

Abstract

This PhD thesis comprises three empirical chapters related to social capital. The thesis investigates the impact of social capital, captured by corporate social responsibility (CSR), on firms' risk, market valuation and investment decisions. In my first empirical chapter, I assess whether social capital is an effective reputational hedge against risks emerging from political and industry-wide uncertainty. I document that CSR reputation significantly reduces stock return volatility during regional political uncertainty and industry-wide peer competition, but cannot mitigate cash flow volatility. I further document that the hedging effect of social capital is transient but has positive real effect on firms' future performance and growth opportunities. In my second empirical chapter, I examine whether social capital creates value via effective hedging during political uncertainty. I find that firms with high social capital realize higher short-term abnormal returns compared to firms with low social capital during political uncertainty caused by elections. Moreover, I find that a portfolio of high CSR firms earns significantly higher long-term abnormal returns than portfolio of low CSR firms over the first three years after the election event. Hence, I document the evidence that social capital creates value both in the short and long run around election periods via reputation effect. In the third empirical chapter, I examine the relationship between CSR reputation and firm investment. I document that firms with high default probability shift risk, via increasing investment intensity, from shareholders to creditors when their CSR reputation is high. Hence, CSR reputation affects risk-shifting incentives. I find evidence that firms with higher probability of default increase their CSR investment to signal jam the information on firms' actual financial fragility.

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List of Abbreviations

2SLS	2-Stage Least Squares
AR	Abnormal Return
BHAR	Buy and Hold Abnormal Return
BP	British Petroleum
CAPM	Capital Asset Pricing Model
CAR	Cumulative Abnormal Return
CEC	Commission for the European Communities
CECP	Chief Executives for Corporate Purpose
CEO	Chief Executive Officer
CRSP	Center for Research in the Security Prices
CSI	Consumer Sentiment Index
CSR	Corporate Social Responsibility
DiD	Difference-in-Difference
EPU	Economic Policy Uncertainty Index
ESG	Environmental, Social, and Governance
EU	European Union
GARCH	Generalized Autoregressive Conditional Heteroskedasticity
GDP	Gross Domestic Product
GSIA	Global Sustainable Investment Alliance
ISO	International Standards Organization
IV	Instrumental Variable
NBER	National Bureau of Economic Research
NGO	Non-Governmental Organization
NYSE	New York Stock Exchange
OLS	Ordinary Least Squares
PP&E	Plant, Property, and Equipment
R&D	Research and Development
ROA	Return on Asset
SIC	Standard Industrial Classification
U.S.	United States
VAR	Vector Autoregressive Analysis

1. Introduction

1.1 An overview of social capital and corporate social responsibility

From a macroeconomic perspective, social capital is the productive value of social networks and the associated norms of reciprocity (Putnam, 1993; Scrivens and Smith, 2013). It is a certain set of social norms and shared values in a society that foster mutual trust and cooperative behavior (Guiso et al., 2008), which produce socially efficient outcomes such as higher economic growth. From an organizational perspective, social capital is a resource that is realized through shared trust between a firm and its stakeholders (Leana and Van Buren, 1999).

Firms can be trustworthy to their stakeholders and the broader community via investment in social capital (Servaes and Tamayo, 2017). Meanwhile, corporate social responsibility (CSR) is a business commitment to contribute sustainable economic development via working to improve the quality of life of the stakeholders (World Business Council for Sustainable Development, 2000). Social capital and CSR have many common elements related to cooperative social networks among agents, such as civic engagement and trust and cooperative norms (Scrivens and Smith, 2013; Lins et al., 2017).[1] Hence, the extant literature posits that CSR practices generate social capital

[1] The civic engagement approach of social capital indicates different type of civic actions (volunteering, donations, political participation etc.) that can contribute to the well-being of the community (Scrivens and Smith, 2013). This engagement fosters trust and cooperative norms. The concept of trust and cooperative norms fundamentally insinuates trust, shared beliefs and social norms. These distinct mechanisms of social capital generate mutually beneficial cooperation and contribute straight to better economic and social outcomes (Scrivens and Smith, 2013).

by building trust based social network between the firm and all its stakeholders (Degli Antoni and Sacconi, 2011). Therefore, CSR is a measure of firm-level social capital.[2]

CSR has emerged as an increasingly important corporate issue to both business firms and their stakeholders. A 2017 survey by Deloitte shows that 88% of millennials judge firms' social capital along with financial performance. Meanwhile, the assets under management in ESG integration strategies increase by 69% from 2016 to 2018, according to Global Sustainable Investment Alliance (GSIA). Chief Executives for Corporate Purpose's (CECP) 2019 survey, on 250 global firms with revenues of approximately $7.9 trillion, shows that surveyed firms' CSR investment increase by 11% from 2016 to 2018, reaching $26 billion. This increasing CSR trend also attracts academic attention and motivates to investigate the financial implications of CSR. One strand of existing literature provides empirical evidence that firms with higher CSR reputation enjoy lower cost of capital (Goss and Roberts, 2011; Hasan et al., 2017), higher cash flows (Gregory et al., 2014) and higher market valuation (Edmans, 2011; Flammer, 2013; Cordeiro and Tewari, 2015). Meanwhile, another strand of related literature suggests that CSR investment tends to create agency problems as it benefits managers at the cost of shareholders (Cheng et al., 2013; Krüger, 2015), hence reduces firm value (Di Giuli and Kostovetsky, 2014; Masulis and Reza, 2015). Therefore, the empirical evidence on the economic value of CSR investment is still inconclusive, which inspires further investigations for better understanding on the rationale for CSR investment.

[2] Hereafter, I use the term "social capital" and "CSR" interchangeably.

1.2 Motivations for corporate social responsibility

The gradual shifts in the conceptualization of CSR explain its rationalization (Davis, 1973; Carroll, 1979). Bowen (1953) first comprehend CSR to theorize the relationship between corporations and society and define CSR as:

"It refers to the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society" (p.6).

Afterwards, the concept of CSR has been gradually updated and associated with broader corporate goals (Davis, 1973; Carroll, 1977). For instance, Carroll (1979) integrates both corporate economic and social goals into the framework of total social responsibility of business which encompasses the economic, legal, ethical and discretionary categories. An institutional definition of CSR is provided by the European Union (EU), explaining it as a concept to integrate social and environmental concerns into business operations and network with stakeholders voluntarily (CEC, 2006). Gradually, firms' interest in the strategic use of CSR grows and their views shift from the institutionalized conceptions of CSR as moral responsibility. Rather, firms start to view CSR practices as strategic corporate investments to build reputation with a motivation to maximize firms' value (McWilliams et al., 2006).

Porter and Kramer (2006) highlight four main rationales for CSR practices: moral obligation, sustainability, license to operate, and reputation. The moral appeal of CSR argues that firms' duty is to be good citizens by doing the right thing, such as operating within the law, filing financial statements with honesty. This CSR motivation signifies earning profit in ways that respect stakeholders and honor ethical values. Meanwhile,

the sustainability principle emphasizes firms' long-term economic performance instead of short-term benefits that are detrimental to society or the environment. The sustainable business stands on the triple bottom line of economic prosperity, social justice and environmental quality (Elkington, 1997). While firms can ignore the sustainability principles due to lack of understanding of future greater costs from social obligation violation, the license-to-operate approach is more practical. The concept of license to operate explains CSR activities as a way for business to get explicit permission from government or other stakeholders to run operations. Socially responsible corporate behavior via complying with state regulations, industrial norms, and normative institutional environment help firms' operations to be seen legitimate (Mcwilliams and Siegel, 2001; Aguilera et al., 2007; Campbell, 2007). For example, maintaining state or industry required precautions while operating in chemical or extractive industries, as these operations are environmentally hazardous. Also, intense pressure from labor unions may influence firms to adopt better labor standards.

The reputation motive of CSR is linked with strategic benefit. A company may choose to invest in CSR to build reputation via trust (Fombrun and Shanley, 1990), which will eventually pay off. For instance, socially responsible corporate behavior improve firms' reputation and consumer loyalty (Kotler and Lee, 2005), attract efficient employees (Turban and Greening, 1997), gain positive market reaction from investors (Cordeiro and Tewari, 2015) and reduce risk of reputational losses emerging from adverse firm-specific events (Peloza, 2006; Minor and Morgan, 2011). Meanwhile, managers can use CSR reputation to shield their opportunistic behavior, such as earning management (Martínez-Ferrero et al., 2016), profit shifting (i.e., cross-country tax avoidance) (Hasan et al., 2019) and different socially irresponsible

activities (Bouslah et al., 2018). CEOs may use CSR for entrenchment purposes to gain private benefits instead of increasing shareholder value (Chahine et al., 2019). Moreover, firms may use CSR activities for greenwashing[3] to create an overinflated environmental reputation which is different from firms' underlying conduct (Delmas and Burbano, 2011; Crilly and Ioannou, 2017). The empirical evidence on such contrary implications of CSR reputation creates an appeal to further research on this area. In this thesis, I have investigated different aspects of CSR reputation, such as hedging ability, valuation effects, risk-shifting incentives, and signal-jamming motives.

In the first empirical chapter of my thesis, I assess the hedging ability of CSR reputation on firm risk during political and industry-wide uncertainty. When the information quality on asset fundamentals is distorted due to uncertainty, investors diverge from their perception about a security's risk and value (Miller, 1997; Ozsoylev and Werner, 2011). As investors take into account firms' reliability in addition to the risk-return trade-off (Guiso et al., 2008), higher CSR reputation can influence investors' perception positively about firms' quality and trustworthiness. Hence, I explore whether firms with more social capital enjoy greater investor confidence and hedge the negative effects of uncertainty by reducing stock return volatility. Moreover, as high CSR firms' profitability and growth expectations are higher compared to low CSR firms (Russo and Fouts, 1997; Barnett and Salomon, 2012; Gregory et al., 2014),

[3] Greenwashing is firms' CSR efforts which are largely symbolic and often opportunistic as these activities are influenced by self-reported rhetoric (Bansal and Kistruck, 2006; Barnett, 2007; Matejek and Gössling, 2014). Hence, firms' CSR reporting becomes a poor predictor of their social performance, if they are engaged in greenwashing (Crilly and Ioannou, 2017).

I investigate whether CSR reputation can hedge cash flow volatility during uncertainty. Market frictions, such as information asymmetry, tax convexity, and financial distress, make the cash flow volatility costly (Tufano, 1996; Ağca and Mozumdar, 2008; Hankins, 2011). Meanwhile, hedging can increase firm value by lowering cash flow volatility (Stulz, 1990; Froot et al., 1993). Also, firms' high CSR reputation leads to relatively lower cost of capital stemming from a lower risk premium (Cao et al., 2015; Hasan et al., 2017), which can also lead to higher firm value.

In my second empirical chapter, I investigate whether firms with high social capital can realize higher value surrounding the election period. Stock prices are influential to agents as they rely on these while making corporate decisions. Also, investors can make market-based corrective actions based on firms' stock market performance. Moreover, firms' stock market performance has some real effects, such as firms' stock price informativeness increases their productivity (Bennett et al., 2020). Meanwhile, low valuation can trigger takeover threats (Edmans et al., 2012), regulatory intervention, shareholder activism (Bradley et al., 2010) etc. As the empirical evidence on the valuation effect of social capital is inconclusive, it requires further investigation.

Business firms' increasing awareness regarding the economic benefits of CSR reputation is reflected in the remarkable upward trend in CSR investment (CECP, 2019). This raises a concern whether firms exploit CSR reputation for immediate payoffs at the cost of long-term value. Firms' risk-shifting behavior can distort their reputation, future access to capital and the ability to pursue positive NPV projects (Diamond, 1989; Almeida et al., 2011). Moreover, signal jamming mechanisms may provide immediate payoffs, but at the cost of long-term firm value. Hence, my third

empirical chapter investigates the relationship between social capital and investment to explore high CSR firms' risk-shifting incentives and signal jamming motivation.

1. 3 Categories of CSR activities

The International Standards Organization (ISO) has created an international standard, known as ISO 26000, to address and assess social responsibilities of businesses and organizations. It defines seven core subjects of social responsibility: organizational governance, human rights, labor practices, the environment, fair operating practices, consumer issues, and community involvement and development. ISO 26000 is increasingly used to assess firms' social responsibility performance, hence the commitment to sustainability. Different CSR related groups categorize CSR activities in different ways using ISO 26000. The heterogeneity in CSR related terminologies or practices exists due to regional differences in culture and ideology, differences in values and norms between various stakeholders, and different market settings (Sandberg et al., 2009). In this thesis, I follow the Environmental, Social, and Governance (ESG) classification of Asset4 database, provided by Refinitiv (formerly Thomson Reuters). Asset4 classifies CSR activities into four major categories, named as pillars: Economic, Social, Environmental, and Corporate Governance. Based on 900 evaluation points and 250 key performance indicators, Asset4 database measures scores for these four pillars. The environmental pillar focuses on firms' emission reduction, product innovation, and reduction of resource use. The corporate governance pillar consists five sub-categories. These are board structure, board functions, shareholders' right, compensation policy, and vision-and-strategy. The social pillar is based on human rights, employment quality, training-and-development, health-and-safety, product responsibility, community and diversity. Finally, the

economic pillar is originated on financial performance, shareholders' loyalty and client loyalty.

1.4 Socially responsible firms' characteristics

Firms' CSR engagement level mainly depends on related costs and benefits (Mcwilliams and Siegel, 2001). Accordingly, CSR activities are practiced both in small and large firms, depending on their visibility, resource access, operating scale and organizational cost (Udayasankar, 2008; Wickert et al., 2016). Due to higher visibility, larger firms have to face more scrutiny from stakeholders and have higher commitment to CSR (Udayasankar, 2008). Meanwhile, greater resource-slack (such as higher cash flow and profitability) also supports large firms to meet their CSR commitments (Waddock and Graves, 1997; Seifert et al., 2016). However, many small firms also responsive to stakeholder demands. Though they cannot donate, small firms remain socially responsible through other resources such as expertise, space and time (Baumann-Pauly, 2013; Wickert et al., 2016). Moreover, firms with lower capital spending, higher payout and leverage ratio tend to engage more in CSR activities (Ferrell et al., 2016). Further to that, the country's legal origin influences firms' CSR engagement, such as firms from civil law countries have higher CSR than firms from common law countries (Liang and Renneboog, 2017). Overall, firms' CSR behavior is highly influenced by nations, regions, and industries (McWilliams et al., 2006). My thesis sample shows that firms with a high CSR score have relatively higher operating margin and profitability compared to low CSR score firms, which comply with the existing literature. Moreover, firms with high CSR score have low average investment, default probability and leverage compared to firms with low CSR score, consistent with existing literature such as Deng et al. (2013).

1.5 Thesis aim and findings

This thesis focuses on three main topics related to social capital. The aim of this study is to document novel empirical evidence on the hedging effect, valuation effect, risk-shifting incentives and signal jamming motivation of social capital.

During negative shocks to firm or market level trust, investors place higher valuation premiums and lower credit spreads to the firms with high social capital as these firms are perceived as more trustworthy (Amiraslani et al., 2017; Lins et al., 2017). However, CSR investment, to build social capital, comes with the trade-off of reduced financial flexibility, especially during negative shocks (Becchetti et al., 2015). Therefore, an extensive investigation requires for further understanding of the insurance-like ability of CSR reputation during uncertainty. The extant literature focuses on the impact of the CSR reputation on stock valuation and operating performance during firm-specific negative events (Choi and Wang, 2009; Godfrey et al., 2009; Barnett and Salomon, 2012) and economy-wide shocks (Lins et al., 2017). The focus should also be on the impact of CSR on firm risk, which motivates my first empirical chapter. In the first empirical chapter, I empirically assess the hedging ability of CSR on firm risk during political and industry-wide uncertainty.

By considering the potential reverse causality between CSR and firm risk, I use for identification one staggered exogenous shock to firm risk: U.S. gubernatorial elections to capture regional political risk. I also use product market fluidity to measure industry-wide exogenous changes in product market competition as a source of exogenous variation in firm risk. Gubernatorial elections create regional policy uncertainty as state governors have significant influence on state-level policies relevant to business environment (Falk and Shelton, 2018). Political uncertainty

increases expected stock return volatility during election period as stock returns have exposure to systematic economic forces (Campbell, 1985; Fama and French, 1988, 1989; Chen, 1991; Bailey and Chung, 1995). Moreover, firms temporarily reduce investment expenditures before the election outcome due to electoral uncertainty (Julio and Yook, 2012), which in turn generates high cash flow volatility (Minton and Schrand, 1999). While U.S. gubernatorial elections are a source of exogenous variation in uncertainty, they have no immediate effect on contemporaneous firm-level CSR. Hence, I exploit elections as well as closely contested elections as exogenous shocks to risk for measuring causal effect of CSR on firm risk. Based on the signaling theory and the reputation effects, I argue that despite the uncertainty surrounding the election, investors would keep investing in the firms with high CSR reputation with a perception that these firms have the efficacy of resolution to adverse effects of policy changes. Moreover, customers and suppliers may also keep trust on these firms' ability and willingness to keep their commitments associated with the implicit contracts. Therefore, I expect low stock return volatility and cash flow volatility for firms with high CSR score compared to firms with low CSR score during an election year. I also use exogenous changes in product market competition, measured by product market fluidity developed by Hoberg et al. (2014). Fluidity is a text-based measure that gauges the change in firms' product market space by comparing firm products with competitors. Higher market fluidity creates negative variation to the stability of future cash flow due to higher competition threat (Hoberg et al., 2014). Hence, firms in highly fluid product markets face high risk due to greater competition. But firms' level of CSR is not affected immediately. The exogenous nature of fluidity allows me to estimate the causal effect of CSR on firm risk by applying a difference-in-difference

model. I argue that firms with high CSR will be benefited via reputational effect of CSR during this exogenous competition shift as stakeholders will value their quality and reliability.

By analyzing all publicly listed U.S. firms, excluding financial and utilities firms, over 2002 to 2016, I find that CSR reputation reduces stock return volatility during political uncertainty that emerged from elections, consistent with my expectation. The reputational hedging effect is stronger during closely contested elections. For instance, a one standard deviation increase in CSR score is associated with 6.52% decrease in stock return volatility during a gubernatorial election and 11.56% decrease during closely contested elections for firms headquartered in states facing gubernatorial elections. However, the results do not support the argument that CSR reputation can reduce cash flow volatility during election period. This can be for increasing cash holdings during election years as a precautionary buffer (Julio and Yook, 2012). Moreover, as CSR reputational hedging is transient, it cannot affect quasi-static cash flows. Also, due to firms' earnings smoothing the hedging effect of CSR reputation possibly cannot be visible. I also find that the hedging effect of CSR is transient, but CSR reputation during election year has lasting real effects, such as higher operating margin, profitability and Tobin's Q surrounding an election cycle. I use an instrumental variable (IV) approach for robustness and my findings are similar to the baseline results regarding political uncertainty. Regarding industry-wide exogenous competitive changes, I find that CSR can be an effective hedge against market risk. For instance, a one-standard-deviation increase in CSR score reduces return volatility by 1.19% during greater product market fluidity.

The findings of the first empirical chapter motivate my second empirical chapter. In my second empirical chapter, I investigate whether investors adjust their valuation premium positively for firms with high social capital surrounding the election period. The empirical evidence on how and whether shareholders value CSR reputation is still inconclusive. While some studies find that investors value firms' social capital positively both in the short and long-run (Flammer 2013; Cordeiro and Tewari, 2015), others find negative market valuation (Fisher-Vanden and Thorburn, 2011; Krüger, 2015; Brammer et al., 2006). Hence, in the second empirical chapter, I focus on the valuation effect of social capital in the short and long-run. While policy uncertainty augments the expected return volatility around an election period (Pantzalis et al., 2000; Li and Born, 2006; Białkowski et al., 2008; Boutchkova et al., 2012; Pasquariello and Zafeiridou, 2014), risk-averse investors are not compensated adequately for this political risk (Białkowski et al., 2008). I argue that investors develop perception of quality via CSR reputation and rely on firms' efficacy to resolve the effect of policy changes surrounding an election. Also, the investors will be confident that firms with high CSR reputation will keep their commitments associated with implicit contracts[4] during the election period. Hence, investors will place a valuation premium for these firms, which will lead to positive abnormal returns

[4] Implicit contracts are firms' informal promises to stakeholders, such as providing quality products and customer services, ensuring employee welfare, and protecting the environment. Failing to meet the implicit contract can adversely affect the values of explicit contracts which are formal contracts between firms and their stakeholders, such as investment contracts, employee contracts, and loan contracts (Cornell and Shapiro, 1987).

surrounding an election year. Therefore, I expect firms with high CSR reputation will realize positive abnormal returns surrounding an election year. The extant literature shows that investors place a valuation premium for firms with high social capital during firm-specific negative events (Godfrey et al., 2009; Minor and Morgan, 2011; Shiu and Yang, 2017) and the 2007-2009 financial crisis (Lins et al., 2017). Regarding economy-wide uncertainty, using the 2007-09 financial crisis as exogenous shock can lead to biased estimates as it had a direct effect on all real economic activities (Berger et al., 2020). However, I use U.S. gubernatorial elections as a source of economy-wide uncertainty, which are staggered and exogenous shocks to market value.

I conduct an event study to examine the short-run valuation effect of CSR reputation during gubernatorial elections. I find empirical evidence of valuation premium for firms with high CSR reputation for different pre-election, post-election, and different event windows. To test CSR reputation effect on firms' long-term stock performance, I apply a standard Buy and Hold Abnormal Returns (BHARs) approach over the first three years after the elections. The results show that high CSR firms realize higher returns compared to low CSR firms, over the first two years after the election. Alternatively, I use a calendar-time portfolio approach and find that the portfolio of firms with high CSR score earns higher return compared to portfolio of firms with low CSR score for a holding period of 12, 24, and 36 months after the election event. Overall, the results are consistent with my expectation that social capital creates value in the short and long-run around election periods via the reputation channel.

While I find empirical evidence of the hedging ability and positive valuation effect of CSR reputation, a remarkable upward trend in CSR investment is also observed

globally (CECP, 2019). It indicates business firms' increasing awareness about the economic benefit of CSR reputation and their intention to utilize this opportunity. Meanwhile, a concern arises whether firms exploit CSR reputation for immediate payoffs at the cost of long-term value, which motivates my third empirical chapter. The extant literature provides empirical evidence on the engagement of firms with high CSR reputation in earning management (Martínez-Ferrero et al., 2016), profit shifting (i.e., cross-country tax avoidance) (Hasan et al., 2019) and different socially irresponsible activities (Bouslah et al., 2018). Social capital is used in these cases to shield the firms from the negative reactions of the affected stakeholders. My third empirical chapter focuses on the relationship between social capital and investment. It investigates whether firms with more social capital transfer wealth from creditors to shareholders through risky investment (i.e., risk-shifting). The risk-shifting hypothesis suggests that highly levered or financially distressed firms have an incentive to transfer wealth from debtholders to shareholders (Jensen and Meckling, 1976; Brealey and Myers, 1996). By increasing risky investment, shareholders of distressed firms try to secure the benefit if things go well; if not, debtholders bear the costs (Eisdorfer, 2008; Becker and Strömberg, 2012). Risk-shifting behavior is likely to reduce future access to capital and ability to pursue positive NPV projects due to reputation distortion (Diamond, 1989; Almeida et al., 2011).

I use financially distressed firms' investment sensitivity to high expected volatility as an empirical set up to test whether social capital affects firm's risk-shifting incentives. According to a real option approach, firms prefer to reduce their investment when expected volatility is high, because the option value of waiting increases with the degree of uncertainty of its payoff (McDonald and Siegel, 1986; Pindyck and

Solimano, 1993). Meanwhile, Eisdorfer (2008) finds empirical evidence that financially distressed firms increase investment in response to expected higher volatility, hence risk-shift. As the debtholders predict that firms with high CSR are less likely to involve in asset substitution (Amiraslani et al., 2017), I argue that financially distressed firms can exploit CSR reputation to protect them from increased scrutiny for risk-shifting. Therefore, CSR reputation can mitigate potential negative effects of risk-shifting behavior, such as increasing agency costs and lower access to finance. Hence, I expect that firms with high social capital increase investment intensity in response to expected higher volatility than firms with low social capital, if their default probability is high. In third empirical chapter, I also document whether financially distressed firms increase CSR investment with signal-jamming intention. Firms having high probability of default may have to face predatory attacks from financially strong competitors in the form of price war (Telser, 1966), more intensely during economic uncertainty. In response, firms with high default probability may increase CSR investment to reflect 'deep-pocket' status to rivals or other stakeholders. Hence, 'halo effect' of CSR reputation can mask firms' actual financial fragility (i.e., signal-jamming). Although financially distressed firms' risk-shifting incentives and signal-jamming motivation can be mutually exclusive, they are independent in my thesis. I investigate both potential exploitations of CSR reputation, whereas risk-shifting hypothesis of my third empirical chapter is conditional on firms' existing level of CSR.

I analyze all publicly listed U.S. firms, excluding financial and utilities firms, from 2002 to 2016. I use four alternative measures of volatility for identification: expected market volatility measured by a GARCH (1,1) model, U.S. composite Economic Policy Uncertainty index of Baker et al. (2016), the NBER recession indicator, and

Consumer Sentiment Index of the University of Michigan. Consistent with my expectation, I find evidence that firms with high default probability increase investment in basic operations during high expected volatility if they have high social capital. Therefore, firms with high default probability exploit their existing CSR reputation for risk-shifting purposes during economic volatility. To address the potential reverse causality between investment intensity and CSR reputation, I exploit the Deepwater Horizon BP oil spill in 2010 as a quasi-natural experiment and apply a difference-in-difference (DiD) methodology. This unexpected event serves as an exogenous shock to CSR, but not to the investment intensity. The results from the difference-in-difference analysis also suggest that social capital affects risk-shifting incentives. Regarding the signal-jamming hypothesis, from additional tests, I find firms with high default probability increase their investment in CSR activities during economic uncertainty, hence use CSR investment as a signal jamming mechanism. Overall, my third empirical chapter documents that firms with high default probability increase investment in CSR during economic uncertainty to signal jam the information on firms' actual financial fragility. Meanwhile, if firms with high default probability already have higher CSR reputation, they increase investment in basic business operations during economic uncertainty to transfer wealth from creditors to shareholders.

1.6 Thesis contribution

This thesis makes several contributions to the related literature. First, I provide empirical evidence on the causal effect of CSR on total firm risk measured by stock return volatility and alternatively by cash flow volatility. I address the potential reverse causality between CSR and risk by using an IV approach and exogenous shock on firm

risk driven by political uncertainty (electoral cycles). I also use product market competition (market fluidity) as a source of exogenous variation in firm risk. Second, I investigate a comprehensive sample of all U.S. firms by considering both firms with and without a CSR score. Hence, in addition to assessing the impact of high CSR score, I also investigate whether having CSR credentials has any effect on firm risk. Third, I complement the literature related to the valuation effect of social capital. I provide novel empirical evidence on the causal effect of CSR reputation on firms' market valuation by using regional political risk surrounding U.S. gubernatorial elections as an exogenous shock on stock returns. Specifically, I find value implications of social capital for both short and long run. Fourth, I show that firms with high CSR reputation transfer wealth from shareholders to creditors when their default probability is high. Hence, social capital affects firms' risk-shifting incentives. Fifth, I provide evidence that firms facing higher probability of default increase investment in CSR practices. They use CSR reputation as a signal-jamming mechanism to prevent investors and other stakeholders from identifying how distressed a firm truly is. Finally, I have provided empirical evidence on both the bright side (i.e., hedging effect and positive valuation effect) and the dark side (i.e., risk-shifting incentives and signal jamming motivation) of CSR reputation.

Overall, the results of this thesis have important implications. My first empirical chapter provides empirical evidence on the hedging ability of social capital during economy-wide and market-wide uncertainty. As hedging can ease firms' access to finance and increase value, firms should take into consideration my findings on the hedging ability of social capital while developing risk management strategies. My second empirical chapter shows that social capital creates value both in the short and

long-run around election periods. This novel empirical evidence has implications for both agents and investors. Firms' financial market performance has some real effects. For instance, stock price informativeness can raise firm productivity (Bennett et al., 2020). Also, lower market valuation can trigger takeover threats (Edmans et al., 2012), and regulatory intervention and shareholder activism (Bradley et al., 2010). Hence, management can imply my findings while taking actions to manage firms. Besides, investors can consider the hedging ability of CSR reputation and its positive valuation effect while constructing risk-adjusted portfolios. My third empirical chapter provides evidence on risk-shifting incentives of social capital. This knowledge can help creditors to be aware of potential wealth-transfer of firms with high social capital. Risk-shifting behavior can distort firms' reputation as well as future access to capital and the ability to pursue positive NPV projects (Diamond, 1989; Almeida et al., 2011). Meanwhile, this chapter also identifies firms' signal jamming motivation of CSR investment. Though both risk-shifting and signal jamming mechanisms may provide immediate payoffs, it can cost firms' long-term firm value. My thesis' findings can allow policymakers and regulators to better understand potential ways for opportunistic exploitation of CSR reputation. Consequently, they can take actions and design policies to mitigate opportunistic exploitation of CSR reputation and facilitate appropriate adoption of CSR practices. Finally, by contributing to the knowledge on the corporate strategic use of social capital, its economic benefits, market valuation in short and long run and potential opportunistic exploitation, this study contributes to the welfare of firms and their stakeholders. Therefore, this study has implicit implications for the economy and society.

1.7 Structure of the thesis

The remaining of the thesis proceeds as follows. Chapter 2 (first empirical chapter) documents the discussion and empirical evidence on whether social capital is an effective hedge against risks arising from political and industry-wide uncertainty. Chapter 3 (second empirical chapter) documents the discussion on whether social capital creates value via effective hedging during political uncertainty, in the short and long run. Chapter 4 (third empirical chapter) documents the relationship between CSR reputation and firm investment, hence, assess whether social capital affects risk-shifting incentives. Moreover, in this chapter, I document whether firms facing higher probability of default increase their CSR investment to use CSR reputation as signal-jamming mechanism. Chapter 5 presents an overall discussion on thesis findings, contributions, limitations, and suggestions on further related research.

2. Can Social Capital and Reputation Mitigate Political and Industry-wide Risk?

2.1 Introduction

The focus on social capital as a significant link to ultimate success or failure has been on the rise over the past few years. A 2019 survey by Deloitte shows that 95% of surveyed business leaders plan to invest more on social-impact issues, with 93% agreeing with the notion that businesses are "stewards of society". Meanwhile, 88% of millennials judge a firm on the basis of its social impact in addition to financial performance (Deloitte, 2017). But social capital also has significant tangible effects. During periods of unexpectedly low trust, investors perceive firms with high social capital to be more trustworthy and place higher valuation premiums and lower credit spreads on these firms (Amiraslani et al., 2017; Lins et al., 2017). However, enhancing social capital comes with the trade-off of reduced financial flexibility, especially at times of negative shocks when firms need to balance stakeholders' expectations and social capital against earnings targets (Becchetti et al., 2015). This chapter addresses two questions. Can social capital reduce risk? Does CSR have a transient or longer-lasting hedging effect, if any?

From a firm's perspective, social capital defines the relationship quality that a firm and its executives build with their stakeholders (Servaes and Tamayo, 2017). Corporate social responsibility (CSR) is a core business strategy to build social capital (Degli Antoni and Sacconi, 2011). Therefore, CSR activities can be a proxy for firms'

social capital.[5] For instance, existing evidence suggests that CSR affects firm value by reducing the cost of capital (Hasan et al., 2017) and improving cash flows (Gregory et al., 2014).

CSR investment reduces information asymmetries between firms and stakeholders by signaling firms' unobservable moral attitudes and builds a good reputation (Fombrun and Shanley, 1990; Rindova and Fombrun, 1999; Su et al., 2014). This reputational effect leads to better stock valuation and operating performance during firm-specific negative events (Choi and Wang, 2009; Godfrey et al., 2009; Barnett and Salomon, 2012) and economy-wide shocks (Lins et al., 2017). To understand the insurance-like ability of CSR reputation the focus should be on the impact of CSR on firm risk. I argue that CSR reputation can be used as an operational hedge against political or industry-wide uncertainty. Therefore, I empirically assess the hedging ability of CSR on firm risk, stock return volatility and cash flow volatility, during times of political and industry-wide uncertainty.[6]

This chapter analyzes all publicly listed U.S. firms, excluding financial and utilities firms, during 2002-2016. Because firm risk can also affect CSR engagement (Orlitzky and Benjamin, 2001; Hong et al., 2012), I use for identification two exogenous variations that affect firm risk. First, I use gubernatorial elections to capture regional political risk. State governors have significant influence over legislation, regulation, permitting and other state-level policies relevant to business investment, with gubernatorial elections reducing business investment due to policy uncertainty

[5] Hereafter, I use the term "social capital" and "CSR" interchangeably.

[6] By decomposing the firm-level stock return variance, Campbell and Shiller (1988) and Vuolteenaho (2002) show that idiosyncratic volatility originates from cash flow shocks and expected return shocks.

(Falk and Shelton, 2018). Moreover, political uncertainty augments the expected return volatility around an election since stock returns are exposed to systematic economic forces (Campbell, 1985; Fama and French, 1988, 1989; Chen, 1991; Bailey and Chung, 1995). Meanwhile, temporary reduction of investment due to electoral uncertainty generates high cash flow volatility (Minton and Schrand, 1999; Julio and Yook, 2012). Hence, regional political risk surrounding the U.S. gubernatorial elections is a staggered exogenous shock to firm risk.

In the backdrop of higher volatility due to political uncertainty, investors would keep investing in firms with high CSR reputation during the election period. That is because CSR reputation influences investors' perception of firms' quality and trustworthiness and convinces them to rely on high CSR firms' efficacy of resolution to adverse effects of policy changes. Also, the beliefs of customers and suppliers that firms with high social capital will keep their commitments associated with the implicit contracts may result to higher (or stable) cash flows during uncertainty. Therefore, I expect to find lower return volatility and cash flow volatility for high CSR firms than low CSR firms in an election year. As gubernatorial elections occur at different times across different states, they give my study a powerful econometric test. I also use placebo tests to rule out the possibility that my findings regarding political uncertainty are spurious.

Second, I use exogenous changes in product market competition. I measure market competition by using product market fluidity developed by Hoberg et al. (2014). As product market fluidity is measured by comparing firm products with rival firms in a given product market space, this proxy of product market competition reflects the industry dynamics (Hoberg et al., 2014; Boubaker et al., 2018). Hence,

greater fluidity indicates industry-wide exogenous variation in competition in a given firms' industry or product space. Moreover, it is exogenous to any single firm as it reflects the movement of rival firms (Boubaker et al., 2018). However, greater change in product market creates negative change to profitability. In turn this reduces the stability of future cash flows and focal firm's propensity to make payouts via dividends (Hoberg et al., 2014). Therefore, higher product market fluidity triggers higher firm risk in a given industry. I argue that high CSR firms will enjoy a reputational hedging benefit during product market competition as stakeholders will value their quality and reliability.

My findings suggest that CSR reputation reduces firm risk during political uncertainty; this effect is stronger during closely contested elections. Therefore, shareholders value social capital reputation during periods of economic uncertainty driven by elections. And this reliance increases when the uncertainty on the election outcome is higher. The results are also economically significant. A one standard deviation increase in CSR score reduces stock return volatility by 6.52% during a gubernatorial election and 11.56% during closely contested elections for firms headquartered in states facing gubernatorial elections. However, my study does not find strong evidence to support the notion that CSR reputation can mitigate cash flow volatility during political uncertainty. I argue that this is driven by the fact that firms increase cash holdings as a precautionary buffer during an election year (Julio and Yook, 2012). Also, due to the transient nature of reputational hedging, a CSR-led reputation cannot affect quasi-static cash flows. Moreover, the fact we do not find evidence of CSR reputation affecting cash flow volatility is probably driven by firms' earnings smoothing engagement (Leuz et al., 2003; Rountree et al., 2008; Das et al.,

2013). Regarding industry-wide uncertainty, as I look into granular product market competition across all industries, in the form of product fluidity, I find that having higher CSR reputation reduces stock volatility more, compared to firms with lower CSR score.

For robustness, I use an instrumental variable (IV) approach and use CSR ratings for each industry-year pair and state-year pair (excluding the focal firm) as instruments for CSR. The IV-based findings confirm my baseline results regarding political uncertainty. In addition, I find that the effect of CSR reputation on firm risk is transient. Overall, CSR is an effective reputational hedge against regional political risk (elections), and industry-wide peer competition (product market fluidity). Even though the risk hedging ability of CSR is transient, CSR has lasting real effects, since stakeholders' perception of social capital reputation during an election year increases operating margin, profitability, and Tobin's Q surrounding the election cycle.

The contribution of this chapter is threefold. First, this study identifies the causal effect of CSR on total firm risk measured by stock return volatility and alternatively by cash flow volatility. Second, I use an IV approach and exogenous shocks on firm risk driven by political uncertainty (electoral cycles) to provide causal evidence of CSR on firm risk. Also, I use exogenous variation in product market competition (market fluidity) as a source of exogenous variation in firm risk. Third, I do not restrict my analysis only to firms that have a CSR score; I investigate a comprehensive sample of all U.S. firms, with and without a CSR score, to assess not just by how a high CSR score has an impact but also whether having CSR credentials in the first place makes a difference on firm risk. Finally, my study is very timely, since, 33% of global CEOs

believe policy uncertainty will be a business threat in 2020 and list it among their top five concerns (PwC, 2019).

This chapter is related to a growing literature on social capital. Existing evidence suggests a negative relationship between CSR and firms' systematic risk for the S&P500 constituent firms (Oikonomou et al., 2012) and idiosyncratic risk but for a small sample of 541 firms during 2002-03 (Luo and Bhattacharya, 2009) or a small sample of 513 "sin stocks" (Jo and Na, 2012). In contrast, Benlemlih et al. (2018) find no correlation between idiosyncratic risk and environmental and social disclosures, but find a negative correlation for systematic and total risk. Still, the aforementioned papers find only an association and not a causal effect, for small samples, and without accounting for potential endogeneity between firm risk, and CSR investment and reputation.

In a paper related to this chapter, Jo and Harjoto (2014) assess firm risk as a function of analyst coverage and CSR, but without disseminating the reciprocal relationship between analyst coverage and CSR, and exclude firms without a CSR score. Similarly, Harjoto and Laksmana (2018) find an inverse relationship between CSR and firms' risk taking, based on the residual from a baseline regression which can potentially lead to biased estimates,[7] and not realized risk, as I do in this chapter. Jiraporn et al. (2014) find that CSR improves credit ratings, but they use only firms

[7] They measure risk taking as the residual from regressing variables such as R&D, Capex, standard deviation of ROA and stock return volatility, on firm-specific and macroeconomic variables, based on the assumption there is an optimal level of risk taking. But this can potentially lead to biased estimates. For instance the reported R-squared from the base line regressions used to estimate the residual as their risk-taking proxy, varies from 8% to 53.45%.

that both have a CSR score and a credit rating. Hence, they exclude firms that have a CSR score but no credit ratings and firms that do not have a CSR rating but may have a credit rating, resulting in a small sample.[8] Bouslah et al. (2013) use a vector autoregressive analysis (VAR) and find that most CSR components have a bidirectional relationship with risk, while some CSR components have a unidirectional relationship with risk. Therefore, it is unclear whether social capital overall has a causal negative effect on firm risk. In contrast, Harjoto et al. (2017) find no direct relationship between CSR and risk, but without using any exogenous shocks on risk and also exclude firms without a CSR score.

Albuquerque et al. (2019) use an IV approach to show that CSR decreases systematic risk, but they use systematic risk based on the CAPM, as a measure of firm risk. This can be problematic because systematic risk accounts only for 15% to 18.9% of total equity volatility (Campbell et al., 2001;Goyol and Santa-Clara, 2003; Gaspar and Massa, 2006). Instead, I use total realized risk, which accounts for the often-ignored effect that idiosyncratic risk can have on market efficiency and stock pricing (Pontiff, 2006). Moreover, Mishra and Modi (2013) find that greater scores in *positive* CSR aspects are related with *lower* idiosyncratic risk, while greater scores in *negative* CSR aspects are related with *higher* idiosyncratic risk. In contrast, Bouslah et al. (2018) find that both positive and negative CSR aspects increase firm risk. However, they use the 2007-09 financial crisis as an exogenous shock on firm risk which can lead to biased estimates since, the 2007-09 financial crisis had a direct effect on real

[8] Jiraporn et al. (2014) use a smaller sample of 2,516 firm-year observations during 1995-2007 which also includes the start of the 2007-09 financial crisis and can potentially affect the results on credit ratings.

economic activity and not just on firm risk (Berger et al., 2020). Therefore, weakening the validity of the 2007-09 financial crisis as an exogenous shock only on firm risk. Instead, this chapter uses gubernatorial elections which are staggered exogenous shocks on firm risk and can provide robust causal evidence.

Since, CSR investment comes with the trade-off of reduced financial flexibility (Becchetti et al., 2015), for instance it increases selling, general, and administrative expenses (Di Giuli and Kostovetsky, 2014), not all firms can invest in CSR. In sum, my study shows that firms investing in their social capital can hedge political and industry-wide risk.

2.2 Theoretical background and hypotheses developments

2.2.1 Social capital, CSR, and operational hedging

CSR can generate social capital by building trust while it establishes cooperating networks between the company and its stakeholders. This chapter considers CSR activities as a proxy for firms' social capital (Degli Antoni and Sacconi, 2011; Lins et al., 2017). The instrumental stakeholder theory posits that CSR creates firm value by generating competitive advantages (Branco and Rodrigues, 2006) in a number of ways; for instance, via socially responsible human resource activities (Turban and Greening, 1997) and superior environmental performance (Russo and Fouts, 1997; McWilliams and Siegel, 2001).

An alternative channel of value creation is reputation signaling. CSR investment reduces information asymmetries between firms and stakeholders, and builds reputation by signaling unobservable firm attributes, such as quality, capability and honesty (Fombrun and Shanley, 1990; Rindova and Fombrun, 1999; Su et al., 2014). Moreover, CSR investment can signal the executives' competency and morality to

stakeholders (Milbourn, 2003) and enhance managerial reputation (Borghesi et al., 2014).[9] Meanwhile, CSR reputation accumulates social capital by fostering good relationships with external parties such as customers (Lev et al., 2010), employees (Edmans, 2011), investors and creditors (Cheng et al., 2014; Hasan et al., 2017), and suppliers (Maden et al., 2012).

But CSR reputation also adds to firm value by mitigating the risk of reputational losses emerging from adverse firm-specific events (Peloza, 2006; Minor and Morgan, 2011). This is due to multiple stakeholders trusting the companies' explanation and perceived sincerity of proposed remedial activities (Brown, 1998). For instance, positive CSR-related events for companies with known controversies of a CSR nature have a positive market valuation effect (Krüger, 2015). By hedging reputation losses following adverse events (Herremans et al., 1993; Shiu and Yang, 2017), CSR reputation protects firms' equity value (Godfrey et al., 2009; Lins et al., 2017) and improves cash flows via immediate higher profitability or superior long-run growth prospects (e.g., Choi and Wang, 2009).

Based on the signaling theory and the reputation effects, I argue that when a politically-driven regional or industry-wide adverse event occurs, social capital serves as an operational hedging tool that protects firms during adverse events.[10] During these

[9] I assume that CEOs align, at least partially, their personal reputation with their firms' reputation.

[10] This chapter refers to CSR as an operational hedging instrument as it is a non-financial instrument and increases firm value by reducing the deadweight costs of financial distress through operational activities. By following the same reasoning, repurchases, as a flexible pay-out structure (Bonaimé et al., 2014), and geographic diversification for multinational corporations (Allayannis et al., 2001; Kim et al., 2006), and acquisitions (Hankins, 2011), are considered as operational hedging mechanisms.

uncertain periods, risk should be lower for firms with higher social capital because of societal trust in firms' reliability. The hedging ability of CSR can affect value in two ways. First, the cost of equity is lower for high CSR firms (El Ghoul et al., 2011) because investors prefer to invest in companies with a high CSR reputation (Brown, 1998; Maden et al., 2012). Also, creditors lower the cost of debt for these firms due to the lower default risk (Goss and Roberts, 2011). For instance, high CSR reputation led to lower debt spreads during the 2007 financial crisis (Amiraslani et al., 2017). Meanwhile, Jiraporn et al. (2014) find that CSR score is positively related to credit ratings. Therefore, high CSR firms have better access to finance at a relatively lower cost of capital stemming from a lower risk premium (Cao et al., 2015; Hasan et al., 2017). Since the value of a firm is the present value of future expected cash flows, by reducing the cost of capital, high CSR investment can increase shareholder value (Gregory et al., 2014).

Second, Stulz (2002) argues that in the presence of market frictions risk reduction can increase firm value. Moreover, because of market frictions such as information asymmetry, tax convexity, and financial distress, cash flow volatility is costly (Tufano, 1996; Ağca and Mozumdar, 2008; Hankins, 2011). Therefore, hedging can increase firm value by reducing cash flow volatility (Stulz, 1990; Froot et al., 1993). Since high CSR firms are more profitable and typically have high growth expectations compared to low CSR firms (Russo and Fouts, 1997; Barnett and Salomon, 2012; Gregory et al., 2014), cash flow volatility for high CSR firms should be lower during uncertainty. In turn, by reducing cash flow volatility, CSR reputation can create value as an operational hedging instrument.

2.2.2 Operational hedging ability of CSR during political uncertainty

Political cycles arise in macroeconomic policies in response to the myopic behavior of voters. Such political business cycles reflect the incumbents' tendency to manipulate macroeconomic policy in order to increase their chances of winning an election by following an inflationary boom and lower unemployment rate prior to the election followed by deflationary policies after the election (Nordhaus, 1975). Meanwhile, the political budget cycle creates a distortion of fiscal policies by lowering taxes and increasing government consumption spending sub-optimally prior to the election (Rogoff, 1987). Hence, while the election is a fundamental mechanism of accountability, the potential policy differences surrounding these cycles and electoral competitiveness can change the firm's business environment and create uncertainty (Pástor and Veronesi, 2012; Gulen and Ion, 2016; Jens, 2017). As stock returns have exposure to systematic economic forces (Campbell, 1985; Fama and French, 1988, 1989; Chen, 1991; Bailey and Chung, 1995), political uncertainty augments the expected return volatility around an election. Empirical evidence shows that return volatility is higher in the election year and electoral competitiveness also contributes to the magnitude of this volatility (Pantzalis et al., 2000; Li and Born, 2006; Białkowski et al., 2008; Boutchkova et al., 2012; Pasquariello and Zafeiridou, 2014).

Investors' perception about a security's risk and value diverge when the quality of information available to them on asset fundamentals is distorted due to uncertainty (Miller, 1997; Ozsoylev and Werner, 2011). But higher social capital increases the perception of quality and trustworthiness. Therefore, firms with more social capital enjoy greater investor confidence in those firms' ability to manage the negative effects of uncertainty. For instance, investors preferred to invest in stocks of companies with

high CSR activities during COVID-19 induced market crash, leading stocks with high CSR ratings to remain more resilient compared to other stocks (Albuquerque et al., 2020; Cheema-Fox et al., 2020). Hence, shareholders assess the firms' reliability in addition to the risk-return trade-off (Guiso et al., 2008). Based on the reputation effects, I argue that investors trust firms with high social capital during elections, which reduces return volatility. Therefore, I expect a negative relationship between CSR reputation and stock return volatility during political uncertainty driven by the staggered U.S. gubernatorial elections.

State governors shape state policies (e.g., state budget, tax code, subsidy policies) (Falk and Shelton, 2018; Jens, 2017), policy changes at the state level have a substantial influence in the economic environment in which firms operate (Chhaochharia et al., 2017) and, therefore, in their investment and financing policies. For instance, investors require a higher risk premium (Gao et al., 2019) and return volatility is higher (Jens, 2017) during U.S. gubernatorial elections. Therefore, I use gubernatorial elections as exogenous changes on firm risk. By considering election years and electoral competitiveness (narrow margin of victory) as sources of regional political uncertainty, I formulate my first hypothesis as follows:

H1a: Firm-specific social capital reduces stock return volatility during political uncertainty.

Electoral uncertainty generated by political factors also leads firms to temporarily reduce investment expenditures before the election outcome (Julio and Yook, 2012). Meanwhile, lower investment is associated with high cash flow volatility (Minton and Schrand, 1999). This is similar to a firm holding an option on whether to invest or not. Since the option value of delaying an investment increases with higher uncertainty

(Bloom, 2009), firms delay investing until this political uncertainty is resolved at the election (Rodrik, 1991). I argue that stakeholders (e.g., customers and suppliers) would believe that firms with high social capital will keep their commitments associated with the implicit contracts during policy uncertainty. Stakeholders will enhance cooperation during elections, which will deliver economic benefits to high CSR firms, such as higher sales, better credit terms and profitability. Therefore, cash flow volatility for high CSR firms should be lower during political uncertainty. My next hypothesis is the following:

H1b: Firm-specific social capital reduces cash flow volatility during political uncertainty.

2.2.3 Operational hedging ability of CSR reputation during greater market competition

In a given industry, firms create competitive pressure to peers by changing their products as well as entering into a similar product mix. In this chapter, I use product market fluidity, developed by Hoberg et al. (2014), to measure this product market competition. Fluidity is a text-based measure of how firms' product market space changes relative to competitors changing their products. Therefore, higher product market fluidity indicates higher market competition. In turn, greater competition leads to greater uncertainty regarding future earnings and the stability of future cash flow (Hoberg et al., 2014). Meanwhile, firms in more fluid product markets reduce their propensity to make payouts via dividends (Hoberg et al., 2014), which can increase stock return volatility (Acker, 1999). Moreover, product market fluidity is exogenous to any single firm in a given industry, as it reflects rival firms' movement (Hoberg et al., 2014; Boubaker et al., 2018). Therefore, I exploit this exogenous shift in product

market competition as a quasi-natural experiment to assess the operational hedging ability of CSR reputation. I argue that the negative impact on cash flow, stemming from greater competition, will be felt less by firms with a high CSR reputation. That is because both investors and customers will be more loyal to firms with greater social capital. Customers will rely on the product quality of high CSR firms and maintain their custom and suppliers will respond to CSR reputation via providing favorable credit terms. Hence, I expect a negative relationship between CSR reputation and risk (i.e., stock return volatility and cash flow volatility) during years of significant increases in product market competition. My final hypotheses are the following:

H2a: Social capital reduces stock return volatility during greater product market competition.

H2b: Social capital reduces cash flow volatility during greater product market competition.

2.3 Sample and data

This study covers all publicly traded U.S. firms, excluding financial firms (SIC codes 6000-6999) and utilities (SIC codes 4900-4949), in the Center for Research in the Security Prices (CRSP)/Compustat merged database between 2002 and 2016. I collect firms' overall Environmental, Social, and Governance (ESG) score from Asset4[11] provided by Refinitiv (formerly Thomson Reuters). Financial data are from

[11] Asset4 provides ESG information for more than 4,300 companies globally (of which 2,693 are U.S. firms) since 2002. Asset4 collects 900 evaluation points and measures 250 key performance indicators. On the basis of these indicators, scores are measured for four pillars: Economic, Social, Environmental, and Corporate Governance. An overall ESG score is measured as the equally weighted score of each

CRSP/Compustat. Data on Gubernatorial elections are collected from online sources such as David Leip's Atlas of U.S. Presidential Elections (www.ourcampaigns.com) and individual state agency websites. State-level unemployment rate and annual GDP growth rate are collected from the Bureau of Labor Statistics (www.bls.gov) and the Bureau of Economic Analysis (www.bea.gov), respectively. After dropping observations with missing values from my control variables, the final sample consists of 43,521 firm-year observations for 5,802 unique U.S. firms.

I report the descriptive statistics for the main variables in Table 2-1. Table 2-1 shows the summary statistics for all sample firms in Panel A, firms with a high CSR score in Panel B, firms with a low CSR score in Panel C and firms without a CSR score in Panel D. Panel A shows that the mean overall CSR score is 52.62, consistent with Halbritter and Dorfleitner (2015) and Ferrell et al. (2016). For all sample firms, the average stock return volatility is 0.542, and average cash flow volatility is 0.068. Panels B, C and D illustrate that firms with a high CSR score have relatively lower average stock return volatility (0.312) and cash flow volatility (0.025) compared to low CSR score firms and firms without a CSR score.

In Table 2-2, I report the average values and differences in means of firm-specific characteristics for firms with and without a CSR score in Panel A, and firms with low and high CSR scores in Panel B. Panel A of Table 2-2 suggests that return volatility and cash flow volatility are significantly higher for firms without CSR score than firms with score. However, market value, leverage, operating margin and profitability are significantly higher for firms with CSR scores. Panel B of Table 2-2 shows that the

pillar. In addition to company-reported data, Asset4 collects information from NGOs, stock exchange filings, and other independent news sources.

difference of means of return volatility and cash flow volatility between low and high CSR firms are significant, while low CSR firms have high firm risk. Finally, operating margin and profitability are significantly higher for high CSR firms.

2.4 Empirical results

2.4.1 The hedging effect of CSR during gubernatorial elections

I test the hedging ability of CSR reputation for stock return volatility and cash flow volatility separately. I use the following OLS model to test the impact of social capital on risk:

$$Risk_{i,t} = \alpha + \beta_1 \times CSR_{i,t} + \beta 2 \times Political\ uncertainty_{t} + \beta 3 \times CSR_{i,t} \times Political\ uncertainty_{t} + X_{i,t-1} + \theta + \gamma + \varepsilon_{i,t} \quad (2.1)$$

where *Risk* is measured as stock return volatility and alternatively cash flow volatility. I follow Hoberg and Moon (2017) and measure return volatility as the standard deviation of the firms' daily logarithmic returns, multiplied by the square root of 252 trading days over a year. Cash flow volatility at time *t* is defined as the standard deviation of cash flow to assets for the previous three years, *t-3* to *t-1*.[12] As in Hoberg and Moon (2017), cash flow is measured as operating income before depreciation. $CSR_{i,t}$ is the overall CSR score of firm *i* at time *t*. For firms with no CSR score I set CSR to zero. I follow Halbritter and Dorfleitner (2015), Ferrell et al. (2016) and Attig et al. (2016) to use the overall ESG score of Asset4 as a proxy of CSR. I have also

[12] This is the standard proxy of cash flow volatility used in the literature (e.g., Bates et al. (2009), Ghaly et al. (2015), Kini et al. (2017), Buchanan et al. (2018), among others). However, for robustness, I also use alternative measures for cash flow volatility: (i) rolling standard deviation of the previous four or eight quarters' cash flow, and (ii) future cash flow volatility which measures as the cash flow volatility of the post-election years. My results are consistent across all cash flow volatility measures.

used three alternative measures of CSR by using individual ESG pillars of Asset4: (i) equally-weighted average of environmental and social scores by following Ioannou and Serafeim (2012) and Boubakri et al. (2016), (ii) equally-weighted average of the social, environmental, and governance scores following Cusumano et al. (2008), and (iii) equally-weighted average score of the economic, social and environmental score.[13] For political uncertainty, I use two binary variables: (i) *Election*, which is a binary variable equal to one if a gubernatorial election occurred in the firm's headquarters state at time *t*, and zero otherwise*;* (ii) *Close Election* which is a binary variable that takes the value of one if the victory margin of the headquarters state's gubernatorial election is in the lowest quartile, and zero otherwise. X is a vector of control variables that have been shown in the literature[14] to affect return and cash flow volatility. All control variables are defined in the Appendix (2-A). As in Jens (2017), I also include state GDP growth rate and state unemployment rate to control for state-level economic conditions. I also add gubernatorial *Term Limit* as a state-level control variable, which is equal to one if the incumbent governor has a term limit on the gubernatorial election and zero otherwise. θ and γ denote year and industry fixed effects respectively. Following Jens (2017) and Albuquerque et al. (2019), I use industry fixed effects. While policy changes surrounding regional election may differentially affect some industries, industry fixed effect can capture unobserved

[13] The results are qualitatively similar across all the estimates of overall ESG score. The results for alternative CSR measures are available on request.

[14] See Vuolteenaho (2002), Bae et al. (2004), Chen et al. (2013), Hoberg and Moon (2017), Michaely et al. (2018), among others.

industry characteristics. Firm-level financial controls, state-level GDP growth rate, and unemployment rate are lagged by one year for all specifications.

Panel A of Table 2-3 presents the OLS estimates for the impact of CSR reputation on stock return volatility during political uncertainty. In line with my hypotheses, I expect the coefficient on the interaction term *CSR* × *Political Uncertainty* to be negative. Columns (1), (3) and (5) show the impact of CSR on return volatility during election years, close elections and post-election years, respectively. To mitigate the concern of omitted variable bias, I add firm-specific financial and state-level macroeconomic control variables in columns (2), (4) and (6). In all specifications, it is clear that return volatility is higher in election years and the degree of uncertainty increases during close elections. Column (1) shows that in non-election years the coefficient on CSR is -0.0032. This estimate implies that for one-standard-deviation increase in CSR (29.63) is associated with a 9.48% (=29.63x-0.0032) decrease in return volatility during non-election years. The estimated coefficient of election dummy variable (β2) indicates that firms having their headquarters in states which have an upcoming gubernatorial election, have 0.74% higher return volatility than firms having their headquarters in states without an upcoming election. Meanwhile, the coefficient for the interaction term between election and CSR is β3=0.0001, which is positive but much lower than the coefficient of the election dummy variable. These estimates indicate that the partial effect of the hedging ability of CSR reputation during election years is equal to β1+ β3= (-0.0032 +0.0001) = -0.0031. This implies that for one-standard-deviation increase in CSR (29.63) is associated with a 9.19% decrease in return volatility during election years, suggesting that high CSR reputation has a mitigating effect on stock volatility.

Prima facie, this finding suggests that firms with higher CSR score face higher (or less negative) volatility during elections. But this can be driven by two factors. First, there can be potentially endogeneity as I discuss and address later in this chapter. Second, not all elections create uncertainty. There are some gubernatorial elections for which the outcome is near-certain. For instance, Gregg Abott (Republican) has been elected the governor of Texas in 2014 and 2018 elections and is running for re-election in the 2022 elections. Moreover, a Republican candidate has been elected as Governor of Texas in every consecutive election since the gubernatorial elections of 1994. I address this issue by looking at closely contest elections.

After adding firm- and state-level control variables (column 2) the results confirm that a higher CSR rating reduces the return volatility during election year. In column (3), I estimate the CSR-risk relationship during closely contested elections. The coefficient for the interaction term between close election and CSR is -0.0003, which is negative and statistically significant. Hence, the result shows that the hedging ability of CSR reputation remains effective and appears to be stronger when the degree of uncertainty of election is higher. The estimates imply that the partial effect of hedging ability of CSR reputation during closely contested election years is equal to $\beta 1 + \beta 3 = (-0.0032 - 0.0003) = -0.0035$, which indicates one-standard-deviation increase in CSR (29.63) is associated with a 10.37% decrease in return volatility during closely contested election years, with the average vote margin being 3.20%. Column (4) confirms that high CSR rating reduces return volatility during close elections. I also regress CSR on return volatility during the post-election year to assess whether the hedging ability is transient or has a longer-term effect. In columns (5) and (6), the results show that the degree of uncertainty decreases during post-election year and the

higher CSR rating increases the return volatility during this period. In columns (7) and (8), I repeat the analysis for post-election year by limiting the sample to closely contested elections. The results confirm my findings in columns (5) and (6). Moreover, I find that firms with high CSR rating face more return volatility in post-election year if the recent election is closely contested. This suggests that CSR has a transient hedging effect on stock volatility during political uncertainty. Overall, my results suggest that CSR reputation reduces stock return volatility during election years and especially during close elections when the degree of uncertainty regarding the gubernatorial race is high.

Panel B of Table 2-3 presents the OLS estimates for the impact of CSR reputation on cash flow volatility during political uncertainty. Columns (1), (3) and (5) show that cash flow volatility is positively affected by the election year and closely contested elections. Column (3) indicates that CSR reputation reduces cash flow volatility during close elections, although, these effects become statistically insignificant after I include control variables in column (4). In columns (5) and (6), I find that cash flow volatility is higher during post-election years, but CSR reputation has no statistically significant hedging effect on this. I find similar results in columns (7) and (8), where the sample is limited to closely contested elections. Overall, this chapter does not find strong evidence to suggest that CSR reputation reduces cash flow volatility during political uncertainty.

2.4.2 Instrumental variable approach

The relationship between CSR and risk can be endogenous. For instance, financially constrained firms lower their investment in CSR (Hong et al., 2012). Moreover, Albuquerque et al. (2019) argue that higher valuation resulting from lower

risk allows the firm to invest more in CSR (see also Orlitzky and Benjamin, 2001). To tackle this endogeneity between risk and CSR, I employ two alternative strategies. First, I use an IV approach to measure the relationship between CSR and risk by instrumenting CSR with a set of instruments. Second, I use product market competition, measured by product fluidity, as a quasi-natural experiment to isolate the causal effect of risk on CSR. In addition to these two steps, I test the effect of CSR reputation across different groups that are categorized based on the CSR score in order to limit the possibility of spurious correlation.

Regarding the IV approach, I follow first the approach of Ferrell et al. (2016) and use the industry peers' average of the endogenous variable as an instrument. In this case my first instrument is the average CSR rating of all firms in the same industry, excluding the focal firm. The rationale behind this instrument is that the CSR performance of other firms in the same industry also systematically influence CSR practices of the focal firm (Cheng et al., 2014; Ioannou and Serafeim, 2014). My second instrument is the average CSR score of all firms in the state (excluding the focal firm) where the focal firm's headquarters is located. Differences in the regional attitude towards CSR practice influence the social performance of the firm (Goss and Roberts, 2011). Rubin (2008) empirically shows that companies with a high CSR score tend to be situated in the Democratic (blue) states that vote Democratic in presidential elections, whereas low CSR companies tend to be situated in Republican (red) states. El Ghoul et al. (2011) and Dunbar et al. (2020) also use these IVs to instrument CSR. Similarly, I assume that both instruments, which vary across firms since the focal firm's CSR score is omitted, are exogenous to the contemporaneous CSR score.

Table 2-4 reports the 2-Stage Least Squares (2SLS) estimates of the impact of CSR reputation on risk by using both industry and state average CSR as instruments.[15] Panel A reports the regression estimates for stock return volatility. Column (1) reports the first stage regression on the CSR score. The results show that CSR has a positive and statistically significant relationship with my instruments. Columns (2) to (7) report the estimates from the second stage regressions. I also report the Cragg-Donald Wald F-statistics which supports the validity of the employed instruments. Moreover, from additional (unreported for brevity) tests I find that the correlation between risk measures and these instruments are very low, which also indicates the validity of my instruments.

Column (2) confirms that the return volatility for the firms headquartered in states facing a gubernatorial election is higher than other U.S. firms and CSR reputation reduces this volatility. Moreover, my results show that the hedging ability of CSR persists during closely contested elections. For instance, column (3) shows that a one-standard-deviation increase in CSR score is associated with a 6.52% decrease in return volatility during the election period for firms headquartered in states facing a gubernatorial election. According to the estimates of column (5), a one-standard-deviation increase in CSR score is associated with an 11.56% decrease in return volatility during close elections, which indicates that the CSR reputation effect is

[15] I repeat the 2SLS estimations with each instrument (industry average CSR and state average CSR) separately. The results, presented in the Appendix (Tables 2-A1 and 2-A2), show that the instruments are also significant individually and, most importantly, the results remain qualitatively similar and significant (both statistically and economically).

stronger when the degree of uncertainty is higher. However, both columns (6) and (7) support my earlier findings that the hedging ability of CSR is transient. This finding also supports Lins et al. (2017), who find that the impact of CSR on firm performance becomes insignificant after the 2007-09 financial crisis. Overall, my IV estimates confirm that CSR reputation reduces stock return volatility during political uncertainty. However, it only has a transient effect.

In Panel B of Table 2-4, I report the 2SLS estimates of the impact of CSR reputation on cash flow volatility during political uncertainty by using both industry and state average CSR as instruments. In column (1), the first stage regression shows that both the instruments have a significantly positive association with CSR. The results of column (2) show that the cash flow volatility of firms having their headquarters in upcoming gubernatorial election states is 1.00% higher than other sample firms. A one standard deviation increase in the CSR score hedges this volatility during election year by 1.78%. Similarly to my earlier OLS results, the impact of CSR during or after elections (or closely contested elections) is not statistically significant when including other control variables to mitigate the concern of omitted variable bias. Boutchkova et al. (2012) argue that the uncertainty regarding future party orientation increases the uncertainty regarding future cash flows and this effect is industry-specific. Also, Julio and Yook (2012) show that firms increase cash holding more than usual during the election year on a precautionary basis. Moreover, the hedging effect of CSR reputation on cash flow volatility cannot be captured possibly due to firms' smoothing their earnings. For instance, when firms' cash flow volatility is higher, they engage in earnings smoothing in large scale to attract investors, shield CEO bonus and conceal cash flow shocks (Leuz et al., 2003; Rountree et al., 2008; Das et al., 2013).

However, such discretionary earnings smoothing can distort the contemporaneous information content of earnings as well as cash flows (Leuz et al., 2003; Jayaraman, 2008). In addition to these reasons, I argue that due to the transient nature of CSR-led reputational hedge, it has no impact on quasi-static cash flows during political uncertainty (gubernatorial elections).

2.4.3 Product market fluidity as exogenous changes on product market competition

I exploit the exogenous change triggered by product market fluidity as a quasi-natural experiment and employ a difference-in-difference (DiD) approach to test the causal link between CSR reputation and industry-wide volatility. The product market fluidity measure, developed by Hoberg et al. (2014)[16], is constructed based on business descriptions in annual firm 10-Ks. These product descriptions are timely and representative as it is a legal requirement. Product market fluidity measures the change in rivals' words relative to the focal firm, which show rivals' competitive behavior for better market opportunity. I argue that firms can use their social capital as a reputational hedge against greater product market competition. Therefore, firms with more social capital should experience lower volatility. Finally, I estimate the following model:

$$Risk_{i,t} = \alpha + \beta 1 CSR_{i,t} + \beta 2 Fluidity_{i,t} + \beta 3 CSR_{i,t} \times Fluidity_{i,t} + Y_{i,t-1} + \theta + \gamma + u_{i,t} \quad (2.2)$$

Here, $Risk_{i,t}$ is measured as the stock return volatility and alternatively as the cash flow volatility of firm *i* during time *t*. First, I use continuous value of *Fluidity* of firm *i* during time *t*. I also identify those firms that face greater market competition. Therefore, the variable *Greater Fluidity* takes the value of one for those firms having

[16] I use the product market fluidity data from Hoberg and Phillips Data Library available at http://hobergphillips.tuck.dartmouth.edu/.

a fluidity measure greater than the annual average fluidity across all the firms in my sample, and zero otherwise. Alternatively, I use the *Adjusted Greater Fluidity*, which is equal to one if a firm's fluidity is greater than the average fluidity across all the firms in my sample, excluding the firm in question from the average estimation, and zero otherwise.

I test the hedging effectiveness of CSR within the reduced sample of firms that have a CSR score. $CSR_{i,t}$ is the overall CSR score of firm *i* at time *t*. Alternatively, I use $CSR_{i,t}$ as a binary variable equal to one for firms with a high CSR score and zero for firms with a low CSR score. I identify firms as having high or low CSR based on the annual mean, median and tercile classifications. For *Median classification,* I split the set of observations into equal groups on the basis of the median value of CSR by year. Then, the group of firms having a higher CSR score than the median at year *t* is categorized as a high CSR firm and other firms are defined as low CSR firms. For the *Mean classification*, I follow the same procedure on the basis of mean CSR values by year. For *Tercile classification*, the set of observations are divided into equal terciles every year based on the CSR score. Firms in the first tercile are classified as high CSR firms, and those in the third tercile are classified as low CSR firms.[17] *Y* is a vector of firm-specific control variables that have been shown in the literature to affect return and cash flow volatility and θ and γ are time and industry fixed effects, respectively. If CSR can mitigate firm risk during industry-wide uncertainty, I expect the coefficient on the interaction term *CSR*× *Fluidity* to be negative.

[17] For alternative measures of cash flow volatility and CSR, as discussed before, the results remain consistent in most of the specifications.

The results from the impact of product market fluidity on the hedging ability of social capital are reported in Table 2-5. Panel A, reports the results for stock return volatility. In columns (1) and (2) I interact the continuous CSR score with a binary measure of fluidity. The results indicate that in a greater competitive environment, as captured by *Greater Fluidity* and *Adjusted Greater Fluidity*, greater social capital leads to lower market volatility. This finding suggests that CSR is an effective reputational hedge when firms have a high CSR reputation. For instance, a one-standard-deviation increase in CSR score is associated with an 1.19% decrease in return volatility during greater product market fluidity. In Column (3), I use the continuous measures value for *Fluidity* and *CSR* and my results are consistent. In columns (4) to (6) I use the binary definition of high- and low-CSR firms, based on the mean, median and terciles classifications discussed earlier. The results are consistent across all specifications, supporting my earlier findings that CSR has a mitigating effect on firms' market risk. In Panel B, I repeat my estimations with cash flow volatility as the risk measure. The results show that the marginal effect related to the interaction term between *Fluidity* and *CSR* is not statistically significant. This is consistent with my earlier findings on the relationship between CSR and cash flow volatility. Overall, my findings suggest that CSR is an effective reputational hedge against market risk emerging from a firm-specific product market threat.

2.4.4 Placebo tests

I conduct placebo tests to ensure that the relationship between CSR and stock return volatility during political uncertainty is not spurious. In Panel A of Table 2-6, I conduct random placebo tests by choosing election years for each state randomly. Then, I replace the original election year with the falsified election year and run the

regressions for the main results. The results of OLS are reported in columns (1) and (2), whereas the results based on my earlier IV approach are reported in columns (3) and (4). All specifications show that the coefficients of the interaction terms are not statistically significant. This suggests my results are not spurious. In Panel B, I repeat the placebo tests by choosing the close election years randomly and I do not find any significant effect of CSR on stock return volatility during these falsified close election years. Hence, I can conclude that the reputational hedging effect of CSR is specific to election years.

2.5 CSR investment, performance and growth surrounding election cycles

To explore the real effects of CSR investment during election year in more detail, I also focus on firms' performance and growth surrounding election cycles. In Table 2-7, I analyze the future operating margin, profitability, valuation (captured by Tobin's Q) and sales growth for firms with CSR, No CSR, High CSR and Low CSR scores over a three-year period for the overall sample period, election years and post-election years. The overall results show significantly higher future operating margin and profitability for firms with a high CSR reputation. However, low or no CSR firms have higher sales growth, since they tend to be younger and high growth firms. Regarding the market valuation, although there is a statistically significant difference between high and low CSR scores only for one year following the gubernatorial elections, there is a persistent difference in valuation between firms that have a CSR score and those firms without a CSR score. This suggests that the market places a premium on those firms committed to enhancing their social capital.

In Table 2-8, I regress firms' performance and growth measures on CSR investment during election year. Here, $CSR_{Election\text{-}Year}$ is the firms' CSR score during an election year. Panels A and B show the results of election year and post-election years, respectively. Overall, the results suggest that CSR reputation during election year has a positive impact on operating margin, profitability, and market valuation (Tobin's Q) during and after an election. During post-election years, firms' operating margin increases, profitability remains same and Tobin's Q decreases compared to an election year. The impact on sales growth is insignificant in election year, but negative in post-election years. In sum, the results indicate that by hedging the political risk, CSR reputation increases firms' performance and growth in both election year and post-election years.

2.6 Conclusion

I assess the hedging ability of firms' social capital during regional political risk via gubernatorial elections and product market competition via the product fluidity of Hoberg et al. (2014). I contribute to the literature by investigating the CSR-risk relationship during times of political uncertainty and industry-wide exogenous change in competition while considering the potential reverse causality between CSR and firm risk. My findings show that firm-specific social capital, captured by CSR reputation, has a statistically and economically significant mitigating effect on stock return volatility during political uncertainty, but not on cash flow volatility. Also, CSR can be an effective hedge against risk during industry-wide uncertainty. Moreover, I find that CSR's mitigating effect on stock volatility during political uncertainty is transient and dissipates following gubernatorial elections. Finally, this reputational hedge has a positive effect on firms' future performance and growth.

Table 2-1: Summary Statistics

This table consists of summary statistics for my sample of all publicly traded U.S. firms in CRSP/Compustat between 2002 and 2016. I exclude financial firms (SIC codes 6000-6999) and utilities (SIC codes 4900-4949). Summary statistics for all sample firms, firms with a high CSR score, firms with a low CSR score and firms without a CSR score are reported in Panels A, B, C, and D respectively. Firms are classified as high and low CSR based on *Tercile classification*. All variables are defined in the Appendix (2-A). All continuous variables are winsorized at the 1% and 99% tails.

Panel A: All Firms

	N	***Mean***	***SD***	***10th Percentile***	***90th Percentile***
CSR	9734	52.6190	29.6339	14.8300	93.6500
Return Volatility	43521	0.5417	0.3028	0.2477	0.9395
Cash Flow Volatility	41795	0.0679	0.1086	0.0078	0.1551
Market-to-Book	43521	1.5542	1.5541	0.3199	3.3487
Leverage	43521	0.1745	0.2004	0.0000	0.4511
Operating Margin	43521	-0.5646	3.8677	-0.3465	0.2935
Investment	43521	0.0918	0.2245	-0.0697	0.3085
Sales Growth	43521	0.0809	0.3374	-0.2102	0.3792
Profitability	41795	-0.0532	0.2713	-0.3294	0.1203
Cash	41795	0.1546	0.1719	0.0101	0.3838
Negative Equity	43521	0.0336	0.1801	0.0000	0.0000

Panel B: High CSR Firms (Based on Tercile Classification)

	N	***Mean***	***SD***	***10th Percentile***	***90th Percentile***
CSR	3238	87.5024	8.9359	75.6600	95.8900
Return Volatility	3238	0.3124	0.1508	0.1715	0.4927
Cash Flow Volatility	3129	0.0247	0.0382	0.0050	0.0511
Market-to-Book	3238	1.5361	1.1947	0.4759	3.0367
Leverage	3238	0.2175	0.1392	0.0436	0.3981
Operating Margin	3238	0.1882	0.1642	0.0677	0.3467
Investment	3238	0.0532	0.1355	-0.0407	0.1605
Sales Growth	3238	0.0420	0.1688	-0.1086	0.1967
Profitability	3129	0.0658	0.0839	0.0065	0.1422
Cash	3129	0.0961	0.0814	0.0158	0.2067
Negative Equity	3238	0.0158	0.1245	0.0000	0.0000

Panel C: Low CSR Firms (Based on Tercile Classification)

	N	*Mean*	*SD*	*10th Percentile*	*90th Percentile*
CSR	3250	20.9098	8.9666	10.0400	34.2650
Return Volatility	3250	0.4122	0.2080	0.2132	0.6612
Cash Flow Volatility	3140	0.0448	0.0744	0.0058	0.1007
Market-to-Book	3250	1.8551	1.7660	0.4022	4.1775
Leverage	3250	0.2295	0.2112	0.0000	0.5118
Operating Margin	3250	-0.1568	2.7606	-0.0025	0.3807
Investment	3250	0.1328	0.2200	-0.0298	0.3710
Sales Growth	3250	0.1105	0.2985	-0.1275	0.3804
Profitability	3140	0.0181	0.1682	-0.1140	0.1397
Cash	3140	0.1296	0.1369	0.0102	0.2941
Negative Equity	3250	0.0385	0.1923	0.0000	0.0000

Panel D: No CSR Firms

	N	*Mean*	*SD*	*10th Percentile*	*90th Percentile*
Return Volatility	33787	0.5927	0.3108	0.2890	1.0062
Cash Flow Volatility	32389	0.0779	0.1178	0.0092	0.1824
Market-to-Book	33787	1.5222	1.5704	0.2949	3.3212
Leverage	33787	0.1612	0.2040	0.0000	0.4513
Operating Margin	33787	-0.7448	4.2790	-0.5897	0.2599
Investment	33787	0.0924	0.2359	-0.0838	0.3247
Sales Growth	33787	0.0826	0.3620	-0.2381	0.4083
Profitability	32389	-0.0814	0.2944	-0.4123	0.1112
Cash	32389	0.1668	0.1841	0.0094	0.4249
Negative Equity	33787	0.0351	0.1840	0.0000	0.0000

Table 2-2: CSR, no CSR, low CSR and high CSR firms

This table presents the average values and the differences in means of firm-specific characteristics for firms with and without a CSR score (Panel A), and firms with low and high CSR scores (based on Tercile classification) (Panel B) for my sample of all publicly traded U.S. firms in CRSP/Compustat between 2002 and 2016. I exclude financial firms (SIC codes 6000-6999) and utilities (SIC codes 4900-4949). All variables are defined in the Appendix (2-A). All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

	No CSR Firms		***CSR Firms***		
	N	***Mean***	***N***	***Mean***	***Difference***
CSR	-	-	9734	52.619	
Return Volatility	33,787	0.593	9,734	0.365	0.228***
Cash Flow Volatility	32,389	0.078	9,406	0.033	0.045***
Market-to-Book	33,787	1.522	9,734	1.665	-0.143***
Leverage	33,787	0.161	9,734	0.221	-0.059***
Operating Margin	33,787	-0.745	9,734	0.061	-0.806***
Investment	33,787	0.092	9,734	0.090	0.002
Sales Growth	33,787	0.083	9,734	0.075	0.008**
Profitability	32,389	-0.081	9,406	0.044	-0.125***
Cash	32,389	0.167	9,406	0.113	0.054***

	Low CSR Firms(Q1)		***High CSR Firms(Q3)***		
	N	***Mean***	***N***	***Mean***	***Difference***
CSR	3,250	20.910	3,238	87.502	-66.593***
Return Volatility	3,250	0.412	3,238	0.312	0.100***
Cash Flow Volatility	3,140	0.045	3,129	0.025	0.020***
Market-to-Book	3,250	1.855	3,238	1.536	0.319***
Leverage	3,250	0.229	3,238	0.218	0.012***
Operating Margin	3,250	-0.157	3,238	0.188	-0.345***
Investment	3,250	0.133	3,238	0.053	0.080***
Sales Growth	3,250	0.110	3,238	0.042	0.068***
Profitability	3,140	0.018	3,129	0.066	-0.048***
Cash	3,140	0.130	3,129	0.096	0.033***

Table 2-3: CSR reputation and risk during political uncertainty

This table reports OLS estimates of CSR reputation and risk. As a risk measure, I use return volatility and cash flow volatility as dependent variables in Panels A and B respectively. Stock return volatility is the standard deviation of the firms' daily logarithmic returns, multiplied by the square root of 252 trading days. Cash flow volatility is the standard deviation of cash flow to assets for the previous three years. To measure political uncertainty, I use two binary variables: (i) *Election,* a binary variable equal to one if a gubernatorial election occurred in the firm's headquarters state at time *t*, and zero otherwise*;* (ii) *Close Election,* a binary variable equal to one if the vote margin between the top two candidates remains in the lowest quartile, and zero otherwise. *Post-election* is a binary variable equal to one if a gubernatorial election occurred in the firm's headquarters state lagged by a year (*t-1*). Values of risk and CSR measures are contemporaneous. All firm-level financial controls, state-level GDP growth rate and unemployment rate are lagged by one year. All variables are defined in the Appendix (2-A). All regressions include industry and year fixed effects. I use heteroscedasticity robust standard errors clustered at the firm level, which are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All continuous variables are winsorized at the 1% and 99% tails.

Panel A: Stock Return Volatility

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
							Only close elections sub-sample	
CSR	-0.0032***	-0.0030***	-0.0032***	-0.0030***	-0.0033***	-0.0031***	-0.0050***	-0.0042***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0006)	(0.0005)
Election	0.0074*	0.0112***						
	(0.0040)	(0.0042)						
CSR* Election	0.0001*	0.0001**						
	(0.0000)	(0.0000)						
Close Election			0.0252***	0.0262***				
			(0.0062)	(0.0061)				
CSR* Close Election			-0.0003***	-0.0003***				
			(0.0001)	(0.0001)				
Post-election					-0.0074**	-0.0053*	-0.1048***	-0.1079***
					(0.0031)	(0.0031)	(0.0167)	(0.0183)
CSR* Post-election					0.0003***	0.0003***	0.0020***	0.0016***

					(0.0000)	(0.0000)	(0.0006)	(0.0005)
Market-to-Book		-0.0106***		-0.0107***		-0.0106***		-0.0212***
		(0.0014)		(0.0014)		(0.0014)		(0.0044)
Leverage		-0.0589***		-0.0586***		-0.0591***		-0.1082***
		(0.0134)		(0.0134)		(0.0134)		(0.0330)
Operating Margin		-0.0135***		-0.0135***		-0.0135***		-0.0149***
		(0.0006)		(0.0006)		(0.0006)		(0.0017)
Investment		-0.0558***		-0.0560***		-0.0555***		-0.0890***
		(0.0079)		(0.0078)		(0.0079)		(0.0310)
Sales Growth		0.0041		0.0039		0.0038		0.0067
		(0.0053)		(0.0053)		(0.0053)		(0.0192)
Negative Equity		0.1677***		0.1674***		0.1676***		0.2266***
		(0.0139)		(0.0139)		(0.0139)		(0.0428)
Term Limit		-0.0279***		-0.0270***				
		(0.0063)		(0.0059)				
Δ GDP		0.0817		0.1188		0.0902		0.6813*
		(0.0746)		(0.0746)		(0.0746)		(0.3950)
Unemployment		0.7003***		0.7092***		0.6817***		-0.8000
		(0.1939)		(0.1940)		(0.1942)		(0.6075)
Constant	0.6327***	0.6216***	0.6293***	0.6192***	0.6399***	0.6295***	0.5187***	0.5844***
	(0.0411)	(0.0398)	(0.0412)	(0.0399)	(0.0411)	(0.0398)	(0.0508)	(0.0708)
Observations	43,521	43,521	43,521	43,521	43,521	43,521	3,023	3,023
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.307	0.345	0.307	0.345	0.307	0.345	0.212	0.279

Panel B: Cash Flow Volatility

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
							Only close elections sub-sample	
CSR	-0.0007***	-0.0002***	-0.0006***	-0.0002***	-0.0007***	-0.0002***	-0.0009***	-0.0004***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0002)	(0.0002)
Election	0.0044***	0.0014						
	(0.0014)	(0.0014)						
CSR* Election	-0.0000	-0.0000						
	(0.0000)	(0.0000)						
Close Election			0.0095***	0.0027				
			(0.0024)	(0.0019)				
CSR* Close Election			-0.0001**	-0.0000				
			(0.0000)	(0.0000)				
Post-election					-0.0020*	-0.0004	-0.0367***	-0.0116*
					(0.0011)	(0.0011)	(0.0070)	(0.0064)
CSR* Post-election					0.0000	-0.0000	0.0003	0.0002
					(0.0000)	(0.0000)	(0.0002)	(0.0002)
Market-to-Book		0.0110***		0.0110***		0.0110***		0.0134***
		(0.0007)		(0.0007)		(0.0007)		(0.0021)
Leverage		-0.0181***		-0.0181***		-0.0181***		-0.0110
		(0.0043)		(0.0043)		(0.0043)		(0.0112)
Profitability		-0.1868***		-0.1868***		-0.1869***		-0.1650***
		(0.0048)		(0.0048)		(0.0048)		(0.0118)
Cash		0.1064***		0.1064***		0.1064***		0.0898***
		(0.0064)		(0.0064)		(0.0064)		(0.0154)
Investment		0.0063*		0.0063*		0.0063*		0.0008
		(0.0034)		(0.0034)		(0.0034)		(0.0130)
Negative Equity		0.0296***		0.0296***		0.0296***		0.0147
		(0.0050)		(0.0050)		(0.0050)		(0.0138)
Term Limit		-0.0022		-0.0021				

		(0.0020)		(0.0019)				
Δ GDP		-0.0389		-0.0352		-0.0380		-0.0347
		(0.0246)		(0.0247)		(0.0246)		(0.1207)
Unemployment		-0.0189		-0.0178		-0.0206		0.2396
		(0.0592)		(0.0592)		(0.0593)		(0.2100)
Constant	0.0427***	0.0210***	0.0427***	0.0209***	0.0465***	0.0219***	0.0551***	0.0018
	(0.0081)	(0.0068)	(0.0081)	(0.0067)	(0.0080)	(0.0067)	(0.0117)	(0.0205)
Observations	41,795	41,795	41,795	41,795	41,795	41,795	2,922	2,922
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.142	0.450	0.142	0.450	0.142	0.450	0.160	0.431

Table 2-4: CSR reputation and risk during political uncertainty – Instrumental variables

This table presents the results of the IV approach, which estimates the relationship between CSR reputation and risk during political uncertainty over the sample period of 2002-2016. As a risk measure, I use return volatility and cash flow volatility as dependent variables in Panels A and B respectively. Stock return volatility is the standard deviation of the firms' daily logarithmic returns, multiplied by the square root of 252 trading days. Cash flow volatility is the standard deviation of cash flow to assets for the previous three years. *CSR* is the overall ESG score instrumented with two instruments jointly: the average CSR rating for each state-year pair and industry-year pair. The results of the 1st stage are presented in column 1. Columns 2, 4 and 6 contain the results of 2nd stage regression without control variables. In columns 3, 5 and 7, I report the 2nd stage regression outcomes with control variables. To measure political uncertainty, I use two binary variables: (i) *Election*, a binary variable equal to one if a gubernatorial election occurred in the firm's headquarters state at time *t*, and zero otherwise*;* (ii) *Close Election*, a binary variable equal to one if the vote margin between the top two candidates remains in the lowest quartile, and zero otherwise. *Post-election* is a binary variable equal to one if a gubernatorial election occurred in the firm's headquarters state lagged by a year (*t-1*). Values of risk and CSR measures are contemporaneous. All firm-level financial controls, state-level GDP growth rate, and unemployment rate are lagged by one year. All variables are defined in the Appendix (2-A). All regressions include industry and year fixed effects. I use heteroscedasticity robust standard errors clustered at the firm level, which are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All continuous variables are winsorized at the 1% and 99% tails.

Panel A: Stock return volatility - Industry and state average CSR as instruments

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Industry Average CSR	0.1994***						
	(0.0374)						
State Average CSR	0.2993***						
	(0.0926)						
CSR		-0.0070***	-0.0065***	-0.0072***	-0.0067***	-0.0077***	-0.0072***
		(0.0010)	(0.0010)	(0.0010)	(0.0011)	(0.0011)	(0.0011)
Election		0.0319***	0.0342***				
		(0.0066)	(0.0066)				
CSR* Election		-0.0023***	-0.0022***				

		(0.0004)	(0.0004)				
Close Election				0.0608***	0.0680***		
				(0.0114)	(0.0116)		
CSR* Close Election				-0.0035***	-0.0039***		
				(0.0008)	(0.0009)		
Post-election						-0.0140***	-0.0112***
						(0.0046)	(0.0046)
CSR* Post-election						0.0009***	0.0009***
						(0.0003)	(0.0003)
Market-to-Book	1.3816***		-0.0052**		-0.0054**		-0.0054**
	(0.1844)		(0.0022)		(0.0022)		(0.0021)
Leverage	15.0707***		0.0043		0.0054		0.0031
	(1.5868)		(0.0221)		(0.0221)		(0.0220)
Operating Margin	0.6393***		-0.0107***		-0.0107***		-0.0108***
	(0.0524)		(0.0009)		(0.0009)		(0.0009)
Investment	-4.1483***		-0.0732***		-0.0734***		-0.0727***
	(0.5776)		(0.0091)		(0.0091)		(0.0091)
Sales Growth	-2.7125***		-0.0071		-0.0066		-0.0072
	(0.2841)		(0.0060)		(0.0060)		(0.0060)
Negative Equity	-11.4207***		0.1199***		0.1197***		0.1209***
	(1.2972)		(0.0191)		(0.0191)		(0.0190)
Term Limit	-0.6438		-0.0296***		-0.0348***		
	(0.5532)		(0.0071)		(0.0067)		
Δ GDP	-8.9254		0.0281		0.1073		0.0413
	(8.0288)		(0.0811)		(0.0813)		(0.0813)
Unemployment	43.5735		0.9407***		0.9892***		0.9226***
	(30.3286)		(0.2384)		(0.2366)		(0.2370)
Constant	-3.1460	0.6351***	0.5970***	0.6344***	0.5917***	0.6586***	0.6203***
	(10.6810)	(0.0763)	(0.0733)	(0.0747)	(0.0720)	(0.0755)	(0.0722)

Observations	43,521	43,521	43,521	43,521	43,521	43,521	43,521
Industry FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Cragg-Donald Wald		145.8	124.7	146.1	125	146.1	125.2

Panel B: Cash Flow Volatility- Industry and state average CSR as instruments

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Industry Average CSR	0.1813***						
	(0.0358)						
State Average CSR	0.2244**						
	(0.0909)						
CSR		-0.0029***	-0.0009***	-0.0030***	-0.0010***	-0.0031***	-0.0010***
		(0.0005)	(0.0003)	(0.0005)	(0.0003)	(0.0005)	(0.0003)
Election		0.0100***	0.0027				
		(0.0025)	(0.0021)				
CSR* Election		-0.0006***	-0.0001				
		(0.0002)	(0.0001)				
Close Election				0.0170***	0.0034		
				(0.0042)	(0.0032)		
CSR* Close Election				-0.0006**	-0.0000		
				(0.0003)	(0.0002)		
Post-election						-0.0045***	-0.0016
						(0.0017)	(0.0016)
CSR* Post-election						0.0002**	0.0001
						(0.0001)	(0.0001)
Market-to-Book	1.8504***		0.0124***		0.0124***		0.0124***
	(0.1836)		(0.0008)		(0.0008)		(0.0008)
Leverage	13.0083***		-0.0085		-0.0084		-0.0086

	(1.6344)		(0.0057)		(0.0057)		(0.0057)
Profitability	15.5699***		-0.1750***		-0.1750***		-0.1751***
	(0.8932)		(0.0065)		(0.0065)		(0.0065)
Cash	-14.9363***		0.0948***		0.0948***		0.0949***
	(1.4561)		(0.0078)		(0.0078)		(0.0078)
Investment	-7.3867***		0.0007		0.0007		0.0008
	(0.6681)		(0.0040)		(0.0040)		(0.0040)
Negative Equity	-7.5771***		0.0241***		0.0240***		0.0241***
	(1.2779)		(0.0055)		(0.0055)		(0.0055)
Term Limit	-1.0120*		-0.0032		-0.0032		
	(0.5506)		(0.0021)		(0.0020)		
Δ GDP	-8.8989		-0.0473*		-0.0424*		-0.0459*
	(8.0332)		(0.0255)		(0.0257)		(0.0255)
Unemployment	72.9082**		0.0455		0.0473		0.0424
	(30.2978)		(0.0677)		(0.0679)		(0.0676)
Constant	-2.9959	0.0498	0.0184*	0.0507	0.0189*	0.0574*	0.0204*
	(10.7830)	(0.0321)	(0.0111)	(0.0317)	(0.0110)	(0.0318)	(0.0109)
Observations	41,795	41,795	41,795	41,795	41,795	41,795	41,795
Industry FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Cragg-Donald Wald		149.2	96.87	150	97.81	150	98.02

Table 2-5: How CSR affects firm risk during a firm-specific product market threat

This table presents the relationship between CSR reputation and risk when firms face a firm-specific product market threat, measured by product market fluidity. Treatment firms are firms that have high product market fluidity during 2002-2016. As a risk measure, I use return volatility and cash flow volatility as dependent variables in Panels A and B, respectively. *Stock return volatility* is the standard deviation of the firms' daily logarithmic returns multiplied by the square root of 252 trading days. *Cash flow volatility* is the standard deviation of cash flow to assets for the previous three years. *CSR score* is the continuous score for the sub-sample of firms that have a CSR score. *High CSR Score (Mean)* is a binary variable that takes the value of one for those firms with a CSR score that is higher than the annual mean CSR score in year *t*, excluding firms that have no CSR score, and zero otherwise. *High CSR Score (Median)* is a binary variable that takes the value of one for those firms with a CSR score that is higher than the annual median CSR score in year *t*, excluding firms that have no CSR score, and zero otherwise. *High CSR Score (Tercile)* is a binary variable that takes the value of one for those firms with a CSR score that is in the top tercile of the annual CSR score in year *t*, excluding firms that have no CSR score, and zero for firms having CSR score in the third tercile. *Greater Fluidity is* a binary variable equal to one for those firms having a fluidity measure greater than the annual average fluidity across all firms in my sample, otherwise it equals zero. *Adjusted Greater Fluidity* is a binary variable equal to one for those firms having a fluidity measure greater than the annual average fluidity across all firms in my sample, excluding the firm in question from the average fluidity estimation, otherwise it equals zero. *Fluidity* is the continuous measure of fluidity from Hoberg et al. (2014). Values of risk and CSR measures are contemporaneous. All firm-level financial controls are lagged by one year. All regressions include industry and year fixed effects. I use heteroscedasticity robust standard errors clustered at the firm level, which are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All continuous variables are winsorized at the 1% and 99% tails.

Panel A: Stock Return Volatility						
	(1)	(2)	(3)	(4)	(5)	(6)
		CSR Score		High CSR Score (Mean)	High CSR Score (Median)	High CSR Score (Tercile)
CSR	-0.0011***	-0.0011***	-0.0006***	-0.0303***	-0.0393***	-0.0517***
	(0.0001)	(0.0001)	(0.0002)	(0.0096)	(0.0094)	(0.0119)
Greater Fluidity	0.0477***					
	(0.0090)					

CSR* Greater Fluidity	-0.0004***					
	(0.0001)					
Adjusted greater Fluidity		0.0477***				
		(0.0090)				
CSR* Adjusted greater Fluidity		-0.0004***				
		(0.0001)				
Fluidity			0.0137***	0.0110***	0.0106***	0.0111***
			(0.0016)	(0.0012)	(0.0012)	(0.0014)
CSR* Fluidity			-0.0001***	-0.0038**	-0.0025*	-0.0045**
			(0.0000)	(0.0015)	(0.0015)	(0.0019)
Market-to-Book	-0.0019	-0.0019	-0.0037**	-0.0034*	-0.0033*	-0.0011
	(0.0018)	(0.0018)	(0.0018)	(0.0019)	(0.0018)	(0.0020)
Leverage	0.0737***	0.0737***	0.0653***	0.0696***	0.0710***	0.0543**
	(0.0200)	(0.0200)	(0.0197)	(0.0199)	(0.0198)	(0.0225)
Operating Margin	-0.0187***	-0.0187***	-0.0165***	-0.0177***	-0.0177***	-0.0161***
	(0.0027)	(0.0027)	(0.0027)	(0.0027)	(0.0027)	(0.0027)
Investment	0.0428***	0.0428***	0.0336**	0.0439***	0.0432***	0.0459***
	(0.0138)	(0.0138)	(0.0134)	(0.0135)	(0.0135)	(0.0160)
Sales Growth	0.0070	0.0070	0.0021	0.0058	0.0055	0.0118
	(0.0110)	(0.0110)	(0.0106)	(0.0109)	(0.0109)	(0.0131)
Negative Equity	0.0455**	0.0455**	0.0464**	0.0499**	0.0501**	0.0527**
	(0.0232)	(0.0232)	(0.0229)	(0.0227)	(0.0226)	(0.0268)
Constant	0.4942***	0.4942***	0.4450***	0.4271***	0.4362***	0.4779***
	(0.0264)	(0.0264)	(0.0274)	(0.0248)	(0.0258)	(0.0212)
Observations	9,527	9,527	9,527	9,527	9,527	6,338
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adj R-squared	0.451	0.451	0.464	0.450	0.450	0.478

Panel B : Cash Flow Volatility

	(1)	(2)	(3)	(4)	(5)	(6)
		CSR Score		High CSR Score (Mean)	High CSR Score (Median)	High CSR Score (Tercile)
CSR	-0.0001***	-0.0001***	-0.0000	-0.0040	-0.0042	-0.0085**
	(0.0000)	(0.0000)	(0.0001)	(0.0028)	(0.0028)	(0.0039)
Greater Fluidity	-0.0045					
	(0.0031)					
CSR* Greater Fluidity	0.0001**					
	(0.0000)					
Adjusted greater Fluidity		-0.0045				
		(0.0031)				
CSR* Adjusted greater Fluidity		0.0001**				
		(0.0000)				
Fluidity			0.0013**	0.0009**	0.0009**	0.0005
			(0.0006)	(0.0004)	(0.0004)	(0.0005)
CSR* Fluidity			-0.0000	-0.0001	-0.0001	0.0004
			(0.0000)	(0.0005)	(0.0004)	(0.0006)
Market-to-Book	0.0070***	0.0070***	0.0067***	0.0068***	0.0067***	0.0077***
	(0.0009)	(0.0009)	(0.0009)	(0.0009)	(0.0009)	(0.0010)
Leverage	0.0094	0.0094	0.0081	0.0086	0.0086	0.0150*
	(0.0072)	(0.0072)	(0.0072)	(0.0073)	(0.0072)	(0.0085)
Profitability	-0.1565***	-0.1565***	-0.1502***	-0.1530***	-0.1527***	-0.1645***
	(0.0177)	(0.0177)	(0.0181)	(0.0179)	(0.0179)	(0.0219)
Cash	0.0992***	0.0992***	0.0961***	0.0976***	0.0973***	0.1114***

	(0.0184)	(0.0184)	(0.0187)	(0.0188)	(0.0187)	(0.0255)
Investment	0.0017	0.0017	-0.0008	0.0005	0.0002	-0.0016
	(0.0062)	(0.0062)	(0.0061)	(0.0061)	(0.0061)	(0.0080)
Negative Equity	0.0240***	0.0240***	0.0242***	0.0244***	0.0244***	0.0289**
	(0.0086)	(0.0086)	(0.0086)	(0.0086)	(0.0086)	(0.0129)
Constant	0.0174***	0.0174***	0.0086*	0.0087**	0.0093**	0.0073
	(0.0039)	(0.0039)	(0.0047)	(0.0039)	(0.0039)	(0.0053)
Observations	9,203	9,203	9,203	9,203	9,203	6,128
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adj R-squared	0.338	0.338	0.339	0.338	0.338	0.371

Table 2-6: Placebo test

This table reports the results of placebo tests. I conduct random placebo tests by choosing election years (Panel A) and close election years (Panel B) randomly. Here, the dependent variable is stock return volatility measured as the standard deviation of the firms' daily logarithmic returns, multiplied by the square root of 252 trading days. I report the results of OLS in columns (1) and (2), and IV in columns (3) and (4). Values of risk and CSR measures are contemporaneous. All firm-level financial controls, state-level GDP growth rate and unemployment rate are lagged by one year. All variables are defined in the Appendix (2-A). All regressions include industry and year fixed effects. I use heteroscedasticity robust standard errors clustered at the firm level, which are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All continuous variables are winsorized at the 1% and 99% tails.

Panel A: Stock Return Volatility

	(1) OLS	(2) OLS	(3) IV	(4) IV
CSR	-0.0032***	-0.0030***	-0.0075***	-0.0070***
	(0.0001)	(0.0001)	(0.0010)	(0.0011)
Election	-0.0020	-0.0029	-0.0039	-0.0049
	(0.0024)	(0.0024)	(0.0044)	(0.0043)
CSR* Election	-0.0001	-0.0001	-0.0000	0.0001
	(0.0001)	(0.0001)	(0.0003)	(0.0003)
Market-to-Book		-0.0106***		-0.0053**
		(0.0014)		(0.0022)
Leverage		-0.0591***		0.0034
		(0.0134)		(0.0220)
Operating Margin		-0.0135***		-0.0108***
		(0.0006)		(0.0009)
Investment		-0.0557***		-0.0731***
		(0.0079)		(0.0091)
Sales Growth		0.0039		-0.0072
		(0.0053)		(0.0060)
Negative Equity		0.1676***		0.1206***
		(0.0139)		(0.0190)
Term Limit		-0.0234***		-0.0269***
		(0.0059)		(0.0063)
Δ GDP		0.0845		0.0363
		(0.0745)		(0.0813)
Unemployment		0.6961***		0.9427***
		(0.1940)		(0.2372)
Constant	0.6400***	0.6322***	0.6586***	0.6229***
	(0.0410)	(0.0396)	(0.0751)	(0.0720)
Observations	43,521	43,521	43,521	43,521
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Adj R-squared	0.307	0.345	0.184	0.239

Cragg-Donald Wald			146.2	125

Panel B: Stock Return Volatility

	(1) OLS	(2) OLS	(3) IV	(4) IV
CSR	-0.0032***	-0.0030***	-0.0074***	-0.0069***
	(0.0001)	(0.0001)	(0.0010)	(0.0011)
Close Election	0.0030	0.0063	0.0072	0.0114
	(0.0045)	(0.0048)	(0.0076)	(0.0076)
CSR* Close Election	0.0001	0.0001	-0.0005	-0.0005
	(0.0001)	(0.0001)	(0.0006)	(0.0006)
Market-to-Book		-0.0106***		-0.0054**
		(0.0014)		(0.0021)
Leverage		-0.0590***		0.0031
		(0.0134)		(0.0219)
Operating Margin		-0.0135***		-0.0108***
		(0.0006)		(0.0009)
Investment		-0.0557***		-0.0727***
		(0.0079)		(0.0091)
Sales Growth		0.0039		-0.0070
		(0.0053)		(0.0060)
Negative Equity		0.1676***		0.1209***
		(0.0139)		(0.0190)
Term Limit		-0.0270***		-0.0296***
		(0.0065)		(0.0070)
Δ GDP		0.0778		0.0289
		(0.0750)		(0.0816)
Unemployment		0.6938***		0.9452***
		(0.1939)		(0.2369)
Constant	0.6383***	0.6300***	0.6555***	0.6188***
	(0.0410)	(0.0396)	(0.0750)	(0.0718)
Observations	43,521	43,521	43,521	43,521
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Adj R-squared	0.307	0.345	0.186	0.241
Cragg-Donald Wald			146.5	125.4

Table 2-7: Future growth and performance

In this table, I test the consequences of CSR investment on the firms' future performance and growth over a three-year period for the overall sample period (Panels A and B), election years (Panels C and D) and post-election years (Panels E and F). As a performance and growth measure, I use: operating margin, profitability, Tobin's Q, and sales growth. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All continuous variables are winsorized at the 1% and 99% tails.

Panel A: Overall sample period

	(1) CSR				(2) No CSR				(3) Low CSR				(4) High CSR			
	t+1	t+2	t+3	t+1 to t+3	t+1	t+2	t+3	t+1 to t+3	t+1	t+2	t+3	t+1 to t+3	t+1	t+2	t+3	t+1 to t+3
Operating Margin	0.149	0.176	0.177	0.538	-0.562	-0.478	-0.423	-1.244	0.077	0.147	0.155	0.472	0.194	0.196	0.192	0.582
Profitability	0.051	0.054	0.054	0.168	-0.061	-0.050	-0.044	-0.113	0.032	0.037	0.037	0.120	0.069	0.070	0.069	0.211
Tobin's Q	2.166	2.107	2.075	6.296	1.991	1.960	1.923	5.895	2.284	2.143	2.107	6.456	2.124	2.108	2.092	6.266
Sales Growth	0.055	0.047	0.037	0.155	0.064	0.062	0.054	0.198	0.081	0.065	0.054	0.210	0.030	0.028	0.019	0.093

Panel B: Overall sample period

	Difference in Means: No CSR vs. CSR				Difference in Means: Low CSR vs. High CSR			
	Operating Margin	Profitability	Tobin's Q	Sales Growth	Operating Margin	Profitability	Tobin's Q	Sales Growth
t+1	-0.711***	-0.112***	-0.175***	0.009*	-0.117***	-0.036***	0.160***	0.052***
t+2	-0.654***	-0.104***	-0.146***	0.015***	-0.049***	-0.033***	0.035	0.037***
t+3	-0.600***	-0.098***	-.152***	0.017***	-0.036***	-0.032***	0.015	0.035***
t+1 to t+3	-1.782***	-0.281***	-0.400***	0.043***	-0.110***	-0.090***	0.190	0.118***

Panel C: Election years

	(1) CSR				(2) No CSR				(3) Low CSR				(4) High CSR			
	t+1	t+2	t+3	t+1 to t+3	t+1	t+2	t+3	t+1 to t+3	t+1	t+2	t+3	t+1 to t+3	t+1	t+2	t+3	t+1 to t+3
Operating Margin	0.168	0.175	0.174	0.171	-0.594	-0.508	-0.423	-0.128	0.140	0.143	0.140	0.474	0.190	0.195	0.194	0.583
Profitability	0.053	0.050	0.053	0.171	-0.063	0.065	-0.049	-0.128	0.034	0.035	0.034	0.128	0.071	0.068	0.071	0.216
Tobin's Q	2.176	2.073	2.154	6.360	2.046	1.923	2.004	5.967	2.229	2.081	2.220	6.542	2.160	2.086	2.163	6.336
Sales Growth	0.058	0.048	0.014	0.157	0.069	0.072	0.032	0.220	0.075	0.064	0.031	0.205	0.038	0.034	0.000	0.109

Panel D: Election years

	Difference in Means: No CSR vs. CSR				Difference in Means: Low CSR vs. High CSR			
	Operating Margin	Profitability	Tobin's Q	Sales Growth	Operating Margin	Profitability	Tobin's Q	Sales Growth
t+1	-0.762***	-0.116***	-0.130***	0.011	-0.050**	-0.037***	0.069	0.037***
t+2	-0.683***	-0.114***	-0.150***	0.024***	-0.052**	-0.032***	-0.005	0.030***
t+3	-0.597***	-0.101***	-0.150***	0.018**	-0.053	-0.037***	0.057	0.031**
t+1 to t+3	-0.299***	-0.299***	-0.393***	0.063***	-0.110	-0.088***	0.206	0.096***

Panel E: Post-election years

	(1) CSR				(2) No CSR				(3) Low CSR				(4) High CSR			
	t+1	t+2	t+3	t+1 to t+3	t+1	t+2	t+3	t+1 to t+3	t+1	t+2	t+3	t+1 to t+3	t+1	t+2	t+3	t+1 to t+3
Operating Margin	0.142	0.176	0.178	0.536	-0.548	-0.463	-0.422	-1.231	0.055	0.149	0.160	0.470	0.196	0.197	0.192	0.583
Profitability	0.051	-0.043	0.054	0.167	-0.060	0.056	-0.043	-0.108	0.032	0.038	0.038	0.118	0.068	0.072	0.068	0.210
Tobin's Q	2.162	2.121	2.049	6.275	1.967	1.979	1.890	5.867	2.302	2.168	2.069	6.426	2.113	2.118	2.071	6.248

Sales Growth	0.054	0.047	0.044	0.154	0.061	0.058	0.063	0.186	0.084	0.065	0.061	0.212	0.027	0.025	0.026	0.086

Panel F: Post-election years

	Difference in Means: No CSR vs. CSR				Difference in Means: Low CSR vs. High CSR			
	Operating Margin	Profitability	Tobin's Q	Sales Growth	Operating Margin	Profitability	Tobin's Q	Sales Growth
t+1	-0.690***	-0.110***	-0.195***	0.007*	-0.141***	-0.036***	0.189***	0.056***
t+2	-0.640***	-0.100***	-0.142***	0.010**	-0.048***	-0.034***	0.050	0.040***
t+3	-0.601***	-0.097***	-0.158***	0.018***	-0.032**	-0.030***	-0.001	0.036***
t+1 to t+3	-1.767***	-0.275***	-0.408***	0.033***	-0.112***	-0.092***	0.178	0.126***

Table 2-8: CSR investment and performance surrounding gubernatorial election cycle

In this table, I analyze the impact of firms' CSR investment during election year on the performance and growth of the election year (Panel A) and post-election years (Panel B). The dependent variables are operating margin, profitability, Tobin's Q, and sales growth. Here, $CSR_{Election\text{-}Year}$ is firms' CSR score during the election year. All firm-level financial controls, state-level GDP growth rate, and unemployment rate are lagged by one year. All regressions include industry and year fixed effects. I use heteroscedasticity robust standard errors clustered at the firm level, which are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All continuous variables are winsorized at the 1% and 99% tails.

Panel A: Election year

	(1) Operating Margin	(2) Operating Margin	(3) Profitability	(4) Profitability	(5) Tobin's Q	(6) Tobin's Q	(7) Sales Growth	(8) Sales Growth
$CSR_{Election\text{-}Year}$	0.0117***	0.0122***	0.0017***	0.0017***	0.0031***	0.0053***	-0.0000	-0.0001
	(0.0011)	(0.0011)	(0.0001)	(0.0001)	(0.0007)	(0.0006)	(0.0001)	(0.0001)
Market-to-Book		-0.3225***		-0.0053*				0.0404***
		(0.0427)		(0.0031)				(0.0026)
Leverage		0.7589***		0.0577***		-0.9198***		0.1262***
		(0.1991)		(0.0193)		(0.0905)		(0.0185)
Sales Growth		1.1448***		0.0186		0.4941***		
		(0.2101)		(0.0130)		(0.0528)		
Profitability						-0.7963***		
						(0.0959)		
Operating Margin								-0.0088***
								(0.0020)
Negative Equity		-0.6770***		-0.1096***		1.2591***		-0.0861***
		(0.2462)		(0.0222)		(0.1137)		(0.0198)
Term Limit		0.0997		0.0309***		0.0443		0.0134*
		(0.0845)		(0.0063)		(0.0354)		(0.0078)

Δ GDP		-0.7203		0.0977		0.2491		0.3124**
		(1.3583)		(0.1179)		(0.5827)		(0.1484)
Unemployment		-5.9241*		-1.1020***		2.4922*		-0.1602
		(3.4154)		(0.2438)		(1.4595)		(0.2771)
Constant	-0.3079	0.2194	-0.0963***	-0.0551	1.3834***	1.3684***	-0.0708**	-0.1509***
	(0.3577)	(0.4513)	(0.0335)	(0.0365)	(0.3833)	(0.3917)	(0.0352)	(0.0359)
Observations	12,470	12,470	12,527	12,527	12,364	12,364	12,483	12,483
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.106	0.137	0.125	0.133	0.132	0.190	0.0355	0.0839

Panel B: Post-election years

	(1) Operating Margin	(2) Operating Margin	(3) Profitability	(4) Profitability	(5) Tobin's Q	(6) Tobin's Q	(7) Sales Growth	(8) Sales Growth
$CSR_{Post\text{-}election\ Year}$	0.0122***	0.0128***	0.0018***	0.0017***	0.0020***	0.0044***	-0.0003***	-0.0003***
	(0.0011)	(0.0011)	(0.0001)	(0.0001)	(0.0006)	(0.0006)	(0.0001)	(0.0001)
Market-to-Book		-0.3522***		-0.0058**				0.0401***
		(0.0417)		(0.0029)				(0.0018)
Leverage		0.6566***		0.0546***		-1.0692***		0.1201***
		(0.1859)		(0.0146)		(0.0784)		(0.0127)
Sales Growth		1.4090***		0.0617***		0.4686***		
		(0.1668)		(0.0080)		(0.0382)		
Profitability						-0.8422***		
						(0.0925)		
Operating Margin								-0.0095***
								(0.0014)

Negative Equity		-0.4683**		-0.1110***		1.3059***		-0.0688***
		(0.1843)		(0.0171)		(0.0954)		(0.0145)
Δ GDP		-0.9643		-0.0964		1.6000***		0.4937***
		(1.1760)		(0.0898)		(0.4903)		(0.0983)
Unemployment		-1.9066		-0.9674***		3.5171***		0.9194***
		(3.0468)		(0.2203)		(1.3431)		(0.1735)
Constant	0.0038	0.3735	-0.0928**	-0.0462	1.3507***	1.2301***	0.0351	-0.1016**
	(0.2489)	(0.3124)	(0.0372)	(0.0385)	(0.2384)	(0.2301)	(0.0411)	(0.0424)
Observations	30,884	30,884	30,985	30,985	30,652	30,652	30,892	30,892
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.112	0.147	0.120	0.134	0.127	0.185	0.0458	0.0963

3. The Value of Social Capital during Political Uncertainty

3.1 Introduction

In 2018 the second largest sustainable investment strategy globally is ESG integration, according to Global Sustainable Investment Alliance (GSIA). The assets under management in ESG integration strategies grow by 69% from 2016 to 2018, reaching $17.5 trillion. However, the empirical evidence on whether social capital adds to shareholder value is inconclusive. For instance, Cordeiro and Tewari (2015) show that investors value positively firms' social capital both in the short and long-run. However, other studies find negative market valuation in the short-run (Fisher-Vanden and Thorburn, 2011; Krüger, 2015) and long-run (Brammer et al., 2006). To understand the valuation effect of social capital this chapter focuses on the hedging ability of social capital during economy-wide uncertainty. And I examine two questions: Can social capital create value? If yes, is it for the short or/and long-run?

CSR builds social capital by establishing relationships between firm and stakeholders (Degli Antoni and Sacconi, 2011; Servaes and Tamayo, 2017). And social capital creates stronger reputation for honoring the implicit contracts between firms and stakeholders (Fombrun and Shanley, 1990; Su et al., 2014).[18] The existing evidence suggests that during uncertain periods, such as firm-specific negative events (Godfrey et al., 2009) and the 2007-2009 financial crisis (Lins et al., 2017), investors trust firms with high CSR reputation placing a valuation premium on these firms (*reputation effect*).

[18] I use CSR as a proxy for firms' social capital and use the term "social capital" and "CSR" interchangeably hereafter.

While the policy uncertainty surrounding an election year augments the expected return volatility (Białkowski et al., 2008; Boutchkova et al., 2012), a question arises about whether investors are compensated for political risk. The existing literature focuses on certain proxies for political uncertainty such as voting laws, political orientation of the incumbent, political affiliation of CEOs, government policies and policy uncertainty index (Pantzalis et al., 2000; Santa-Clara and Valkanov, 2003; Bertrand et al., 2007; Baker et al., 2016; Shen et al., 2017). I provide a novel insight into the value implications of CSR reputation by focusing on political risk stemming from election cycles which act as staggered exogenous shocks to market value.

Incumbents' attempt to convince myopic voters by following expansionary macroeconomic policies or distorted fiscal policies in the election year create election-induced economic cycles, such as political business cycle and political budget cycle (Nordhaus, 1975; Rogoff, 1987). The potential implications of these opportunistic economic policies surrounding the election cycle create uncertainty in the business environment (Pástor and Veronesi, 2012; Gulen and Ion, 2016; Jens, 2017). Uncertainty, i.e., divergence of investors' perception about a security's valuation, and risk go together (Miller, 1997). As fundamental uncertainty creates high ambiguity of information on asset fundamentals (Ozsoylev and Werner, 2011), political uncertainty reduces the trading volume and liquidity in the stock market (Pasquariello and Zafeiridou, 2014) and affects stock returns via depressed prices (Pástor and Veronesi, 2012; 2013). Finally, the exposure of stock returns to policy uncertainty augments the expected return volatility around an election period, which is empirically evidenced in the literature (Pantzalis et al., 2000; Li and Born, 2006; Białkowski et al., 2008; Boutchkova et al., 2012; Pasquariello and Zafeiridou, 2014). However, the risk

premiums are not adequate to compensate risk-averse investors for this political risk (Białkowski et al., 2008).

I argue that the perception of quality and trustworthiness via CSR reputation influences investors' beliefs that high CSR firms will keep their commitments associated with the implicit contracts during policy uncertainty. For instance, investors assess firms' reliability and trustworthiness in addition to the risk-return trade-off (Guiso et al., 2008). When return volatility is higher due to political uncertainty, investors will place a valuation premium for firms' CSR reputation effect during the election period. Therefore, I expect to find that firms with high CSR reputation will earn positive abnormal returns surrounding an election year.

I use U.S. gubernatorial elections, which are staggered and exogenous, as a source of regional political risk. State governors have significant power to shape and change state policies, influence the states' business environment, and substantially increase regional political risk (Chhaochharia et al., 2017; Falk and Shelton, 2018). Moreover, local bias influences investors to allocate their equity holdings to locally headquartered firms (Ivkovic and Weisbenner, 2005). Hence, state-level uncertainty affects investors' decisions as well as the stock market, leading to higher stock return volatility surrounding a gubernatorial election (Jens, 2017). Consequently, risk-averse investors expect higher risk premiums during U.S. gubernatorial elections (Gao et al., 2019). I test whether firms with high CSR reputation realize higher stock returns compared to firms with low or no CSR reputation during political uncertainty triggered by U.S. gubernatorial elections.

This chapter analyzes all publicly listed U.S. firms, excluding financial and utilities firms, during 2002-2016. First, I conduct a standard event study to examine

whether CSR reputation affects value in the short run for firms headquartered in a state having a gubernatorial election. I find that high CSR firms have a valuation premium around the election, which is economically and statistically significant. The realized short-run abnormal returns of high CSR firms vary from 0.29% [CAR (-1,1)] to 2.01% [CAR (-10,10)] for different pre-election, post-election, and event windows.

Second, I test the impact of firms' social capital on the long-term stock performance following gubernatorial elections. A standard Buy and Hold Abnormal Returns (BHARs) approach shows that high CSR firms realize higher returns compared to low CSR firms, over the first two years after the election. A one-standard-deviation increase in CSR score, increases the 12- and 24-month BHARs by 1.15%. Alternatively, I use a calendar-time portfolio approach. I find that portfolio of high CSR firms earns approximately 0.30% monthly, over the first three years after the election, which is statistically and economically significant and higher compared to portfolio of low CSR firms. Hence, the results indicate that the investors can earn 3.66% annualized abnormal return from their investment in portfolio of high CSR firms with a holding period of three years after the election. Similar to my study, Deng et al. (2013) also find that portfolio of high CSR acquirers earns monthly 0.30% abnormal returns for holding periods of two and three years. Overall, my results are consistent with my expectation that high CSR firms enjoy a valuation premium during political uncertainty. Hence, social capital signals trustworthiness and creates value in the short and long-run around election periods via the *reputation effect*.

The contribution of this chapter is twofold. First, I measure the short and long-run value implications of social capital. Second, I use regional political risk surrounding U.S. gubernatorial elections as an exogenous shock on stock returns to provide causal

evidence of CSR on firms' market valuation. My study provides novel empirical evidence that CSR reputation has a positive valuation effect surrounding a regional election cycle for both the short and long run.

This chapter is related to the growing literature on the market valuation of social capital. A strand of the literature focuses on how investors react to firms' socially responsible and irresponsible behavior. Flammer (2013) focuses only on short-term market reactions and finds that firms experience a significant stock price increase for responsible behavior toward the environment and decrease for behave irresponsibly. In contrast, Fisher-Vanden and Thorburn (2011) and Krüger (2015) find that firms experience significant stock price decline in the short-run around the CSR-related positive news, such as greenhouse gas emissions reduction. However, Karpoff et al. (2005) and Capelle-Blancard and Laguna (2010) also focus only on short-term effects and show that firms realize negative abnormal stock returns for adverse CSR events, such as product safety, chemical disasters, or fraudulent marketing. These studies focus only on the short-term valuation effect of CSR-related events. Meanwhile, my study focuses on both the short and long-run valuation effects of CSR reputation during economy-wide uncertainty.

Cordeiro and Tewari (2015) show that investors react positively to firms' good rankings in green performance, both in the short and long-run. They use the calendar portfolio approach to examine the long-run portfolio returns over 6, 12 and 18 months and find that portfolios of firms with top green scores earn 0.48% (0.32%) monthly return in the 6-month (12-month) period. Meanwhile, I apply a BHAR and a calendar-time portfolio approach and find statistically and economically significant positive earnings of portfolios of high CSR firms, over the first three years after the election.

Edmans (2011) uses employee satisfaction as featured in Fortune magazine and find that firms with higher employee satisfaction earn higher long-run stock returns than other firms, but does not examine the short-run effect. Meanwhile, I use the overall ESG score of the ASSET4 database, which covers all aspects of CSR. Using British firms, Brammer et al. (2006) examine only the long-term effect (1, 2 and 3 years holding period) of post-CSR performance and find a negative relationship between CSR reputation and stock returns. My study examines firms having headquarters in the U.S. and contributes to the related literature by showing, in contrast to Brammer et al. (2006), that CSR reputation has a long-term positive effect on stock returns during economy-wide shock.

Moreover, by analyzing over a short-term period, Consolandi et al. (2009), Becchetti et al. (2012) and Kappou and Oikonomou (2016) show that deletions from any social index for irresponsible behavior have significantly negative effect on abnormal returns. In contrast, market reactions for addition to such a social index are mixed. Although Kappou and Oikonomou (2016) also study for long-term period, they analyze earnings per share of 1 year before and after the event date. In comparison, I apply BHAR and calendar-time portfolio approach over the first three years after the elections.

My study mainly differs from the above stated papers as I focus on the value implications of the hedging effect of social capital and use political uncertainty arises from the election cycle as an exogenous shock to market value. The existing literature on the related stream mainly focuses on the hedging ability of social capital during firm-specific negative events. For instance, Godfrey et al. (2009), Shiu and Yang (2017) and Minor and Morgan (2011) investigate insurance-like effects of CSR

reputation, focusing only on short-term effects. They find that CSR reputation can reduce the negative market reactions for firm-specific adverse events, such as controversy, product recalls, fraud, allegations, lawsuits etc. They do not discuss the long-term effect, as I do in this chapter. Meanwhile, Lins et al. (2017) use the 2007–2009 financial crisis as an exogenous financial shock and find that high CSR firms experience higher stock returns compared to low CSR firms during this economy-wide shock. However, as the 2007-09 financial crisis disrupts the equilibrium, it had a direct effect on all real economic activities (Berger et al., 2020). As this credit shock expanded on both supply and demand, using this as exogenous shock can lead to biased estimates. My study uses a staggered exogenous shock on firms' market value, U.S. gubernatorial elections, and provides robust causal evidence on the valuation effect of social capital both in the short and long-run.

3.2 Theoretical background and hypotheses development

Investors assess firms' reliability and trustworthiness in addition to the risk-return trade-off when investing in stocks (Guiso et al., 2008). CSR investment creates reputation by signaling firms' unobservable attributes, such as management quality and honesty (Fombrun and Shanley, 1990; Rindova and Fombrun, 1999; Su et al., 2014), and establishes cooperating networks between firms and their stakeholders, which build firms' trustworthiness (Degli Antoni and Sacconi, 2011). But the empirical evidence is mixed on how and whether shareholders value CSR reputation. Derwall et al. (2005), Statman and Glushkov (2009), and Edmans (2011) show that portfolios comprising firms with high CSR reputation realize positive long-term stock returns than low CSR firms. Cordeiro and Tewari (2015) show that investors react positively to firms' good rankings in green performance, both in the short and long-

run. In contrast, Renneboog et al. (2008) and Hong and Kacperczyk (2009) show that SRI funds underperform conventional funds or sin stocks (stocks of publicly traded companies that produce alcohol, tobacco, and gaming) due to higher screening intensity. Meanwhile, other studies find no difference between the risk-adjusted return of SRI and conventional funds (Bauer et al., 2005; Schröder, 2007). Fishser-Vanden and Thorburn (2011) and Krüger (2015) find that firms experience significant stock price decline for CSR related positive news in the short-run. Brammer et al. (2006) find a negative long-term valuation effect of CSR.

Investors adjust their valuation for high CSR firms during firm-specific negative events (Godfrey et al., 2009; Minor and Morgan, 2011; Shiu and Yang, 2017). Also, firms with high social capital provide a signal of resilience to investors and experience stronger relative stock market performance during economy-wide shocks, such as the 2007-09 financial crisis (Lins et al., 2017) and the market crisis induced by COVID-19 (Albuquerque et al., 2020; Cheema-Fox et al., 2020). Regarding economy-wide uncertainty, using the 2007-09 financial crisis as exogenous shock can lead to biased estimates. That is because this credit shock expanded on both supply and demand, hence had a direct effect on all real economic activities (Berger et al., 2020). Meanwhile, the Covid-19 related crisis is still an active and evolving crisis, whereas markets are still in flux (Cheema-Fox et al., 2020). Hence, it is too early to draw robust empirical conclusions. I use U.S. gubernatorial elections as staggered exogenous shocks to market value. Focusing on state-level political risk limits the extent of unobserved institutional heterogeneity and improves data comparability (Falk and Shelton, 2018). State governors have significant power to shape state policies through legislation, regulation, permitting, and others (Falk and Shelton, 2018), which

substantially influence the states' business environment in which firms operate (Chhaochharia et al., 2017). The policy differences and changes surrounding the election periods, along with electoral competitiveness, generate political uncertainty in the business environment (Pástor and Veronesi, 2012; Gulen and Ion, 2016). In turn, influencing firms' corporate policies such as investment reduction in election years (Jens, 2017; Falk and Shelton, 2018) and the risk premium expectations of risk-averse investors (Gao et al., 2019). Meanwhile, individual investors have a strong locality bias in allocating funds to stocks having headquarters locally. On average, 31.5% stocks of their portfolio are headquartered within 250 miles of them, from which they earn additional annualized return of 3.2% compared to nonlocal holdings (Ivkovic and Weisbenner, 2005). Also, gubernatorial elections are staggered and exogenous. This makes them a robust econometric test.

As fundamental uncertainty distorts the quality of investors' information on asset fundamentals (Ozsoylev and Werner, 2011), it accompanies divergence of investors' perception about a security's valuation and risk (Miller, 1997). Hence, the trading volume and liquidity in the stock market reduces before the election due to political uncertainty (Pasquariello and Zafeiridou, 2014). Also, as political uncertainty affects future cash flows and discount rates, the high ambiguity of information before election affects stock returns (Pástor and Veronesi, 2012 and 2013). Due to this exposure of stock returns to systematic economic forces (Campbell, 1985; Fama and French, 1988, 1989; Chen, 1991; Bailey and Chung, 1995), political uncertainty augments the expected return volatility around an election. The extant literature suggests that stock return volatility is higher in the election year and electoral competitiveness also

contributes to the magnitude of this volatility (Pantzalis et al., 2000; Li and Born, 2006; Białkowski et al., 2008; Boutchkova et al., 2012; Pasquariello and Zafeiridou, 2014).

I argue that preception of quality via CSR reputation influences investors to rely on firms' efficacy to resolve the effect of policy changes surrounding an election. Moreover, high CSR firms' trustworthiness leads investors to believe that these firms will keep their commitments associated with the implicit contracts during policy uncertainty. Therefore, investors would adjust their valuation positively in the short-run for high CSR firms during uncertainty surrounding an election. I also argue that investors' market reaction for firms with high social capital would remain positive in the long-run. That is because these firms' short-run positive market performance during an election is likely to increase investors' trust, hence influence firms' long-term stock returns positively. Therefore, I expect to find positive abnormal returns for high CSR firms surrounding a regional election cycle for both the short and long run. Finally, I expect that high CSR firms earn positive abnormal returns during U.S. gubernatorial elections both in the short and long term. Hence, my hypotheses are the following:

H1: Firms with high social capital realize higher short-term stock returns compared to firms with low social capital during political uncertainty.

H2: Firms with high social capital realize higher long-term stock returns compared to firms with low social capital during political uncertainty.

3.3 Sample and data

My sample comprises all publicly listed U.S. firms in the Center for Research in the Security Prices (CRSP)/Compustat merged database having headquarters in the United States between 2002 and 2016. I exclude financial firms (SIC codes 6000-

6999) and utilities (SIC codes 4900-4949). For social capital measurement, I gather firms' overall Environmental, Social, and Governance (ESG) score from the Asset4[19] database provided by Refinitiv (formerly Thomson Reuters). Daily and monthly stock prices and financial data are collected from the CRSP/Compustat merged database. I collect data on U.S. gubernatorial elections from David Leip's Atlas of U.S. Presidential Elections (www.ourcampaigns.com) and individual state agency websites. State-level unemployment rates and annual GDP growth rates are gathered from the Bureau of Labor Statistics (www.bls.gov) and the Bureau of Economic Analysis (www.bea.gov), respectively. The four factors of the Carhart (1997) model are obtained from the Kenneth French website.[20] After dropping missing observations, my final sample consists of 12,246 firm-year observations for 4,977 unique U.S. firms.

Table 3-1 provides descriptive statistics for the main variables. Summary statistics for all sample firms, high CSR firms, low CSR firms, and firms without a CSR score are reported in Panel A, B, C, and D, respectively. Overall the ESG score is 54.41 for all sample firms, consistent with Halbritter and Dorfleitner (2015) and Ferrell et al. (2016). Also, firms with high CSR scores have higher operating profit and maintain lower leverage than firms with low CSR scores or no scores, consistent with Deng et al. (2013). Table 3-2 reports the average values and differences in means of CSR value

[19] Asset4 provides ESG information for more than 4,300 companies globally (including 2,693 U.S. firms) during my sample period. This database collects 900 evaluation points to measure 250 key performance indicators. These indicators are the base to construct scores for four pillars: Economic, Social, Environmental, and Corporate Governance. Overall ESG score is the equally weighted score of these pillars. Along with company-reported data, Asset4 collects information from NGOs, stock exchange filings, and other independent news sources.

[20] https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

and firm characteristics that I use as control variables later in the chapter. Panel A shows the statistics for firms with and without a CSR score, while Panel B reports firms with low and high CSR scores. Panel A shows that market value, leverage and operating margin are significantly higher for firms with CSR scores than firms without CSR scores. Panel B shows that firms with high CSR scores have significantly higher operating margin and lower leverage relative to firms with low CSR scores.

3.4 Empirical results

3.4.1 Election-event returns

I conduct a standard event study analysis to examine the impact of social capital on stock performance around U.S. gubernatorial elections. I examine the abnormal returns for the firms headquartered in the U.S. facing a gubernatorial election by estimating the market model parameters as follows:

$$AR_{i,t} = R_{i,t} - \alpha_{i,t} - (\beta_{i,t} \times R_{M,t}) \qquad (3.1)$$

Here, $AR_{i,t}$ is the abnormal return for the firm i on day t. $R_{i,t}$ is the logarithmic return of firm i on day t. α and β are the estimated market model parameters based on estimation periods of 250 trading days ending 50 days before the election date.[21] $R_{M,t}$ is the market index return on day t. I use the CRSP equally weighted index as a proxy of the market index by following Godfrey et al. (2009), Flammer (2013) and Heflin

[21] I repeat the estimation methods for calculating CARs based on the model parameters of the 1-factor Capital Asset Pricing Model (CAPM), as following:

$$AR_{it} = (R_{it} - R_{ft}) - \alpha_t - \beta_t (R_{mt} - R_{ft}) \qquad (3.2)$$

Here, R_{ft} is the risk-free rate. My results remain similar to almost all the estimates.

and Wallace (2017).[22] To measure the abnormal returns, I use following event windows: (-1,1), (-2,2), (-5,5), (-10,10) and (-25,25) trading days around the election date. I also analyze the abnormal returns for various pre-and post-election windows. Figure 3-1 presents the graphical depiction of the cumulative average abnormal returns for a 51 days' window (-25, +25) around the U.S. gubernatorial election day for all sample firms, firms without CSR score, with CSR score, low CSR score and high CSR score. It shows that average CAR for firms with CSR scores is higher than all sample firms and firms without CSR credentials. Moreover, the average CAR is higher for high CSR firms compared to low CSR firms.

Table 3-3 presents the cumulative abnormal returns (CARs) for all sample firms and subsamples of firms with CSR scores and without CSR scores in Panel A, and high and low CSR scores in Panel B based on the tercile classification of CSR scores.[23] Panel A shows that in pre-event windows, CARs are negative and insignificant for all sample firms. Meanwhile, firms with CSR scores realize higher CARs than all sample firms and firms without CSR credentials in event windows (-10,-2), (-10,-1) and (-5,-2). Panel A also suggests that CARs for firms with CSR scores are significantly positive [except (-1,1)] and higher than CARs of all sample firms and firms without CSR credentials in all event and post-event windows. For instance, for (-10,10) and (1,25) event windows, firms with CSR credentials realize economically and

[22] I repeat the estimation by using the CRSP value weighted index as a proxy of the market index and find qualitatively similar and consistent results to almost all the estimates.

[23] I repeat the univariate analysis of CARs by using mean, median, quartile and quantile classifications of CSR scores. The results, presented in the Appendix (Table 3-A1), are qualitatively similar and consistent.

statistically significant positive CARs, 1.14% and 1.02%, respectively. The differences in CARs between firms without and with CSR scores are negative in almost all specifications and significant in (-10, -1), (-10,10), (2,5), (1,10), (2,10) and (1,25). These results indicate that firms with CSR score perform better than firms without CSR credentials in the short run around the election date. Panel B shows that for both firms with high and low CSR scores, CARs are positive and economically and statistically significant in (-10,10) and almost all post-event windows. Although, they are not statistically different between the two groups (high and low CSR). By analyzing CARs surrounding national elections of OECD countries, Białkowski et al. (2008) show that firms earn positive CARs in symmetric-event windows, such as 0.23% (-2,2) and 0.33% (-25,25). Whereas short-run CARs in asymmetric event windows are negative in most cases, such as -0.25% (0,2), -0.33% (0,5) etc. But all of the reported CARs are statistically insignificant, which reveals that abnormal returns are inadequate to investors for increased return volatility surrounding the election period. Meanwhile, my results contribute to the related literature by suggesting that investors can earn significantly higher positive short-term returns during regional election periods by investing in firms with CSR reputation.

To rule out alternative explanations and better understand the cross-sectional variation in the stock market reaction to the CSR reputation during the gubernatorial election period, I also conduct multivariate regressions. In Table 3-4, I present the results of the multivariate regression analysis of CARs of different event windows around gubernatorial election dates on CSR scores. I estimate the following model:

$$CAR_{i,t} = \alpha + \beta_1 \times CSR_{i,t} + X_{i,t-1} + \theta + \gamma + \varepsilon_{i,t} \qquad (3.3)$$

Here, $CSR_{i,t}$ is the overall CSR score of firm *i* at time *t*, and I set CSR to zero for firms with no CSR score. *X* is a vector of control variables that affect firm value.[24] θ and γ denote the year and firm fixed effects, respectively. In line with my arguments, I expect the β1 coefficient to be positive.

In Panel A, I report the results of pre-event windows. Columns (5) and (7) show that CAR (-10, -2) and CAR (-10, -1) are significantly higher for high CSR firms than low CSR firms. A one-standard-deviation increase in CSR (28.75) is associated with 1.15% and 1.44% increase in CAR (-10, -2) and CAR (-10, -1), respectively. The results remain identical when I include control variables in columns (6) and (8). In contrast, columns (1) and (2) show negative CAR for firms with high CSR scores in (-25, -2), which is also statistically significant. Panel B reports the results of event windows around the election date. I find that high CSR firms realize higher abnormal returns in all event windows, except CAR (-25,25). The realized CARs are between 0.29% [CAR (-1,1)] to 2.01% [CAR (-10,10)]. Panel C reports the estimates of post-event windows, suggesting that abnormal returns are higher for all post-event windows. The realized short-run post-election CARs vary from 0.58% [CAR (2,5)] to 1.15% [CAR (1,25)]. Hence, taken together, the results are consistent with my expectation that firms having their headquarters in upcoming gubernatorial election states realize higher short-term abnormal returns around the election period if they have high CSR reputation.

[24] All control variables are defined in the Appendix (3-A).

3.4.2 Long-run performance: Buy and Hold Abnormal Returns (BHARs)

To assess the impact of firms' social capital on the long-term market performance around the election cycle, I measure the abnormal returns during post-election periods by using standard Buy and Hold Abnormal Returns (BHARs) approach. I calculate the monthly BHAR over the 1,2 and 3 years following the election month as follows:

$$BHAR_{i,t} = \prod_{t=1}^{t=T}(1 + R_{i,t}) - \prod_{t=1}^{t=T}(1 + R_{M,t}) \qquad (3.4)$$

Here, $BHAR_{i,t}$ is the monthly Buy and Hold Abnormal Returns of firm *i* on month *t*. R_{it} is the monthly return for firm *i* on month *t*, and R_{Mt} is the monthly return of the market index on month *t*. By following Çolak et al. (2017), I use the CRSP equally weighted index as a proxy of the market index.[25] Here, *T* represents the 12, 24, and 36 months after the election month.

Table 3-5 reports the BHARs for the subsamples of firms with CSR scores and without CSR scores (Panel A), and high and low CSR scores (Panel B) based on the tercile classification of CSR score.[26] Panel A shows that BHARs of one year after election month is positive (2.89%) and statistically and economically significant for firms with CSR score. For firms without CSR score, BHARs are negative and significant on two years after the election month (-1.03%). The difference of mean BHARs suggests that realized BHARs are significantly higher for firms with CSR scores than firms without CSR scores for all of these years. In Panel B, the BHARs of firms with high CSR scores are positive (2.33% to 2.92%) and significant for one, two

[25] I repeat the BHAR estimation by using the CRSP value weighted index as a proxy of the market index and find qualitatively similar and consistent results to almost all the estimates.

[26] I repeat the univariate analysis of BHARs by using mean, median, quartile and quantile classifications of CSR scores. The results, presented in Appendix (Table 3-A2), are qualitatively similar and consistent.

and three years after the gubernatorial election month. However, estimates of the univariate tests show that high CSR firms earn higher long-term returns compared to low CSR firms, whereas the difference of mean BHAR is insignificant in all specifications.

Moreover, I regress the BHARs of the 12, 24, and 36 months following election months on the firms' CSR scores. The multivariate analysis results are presented in table 3-6. Columns (1) and (3) suggest that CSR reputation has positive and significant association with the BHARs of 12 and 24 months after elections. However, the realized BHARs of 36 months are negatively and significantly associated with CSR scores (column 5). After adding control variables, the results confirm that firms with high CSR reputation earn higher BHARs on 12 and 24 months following the gubernatorial elections of headquarter states. For one-standard-deviation increase in CSR (28.75), BHARs of 12 and 24 months after the elections increase by 1.15% (columns 2 and 4, respectively), which decreases by 1.44% on 36 months after the election (column 6). Overall, the results suggest that CSR reputation has a positive effect on the long-run post-election period market performance up to two years after the election.

3.4.3 Long-run performance: Calendar-time portfolio regression approach

I employ the calendar-time portfolio regression approach alternatively to examine the impact of firms' social capital on the post-election long-term market performance. First, I compare the post-election long-term stock returns of firms with CSR score and without CSR credentials. Then, I compare the long-term performance of high CSR firms with low CSR firms. Following Brammer et al. (2006) and Deng et al. (2013), I construct equally-weighted portfolios for these groups separately for each calendar month. I keep these firms in the portfolio for a holding period of 12, 24 and 36 months

following the election month. Then, I regress the portfolio excess return on the four factors of Carhart (1997) model :

$$R_{P,t} - R_{F,t} = \alpha + \beta_1 (R_{M,t} - R_{F,t}) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t \quad (3.5)$$

Here, $R_{P,t}$ is the portfolio return, $R_{F,t}$ is the risk-free return and $R_{M,t}$ is the CRSP value-weighted index return on month *t*. SMB_t, HML_t and UMD_t are the size, book to market and momentum factors of month *t*, respectively. α is the average monthly abnormal return of the portfolio over the post-event holding period.

Table 3-7 reports the long-term post-election abnormal returns of the equally-weighted portfolios for firms with CSR scores and without CSR scores (Panel A), and high and low CSR scores (Panel B) based on the tercile classification of CSR score. In Panel A, α is positive and significant for firms with CSR score only for holding period of 36 months (0.20% monthly), while that is significant but negative for firms without CSR credential (-0.23% monthly). Hence, long-term realized returns are higher for portfolio of firms with CSR score compared to portfolio of firms without CSR score, for holding period of 36 months after the election. Meanwhile, Panel B shows that portfolios of high CSR firms earn positive and significant abnormal returns for holding periods of 12, 24 and 36 months (0.33%, 0.27%, and 0.35% monthly, respectively). In contrast, portfolio of low CSR firms exhibits insignificant abnormal returns for the same holding periods. These results suggest that long-term realized abnormal returns are higher for the portfolio of high CSR firms than the portfolio of low CSR firms over first three years after election, which are also economically and statistically significant.[27] My results comply with Deng et al. (2013) as they realize post-merger

[27] I repeat these analyses by using mean, median, quartile and quantile classifications of CSR scores. The results are presented in the Appendix (Table 3-A3). For all of the specifications, realized abnormal

positive long-term stock returns and suggest that the market participants do not fully value the benefits of social capital immediately.

In sum, I find strong and robust evidence that the realized abnormal returns around the U.S. gubernatorial elections are higher for firms with high social capital than firms with low social capital, both in the short and long-run. Hence, investment in firms with high CSR reputation compensates market participants for taking on additional political risk.

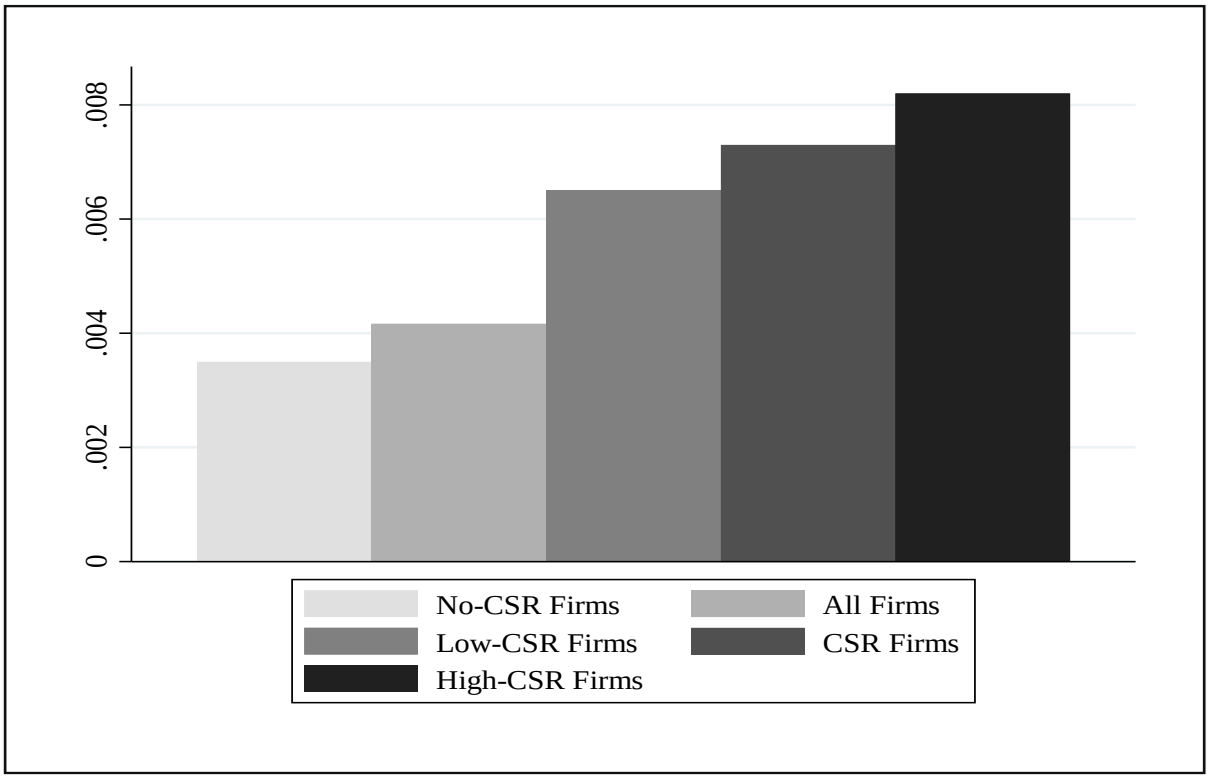
3.5 Conclusion

I assess the valuation effect of hedging ability of social capital during regional political risk driven by U.S. gubernatorial elections. I measure the short-run valuation effect by using event study and long-term post-election periods market performance by following BHARs approach and calendar-time portfolio regression approach. By using U.S. gubernatorial elections as an exogenous shock on the stock market, I provide novel and robust causal evidence of CSR reputation effect on firms' market valuation. My results suggest that firms with high social capital earn higher positive abnormal returns in the short run surrounding the election year compared to firms with low social capital. Also, the realized long-run abnormal returns in the post-election period are significantly higher for firms with high CSR reputation than firms with low

returns for 36 months are positive and significant for the portfolios of high CSR firms, but insignificant for portfolios of low CSR firms. For 24 months holding period, abnormal returns are insignificant for both portfolios in all panels. However, Panel A of Table 3-A3 (mean classification of CSR) shows that abnormal returns for holding period of 12 months are positive and significant (0.29% monthly) for portfolios of high CSR firms, but insignificant for portfolios of low CSR firms.

CSR reputation. Both in the short and long-run, the realized abnormal returns of firms with high social capital are economically and statistically significant. Hence, firm-specific social capital creates value in the short and long run during political uncertainty around election periods via reputation effect.

Figure 3-1: Cumulative abnormal returns around the U.S. gubernatorial election day



This figure illustrates the cumulative average abnormal returns for a 51 days' window (-25, +25) around the U.S. gubernatorial election day for all sample firms, firms without CSR score, with CSR score, low CSR score and high CSR score. Firms are categorized into high and low CSR firms based on the sample median CSR scores. The realized abnormal return is calculated based on market model parameters by using estimation periods of 250 trading days ending 50 days before the event (election) date. CRSP equally-weighted index is used as the market index. CARs are winsorized at the 1% and 99% tails.

Table 3-1: Summary Statistics

This table reports summary statistics for my sample of all publicly listed U.S. firms in CRSP/Compustat between 2002 and 2016, which have headquarters in the United States. I exclude financial (SIC codes 6000-6999) and utilities (SIC codes 4900-4949) firms. Summary statistics for all sample firms, firms with a high CSR score, firms with a low CSR score, and firms without a CSR score are reported in Panels A, B, C, and D, respectively. Firms are classified as high and low CSR based on *Tercile classification*. All variables are defined in the Appendix (3-A). All continuous variables are winsorized at the 1% and 99% tails.

Panel A: All Firms

	N	*Mean*	*SD*	*10th Percentile*	*90th Percentile*
CSR	2298	54.4132	28.7494	17.2300	93.9800
Market-to-Book	12532	1.5988	1.6052	0.3209	3.4867
Leverage	12532	0.1682	0.1987	0.0000	0.4425
Operating Margin	12532	-0.5662	3.7563	-0.4722	0.2858
Investment	12532	0.0911	0.2317	-0.0814	0.3228
Sales Growth	12532	0.0513	0.3586	-0.2909	0.3745
Negative Equity	12532	0.0326	0.1777	0.0000	0.0000

Panel B: High CSR Firms (Based on Tercile Classification)

	N	*Mean*	*SD*	*10th Percentile*	*90th Percentile*
CSR	760	87.4908	10.0894	76.6750	96.2450
Market-to-Book	760	1.6241	1.2287	0.5255	3.0642
Leverage	760	0.1999	0.1284	0.0302	0.3674
Operating Margin	760	0.1910	0.1089	0.0707	0.3418
Investment	760	0.0548	0.1372	-0.0382	0.1539
Sales Growth	760	0.0125	0.1699	-0.1804	0.1619
Negative Equity	760	0.0066	0.0809	0.0000	0.0000

Panel C: Low CSR Firms (Based on Tercile Classification)

	N	*Mean*	*SD*	*10th Percentile*	*90th Percentile*
CSR	774	23.6107	9.8513	11.1000	36.2600
Market-to-Book	774	1.7743	1.6441	0.4111	3.8316
Leverage	774	0.2265	0.2072	0.0000	0.5070
Operating Margin	774	0.1074	0.8223	0.0199	0.3811
Investment	774	0.1096	0.1994	-0.0461	0.3033
Sales Growth	774	0.0589	0.3003	-0.2332	0.3391
Negative Equity	774	0.0323	0.1769	0.0000	0.0000

Panel D: No CSR Firms

	N	*Mean*	*SD*	*10th Percentile*	*90th Percentile*
Market-to-Book	10234	1.5739	1.6295	0.2988	3.4867
Leverage	10234	0.1580	0.2026	0.0000	0.4443
Operating Margin	10234	-0.7290	4.1326	-0.7233	0.2534
Investment	10234	0.0939	0.2438	-0.0949	0.3436
Sales Growth	10234	0.0560	0.3802	-0.3108	0.3995
Negative Equity	10234	0.0343	0.1820	0.0000	0.0000

Table 3-2: CSR, no CSR, low CSR, and high CSR firms

This table reports the average values and the differences in means of firm characteristics for firms with and without a CSR score (Panel A) and firms with low and high CSR scores (based on Tercile classification) (Panel B) for my sample of all publicly traded U.S. firms in CRSP/Compustat between 2002 and 2016, having headquarters in the United States. I exclude financial firms (SIC codes 6000-6999) and utilities (SIC codes 4900-4949). All variables are defined in the Appendix (3-A). All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A: CSR and No CSR Firms

	No CSR Firms		***CSR Firms***		
	N	***Mean***	***N***	***Mean***	***Difference***
CSR	-	-	2298	54.413	
Market-to-Book	10234	1.574	2298	1.710	-0.136***
Leverage	10234	0.158	2298	0.214	-0.056***
Operating Margin	10234	-0.729	2298	0.159	-0.888***
Investment	10234	0.094	2298	0.079	0.015***
Sales Growth	10234	0.056	2298	0.031	0 .025***

Panel B: Low and High CSR Firms (Tercile Classification)

	Low CSR Firms(Q1)		***High CSR Firms(Q3)***		
	N	***Mean***	***N***	***Mean***	***Difference***
CSR	774	23.611	760	87.491	-63.880***
Market-to-Book	774	1.774	760	1.624	0.150**
Leverage	774	0.226	760	0.200	0.026***
Operating Margin	774	0.107	760	0.191	-0.084***
Investment	774	0.110	760	0.055	0.055***
Sales Growth	774	0.059	760	0.013	0.046***

Table 3-3: Cumulative abnormal returns (CARs) around election day

This table presents the cumulative abnormal returns (CARs) calculated around the U.S. gubernatorial elections. My sample consists of all publicly traded U.S. firms in CRSP/Compustat (except financial and utility firms), which have faced a gubernatorial election in their headquarter state between 2002 and 2016. In Panel A, results are presented for firms with and without a CSR score. In Panel B, results are presented for firms with high and low CSR scores, classified based on the sample tercile CSR scores. The realized abnormal return is calculated based on market model parameters by using estimation periods of 250 trading days ending 50 days before the event (election) date. CRSP equally-weighted index is used as the market index. CARs are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A: CSR and NO CSR Firms

CARs	All Firms	No CSR Firms: (A)	CSR Firms: (B)	Test of Difference: (A-B)
Pre-event Windows				
CAR(-25,-2)	-0.0014	-0.0011	-0.0027	0.0016
CAR(-25,-1)	-0.0020	-0.0019	-0.0028	0.0009
CAR(-10,-2)	-0.0011	-0.0017	0.0019	-0.0036
CAR(-10,-1)	-0.0015	-0.0023**	0.0019	-0.0042*
CAR(-5,-2)	-0.0004	-0.0005	0.0000	-0.0005
Event Windows				
CAR(-1,1)	0.0004	0.0003	0.0009	-0.0006
CAR(-2,2)	0.0014**	0.0010	0.0031***	-0.0021
CAR(-5,5)	0.0002	-0.0004	0.0026*	-0.0030
CAR(-10,10)	0.0015	-0.0008	0.0114***	-.0122***
CAR(-25,25)	0.0042*	0.0035	0.0073**	-0.0038
Post-event Windows				
CAR(2,5)	-0.0002	-0.0007	0.0018**	-0.0025*
CAR(1,10)	0.0019**	0.0001	0.0098***	-0.0097***
CAR(2,10)	0.0015*	-0.0001	0.0083***	-0.0084***
CAR(1,25)	0.0050***	0.0038**	0.0102***	-0.0064*
CAR(2,25)	0.0046***	0.0036**	0.0088***	-0.0052

Panel B: Low and High CSR Firms (Tercile Classification)

CARs	Low CSR Firms: A	High CSR Firms: B	Test of Difference (A-B)
Pre-event Windows			
CAR(-25,-2)	0.0016	-0.0001	0.0017
CAR(-25,-1)	0.0012	-0.0007	0.0019
CAR(-10,-2)	0.0054*	0.0013	0.0041
CAR(-10,-1)	0.0050*	0.0008	0.0042
CAR(-5,-2)	0.0026	-0.0010	0.0036
Event Windows			
CAR(-1,1)	-0.0009	0.0009	-0.0018
CAR(-2,2)	0.0025	0.0021	0.0004
CAR(-5,5)	0.0028	0.0001	0.0027
CAR(-10,10)	0.0137***	0.0070**	0.0067
CAR(-25,25)	0.0094	0.0057	0.0037
Post-event Windows			
CAR(2,5)	0.0013	0.0005	0.0008
CAR(1,10)	0.0099***	0.0060***	0.0039
CAR(2,10)	0.0088***	0.0051***	0.0037
CAR(1,25)	0.0087**	0.0061**	0.0026
CAR(2,25)	0.0077*	0.0051*	0.0026

Table 3-4: The relationship between CSR reputation and cumulative abnormal returns (CARs) around election dates

This table reports OLS estimates of CSR reputation and cumulative abnormal returns (CARs) around U.S. gubernatorial election dates. The dependent variable, *CAR* is estimated based on market model parameters by using estimation periods of 250 trading days ending 50 days before the event (election) date. I use pre-event (Panel A), event (Panel B) and post-event (Panel C) windows to measure abnormal returns. The pre-event windows are (-25,-2), (-25,-1),(-10,-2) ,(-10,-1), and (-5,-2); event windows are (-1,1), (-2,2), (-5,5), (-10,10) and (-25,25); and the post-event windows are (+2,+5), (+1,+10), (+2,+10), (+1,+25), and (+2,+25) days around the election date. *CSR* is the equally weighted overall ESG score from Asset4, and I set CSR to zero for firms with no CSR score. CARs and CSR measures are contemporaneous. All firm-level financial controls, state-level GDP growth rate, and unemployment rate are lagged by one year. All regressions include firm and year fixed effects. I use heteroscedasticity robust standard errors clustered at the firm level, which are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All continuous variables are winsorized at the 1% and 99% tails.

Panel A: Pre-event Windows

	(1) **CAR (-25,-2)**	(2) **CAR (-25,-2)**	(3) **CAR (-25,-1)**	(4) **CAR (-25,-1)**	(5) **CAR (-10,-2)**	(6) **CAR (-10,-2)**	(7) **CAR (-10,-1)**	(8) **CAR (-10,-1)**	(9) **CAR (-5,-2)**	(10) **CAR (-5,-2)**
CSR	-0.0002**	-0.0002**	-0.0001	-0.0001	0.0004***	0.0004***	0.0005***	0.0005***	0.0000	0.0000
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0000)	(0.0000)
Market-to-Book		0.0002		0.0004		-0.0046***		-0.0045***		-0.0022***
		(0.0019)		(0.0020)		(0.0012)		(0.0013)		(0.0008)
Leverage		-0.0302*		-0.0337*		-0.0119		-0.0154		-0.0079
		(0.0172)		(0.0179)		(0.0112)		(0.0120)		(0.0078)
Operating Margin		0.0010		0.0007		0.0008		0.0005		0.0003
		(0.0011)		(0.0011)		(0.0006)		(0.0007)		(0.0005)
Investment		0.0447***		0.0490***		0.0193***		0.0238***		0.0093**
		(0.0112)		(0.0115)		(0.0072)		(0.0074)		(0.0047)
Sales Growth		-0.0063		-0.0055		0.0012		0.0026		0.0007

		(0.0080)		(0.0083)		(0.0048)		(0.0051)		(0.0033)
Negative Equity		-0.0115		-0.0183		-0.0065		-0.0141		0.0006
		(0.0164)		(0.0166)		(0.0112)		(0.0115)		(0.0069)
Term Limit		-0.0055		-0.0070		-0.0054		-0.0072*		-0.0010
		(0.0054)		(0.0056)		(0.0035)		(0.0038)		(0.0023)
Δ GDP		-0.3688***		-0.4118***		-0.1091**		-0.1654***		0.0086
		(0.0833)		(0.0869)		(0.0518)		(0.0556)		(0.0351)
Unemployment		0.3013		0.2513		0.1329		0.0730		0.1198
		(0.2307)		(0.2384)		(0.1481)		(0.1599)		(0.0972)
Constant	-0.0138***	-0.0171	-0.0186***	-0.0183	-0.0080***	-0.0029	-0.0125***	-0.0029	-0.0017	-0.0037
	(0.0033)	(0.0134)	(0.0034)	(0.0139)	(0.0022)	(0.0087)	(0.0024)	(0.0094)	(0.0014)	(0.0058)
Observations	12,246	12,246	12,246	12,246	12,244	12,244	12,244	12,244	12,243	12,243
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.00772	0.0143	0.0106	0.0182	0.00862	0.0137	0.0134	0.0196	0.00507	0.00701

Panel B: Event Windows

	(1) **CAR (-1,1)**	(2) **CAR (-1,1)**	(3) **CAR (-2,2)**	(4) **CAR (-2,2)**	(5) **CAR (-5,5)**	(6) **CAR (-5,5)**	(7) **CAR (-10,10)**	(8) **CAR (-10,10)**	(9) **CAR (-25,25)**	(10) **CAR (-25,25)**
CSR	0.0001**	0.0001**	0.0001***	0.0001***	0.0003***	0.0003***	0.0007***	0.0007***	0.0002	0.0002
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0002)
Market-to-Book		0.0000		-0.0006		-0.0028**		-0.0065***		-0.0053*

		(0.0007)		(0.0010)		(0.0014)		(0.0019)		(0.0030)
Leverage		-0.0037		-0.0097		-0.0170		-0.0204		-0.0344
		(0.0062)		(0.0087)		(0.0130)		(0.0184)		(0.0281)
Operating Margin		-0.0006		-0.0006		0.0002		0.0000		0.0020
		(0.0004)		(0.0005)		(0.0008)		(0.0011)		(0.0017)
Investment		0.0107***		0.0111**		0.0200***		0.0489***		0.1051***
		(0.0041)		(0.0054)		(0.0074)		(0.0109)		(0.0172)
Sales Growth		-0.0042		-0.0030		-0.0035		-0.0123		-0.0295**
		(0.0029)		(0.0038)		(0.0054)		(0.0077)		(0.0128)
Negative Equity		-0.0031		0.0009		0.0044		-0.0033		-0.0184
		(0.0056)		(0.0076)		(0.0111)		(0.0185)		(0.0268)
Term Limit		-0.0030		-0.0013		-0.0047		-0.0140**		-0.0061
		(0.0019)		(0.0025)		(0.0038)		(0.0055)		(0.0084)
Δ GDP		-0.0636**		-0.0509		-0.1289**		-0.3531***		-0.8375***
		(0.0300)		(0.0399)		(0.0581)		(0.0839)		(0.1386)
Unemployment		-0.0803		-0.0305		-0.1352		-0.2176		0.3909
		(0.0835)		(0.1122)		(0.1628)		(0.2292)		(0.3639)
Constant	-0.0069***	-0.0016	-0.0096***	-0.0054	-0.0136***	0.0025	-0.0171***	0.0146	-0.0319***	-0.0215
	(0.0012)	(0.0050)	(0.0016)	(0.0067)	(0.0022)	(0.0096)	(0.0033)	(0.0134)	(0.0049)	(0.0211)
Observations	12,243	12,243	12,243	12,243	12,243	12,243	12,244	12,244	12,247	12,247
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0156	0.0185	0.0137	0.0148	0.0144	0.0169	0.0161	0.0250	0.0225	0.0360

Panel C: Post-event Windows

	(1) **CAR (2,5)**	(2) **CAR (2,5)**	(3) **CAR (1,10)**	(4) **CAR (1,10)**	(5) **CAR (2,10)**	(6) **CAR (2,10)**	(7) **CAR (1,25)**	(8) **CAR (1,25)**	(9) **CAR (2,25)**	(10) **CAR (2,25)**
CSR	0.0002***	0.0002***	0.0002***	0.0003***	0.0002***	0.0002***	0.0004***	0.0004***	0.0003***	0.0003***
	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Market-to-Book		-0.0006		-0.0016		-0.0014		-0.0057***		-0.0058***
		(0.0008)		(0.0012)		(0.0012)		(0.0019)		(0.0019)
Leverage		-0.0035		-0.0073		-0.0030		-0.0086		-0.0033
		(0.0072)		(0.0118)		(0.0112)		(0.0190)		(0.0183)
Operating Margin		0.0003		-0.0003		-0.0002		0.0008		0.0010
		(0.0005)		(0.0007)		(0.0007)		(0.0012)		(0.0012)
Investment		0.0010		0.0175**		0.0172**		0.0514***		0.0518***
		(0.0044)		(0.0071)		(0.0067)		(0.0114)		(0.0112)
Sales Growth		-0.0007		-0.0121**		-0.0116**		-0.0196**		-0.0183**
		(0.0030)		(0.0048)		(0.0045)		(0.0081)		(0.0079)
Negative Equity		0.0062		0.0047		0.0077		0.0031		0.0033
		(0.0062)		(0.0108)		(0.0101)		(0.0171)		(0.0164)
Term Limit		-0.0009		-0.0041		-0.0054*		0.0014		0.0004
		(0.0022)		(0.0034)		(0.0033)		(0.0053)		(0.0052)
Δ GDP		-0.0663*		-0.1593***		-0.1663***		-0.4290***		-0.4275***
		(0.0369)		(0.0569)		(0.0544)		(0.0913)		(0.0898)
Unemployment		-0.1735*		-0.3626**		-0.2858**		0.0380		0.1038
		(0.0965)		(0.1517)		(0.1419)		(0.2336)		(0.2254)
Constant	-0.0058***	0.0062	-0.0044**	0.0208**	-0.0037*	0.0170**	-0.0126***	0.0038	-0.0119***	0.0005
	(0.0013)	(0.0056)	(0.0021)	(0.0088)	(0.0020)	(0.0083)	(0.0031)	(0.0136)	(0.0030)	(0.0133)

Observations	12,243	12,243	12,243	12,243	12,243	12,243	12,244	12,244	12,244	12,244
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.00527	0.00569	0.00896	0.0128	0.00837	0.0124	0.0191	0.0280	0.0191	0.0286

Table 3-5: Buy and Hold Abnormal Returns (BHARs)

This table presents the Buy and Hold Abnormal Returns (BHARs) calculated over the 1,2 and 3 years following the election month. In Panel A, results are presented for firms with and without a CSR score. In Panel B, results are presented for firms with high and low CSR scores, classified based on the sample tercile CSR scores. BHARs are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A: CSR and No-CSR Firms

	No CSR Firms: A	***CSR Firms: B***	***Test of Difference (A-B)***
After 1 Year	0.0028	0.0289***	-0.0261***
After 2 Years	-0.0103***	0.0168***	-0.0271***
After 3 Years	-0.0013	0.0231***	-0.0244***

Panel B: Low and High CSR Firms (Tercile Classification)

	Low CSR Firms: A	***High CSR Firms: B***	***Test of Difference (A-B)***
After 1 Year	0.0229***	0.0286***	-0.0057
After 2 Years	0.0134**	0.0233***	-0.0099
After 3 Years	0.0229***	0.0292***	-0.0063

Table 3-6: The relationship between CSR reputation and Buy and Hold Abnormal Returns (BHARs) in the post-election period

This table reports OLS estimates of CSR reputation and Buy and Hold Abnormal Returns (BHARs) following U.S. gubernatorial elections. The dependent variable, *BHARs* are estimated over the 1,2 and 3 years following the election month. *CSR* is the equally weighted overall ESG score from Asset4. BHARs and CSR measures are contemporaneous. All firm-level financial controls, state-level GDP growth rate, and unemployment rate are lagged by one year. All regressions include firm and year fixed effects. I use heteroscedasticity robust standard errors clustered at the firm level, which are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All continuous variables are winsorized at the 1% and 99% tails.

	(1) BHAR-After 1 Years	(2) BHAR-After 1 Years	(3) BHAR-After 2 Years	(4) BHAR-After 2 Years	(5) BHAR-After 3 Years	(6) BHAR-After 3 Years
CSR	0.0003**	0.0004**	0.0004***	0.0004***	-0.0005***	-0.0005***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Market-to-Book		-0.0041		-0.0084***		-0.0091***
		(0.0028)		(0.0027)		(0.0027)
Leverage		0.0108		-0.0007		-0.0404*
		(0.0239)		(0.0237)		(0.0238)
Operating Margin		0.0033**		0.0021		-0.0006
		(0.0015)		(0.0015)		(0.0016)
Investment		-0.0389**		-0.0046		-0.0275*
		(0.0175)		(0.0154)		(0.0161)
Sales Growth		-0.0274**		-0.0002		0.0079

		(0.0107)		(0.0107)		(0.0123)
Negative Equity		0.0215		-0.0109		0.0127
		(0.0214)		(0.0203)		(0.0213)
Term Limit		-0.0077		0.0031		-0.0053
		(0.0073)		(0.0073)		(0.0071)
Δ GDP		-0.3605***		0.0587		0.0682
		(0.1277)		(0.1163)		(0.1178)
Unemployment		-0.4004		-0.2712		-0.1822
		(0.3373)		(0.3240)		(0.3085)
Constant	0.0101**	0.0575***	-0.0074*	0.0191	0.0070**	0.0388**
	(0.0050)	(0.0208)	(0.0039)	(0.0190)	(0.0034)	(0.0186)
Observations	10,866	10,866	9,835	9,835	8,638	8,638
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0102	0.0182	0.0176	0.0202	0.0110	0.0146

Table 3-7: Calendar-time Portfolio Analysis for long-term abnormal stock returns

This table reports the results of the calendar-time portfolio regression analysis of post-election long-term abnormal returns for firms facing a gubernatorial election in their headquarter state. I construct equally weighted portfolios for each calendar month for firms with and without CSR scores (Panel A), and high and low CSR scores (Panel B, based on the sample tercile CSR scores). Firms remain in the portfolio for 12 (columns 1 and 2), 24 (columns 3 and 4) and 36 (columns 5 and 6) months following the election month, and rebalanced monthly. Then, I estimate the abnormal performance as the intercept of the regression of the portfolio excess return on the four factors of the Carhart (1997) model. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All continuous variables are winsorized at the 1% and 99% tails.

Panel A: CSR and No-CSR Firms

	(1)	(2)	(3)	(4)	(5)	(6)
	After 1 Year		After 2 Years		After 3 Years	
	No CSR Firm	CSR Firm	No CSR Firm	CSR Firm	No CSR Firm	CSR Firm
α	-0.0024	0.0005	-0.0020	0.0007	-0.0023**	0.0020**
	(0.0019)	(0.0015)	(0.0013)	(0.0011)	(0.0011)	(0.0009)
$R_M - R_F$	1.0186***	1.0606***	1.0157***	1.0805***	1.0012***	1.0400***
	(0.0600)	(0.0456)	(0.0408)	(0.0328)	(0.0340)	(0.0264)
SMB	0.9107***	0.4282***	0.8991***	0.4336***	0.8369***	0.3945***
	(0.0945)	(0.0719)	(0.0649)	(0.0521)	(0.0548)	(0.0423)
HML	0.0902	-0.0196	0.1035	-0.0131	0.1481***	0.0273
	(0.0943)	(0.0713)	(0.0646)	(0.0519)	(0.0541)	(0.0420)
UMD	-0.1918***	-0.1065**	-0.1537***	-0.1147***	-0.1638***	-0.1290***
	(0.0578)	(0.0441)	(0.0409)	(0.0329)	(0.0349)	(0.0272)

Observations	188	188	371	371	553	553
Adj R-squared	0.793	0.834	0.796	0.829	0.784	0.826

Panel B: Low and High CSR Firms (Tercile Classification)

	(1)	(2)	(3)	(4)	(5)	(6)
	After 1 Year		After 2 Years		After 3 Years	
	Low CSR Firm	High CSR Firm	Low CSR Firm	High CSR Firm	Low CSR Firm	High CSR Firm
α	-0.0006	0.0033*	0.0006	0.0027*	0.0015	0.0035***
	(0.0026)	(0.0018)	(0.0019)	(0.0015)	(0.0015)	(0.0012)
$R_M - R_F$	1.1274***	0.9538***	1.1279***	1.0548***	1.0664***	1.0463***
	(0.0802)	(0.0557)	(0.0579)	(0.0441)	(0.0451)	(0.0365)
SMB	0.5865***	0.2338***	0.5786***	0.1271*	0.5091***	0.1499**
	(0.1273)	(0.0877)	(0.0925)	(0.0698)	(0.0730)	(0.0585)
HML	-0.1371	-0.0141	-0.1178	0.0003	-0.0386	0.0596
	(0.1267)	(0.0859)	(0.0918)	(0.0697)	(0.0721)	(0.0583)
UMD	-0.1777**	-0.1377**	-0.1803***	-0.0432	-0.1863***	-0.0561
	(0.0776)	(0.0541)	(0.0582)	(0.0444)	(0.0464)	(0.0378)
Observations	188	186	371	367	553	547
Adj R-squared	0.660	0.725	0.646	0.686	0.645	0.686

4. Social Capital and Risk-Shifting Incentives

4.1 Introduction

Based on 250 global firms with revenues of approximately $7.9 trillion, a Chief Executives for Corporate Purpose (CECP) (2019) survey shows that the surveyed firms invested more than $26 billion in corporate social responsibility (CSR) activities in 2018. An 11% increase from 2016. The upward trend of CSR spending highlights a concern on whether firms exploit corporate resources for immediate payoffs at the cost of long-term firm value. CSR activities can reduce agency costs through information asymmetries (Attig et al., 2014). Meanwhile, managers can mislead stakeholders via CSR reputation to validate practices related to their own or a particular stakeholders' interests at the cost of firms' long-term financial objectives. Such opportunistic exploitation of CSR reputation can lead to greater agency problems (Cennamo et al., 2009). This chapter addresses the following question. Do firms exploit their social capital opportunistically via risky investments? I examine this question by estimating the relationship between CSR reputation and firm investment and assess whether firms with high CSR reputation transfer wealth from creditors to shareholders through risky investments (i.e., risk-shifting).

The extant literature discusses the agency problems of CSR investment from the perspective of the conflict among different shareholders (Barnea and Rubin, 2010) or between managers and shareholders (Di Giuli and Kostovetsky, 2014; Masulis and Reza, 2015). I argue that the focus should also be on the transfer of wealth from creditors to shareholders, called risk-shifting. The risk-shifting hypothesis posits that highly levered or financially distressed firms have an incentive to extract wealth from debtholders (Jensen and Meckling, 1976; Brealey and Myers, 1996). Financially

distressed firms increase risky investment as shareholders of distressed firms can reap the benefit if things go well; otherwise debtholders bear the costs (Eisdorfer, 2008; Becker and Strömberg, 2012). Such risk-shifting behavior is likely to distort firm reputation, reduce future access to capital and ability to pursue positive NPV projects (Diamond, 1989; Almeida et al., 2011).

CSR activities accrue reputational credits by reducing information asymmetries and create a buffer that may allow firms to take more risk even in the form of socially irresponsible activities (Bouslah et al., 2018). Stakeholders downplay the negative information about the firms with high social capital and reduce market discipline for respective CEOs. For instance, firms with more social capital can avoid the higher risk premium for engaging in earning management practices and managers can shield themselves from the scrutiny of the affected stakeholders (Martínez-Ferrero et al., 2016). Therefore, I predict that firms with high CSR reputation and higher default probability are more likely to engage in risk-shifting.

I test whether CSR[28] affects firm's risk-shifting incentives by using sensitivity of investment intensity to volatility as an empirical set up. The real options approach suggests that firms prefer to delay an irreversible investment when waiting leads to a higher option value than the immediate investment (McDonald and Siegel, 1986). Hence, firms will reduce their investment in response to higher expected volatility, as the option value of waiting increases with the degree of uncertainty of its payoff (Pindyck and Solimano, 1993). Meanwhile, Eisdorfer (2008) finds that financially

[28] In this chapter, CSR is used as a proxy of social capital and the terms are used interchangeably hereafter. CSR builds firm level social capital as it establishes the relationship between firm and stakeholders (Degli Antoni and Sacconi, 2011; Servaes and Tamayo, 2017).

distressed firms risk-shift by increasing investment in response to expected higher volatility. However, as the debtholders expect that high CSR firms are less likely to engage in asset substitution (Amiraslani et al., 2017), the CSR reputation of distressed firms can protect them from increased scrutiny for risk-shifting. Therefore, risk-shifting behavior can increase agency costs and limit access to finance. But CSR reputation can mitigate these potential negative effects. Hence, it is reasonable to expect that high CSR firms with higher default probability increase investment in response to expected higher volatility compare to low CSR firms.

I also test an alternative, but not mutually exclusive, hypothesis that firms with higher default probability increase CSR investment motivated by signal-jamming. Financially strong competitors may conduct predatory attacks against their financially constrained rivals by reducing their rivals' cash flow through price war (Telser, 1966). Firms having higher probability of default may face such predatory attacks during economic uncertainty more intensely due to the competition for the scarcity of resources in the economy. However, CSR reputation has a 'halo effect' as it creates a positive impression regarding other corporate actions (Klein and Dawar, 2004). Hence, through high CSR investment, firms with higher default probability can portray a 'deep-pocket' status and mask their actual financial fragility from rivals and other stakeholders (i.e., signal-jamming). I argue that firms' CSR investment increase during greater volatility indicates their signal-jamming motivation if they have higher default probability, as firms usually reduce CSR investment during a recession (Bansal et al., 2015). However, signal jamming could cost long-term firm value. During economic volatility, distressed firms should prioritize investing their scarce resources in basic operations rather than non-core business activities such as CSR.

While, my risk-shifting hypothesis is conditional on firms' existing CSR level, signal- jamming hypothesis is not. Hence, in this thesis, the risk-shifting and signal-jamming hypotheses are independent, but not mutually exclusive. However, for firms with higher default probability, investment in CSR activities cannot directly transfer wealth to shareholders. But it can provide signal about firms' 'deep pocket' status to hide firms' distressed financial conditions. So, increasing CSR investment during economic volatility indicates signal jamming motivation for firms with higher default probability, rather than risk-shifting.

This chapter analyzes all publicly traded U.S. firms (excluding financial and utilities) from 2002 to 2016. I use four alternative proxies to measure volatility: (i) expected market volatility measured by a GARCH (1,1) model, (ii) U.S. composite Economic Policy Uncertainty index of Baker et al. (2016), (iii) the NBER recession indicator, and (iv) Consumer Sentiment Index of the University of Michigan. I also address the potential endogeneity issue between investment intensity and CSR reputation due to reverse causality. As CSR investment has the trade-off of requiring resources which may be more needed for operations at times of financial distress, firms may be constrained financially to engage in CSR. To mitigate this endogeneity concern, I apply a difference-in-difference (diff-in-diff) methodology by using the Deepwater Horizon BP oil spill in 2010 as an exogenous shock to CSR. This Deepwater Horizon explosion is one of the major environmental disasters in U.S. history (Zeller, 2010). It is an exogenous negative shock to firms' CSR reputation, which leads the firms in affected industries to improve their CSR performance (Liang and Renneboog, 2017; Pek et al., 2018). As treated firms, I use the firms belonging to

the Oil and Gas industries directly exposed to the BP oil spill event in the years after the disaster.

I find that when the financially distressed firms' CSR reputation is high, they increase investment intensity at times of high volatility. Therefore, firms with higher default probability use CSR reputation for risk-shifting purposes during economic volatility. The results are significant, both statistically and economically. With an average investment intensity ratio of 0.13 for the entire sample, at times of high volatility, firms with high CSR and higher default probability increase investment by 11.26% to 28.90% across different estimation specifications compared to firms with low CSR and higher default probability. The results of difference-in-difference (DiD) analysis support my main findings: firms with high CSR reputation have risk-shifting incentives. Hence, high CSR firms increase investment in basic operations when macroeconomic or industry-specific uncertainty is high, if their default probability is also high.

Regarding signal jamming, my alternative tests show that firms with higher default probability increase their CSR investment during economic uncertainty by 0.54% to 2.36% than firms with low default probability. Therefore, these results support my argument that firms use CSR for signal jamming. Overall, my study finds novel empirical evidence that firms with higher default probability increase CSR investment during economic uncertainty to signal jam the information on firms' actual financial fragility. Meanwhile, if firms with higher default probability also have higher social capital, they increase investment in core business operations during economic uncertainty to transfer wealth from creditors to shareholders.

The contribution of this chapter is twofold. First, I examine the relationship between CSR and risk-shifting. Second, I test whether firms that are financially distressed use social capital for signal-jamming purposes. I show that high CSR firms shift risk from shareholders to creditors. Also, firms facing higher probability of default use CSR reputation as a signal-jamming mechanism. Both risk-shifting and signal jamming mechanisms prioritize immediate payoffs at the cost of long-term firm value.

The existing evidence suggests that high CSR firms invest more efficiently as they are less prone to both overinvestment and underinvestment (Benlemlih and Bitar, 2018; Cook et al., 2019) measured based on the residuals from their investment efficiency model. Bhandari and Javakhadze (2017) find that the effect of corporate growth options is weaker, and the effect of cash flow is stronger on investment for high CSR firms. In contrast, Attig et al. (2014) focus on internal cashflow's investment and suggest that CSR reduces the internal cash flow for investment. Meanwhile, I test the relationship between CSR and investment intensity by using the empirical setup of investment-volatility sensitivity and focus on the risk-shifting problem. This study contributes to this strand of literature by showing that investment intensity of high CSR firms is conditional on default probability and economic volatility.

Firms with high leverage invest less in CSR (Barnea and Rubin, 2010). Similarly, Hong et al. (2012) find that firms spend less on CSR when they are financially constrained. In contrast, Karampatsas et al. (2020) find that following a major shift in firms' investment-grade rating, firms increase CSR investment to restore their credit ratings. I provide new insights to this debate by testing the CSR investment behavior of firms with higher default probability conditional on economic volatility. During

economic volatility firms have fewer resources. In which case managers tend to limit information flows to gain some control over this adverse situation (Staw et al., 1981). Hence, distressed firms are likely to increase CSR investment during adverse economic conditions to limit information on their current financial condition. This signal jamming via CSR reputation can help the distressed firms to attract investors (Graves and Waddock, 1994; Hermalin and Weisbach, 2017) in this highly competitive environment. Also, managers of distressed firms can lessen the probability of CEO turnover (Harjoto and Jo, 2011) and enjoy favorable compensation contracts (Mahoney and Thorne, 2005 and 2006) during economic volatility. I provide robust evidence by using Altman's (1968) Z-score and CHS- score by following Campbell et al. (2008) to measure firms' default probability.

Bansal et al. (2015) focus on firms' CSR spending during economic uncertainty by using the 2007-2009 global financial crisis as a shock and find firms reduce their CSR during the recession. I provide empirical evidence that the CSR investment-volatility sensitivity is conditional on firms' default probability, as firms with higher default probability have signal jamming motivation to increase CSR investment. However, the 2007-09 financial crisis is not a valid exogenous shock as this recession event had a direct effect on all aspects of the economy (Berger et al., 2020). Also, the authors focus on only one recession event, while I provide robust evidence by using four proxies to measure economic uncertainty, such as expected market volatility measured by a GARCH (1,1) model, EPU index of Baker et al. (2016), the NBER recession indicator, and Consumer Sentiment Index of the University of Michigan. Finally, my study relates social capital with financial distress, investment, and economic uncertainty altogether.

4.2 Literature review

4.2.1 Social capital and risk shifting

CSR can be viewed as a manifestation of agency problems. Masulis and Reza (2015) concentrate on managerial-shareholder agency problems and suggest that CEOs are inclined to use CSR for enhancing their reputation and strengthening their social bond with directors at the cost of shareholders' cash flow rights. Barnea and Rubin (2010) reveal that high CSR investment creates conflict among different shareholders as insiders (e.g., corporate managers, directors, and large blockholders) insist on overinvesting in CSR to improve their reputation though they bear relatively little fraction of the costs. Meanwhile, Attig et al. (2014) argue that CSR activities can reduce information asymmetries and agency costs by decreasing the sensitivity of investment to cash flows. While the influence of CSR on agency problem is inconclusive, I argue that the focus should also be on the agency problem that arises from the debtholder-equityholder conflict, referred as risk-shifting.

The risk-shifting problem is introduced by Jensen and Meckling (1976) and Galai and Masulis (1976). This problem arises if equityholders have an incentive to extract wealth from debtholders. Usually, highly levered or financially distressed firms suffer more from risk-shifting problems (Brealey and Myers, 1996). As risk-shifting behavior distorts firm reputation, in turn, future access to capital and the ability to pursue positive NPV projects (Diamond, 1989; Almeida et al., 2011), my study addresses the question whether CSR reputation creates risk-shifting incentives.

Firm-specific social capital creates trust between the firm and stakeholders leading firms with high CSR scores to experience superior financial performance (Lins et al., 2017). While CSR reputation becomes an essential element of corporate strategies,

high CSR firms can use their social capital to shield corporate activities or policies, which can increase agency conflicts or stakeholders' negative reactions. Martínez-Ferrero et al. (2016) highlight that high CSR firms can successfully avoid the higher risk premium for engaging in earning management and managers can shield themselves from the negative reactions of the affected stakeholders. Moreover, Hasan et al. (2019) show that multinational firms with higher CSR scores engage in profit shifting (i.e., cross-country tax avoidance) and face relatively lower scrutiny by stakeholders. Bouslah et al. (2018) suggest that CSR reputation creates a buffer to take more risk in the form of socially irresponsible activities. In a similar manner, based on the signaling theory and the risk-shifting hypothesis, I argue that high CSR firms with high CSR reputation may able to mask their risk-shifting behavior. Hence, it is reasonable to expect that social capital creates risk-shifting incentives for firms with higher default probability. Meanwhile, Benabou and Tirole (2010) argue that firms' CSR policies focus more on long-term perspectives, hence discourage short-term opportunistic behavior. Similarly, Harjoto and Laksmana (2018) show that CSR performance can reduce excessive risk-taking. Finally, these contradictory views motivate me to investigate the influence of CSR on risk-shifting behavior.

Eisdorfer (2008) tests the risk-shifting hypothesis based on the relationship between volatility and investment of firms with higher default probability. According to the real options approach, if firms have the right to delay investment, they prefer to delay an irreversible investment, when waiting results higher option value than the immediate investment (McDonald and Siegel, 1986). Hence, firms will decrease investment during expected higher volatility to achieve higher option value of waiting as its payoff increases with the degree of uncertainty (Pindyck and Solimano, 1993).

However, equityholders of distressed firms have the incentive to increase risky investments because they receive the benefit if everything turns out all right; otherwise debtholders bear the costs (Becker and Strömberg, 2012). Eisdorfer (2008) considers both the risk-shifting behavior and real options approach to gauge the relationship between expected volatility and investment and states the risk-shifting incentives of financially distressed firms dominate the real options perspective.

I follow Eisdorfer (2008) and augment this argument by positing that the negative relation between investment and volatility is conditional on CSR reputation. While distressed firms take additional risk by making risky investments, it increases the potential payoff to equityholders at the detriment of debtholders. Meanwhile, stakeholders downplay negative information about high CSR firms (Godfrey et al., 2009; Lins et al., 2017). As managers design the corporate policies to raise shareholders' benefit, risk-shifting behavior is more evident when the interests of equityholders and managers are aligned (Eisdorfer, 2008), whereas high CSR standing helps to reduce market discipline for CEOs (Dunbar et al., 2020). Therefore, firms with relatively higher default probability along with high CSR reputation may motivate to be involved in risk-shifting by increasing investment during economic volatility. Based on the above reasoning, my first hypothesis is:

H1: Firms with high social capital increase investment during high economic volatility when their default probability is higher.

4.2.2 Signal jamming and CSR investment

Firms reduce investment when volatility is high (Pindyck and Solimano, 1993; Gulen and Ion, 2016). Bansal et al. (2015) find that firms also reduce CSR investment during the recession. During the adverse economic condition, firms may choose to

invest more in basic operations rather than non-core business activities such as CSR. Hence, firms may follow a similar pattern for CSR investment decisions as other investment decisions (Sun and Gunia, 2018). In this regard, this chapter investigates whether the firms' CSR investment during market volatility is conditional on default probability.

While firms have a higher probability of default, competitors may plan predatory attacks by reducing rivals' cash flow through price war (Telser, 1966). Moreover, firms having higher probability of default may face such predatory attacks during economic uncertainty more intensely, as this adverse circumstance creates competition for deflated pool of resources in the business environment. Meanwhile, CSR reputation has a 'halo effect,' which creates a positive impression on stakeholders regarding corporate actions. Hence, high CSR investment can limit information of the firms' actual economic condition from the stakeholders and rivals, indicate firms' 'deep-pocket' status, and counter the predatory attacks (i.e., signal jam). Therefore, I argue that firms with a higher default probability may have a signal-jamming motivation to increase CSR investment during high economic volatility to avoid predation. For instance, high leverage firms may fail to honor the implicit contract with customers (Matsa, 2011; Kini et al., 2017), which results in product market underperformance (Campello, 2006). Bae et al. (2019) suggest that CSR guards the highly levered firms against rivals' predation, keeps customers, and reduces the loss of market share. Meanwhile, as investors value a firm based on current performance, it creates an incentive for distressed firms to signal jam current financial condition with an intention to boost the estimated value and attract investors (Hermalin and Weisbach, 2017). Moreover, managers may mask their firms' probability of default via CSR investment

for favorable future CEOs compensation contracts (Mahoney and Thorne, 2005 and 2006), especially during economic volatility, to lessen the probability of CEO turnover (Harjoto and Jo, 2011). Hence, my second hypothesis is:

H2: Firms with high default probability increase CSR investment during high economic volatility.

4.3 Data and Summary Statistics

This chapter analyzes all publicly listed U.S. firms in the CRSP/Compustat merged database during 2002 to 2016. I exclude utility (SIC codes 4900-4949) and financial (SIC codes 6000-6999) firms. For CSR measurement, I use the equally weighted Environmental, Social, and Governance (ESG) score of the Asset4[29] database from Refinitiv (formerly Thomson Reuters). Firm-level financial data are from CRSP/Compustat. Monthly returns of the NYSE Value-weighted market index are collected from CRSP. I also use the Economic Policy Uncertainty Index (EPU) of Baker et al. (2016) available at http://www.policyuncertainty.com/. Yields of the long-term Baa and Aaa securities, the NBER recession indicator are from the Federal Reserve Bank of St. Louis. I obtain the Michigan Consumer Sentiment Index from the University of Michigan available at http://www.sca.isr.umich.edu/. Finally, my sample comprises 5,742 unique U.S. firms and 43,723 firm-year observations, of which 1,708 unique firms with 9,523 firm-year observations have CSR scores.

[29] Asset4 provides ESG score since 2002. This database provides information on more than 4,300 companies globally, including 2,693 U.S. firms. Based on 900 evaluation points and 250 key performance indicators, ESG measurements are calculated for four pillars: Environmental, Social, Corporate Governance and Economic. Then, the overall score is the equally weighted score of these four pillars.

Table 4-1 reports the summary statistics of the main variables of this study. I report the descriptive statistics of all sample firms in Panel A. Panel B, C, and D present the descriptive statistics of high CSR, low CSR, and no-CSR firms, respectively. The mean overall Asset4 ESG score for all sample firms is 52.99, consistent with Ferrell et al. (2016). Summary statistics for firm-level financial variables are largely consistent with the extant literature. The average investment is higher for low CSR firms (0.1492) than high CSR firms (0.0979). Meanwhile, default probability is low for high CSR firms as the average CHS score is lower for high CSR firms (0.0660) than low CSR firms (0.1481). Table 4-2 shows the average values and differences in means of the main variables for firms with and without a CSR score and firms with low and high CSR scores in Panel A and B, respectively.

4.4 Empirical results

4.4.1 Social capital and risk-shifting

To estimate the impact of social capital on investment intensity, I test the following equation:

$$Investment\ Intensity_{i,t} = \alpha + \beta 1 \times Uncertainty_{t} + \beta 2 \times Distress_{i,t-1} + \beta 3 \times CSR_{t-1} + \beta 4 \times Uncertainty_{t} \times Distress_{i,t-1} \times CSR_{i,t-1} + X_{i,t-1} + \theta + \gamma + \varepsilon_{i,t} \qquad (4.1)$$

By following Eisdorfer (2008), I estimate *Investment Intensity* as the ratio of gross capital expenditures in a given year to PP&E at the beginning of the year.[30] I use two alternative measures for *Distress*: (i) Altman's (1968) Z-score, (ii) CHS- score by the

[30] I scale gross capital expenditures in a given year with the PP&E at the beginning of the year, as I intend to measure the investment intensity of firms conditional on their probability of default at the beginning of the year.

Campbell et al. (2008). Based on Altman's (1968) Z-score I create a binary variable, *Z score- Dummy*, equal to one if Z-score is below 1.81 at the beginning of the year (indicating financial distress), and zero otherwise. *CHS-Default Probability* is a binary variable equal to one if the CHS-score based default probability is in the top tercile in year *t-1*, and zero otherwise. I use four alternative proxies to measure uncertainty: (i) The expected market volatility at the beginning of the year by applying a generalized autoregressive conditional heteroskedasticity (GARCH) model to monthly returns of the NYSE value-weighted market index from 2002 to 2016.[31] (ii) The US composite EPU index of Baker et al. (2016) in time t-1[32]; (iii) The NBER recession indicator at time *t;* and (iv) The inverted values of the Consumer Sentiment Index at time *t.*[33] Here, Uncertainty is a binary variable, which is equal to one if the uncertainty measurement is in the top tercile[34] in year *t* (classified as high volatility), and zero otherwise. *CSR* is a dummy variable equals to one for firms having annual CSR score in the top tercile

[31] GARCH (1,1) model yields k-step-ahead expected volatility for each month. Therefore a 12-month-ahead forecasted volatility for each year is generated which is conditional on the information of the last month of the year before. As the expected annual variance is a linear function of the expected variance for the next month as well as the expected variance for any month during the year, Eisdorfer (2008) suggests that regressing annual investment on expected volatility for the first month of the year is sufficient.

[32] I use annual average of the monthly EPU index by following Gulen and Ion (2016).

[33] The Consumer Sentiment Index of the university of Michigan is a phone survey-based monthly index which represents the consumers' level of optimism/pessimism regarding the future economic policy. I use the annual average value of the index.

[34] While Eisdorfer (2008) estimates low- and high-expected volatilities based on median values, I use tercile values to avoid marginal cases. I repeat the estimations with median classification of low and high uncertainty and the results, presented in the Appendix (Table 4-A1), remain qualitatively similar.

in year t-1, and zero otherwise.[35] X is a vector of control variables which affect investment intensity according to the extant literature. All variables are defined in the Appendix. θ and γ denote the year and firm fixed effects respectively.

Table 4-3 reports the OLS regression estimates for social capital and risk shifting. In Panel A, I report the results for *Z score- Dummy*. Columns (1), (3), (5) and (7) show the results for uncertainty measured by the GARCH (1,1) model, EPU, Recession, and Inverted CSI, respectively. The results suggest that social capital has positive and statistically significant impact on the investment intensity of the firms with higher default probability during economic volatility. The results are also economically significant. With an average investment of 0.1332 for the entire sample, firms with high CSR reputation increase investment when their distress likelihood is higher during high uncertainty by 23.87%, 28%, 19.37% and 19.37% in columns (1), (3), (5) and (7) respectively. Then, I include control variables to alleviate omitted variable bias concerns. The results remain consistent in all the specifications, except column (8).

Panel B presents the results for the *CHS-Default Probability*. All specifications show that CSR has statistically and economically significant positive effect on the relationship between volatility and investment of firms with higher default probability. High CSR reputation increases investment of firms with higher default probability during high uncertainty by 23.57%, 26.73%, 16.74% and 28.90% in columns (1), (3), (5) and (7) respectively. The results remain statistically and economically significant

[35] I repeat the estimations with mean, median, quartile and quantile classifications of CSR, CSR-No CSR and continuous CSR values. The results are presented in Appendix (Table 4-A2 and 4-A3). For most of the specifications, the results are qualitatively similar, and economically and statistically significant.

when I add control variables.[36] Hence, the empirical evidence supports my first hypothesis and suggests that firms with high social capital have higher risk-shifting incentives as they increase investment during high economic volatility when their distress likelihood is high.

4.4.2 Difference-in-Difference

The relationship between CSR reputation and risk-shifting incentives can be endogenous due to the potential reverse causality. Firms engaging in high risk-shifting behavior may intend to invest less in CSR activities due to resource constraint during economic volatility. To address this endogeneity concern, I apply a difference-in-difference (diff-in-diff) methodology by using the Deepwater Horizon BP oil spill event in 2010 as a quasi-natural experiment. The Deepwater Horizon explosion of April 20, 2010 is considered as one of the major environmental disasters in U.S. history (Zeller, 2010). This rig explosion event shattered BP's reputation and stakeholders' trust. While prior to this disaster BP claimed itself as one of the best among the industry in terms of safety culture, its ignoring key safety warning signs lead to the deaths of 11 people and the offshore oil spill caused a damage of more than $20 billion (Rogers,

[36] My coefficient of interest is the triple interaction coefficient for *Uncertainty* × *Distress* × *CSR*. According to my hypothesis, the marginal effect of this triple interaction term captures the risk-shifting incentives of firms with high CSR reputation. Hence, I follow the literature (e.g., Eisdorfer, 2008; Gopalan and Xie, 2011; Lins et al., 2017; Nagar et al., 2019) and do not include double interaction terms in table 4.3. However, I repeat the analysis by incorporating the related double interaction terms and find that the results are inconsistent. The results become inconsistent probably due to overfitting the model and the fact that the pairwise slopes take out the consistency of the triple interaction.

2010). Meanwhile, this oil spill disaster created uncertainty for all energy related industries due to the negative spillover effect (Dyck et al., 2019). This environmental shock forces the affected firms to improve their CSR performance in the post-disaster period to restore their reputation (Liang and Renneboog, 2017; Pek et al., 2018). Since this CSR-disaster is an exogenous shock to firms' CSR performance (Liang and Renneboog, 2017), I use this oil spill disaster for my DiD setup. As treated firms, I use those belonging to the Oil and Gas industries that were directly exposed to the BP oil spill event in the years after the disaster.

Overall, I test the following model:

$$\textit{Investment Intensity}_{i,t} = \alpha + \beta 1 \times \textit{CSR Disaster}_{t-1} + \beta 2 \times \textit{Distress}_{i,t-1} + \beta 3 \times \textit{CSR}_{t-1} + \beta 4 \times \textit{CSR Disaster}_{t-1} \times \textit{Distress}_{i,t-1} \times \textit{CSR}_{i,t-1} + X_{i,t-1} + \theta + \gamma + \varepsilon_{i,t} \qquad (4.2)$$

I follow Dyck et al. (2019) to consider Oil and Gas Extraction industries (SIC=13) as affected by this disaster and use the years 2009 to 2012 to balance the pre and post-event periods. The *CSR Disaster* is a binary variable equal to one for the post-event years 2011 and 2012 and the treated firms, and zero otherwise. I use the median classification for CSR and CHS-Default Probability dummy variables for this difference-in-difference estimation due to the lack of observations for the interaction term CSR Disaster× Default Probability× CSR dummy with tercile classification. Finally, I include the same control variables used in my baseline regressions along with firm and year fixed effects.

Table 4-4 presents the results of the difference-in-difference estimation. In panel A, I report the estimates based on the overall CSR score. In columns (1) and (2), I use the *Z score- Dummy* as a proxy of financial distress. The results show that firms with high CSR reputation and higher default probability increase their investment intensity

during economic uncertainty. This supports the risk-shifting behavior of firms with high CSR reputation. The results do not hold when I use *CHS- Default Probability* alternatively in columns (3) and (4).

As the BP oil event is an environmental shock, this CSR disaster has direct impact on firms' environmental CSR activities (Liang and Renneboog, 2017). Hence, in Panel B, I repeat the analysis by using the environmental score similar to Dyck et al. (2019). The results are consistent with Panel A, suggesting that firms with higher default probability increase their investment intensity during economic uncertainty if they have higher reputation for environmental CSR activities.[37]

Finally, the results show that the interaction term *CSR Disaster* × *Distress*× *CSR* is statistically and economically significant for the *Z score-Dummy*, which is consistent for different alternative specifications and supports my earlier findings in Table 4-3. Hence, CSR reputation creates risk-shifting incentives for firms with higher default probability during macroeconomic or industry-specific uncertainty.

4.4.3 Signal jamming and CSR investment

I examine the CSR investment patterns of financially distressed firms during economic volatility to empirically assess firms' signal jamming motivation. I argue that firms with higher probability of default have strong intention to engage in signal jamming during higher economic volatility. By increasing CSR investment in this backdrop, financially distressed firms hope to influence market perception about their financial ability. Hence, I expect that firms with higher default probability increase CSR investment in response to expected higher volatility. I use the following first-

[37] I also repeat the analysis by including Petroleum Refining and Related industries (SIC=29). The results are presented in the Appendix (Table 4-A4), which remain almost identical.

order differences regression to test the change in CSR investment of financially distressed firms during volatility:

$$\Delta\ CSR\ Investment_{i,t} = \alpha + \beta 1 \times Distress_{i,t-1} + \beta 2 \times Uncertainty_{t} + \beta 3 \times Distress_{i,t-1} \times Uncertainty_{t} + \Delta\ Y_{i,t-1} + \vartheta + \gamma + u_{i,t} \qquad (4.3)$$

where *CSR Investment* is the overall equally weighted CSR score. I set CSR to zero if firms do not have CSR scores. *Y* indicates the vector of control variables which affect CSR investment. In this model, I use the first difference of the *CSR Investment* and control variables. The estimation based on changes in variables can alleviate the possible endogeneity biases (Roberts and Whited, 2013). ϑ and γ denote year and industry fixed effects, respectively.[38]As I argue that firms with higher default probability may increase CSR investment during economic volatility with signal-jamming motivation, it is reasonable to expect positive coefficient for the interaction term *Distress* × *Uncertainty*.

In table 4-5, I report the OLS regression estimates for the social capital investment pattern for firms with higher default probability during macroeconomic uncertainty. Panel A reports the estimates for the *Z score-Dummy*. In all specifications, except columns (5) and (6), the coefficients on the interactive variable are positive and statistically significant. The results show that firms with higher default probability increase their CSR investment during economic uncertainty by 0.54%, 0.63% and 1.64% (on a scale of 100) in columns (1), (3), and (7), respectively. The results remain statistically and economically consistent when I add control variables. In columns (5)

[38] I also estimate this model by using firm fixed effects. For this, I use the first difference of the CSR investment only. Results are reported in Appendix (Table 4-A5), which remain consistent.

and (6), I measure *Uncertainty* by the recession and the results are counterintuitive. It may be due to the fact that my other *Uncertainty* proxies measure expected high volatility, while the recession is real economic volatility. Hence, while firms face recession, real massive economic volatility, they may require investing in basic operations immediately rather than CSR activities due to resource scarcity, unpredictability and uncontrollability in the whole business ecosystem.

Panel B reports the estimates for the *CHS-Default Probability*, which are similar to Panel A. The results show that firms with higher distress likelihood increase their CSR investment during high economic volatility by 1%, 1.29% and 2.36% (on a scale of 100) in columns (1), (3) and (7) respectively and remain consistent when I add control variables.[39] Overall, the results strongly support my argument that firms with higher default probability signal jam during economic uncertainty by increasing their investment in CSR activities.

4.5 Conclusion

I examine the risk-shifting incentives of social capital by focusing on the investment decisions of the firms with higher default probability during economic volatility. I use a number of alternative proxies of uncertainty and find that high CSR firms with higher default probability increase investment when volatility is high. I also use the BP oil spill event in 2010 as an exogenous shock to CSR performance, and my

[39] I repeat this OLS estimations with continuous values of the *Uncertainty* and report the results in Appendix (Table 4-A6). The results remain qualitatively similar and significant (both economically and statistically). Moreover, I estimate this model with median classification of uncertainty and CHS-Default Probability and find the results, reported in Appendix (Table 4-A7), remain largely consistent.

results confirm that social capital affects risk-shifting incentives. Meanwhile, my alternative tests suggest that firms with higher distress likelihood increase CSR investment during economic volatility, which acts as a signal jamming mechanism to hide firms' distressed economic condition from stakeholders and prevent predatory attacks. Finally, high CSR firms shift risk from shareholders to creditors and use CSR reputation as signal jamming mechanism to prioritize immediate payoffs instead of long-term firm value.

Table 4-1: Summary Statistics

This table reports descriptive statistics for all sample firms analyzed in this chapter from 2002 to 2016 (Panel A). Utility (SIC codes 4900-4949) and financial (SIC codes 6000-6999) firms are excluded. I also report summary statistics for high CSR firms (Panel B), low CSR firms (Panel C), and no-CSR firms (Panel D). I classified firms as high and low CSR firms by using *Tercile classification* of annual CSR score. All the variables are described in the Appendix (4-A). All continuous variables are winsorized at the 1% and 99% tails.

Panel A: All Firms

	N	***Mean***	***SD***	***10th Percentile***	***90th Percentile***
CSR	9523	52.9945	29.5955	15.0100	93.7300
Investment	42957	0.1332	0.1564	0.0250	0.2732
Cash Flow	43723	-0.2264	3.2150	-0.9769	1.0721
Market-to-Book	43723	1.5627	1.5845	0.3283	3.3568
Leverage	43723	0.1728	0.2013	0.0000	0.4489
Z score-Dummy	33703	0.1855	0.3887	0.0000	1.0000
Default probability (CHS)	43654	0.4096	2.0826	0.0199	0.3098

Panel B: High CSR Firms

	N	***Mean***	***SD***	***10th Percentile***	***90th Percentile***
CSR	2666	87.5605	11.0872	74.3200	96.0400
Investment	2684	0.0979	0.0680	0.0436	0.1648
Cash Flow	2691	0.4764	0.4728	0.1307	0.9605
Market-to-Book	2691	1.4732	1.0963	0.4790	2.8507
Leverage	2691	0.2118	0.1323	0.0460	0.3852
Z score-Dummy	2550	0.0612	0.2397	0.0000	0.0000
Default probability (CHS)	2691	0.0660	0.5634	0.0179	0.0525

Panel C: Low CSR Firms

	N	***Mean***	***SD***	***10th Percentile***	***90th Percentile***
CSR	2663	28.8606	15.0874	13.1000	49.5700
Investment	2684	0.1492	0.1492	0.0400	0.2890
Cash Flow	2705	0.4870	2.3429	0.0354	1.8460
Market-to-Book	2705	1.7522	1.6786	0.3920	3.7443
Leverage	2705	0.2371	0.2096	0.0000	0.5119
Z score-Dummy	2213	0.1672	0.3732	0.0000	1.0000
Default probability (CHS)	2704	0.1481	1.1289	0.0193	0.0964

Panel D: No CSR Firms

	N	*Mean*	*SD*	*10th Percentile*	*90th Percentile*
Investment	33458	0.1350	0.1648	0.0213	0.2848
Cash Flow	34200	-0.4108	3.4740	-1.5033	0.9974
Market-to-Book	34200	1.5407	1.6155	0.3044	3.3487
Leverage	34200	0.1597	0.2054	0.0000	0.4502
Z score-Dummy	25374	0.2085	0.4062	0.0000	1.0000
Default probability (CHS)	34135	0.4950	2.3033	0.0207	0.4083

Table 4-2: CSR, no CSR, low CSR, and high CSR firms

This table shows the average values and differences in means of the main variables for firms with and without a CSR score in Panel A, and for firms with low and high CSR scores (based on Tercile classification) in Panel B for my sample firms during the period 2002 to 2016. Utility (SIC codes 4900-4949) and financial (SIC codes 6000-6999) firms are excluded. All continuous variables are winsorized at the 1% and 99% tails. All the variables are described in the Appendix (4-A). ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A: CSR and No CSR Firms

	No CSR Firms		***CSR Firms***		
	N	***Mean***	***N***	***Mean***	***Difference***
CSR			9,523	52.9945	
Investment	33,458	0.1350	9,499	0.127	0.0080***
Cash Flow	34,200	-0.4108	9,523	0.4361	-0.8469***
Market-to-Book	34,200	1.5407	9,523	1.6415	-0.1008***
Leverage	34,200	0.1597	9,523	0.2199	-0.0602***
Z score-Dummy	25,374	0.2085	8,329	0.1156	0.0929***
Default probability (CHS)	34,135	0.4950	9,519	0.1030	0.3920***

Panel B: Low and High CSR Firms (Tercile Classification)

	Low CSR Firms(Q1)		***High CSR Firms(Q3)***		
	N	***Mean***	***N***	***Mean***	***Difference***
CSR	2,663	28.8606	2,666	87.5605	-58.6999***
Investment	2,684	0.1492	2,684	0.0979	0.0512***
Cash Flow	2,705	0.4870	2,691	0.4764	0.0106
Market-to-Book	2,705	1.7522	2,691	1.4732	0.2790***
Leverage	2,705	0.2371	2,691	0.2118	0.0252***
Z score-Dummy	2,213	0.1672	2,550	0.0612	0.1060***
Default probability (CHS)	2,704	0.1481	2,691	0.066	0..0821***

Table 4-3: Social capital and risk-shifting

This table presents the OLS regression results of social capital and risk-shifting for my sample firms during the period 2002 to 2016. The dependent variable, *Investment Intensity* is estimated by using the ratio of gross capital expenditures in a given year to PP&E at the beginning of the year. As a measure of default probability, I use *Z score-Dummy* based on Altman's (1968) model (Panel A) and *CHS-Default Probability based on* Campbell et al.'s (2008) CHS- score (Panel B). *Z score-Dummy* is a dummy variable that equals to one for firms with Z-score below 1.81 at the beginning of the year (classified as firms with higher default probability), and zero otherwise. *CHS-Default Probability* is also a dummy variable that equals to one if the CHS-score associated default probability is in the top tercile in year *t-1* (classified as firms with higher default probability), and zero otherwise. I estimate *Uncertainty* as the expected market volatility at the beginning of the year by using GARCH (1,1) model (in columns 1 and 2), Economic Policy Uncertainty Index (in columns 3 and 4), Recession (in columns 5 and 6), and Inverted Consumer Sentiment Index (CSI) (in columns 7 and 8). In all specifications, *Uncertainty* is a binary variable that equals one if the uncertainty measurement is in the top tercile in year *t* (classified as high volatility), and zero otherwise. *CSR* is a dummy variable that equals to one for firms having annual CSR score in the top tercile in year t-1, and zero otherwise. I report heteroscedasticity robust standard errors in parentheses, which are clustered at the firm level. All firm-level financial control variables are lagged by one year. Firm and year fixed effects are included in all specifications. All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at 1%, 5%, and 10% level, respectively.

Panel A: Z score - Dummy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Expected Market Volatility	Expected Market Volatility	EPU	EPU	Recession	Recession	CSI	CSI
Uncertainty	0.0344***	0.0152**	-0.0341***	-0.2355***	-0.0340***	0.0317***	-0.0159**	-0.0994**
	(0.0072)	(0.0067)	(0.0065)	(0.0483)	(0.0077)	(0.0083)	(0.0068)	(0.0409)
Z score-Dummy	-0.0689***	-0.0442***	-0.0781***	-0.0512***	-0.0638***	-0.0405***	-0.0534***	-0.0330***
	(0.0162)	(0.0142)	(0.0183)	(0.0163)	(0.0125)	(0.0112)	(0.0118)	(0.0116)

CSR-Dummy	0.0057	0.0038	-0.0006	0.0001	0.0011	0.0030	-0.0036	0.0015
	(0.0067)	(0.0062)	(0.0077)	(0.0060)	(0.0065)	(0.0056)	(0.0085)	(0.0068)
Uncertainty* Z score-Dummy* CSR-Dummy	0.0318**	0.0194*	0.0373**	0.0210*	0.0258**	0.0208*	0.0258**	0.0155
	(0.0131)	(0.0109)	(0.0149)	(0.0125)	(0.0129)	(0.0115)	(0.0108)	(0.0099)
Cash Flow		-0.0024		-0.0044		0.0090		0.0097
		(0.0208)		(0.0181)		(0.0180)		(0.0173)
Market-to-Book		0.0352***		0.0367***		0.0347***		0.0312***
		(0.0070)		(0.0071)		(0.0060)		(0.0067)
Leverage		-0.0152		-0.0141		-0.0286		-0.0119
		(0.0477)		(0.0468)		(0.0341)		(0.0421)
Default Spread		0.0305***		0.4432***		0.1548***		-1.3259***
		(0.0101)		(0.0897)		(0.0371)		(0.4965)
Recession		-0.0429***		-0.3246***		-0.1298***		1.2570***
		(0.0090)		(0.0650)		(0.0305)		(0.4744)
Constant	0.1008***	0.0280	0.1455***	-0.2556***	0.1427***	-0.1158**	0.1391***	1.5347***
	(0.0050)	(0.0218)	(0.0063)	(0.0729)	(0.0074)	(0.0490)	(0.0068)	(0.5453)
Observations	3,284	3,284	3,373	3,373	4,745	4,745	3,225	3,225
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0813	0.173	0.0961	0.193	0.0818	0.190	0.0675	0.153

Panel B: CHS-Default Probability

	(1) Expected Market Volatility	(2) Expected Market Volatility	(3) EPU	(4) EPU	(5) Recession	(6) Recession	(7) CSI	(8) CSI
Uncertainty	0.0370***	0.0185***	-0.0417***	-0.2741***	-0.0344***	-0.0752***	-0.0160*	-0.0845
	(0.0079)	(0.0068)	(0.0078)	(0.0549)	(0.0077)	(0.0235)	(0.0089)	(0.0521)
CHS-Default Probability	-0.0765***	-0.0486***	-0.0769***	-0.0511***	-0.0720***	-0.0455***	-0.0721***	-0.0481***
	(0.0132)	(0.0124)	(0.0134)	(0.0124)	(0.0099)	(0.0087)	(0.0121)	(0.0114)
CSR-Dummy	0.0048	-0.0010	0.0000	-0.0026	-0.0010	-0.0031	-0.0079	-0.0085
	(0.0105)	(0.0085)	(0.0108)	(0.0087)	(0.0082)	(0.0071)	(0.0110)	(0.0100)
Uncertainty* CHS-Default Probability* CSR-Dummy	0.0314***	0.0188**	0.0356***	0.0231*	0.0223**	0.0150*	0.0385***	0.0273***
	(0.0102)	(0.0095)	(0.0130)	(0.0120)	(0.0089)	(0.0081)	(0.0110)	(0.0100)
Cash Flow		0.0193***		0.0172***		0.0225***		0.0251***
		(0.0050)		(0.0048)		(0.0053)		(0.0069)
Market-to-Book		0.0237***		0.0222***		0.0232***		0.0199***
		(0.0037)		(0.0038)		(0.0030)		(0.0027)
Leverage		-0.0328		-0.0427		-0.0448*		-0.0384
		(0.0358)		(0.0355)		(0.0249)		(0.0308)
Default Spread		0.0189**		0.4955***		0.1110***		-1.1568*
		(0.0084)		(0.0991)		(0.0381)		(0.6302)
Recession		-0.0363***		-0.3594***				1.0881*
		(0.0087)		(0.0718)				(0.6034)
Constant	0.1142***	0.0536***	0.1632***	-0.2683***	0.1537***	-0.0447	0.1634***	1.3769**

	(0.0071)	(0.0177)	(0.0080)	(0.0760)	(0.0075)	(0.0499)	(0.0087)	(0.6939)
Observations	2,459	2,459	2,533	2,533	3,561	3,561	2,425	2,425
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.132	0.204	0.140	0.199	0.126	0.206	0.123	0.193

Table 4-4: Social capital and risk-shifting (difference-in-difference)

This table reports the difference-in-difference estimates of the social capital and risk-shifting. The dependent variable, *Investment Intensity* is estimated by using the ratio of gross capital expenditures in a given year to PP&E at the beginning of the year. I measure CSR by using overall ESG score in Panel A and Environmental score in Panel B. As a measure of default probability, I use *Z score-Dummy* based on Altman's (1968) model (columns 1 and 2) and *CHS-Default Probability based on* Campbell et al.'s (2008) CHS- score (columns 3 and 4). *Z score-Dummy* is a dummy variable that equals to one for firms with Z-score below 1.81 at the beginning of the year (classified as firms with higher default probability), and zero otherwise. *CHS-Default Probability* is also a dummy variable that equals to one if the CHS-score associated default probability is above the median value in year *t-1* (classified as firms with higher default probability), and zero otherwise. Here, I use the BP oil spill event as a source of uncertainty and an exogenous shock to firms' CSR performance. *CSR Disaster* is a dummy variable that equals one for the firms of the treated industries which are exposed to the BP oil spill in the years of the disaster and afterwards. I consider Oil and Gas Extraction industries (SIC=13) as the treatment industry. *CSR* is a binary variable that equals one for those firms with annual CSR score above the median CSR score in year *t-1*, and zero otherwise. I report heteroscedasticity robust standard errors in parentheses, which are clustered at the firm level. All firm-level financial control variables are lagged by one year. Firm and year fixed effects are included in all specifications. All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at 1%, 5%, and 10% level, respectively.

Panel A: Overall CSR Score

	(1)	(2)	(3)	(4)
		SIC=13		
	Investment Intensity	Investment Intensity	Investment Intensity	Investment Intensity
CSR Disaster	-0.0365*	-0.0302	-0.0402*	-0.0341
	(0.0218)	(0.0217)	(0.0226)	(0.0221)
CSR	-0.0040	-0.0061	-0.0080*	-0.0092**
	(0.0037)	(0.0039)	(0.0046)	(0.0046)
Z score-Dummy	-0.0557***	-0.0391***		
	(0.0165)	(0.0124)		
CSR Disaster* Z score-Dummy *CSR	0.0444***	0.0334**		
	(0.0147)	(0.0143)		
CHS- Default Probability			-0.0331***	-0.0258***
			(0.0069)	(0.0063)

CSR Disaster* CHS-Default Probability *CSR			0.0168	0.0134
			(0.0202)	(0.0199)
Cash Flow		0.0268*		0.0091
		(0.0141)		(0.0060)
Market-to-Book		0.0172***		0.0180***
		(0.0053)		(0.0039)
Leverage		-0.0928*		-0.0761
		(0.0535)		(0.0511)
Default Spread		-0.0230**		-0.0447***
		(0.0114)		(0.0140)
Recession		0.0135		0.0291**
		(0.0095)		(0.0114)
Constant	0.1129***	0.1300***	0.1220***	0.1671***
	(0.0043)	(0.0204)	(0.0048)	(0.0207)
Observations	2,348	2,348	2,649	2,649
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Adj R-squared	0.0377	0.0773	0.0435	0.0737

Panel B: Environmental Score

	(1)	(2)	(3)	(4)
		SIC=13		
	Investment Intensity	Investment Intensity	Investment Intensity	Investment Intensity
CSR Disaster	-0.0366*	-0.0304	-0.0401*	-0.0341
	(0.0218)	(0.0217)	(0.0228)	(0.0223)
CSR-Dummy	-0.0085	-0.0064	-0.0072	-0.0048
	(0.0071)	(0.0071)	(0.0067)	(0.0068)
Z score-Dummy	-0.0553***	-0.0391***		
	(0.0165)	(0.0124)		
CSR Disaster* Z score-Dummy *CSR	0.0491***	0.0340**		
	(0.0161)	(0.0160)		
CHS- Default Probability			-0.0325***	-0.0254***
			(0.0068)	(0.0062)
CSR Disaster* CHS-Default Probability *CSR			0.0146	0.0105

			(0.0218)	(0.0221)
Cash Flow		0.0262*		0.0087
		(0.0137)		(0.0058)
Market-to-Book		0.0171***		0.0180***
		(0.0053)		(0.0039)
Leverage		-0.0907*		-0.0744
		(0.0539)		(0.0514)
Default Spread		-0.0233**		-0.0448***
		(0.0113)		(0.0140)
Recession		0.0137		0.0293**
		(0.0095)		(0.0115)
Constant	0.1152***	0.1302***	0.1214***	0.1647***
	(0.0056)	(0.0198)	(0.0056)	(0.0194)
Observations	2,348	2,348	2,649	2,649
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Adj R-squared	0.0386	0.0773	0.0431	0.0727

Table 4-5: CSR investment of firms with higher default probability during uncertainty (Uncertainty as a dummy variable)

This table reports the OLS estimates of the CSR investment-volatility sensitivity of the firms with higher default probability. The dependent variable, *CSR Investment* is estimated by the change in CSR score from year *t-1* to year *t*. As a measure of default probability, I use *Z score-Dummy* based on Altman's (1968) model (Panel A) and *CHS-Default Probability based on* Campbell et al.'s (2008) CHS- score (Panel B). *Z score-Dummy* is a dummy variable that equals to one for firms with Z-score below 1.81 at the beginning of the year (classified as firms with higher default probability), and zero otherwise. *CHS-Default Probability* is also a dummy variable that equals to one if the CHS-score associated default probability is in the top tercile in year *t-1* (classified as firms with higher default probability), and zero otherwise. I estimate *Uncertainty* as the expected market volatility at the beginning of the year by using GARCH (1,1) model (in columns 1 and 2), Economic Policy Uncertainty Index (in columns 3 and 4), Recession (in columns 5 and 6), and Inverted Consumer Sentiment Index (in columns 7 and 8). In all specifications, *Uncertainty* is a binary variable that equals one if the uncertainty measurement is in the top tercile in year *t* (classified as high volatility), and zero otherwise. I report heteroscedasticity robust standard errors in parentheses, which are clustered at the firm level. All firm-level financial control variables are lagged by one year. Industry and year fixed effects are included in all specifications. All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at 1%, 5%, and 10% level, respectively.

Panel A: Z score-Dummy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Expected Market Volatility	Expected Market Volatility	EPU	EPU	Recession	Recession	CSI	CSI
Uncertainty	-4.8766***	-4.8789***	-0.6307**	-0.6434**	1.3454***	1.3621***	-4.3350***	-4.2865***
	(0.2581)	(0.2586)	(0.2838)	(0.2842)	(0.2793)	(0.2794)	(0.2926)	(0.2975)
Z score-Dummy	-0.8402***	-0.8570***	-0.9559***	-0.9434***	-0.8639***	-0.8412***	-2.0988***	-2.0564***
	(0.1896)	(0.1933)	(0.2156)	(0.2186)	(0.1084)	(0.1104)	(0.2408)	(0.2436)
Uncertainty * Z score-Dummy	0.5403**	0.5386**	0.6294**	0.6155**	0.4060	0.4080	1.6410***	1.6295***

	(0.2433)	(0.2434)	(0.2811)	(0.2813)	(0.3406)	(0.3407)	(0.2969)	(0.2971)
Cash Flow		-0.0204		-0.0300**		-0.0163		-0.0353*
		(0.0155)		(0.0145)		(0.0146)		(0.0204)
Market-to-Book		0.0301		0.1183**		0.0341		0.0450
		(0.0477)		(0.0554)		(0.0420)		(0.0586)
Leverage		0.3134		-0.0132		-0.4817		-0.8515
		(0.4528)		(0.5093)		(0.4164)		(0.5464)
Investment		-0.4420*		-0.4682*		-0.0455		-0.1394
		(0.2599)		(0.2811)		(0.2167)		(0.3014)
Constant	4.2884***	4.2776***	0.5485	0.5494	-0.5000	-0.4882	2.0885***	2.0693***
	(0.4108)	(0.4112)	(0.5354)	(0.5318)	(0.5300)	(0.5311)	(0.6974)	(0.6994)
Observations	20,835	20,835	20,247	20,247	29,048	29,048	18,356	18,356
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0256	0.0255	0.0240	0.0240	0.0381	0.0380	0.0398	0.0397

Panel B: CHS - Default Probability

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Expected Market Volatility	Expected Market Volatility	EPU	EPU	Recession	Recession	CSI	CSI
Uncertainty	-4.3752***	-4.3903***	-0.9017***	-0.9014***	2.1245***	2.1385***	-4.9117***	-4.8537***
	(0.2925)	(0.2943)	(0.3150)	(0.3149)	(0.3544)	(0.3541)	(0.3483)	(0.3541)

CHS-Default Probability	-1.0255***	-1.0367***	-1.4568***	-1.4512***	-1.0222***	-1.0218***	-3.0016***	-2.9889***
	(0.1611)	(0.1622)	(0.1757)	(0.1763)	(0.0932)	(0.0943)	(0.2111)	(0.2115)
Uncertainty * CHS-Default Probability	1.0026***	0.9967***	1.2858***	1.2715***	-1.0562***	-1.0441***	2.3559***	2.3576***
	(0.2300)	(0.2301)	(0.2522)	(0.2518)	(0.3439)	(0.3442)	(0.2768)	(0.2770)
Cash Flow		-0.0229**		-0.0296***		-0.0197**		-0.0346**
		(0.0113)		(0.0109)		(0.0100)		(0.0139)
Market-to-Book		0.0147		0.0610		0.0081		0.0433
		(0.0341)		(0.0392)		(0.0302)		(0.0431)
Leverage		-0.0381		-0.3320		-0.6697		-1.1976**
		(0.4090)		(0.4608)		(0.4116)		(0.5459)
Investment		-0.3957*		-0.4139*		-0.2535		-0.2497
		(0.2260)		(0.2426)		(0.1873)		(0.2576)
Constant	3.7414***	3.7410***	1.2161***	1.2055***	-0.0783	-0.0878	3.5585***	3.5169***
	(0.2858)	(0.2906)	(0.4485)	(0.4517)	(0.3170)	(0.3223)	(0.5287)	(0.5397)
Observations	18,027	18,027	17,614	17,614	25,098	25,098	15,891	15,891
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0230	0.0229	0.0229	0.0228	0.0356	0.0356	0.0434	0.0434

5. Concluding Remarks

5.1 Thesis overview

This PhD thesis is based on three empirical studies which explore different aspects of social capital and corporate social responsibility (CSR). From a firm's perspective, social capital is the productive value of shared trust between firm and its stakeholders (Leana and Van Buren, 1999; Servaes and Tamayo, 2017). Firms can build social capital by being trustworthy to their stakeholders and the broader community, whereas firms can be trustworthy and realize reputation via engagement in CSR activities (Fombrun and Shanley, 1990; Degli Antoni and Sacconi, 2011; Servaes and Tamayo, 2017; Lins et al., 2017). Firms' growing interest in using CSR strategically to build reputation, shift the conceptions of CSR from moral responsibility to strategic corporate investment for maximizing firms value (McWilliams et al., 2006). Depending on related costs and benefits, firms adapt their level of CSR engagement (Mcwilliams and Siegel, 2001). For instance, though both small and large firms engage in CSR activities, large firms intend to engage more in CSR for their higher visibility, higher chance to be scrutinized by stakeholders and greater resource-slack (Waddock and Graves, 1997; Udayasankar, 2008; Wickert et al., 2016; Seifert et al., 2016). The extant literature also finds that firms with higher profitability, lower capital spending, higher payout and leverage ratio invest more in CSR activities (Waddock and Graves, 1997; Ferrell et al., 2016). Also, firms' socially responsible behavior largely depends on nations, regions, and industries (McWilliams et al., 2006; Liang and Renneboog, 2017).

There is heterogeneity in CSR practices due to differences in regional culture and ideology, stakeholders' values and norms, and different market settings (Sandberg et

al., 2009). However, CSR activities are mainly categorized by using ISO 26000, an international standard by ISO. It is used to address social responsibilities of businesses and organizations. ISO 26000 defines seven core subjects of social responsibility: organizational governance, the environment, fair operating practices, consumer issues, human rights, labor practices, and community involvement and development. Then, different CSR related groups use these differently to measure CSR performance. For instance, I use the Environmental, Social, and Governance (ESG) classification of Asset4 database in this thesis, which classifies CSR activities into four major categories: Economic, Social, Environmental, and Corporate Governance.

Firms' higher CSR reputation enhances stakeholder cooperation, in turn firms with high CSR reputation receive economic benefits. For instance, firms' socially responsible behavior develops customer loyalty (Kotler and Lee, 2005), attract skilled employees (Turban and Greening, 1997), realize higher cash flows (Gregory et al., 2014) and better access to finance (Goss and Roberts, 2011; Hasan et al., 2017). Also, one strand of existing literature suggests that firms with high CSR reputation receive positive market reaction from investors (Edmans, 2011; Flammer, 2013; Cordeiro and Tewari, 2015). Meanwhile, some related studies suggest that CSR investment can reduce firm value (Di Giuli and Kostovetsky, 2014; Masulis and Reza, 2015), as it can be considered as manifestation of agency problems (Cheng et al., 2013; Krüger, 2015). Therefore, while the importance of CSR to firms, business leaders and stakeholders is increasing, the empirical evidence on the economic benefit of CSR reputation is inconclusive. These motivate further academic research on the implications and economic benefits of CSR reputation.

While firms with high CSR reputation receive higher valuation premiums and lower credit spreads during negative shocks to firm or market level trust (Amiraslani et al., 2017; Lins et al., 2017), CSR investment comes with the trade-off of reduced financial flexibility (Becchetti et al., 2015). Hence, it motivates the first empirical chapter of this thesis to further investigate the insurance-like ability of CSR reputation during uncertainty. The extant literature documents better stock valuation and operating performance for firms with high CSR during firm-specific negative events (Choi and Wang, 2009; Godfrey et al., 2009; Barnett and Salomon, 2012) and economy-wide shocks (Lins et al., 2017). My first empirical chapter focuses on the impact of CSR on firm risk. I empirically assess the hedging ability of social capital on firm risk during political and industry-wide uncertainty. Consistent with my expectation, I find empirical evidence of reputational hedging effect of CSR during political uncertainty. CSR reputation reduces stock return volatility during political uncertainty emerged from regional elections, which is stronger during closely contested elections. Also, I find that the hedging effect of CSR is transient. However, contrary to my arguments, I find evidence that CSR reputation cannot reduce cash flow volatility during election period. This can be explained by increasing cash holdings during election years as a precautionary buffer (Julio and Yook, 2012). Moreover, due to transient nature of CSR hedging effect, it cannot affect quasi-static cash flows. Also, the hedging effect of CSR reputation on cash flow volatility possibly cannot be captured due to firms' earnings smoothing engagement. I further find lasting real effects of CSR reputation of election year, though the hedging effect of CSR is transient. Firms with higher CSR reputation during election year have higher operating margin, profitability and Tobin's Q surrounding an election cycle. Finally, regarding

the industry-wide uncertainty, I find evidence that CSR reputation can be an effective hedge against market risk.

The second empirical chapter investigates the valuation effect of social capital. This is motivated by the empirical evidence of the hedging ability of CSR reputation during the political risk emerged from elections, which I find in the second chapter. The empirical evidence from existing literature on how and whether shareholders value CSR reputation is still inconclusive (Brammer et al., 2006; Fisher-Vanden and Thorburn, 2011; Flammer 2013; Cordeiro and Tewari, 2015; Krüger, 2015). The extant literature shows that firms with high social capital earn higher valuation premium during firm-specific negative events (Godfrey et al., 2009; Minor and Morgan, 2011; Shiu and Yang, 2017) and the 2007-2009 financial crisis (Lins et al., 2017). Applying the 2007-09 financial crisis as exogenous shock creates scope to generate biased estimates as it had a direct effect on all real economic activities (Berger et al., 2020). Hence, I use U.S. gubernatorial elections as a source of economy-wide uncertainty, as these elections are staggered and exogenous shocks to market value. From a standard event study, I find that firms with high CSR reputation realize short-term positive abnormal returns surrounding an election year. I also test long-term valuation effect of CSR reputation following gubernatorial elections by using a standard Buy and Hold Abnormal Returns (BHARs) approach and calendar-time portfolio approach. I find firms with high CSR reputation realize higher returns compared to low CSR firms in the long run too. Therefore, consistent with my expectations, the results suggest that social capital creates value in both short and long-run around election periods via the *reputation effect*.

My third empirical chapter is motivated by the concern of whether firms exploit their social capital for immediate payoffs at the cost of long-term value. Some CSR related studies find that firms with high social capital use their reputation for being trustworthy and reliable to engage in earning management (Martínez-Ferrero et al., 2016), profit shifting (i.e., cross-country tax avoidance) (Hasan et al., 2019) and different socially irresponsible activities (Bouslah et al., 2018). Hence, they intend to use social capital as a shield against the negative reactions of the affected stakeholders. I investigate whether firms with more social capital transfer wealth from creditors to shareholders through risky investment (i.e., risk-shifting). I use financially distressed firms' investment sensitivity to high-expected volatility as an empirical set up. Consistent with my expectation, I find evidence that firms with high default probability increase investment in basic operations in response to expected higher volatility, if they have high social capital. Therefore, Social capital has risk-shifting incentives.

In the third empirical chapter, I also conduct an additional test whether financially distressed firms increase CSR investment during high volatility to signal-jam their true financial condition from rivals and other stakeholders. I find that firms with high default probability increase their investment in CSR activities during economic uncertainty, hence exploit CSR reputation as a signal jamming mechanism. Overall, financially distressed firms' risk-shifting incentives and signal-jamming motivation can be mutually exclusive, as financially distressed firms have to trade-off between CSR investment and financial flexibility. In my thesis, they are independent. The results of third empirical chapter suggest that firms with high default probability have signal jamming motivation during expected high volatility, whereas their risk-shifting incentive is conditional on their existing level of CSR.

5.2 Contributions and implications

This thesis contributes to the related literature in several ways. My thesis provides empirical evidence on the causal effect of CSR on firm risk. I focus on idiosyncratic risk measured by stock return volatility and alternatively by cash flow volatility. Moreover, by considering the potential reverse causality issue between CSR and risk, I apply an IV approach. Also, I use exogenous shocks on firm risk which are driven by political uncertainty (electoral cycles). Product market competition (market fluidity) is used as a source of exogenous variation in firm risk. Specifically, for investigation, I use a comprehensive sample of all U.S. firms and consider both firms with and without a CSR score. By doing so, I can measure the effect of having CSR credentials on firms' risk, in addition to the impact of high CSR score. The thesis further contributes to the extant literature by documenting novel insights on the valuation effect of social capital. I provide empirical evidence on the causal effect of CSR reputation on firms' market valuation during uncertainty. I use regional political risk surrounding U.S. gubernatorial elections as an exogenous and staggered shock on stock returns. Specifically, my thesis finds value implications of CSR reputation for both the short and long run.

Finally, this thesis documents that firms with more social capital transfer wealth from shareholders to creditors when their default probability is high. Hence, social capital has effect on firms' risk-shifting incentives. In addition, I provide evidence that if firms face higher probability of default, they increase investment in CSR activities. My findings are consistent with my expectation that firms use CSR reputation as a signal-jamming mechanism if they have high default probability, to prevent investors and other stakeholders from identifying their true financial condition. While risk-

shifting incentives and signal-jamming motivation of firms with high default probability can be mutually exclusive, these two hypotheses are independent in my thesis as I investigate the risk-shifting hypothesis conditional on firms' existing CSR level.

The findings of this thesis have several implications. First, as this study provides empirical evidence on the hedging ability of social capital during economy-wide and industry-wide uncertainty, companies can apply this knowledge to develop their risk management strategies. Second, investors can construct risk-adjusted portfolios by considering this study's novel empirical evidence on hedging ability and valuation effect of CSR reputation. Third, creditors can benefit from the empirical evidence on risk-shifting incentives of social capital by being aware of the potential risk of wealth-transfer. My thesis also shows that CSR investment can be motivated by signal jamming incentives. Hence, policymakers and regulators can get insights into potential ways for opportunistic exploitation of CSR reputation: risk-shifting and signal-jamming. Therefore, they can take actions to mitigate opportunistic exploitation of CSR reputation and design policies to facilitate appropriate adoption of CSR practices which balance interests of firms and their stakeholders, utilize corporate resources efficiently and focus on long-term firm value. Finally, my thesis provides knowledge on different aspects of CSR reputation. For instance, the first and second empirical chapters document empirical evidence on the bright side (i.e., hedging effect and positive valuation effect) of CSR reputation, while the third empirical chapter highlights the dark side (i.e., risk-shifting incentives and signal jamming motivation). Application of this set of knowledge in designing CSR-related corporate policy, regulatory frameworks and stock market participation can lead to the welfare of firms,

investing (e.g., shareholders) and non-investing (e.g., employees, community, environment) stakeholders. Hence, this thesis has implicit implications for the economy and society.

5.3 Limitations of the study

This thesis faces some limitations, which I discuss in this section. First, some researchers argue that CSR is not an exact measure of firm-level social capital (Scrivens and Smith, 2013; Sapienza et al., 2013). For instance, firms maintaining a better CSR label may not be able to build social capital if they do not incorporate proper organizational commitment to such activities (Servaes and Tamayo, 2017). I follow the argument of Lins et al. (2017) to use CSR score as a social capital measure. Lins et al. (2017) suggest that CSR is measurable (though inexactly), it has a nonnegative payoff, and level of CSR can be changed through investment or depreciation. Hence, these features of CSR ease Solow's (1995) reservations on social capital measurement.[40]

Second, there are several databases which provide CSR scores based on different methodologies and coverage. Hence, this study may be affected by the CSR data collection sources. However, in this thesis, I have used the ESG score from Asset4 database, provided by Refinitiv (formerly Thomson Reuters), which is considered as the leading provider of standard ESG research data. Another widely used CSR

[40] Solow (1995) suggests that if social capital is more than a buzzword, it should be measurable even in any inexact way. Also, an identifiable process of 'investment' is required which adds to the stock of social capital. A process of 'depreciation' is also needed to identify reduction from this stock. Moreover, the remarkable changes in stock of social capital should correspond to investment and depreciation.

database is MSCI ESG Stats database (formerly KLD). As ESG Stats follows a binary scoring system to value strength and weakness of each category, the scores are likely to be static with limited variation (Barnea and Rubin, 2010; Schreck, 2011). Meanwhile, ESG scores of ASSET4 is more dynamic as it provides percentile rank scores. Moreover, as the Asset4 ESG score for a firm is relative to each company's peer group, the score indicates that a firm invests resources in CSR activities to improve its rating. Finally, prior CSR studies validate and widely use ESG score of Asset4 database (Ioannou and Serafeim, 2012; Cheng et al., 2014; Halbritter and Dorfleitner, 2015; Ferrell et al., 2016; Attig et al., 2016). Therefore, I use Assset4 database as it seems more appropriate and robust.

5.4 Future research

This thesis finds empirical evidence on the hedging ability of social capital during political risk surrounding an election year and industry-wide risk from product market fluidity. This research can be augmented in future by focusing on different other economy-wide or industry-wide shocks. That is because each negative event has unique attributes (Bansal et al., 2015). Future studies can consider negative shocks such as political scandal or turmoil, geopolitical tensions etc. Moreover, political uncertainty may arise and be resolved differently in different countries due to different political systems (Jens, 2017). Therefore, applying similar analyses to different political systems can give better understanding about the generalizability of my thesis findings.

As the second empirical chapter of this thesis finds evidence of positive stock market valuation effect of CSR reputation during political uncertainty emerged from elections, it motivates further research to investigate bondholders' reaction to CSR

reputation during elections. Firms' social capital can create debtholders' confidence that managers will be committed to safeguard the economic benefits of all stakeholders, hence demand less monitoring which consequently reduces agency costs of debt. Also, bondholders can rely on the reciprocity nature of social capital that stakeholders will cooperate the firm during uncertainty, which may increase firms' profitability and reduce the probability of default. These potential economic benefits of social capital can lead to lower debt spreads. Meanwhile, bondholders can also view CSR investment during uncertainty as waste of resources, which can lead to higher default premium. By following these arguments, Amiraslani et al. (2017) investigate the impact of social capital in bond market during financial crisis and find that firms with high CSR is benefitted by lower debt spread in the secondary market. Therefore, future research can focus on how bondholders react to social capital during political uncertainty surrounding election period. While debt market is another highly important source of external financing, this further empirical research can provide useful insights.

Appendix

Appendix 2-A. Variable Definitions

Variables	Definitions
CSR	Equally-weighted Overall ESG score from Asset4.
Return Volatility	The standard deviation of the firms' daily logarithmic returns (source: CRSP), multiplied by the square root of the 252 total trading days over a year.
Cash flow	Operating income before depreciation (Compustat item OIBDP).
Cash Flow Volatility	The standard deviation of cash flow (Compustat item OIBDP) scaled by total assets (Compustat item AT) for the previous three years, *t-3* to *t-1*.
Election	Binary variable, which is equal to one if a gubernatorial election occurred in the firm's headquarters state at time *t*, otherwise it equals zero.
Close Election	Binary variable, which is equal to one if the victory margin of the headquarters state's gubernatorial election in year *t* is at the lowest quartile, otherwise it equals zero.
Fluidity	The degree of competitive threat and product market change surrounding a firm, based on Hoberg et al. (2014).
Greater Fluidity	A binary variable equal to one for those firms having a fluidity measure greater than the annual average fluidity across all firms in my sample.
Adjusted Greater Fluidity	A binary variable equal to one for those firms having a fluidity measure greater than the annual average fluidity across all firms in my sample, excluding the firm in question from the average fluidity estimation, otherwise it equals zero.
Market-to-Book	Market value of equity (Compustat item PRCC times item CSHO) over total assets (Compustat item AT).
Leverage	Long-term debt (Compustat item DLTT) over total assets (Compustat item AT).
Operating margin	Operating income before depreciation (Compustat item OIBDP) scaled by sales (Compustat item SALE).
Investment	Percentage change in gross plant, property, and equipment (Compustat item PPEGT) from year t-1 to year t.
Sales growth	Growth in sales from year t-1 to year t (Compustat item SALE).
Profitability	The ratio of net income before extraordinary items (Compustat item NI) to total assets (Compustat item AT).
Cash	Cash (Compustat item CH) scaled by total assets (Compustat item AT).
Tobin's Q	Market value of equity (Compustat item PRCC times item CSHO) plus book value of debt (Compustat item AT minus CEQ) over total assets (Compustat item AT).
Negative Equity	Equal to one if the total liabilities (Compustat item LT) are greater than the book value of total assets (Compustat item AT), otherwise zero.
Term Limit	Equal to one if the incumbent governor has a term limit on the gubernatorial election, otherwise zero.
Δ GDP	Annual percentage change in state GDP.
Unemployment	Annual state-level unemployment rate.

Table 2-A1. The relationship between CSR reputation and risk during political uncertainty

This table presents the results of the IV approach, which estimates the relationship between CSR reputation and risk during political uncertainty over the sample period of 2002-2016. As a risk measure, I use stock return volatility as the dependent variable. Stock return volatility is the standard deviation of the firms' daily logarithmic returns, multiplied by the square root of 252 trading days. *CSR* is the overall ESG score instrumented with two instruments separately: the average CSR rating for each industry-year pair (Panel A) and state-year pair (Panel B). The results of the 1st stage are presented in column 1. Columns 2, 4 and 6 contain the results of 2nd stage regression without control variables. In columns 3, 5 and 7, I report the 2nd stage regression outcomes with control variables. To measure political uncertainty, I use two binary variables: (i) *Election*, a binary variable equal to one if a gubernatorial election occurred in the firm's headquarters state at time *t*, and zero otherwise*;* (ii) *Close Election*, a binary variable equal to one if the vote margin between the top two candidates remains in the lowest quartile, and zero otherwise. *Post-election* is a binary variable equal to one if a gubernatorial election occurred in the firm's headquarters state lagged by a year (*t-1*). Values of risk and CSR measures are contemporaneous. All firm-level financial controls, state-level GDP growth rate, and unemployment rate are lagged by one year. All variables are defined in the Appendix (2-A). All regressions include industry and year fixed effects. I use heteroscedasticity robust standard errors clustered at the firm level, which are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All continuous variables are winsorized at the 1% and 99% tails.

Panel A: Stock Return Volatility - Industry Average CSR as Instruments

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Industry Average CSR	0.2030***						
	(0.0376)						
CSR		-0.0056***	-0.0047***	-0.0059***	-0.0049***	-0.0063***	-0.0053***
		(0.0010)	(0.0010)	(0.0010)	(0.0010)	(0.0011)	(0.0010)
Election		0.0271***	0.0291***				
		(0.0063)	(0.0062)				
CSR* Election		-0.0018***	-0.0016***				
		(0.0004)	(0.0004)				
Close Election				0.0556***	0.0589***		
				(0.0116)	(0.0115)		

CSR* Close Election				-0.0030***	-0.0032***		
				(0.0009)	(0.0008)		
Post-election						-0.0127***	-0.0102**
						(0.0046)	(0.0046)
CSR* Post-election						0.0008**	0.0008**
						(0.0003)	(0.0003)
Market-to-Book	1.3518***		-0.0077***		-0.0078***		-0.0078***
	(0.1847)		(0.0020)		(0.0020)		(0.0020)
Leverage	15.3128***		-0.0252		-0.0238		-0.0259
	(1.5925)		(0.0211)		(0.0211)		(0.0210)
Operating Margin	0.6455***		-0.0120***		-0.0120***		-0.0121***
	(0.0525)		(0.0009)		(0.0009)		(0.0009)
Investment	-4.3162***		-0.0651***		-0.0654***		-0.0647***
	(0.5846)		(0.0090)		(0.0090)		(0.0090)
Sales Growth	-2.7063***		-0.0019		-0.0017		-0.0021
	(0.2849)		(0.0060)		(0.0060)		(0.0060)
Negative Equity	-11.5671***		0.1420***		0.1415***		0.1427***
	(1.3052)		(0.0186)		(0.0186)		(0.0185)
Term Limit	-0.8708		-0.0284***		-0.0322***		
	(0.5618)		(0.0066)		(0.0063)		
Δ GDP	-13.0323		0.0522		0.1215		0.0638
	(8.2904)		(0.0774)		(0.0775)		(0.0774)
Unemployment	59.0044*		0.8265***		0.8684***		0.8094***
	(30.2681)		(0.2139)		(0.2139)		(0.2131)
Constant	-3.2570	0.6321***	0.6049***	0.6305***	0.6002***	0.6525***	0.6249***
	(10.8799)	(0.0633)	(0.0561)	(0.0625)	(0.0556)	(0.0627)	(0.0555)
Observations	43,521	43,521	43,521	43,521	43,521	43,521	43,521
Industry FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES

Cragg-Donald Wald		216.3	193.2	217.9	194.5	217.5	194.2

Panel B: Stock Return Volatility - State Average CSR as Instruments

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
State Average CSR	0.3178***						
	(0.0935)						
CSR		-0.0106***	-0.0124***	-0.0110***	-0.0126***	-0.0117***	-0.0133***
		(0.0026)	(0.0034)	(0.0026)	(0.0034)	(0.0027)	(0.0035)
Election		0.0389***	0.0414***				
		(0.0094)	(0.0098)				
CSR* Election		-0.0031***	-0.0030***				
		(0.0007)	(0.0008)				
Close Election				0.0631***	0.0753***		
				(0.0139)	(0.0156)		
CSR* Close Election				-0.0035***	-0.0043***		
				(0.0011)	(0.0013)		
Post-election						-0.0166**	-0.0135**
						(0.0067)	(0.0070)
CSR* Post-election						0.0012**	0.0011*
						(0.0006)	(0.0006)
Market-to-Book	1.3547***		0.0028		0.0024		0.0026
	(0.1851)		(0.0052)		(0.0051)		(0.0051)
Leverage	15.2962***		0.0983*		0.0979*		0.0970*
	(1.5953)		(0.0569)		(0.0565)		(0.0565)
Operating Margin	0.6740***		-0.0066***		-0.0067***		-0.0067***
	(0.0524)		(0.0024)		(0.0024)		(0.0024)
Investment	-4.1420***		-0.0993***		-0.0991***		-0.0987***

	(0.5826)		(0.0170)		(0.0169)		(0.0169)
Sales Growth	-2.7469***		-0.0237**		-0.0229**		-0.0238**
	(0.2858)		(0.0109)		(0.0108)		(0.0108)
Negative Equity	-11.5307***		0.0491		0.0502		0.0504
	(1.3219)		(0.0442)		(0.0439)		(0.0439)
Term Limit	-0.6167		-0.0338***		-0.0409***		
	(0.5557)		(0.0097)		(0.0090)		
Δ GDP	-7.9490		-0.0475		0.0429		-0.0315
	(8.0480)		(0.1097)		(0.1095)		(0.1104)
Unemployment	45.0984		1.3096***		1.3584***		1.2894***
	(30.3781)		(0.4070)		(0.3994)		(0.4098)
Constant	-2.4343	0.6465***	0.5773***	0.6490***	0.5735***	0.6752***	0.6049***
	(10.3126)	(0.1128)	(0.1345)	(0.1100)	(0.1313)	(0.1125)	(0.1326)
Observations	43,521	43,521	43,521	43,521	43,521	43,521	43,521
Industry FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Cragg-Donald Wald		82.80	61.69	81.72	61.03	82.90	62.16

Table 2-A2. The relationship between CSR reputation and risk during political uncertainty

This table presents the results of the IV approach, which estimates the relationship between CSR reputation and risk during political uncertainty over the sample period of 2002-2016. As a risk measure, I use cash flow volatility as the dependent variable. Cash flow volatility is the standard deviation of cash flow to assets for the previous three years. *CSR* is the overall ESG score instrumented with two instruments separately: the average CSR rating for each industry-year pair (Panel A) and state-year pair (Panel B). The results of the 1st stage are presented in column 1. Columns 2, 4 and 6 contain the results of the 2nd stage regression without control variables. In columns 3, 5 and 7, I report the 2nd stage regression outcomes with control variables. To measure political uncertainty, I use two binary variables: (i) *Election,* a binary variable equal to one if a gubernatorial election occurred in the firm's headquarters state at time *t*, and zero otherwise; (ii) *Close Election,* a binary variable equal to one if the vote margin between top two candidates remains in the lowest quartile, and zero otherwise. *Post-election* is a binary variable equal to one if a gubernatorial election occurred in the firm's headquarters state lagged by a year (*t-1*). Values of risk and CSR measures are contemporaneous. All firm-level financial controls, state-level GDP growth rate, and unemployment rate are lagged by one year. All variables are defined in the Appendix (2-A). All regressions include industry and year fixed effects. I use heteroscedasticity robust standard errors clustered at the firm level, which are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All continuous variables are winsorized at the 1% and 99% tails.

Panel A: Cash Flow Volatility - Industry Average CSR as Instrument

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Industry Average CSR	0.1835***						
	(0.0360)						
CSR		-0.0028***	-0.0009***	-0.0028***	-0.0009***	-0.0029***	-0.0009***
		(0.0005)	(0.0003)	(0.0005)	(0.0003)	(0.0005)	(0.0003)
Election		0.0084***	0.0022				
		(0.0023)	(0.0020)				
CSR* Election		-0.0004***	-0.0001				
		(0.0001)	(0.0001)				
Close Election				0.0160***	0.0031		
				(0.0045)	(0.0031)		

CSR* Close Election				-0.0006*	0.0000		
				(0.0003)	(0.0002)		
Post-election						-0.0041**	-0.0018
						(0.0017)	(0.0015)
CSR* Post-election						0.0002*	0.0001
						(0.0001)	(0.0001)
Market-to-Book	1.8416***		0.0123***		0.0123***		0.0123***
	(0.1838)		(0.0009)		(0.0009)		(0.0009)
Leverage	13.1212***		-0.0091		-0.0091		-0.0091
	(1.6383)		(0.0057)		(0.0057)		(0.0057)
Profitability	15.7050***		-0.1757***		-0.1757***		-0.1758***
	(0.8937)		(0.0065)		(0.0065)		(0.0065)
Cash	-15.2795***		0.0955***		0.0955***		0.0955***
	(1.4555)		(0.0078)		(0.0078)		(0.0078)
Investment	-7.5327***		0.0010		0.0010		0.0011
	(0.6748)		(0.0040)		(0.0040)		(0.0040)
Negative Equity	-7.6303***		0.0244***		0.0244***		0.0244***
	(1.2834)		(0.0055)		(0.0055)		(0.0055)
Term Limit	-1.2496**		-0.0031		-0.0031		
	(0.5590)		(0.0021)		(0.0020)		
Δ GDP	-11.9390		-0.0467*		-0.0422*		-0.0455*
	(8.2661)		(0.0255)		(0.0255)		(0.0254)
Unemployment	85.8703***		0.0419		0.0428		0.0390
	(30.2546)		(0.0667)		(0.0669)		(0.0667)
Constant	-3.0618	0.0501*	0.0188*	0.0503*	0.0191*	0.0566*	0.0205*
	(10.9446)	(0.0304)	(0.0107)	(0.0301)	(0.0106)	(0.0301)	(0.0106)
Observations	41,795	41,795	41,795	41,795	41,795	41,795	41,795
Industry FE	YES	YES	YES	YES	YES	YES	YES

Year FE	YES	YES	YES	YES	YES	YES	YES
Cragg-Donald Wald		227.8	162	229.8	163.4	229.6	163.7

Panel B: Cash Flow Volatility - State Average CSR as Instrument

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
State Average CSR	0.2387***						
	(0.0917)						
CSR		-0.0033***	-0.0011	-0.0035***	-0.0012*	-0.0036***	-0.0011
		(0.0010)	(0.0007)	(0.0010)	(0.0007)	(0.0010)	(0.0007)
Election		0.0131***	0.0038				
		(0.0036)	(0.0029)				
CSR* Election		-0.0009***	-0.0002				
		(0.0003)	(0.0002)				
Close Election				0.0173***	0.0038		
				(0.0050)	(0.0038)		
CSR* Close Election				-0.0007*	-0.0000		
				(0.0004)	(0.0003)		
Post-election						-0.0054**	-0.0014
						(0.0025)	(0.0022)
CSR* Post-election						0.0003	0.0001
						(0.0002)	(0.0002)
Market-to-Book	1.8376***		0.0127***		0.0128***		0.0127***
	(0.1836)		(0.0014)		(0.0014)		(0.0014)
Leverage	13.1355***		-0.0059		-0.0056		-0.0062
	(1.6406)		(0.0101)		(0.0102)		(0.0100)
Profitability	16.0856***		-0.1718***		-0.1715***		-0.1722***
	(0.8968)		(0.0123)		(0.0124)		(0.0121)

Cash	-15.6049***		0.0917***		0.0913***		0.0920***
	(1.4701)		(0.0132)		(0.0133)		(0.0131)
Investment	-7.5135***		-0.0008		-0.0010		-0.0006
	(0.6743)		(0.0064)		(0.0065)		(0.0063)
Negative Equity	-7.5484***		0.0226***		0.0224***		0.0227***
	(1.2962)		(0.0074)		(0.0074)		(0.0073)
Term Limit	-1.0275*		-0.0034		-0.0035		
	(0.5517)		(0.0022)		(0.0021)		
Δ GDP	-8.0899		-0.0496*		-0.0444*		-0.0478*
	(8.0368)		(0.0267)		(0.0269)		(0.0266)
Unemployment	75.4400**		0.0625		0.0669		0.0584
	(30.2806)		(0.0920)		(0.0931)		(0.0912)
Constant	-2.2861	0.0501	0.0173	0.0527	0.0182	0.0598	0.0199
	(10.4236)	(0.0372)	(0.0131)	(0.0367)	(0.0131)	(0.0370)	(0.0126)
Observations	41,795	41,795	41,795	41,795	41,795	41,795	41,795
Industry FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Cragg-Donald Wald		78.30	35.34	76.67	34.72	78.49	36.08

Appendix 3-A. Variable Definitions

Variables	Definitions
CSR	Equally-weighted Overall ESG score from Asset4.
Market-to-Book	Market value of equity (Compustat item PRCC times item CSHO) over total assets (Compustat item AT).
Leverage	Long-term debt (Compustat item DLTT) over total assets (Compustat item AT).
Operating margin	Operating income before depreciation (Compustat item OIBDP) scaled by sales (Compustat item SALE).
Investment	Percentage change in gross plant, property, and equipment (Compustat item PPEGT) from year t-1 to year t.
Sales growth	Growth in sales from year t-1 to year t (Compustat item SALE).
Cash	Cash (Compustat item CH) scaled by total assets (Compustat item AT).
Negative Equity	Equal to one if the total liabilities (Compustat item LT) are greater than the book value of total assets (Compustat item AT), otherwise zero.
Term Limit	Equal to one if the incumbent governor has a term limit on the gubernatorial election, otherwise zero.
Δ GDP	Annual percentage change in state GDP.
Unemployment	Annual state-level unemployment rate.

Table 3-A1: Cumulative abnormal returns (CARs) around election day

This table presents the cumulative abnormal returns (CARs) calculated around the U.S. gubernatorial elections. My sample consists of all publicly traded U.S. firms in CRSP/Compustat (except financial and utility firms), which have faced a gubernatorial election in their headquarter state between 2002 and 2016. In Panel A to D, results are presented for firms with high and low CSR scores, classified based on the sample mean, median, quartile and quantile CSR scores, respectively. The realized abnormal return is calculated based on market model parameters by using estimation periods of 250 trading days ending 50 days before the event (election) date. CRSP equally-weighted index is used as the market index. CARs are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A: Low and High CSR Firms (Mean Classification)

CARs	*Low CSR Firms: A*	*High CSR Firms: B*	*Test of Difference (A-B)*
Pre-event Windows			
CAR(-25,-2)	-0.0042	-0.0010	-0.0032
CAR(-25,-1)	-0.0043	-0.0011	-0.0032
CAR(-10,-2)	0.0020	0.0019	0.0001
CAR(-10,-1)	0.0020	0.0018	0.0002
CAR(-5,-2)	0.0010	-0.0011	0.0021
Event Windows			
CAR(-1,1)	0.0004	0.0015	-0.0011
CAR(-2,2)	0.0030*	0.0032**	-0.0002
CAR(-5,5)	0.0025	0.0026	-0.0001
CAR(-10,10)	0.0114***	0.0113***	0.0001
CAR(-25,25)	0.0044	0.0106	-0.0062
Post-event Windows			
CAR(2,5)	0.0013	0.0024**	-0.0011
CAR(1,10)	0.0102***	0.0094***	0.0008
CAR(2,10)	0.0086***	0.0081***	0.0005
CAR(1,25)	0.0090***	0.0116***	-0.0026
CAR(2,25)	0.0075**	0.0103***	-0.0028

Panel B: Low and High CSR Firms (Median Classification)

CARs	*Low CSR Firms: A*	*High CSR Firms: B*	*Test of Difference (A-B)*
Pre-event Windows			
CAR(-25,-2)	-0.0038	-0.0017	-0.0021
CAR(-25,-1)	-0.0035	-0.0020	-0.0015
CAR(-10,-2)	0.0036	0.0003	0.0033

CAR(-10,-1)	0.0039	-0.0000	0.0039
CAR(-5,-2)	0.0009	-0.0009	0.0018
Event Windows			
CAR(-1,1)	0.0007	0.0011	-0.0004
CAR(-2,2)	0.0034**	0.0028**	0.0006
CAR(-5,5)	0.0034	0.0017	0.0017
CAR(-10,10)	0.0141***	0.0086***	0.0055
CAR(-25,25)	0.0065	0.0082*	-0.0017
Post-event Windows			
CAR(2,5)	0.0022	0.0015	0.0007
CAR(1,10)	0.0112***	0.0084***	0.0028
CAR(2,10)	0.0096***	0.0072***	0.0024
CAR(1,25)	0.0104***	0.0100***	0.0004
CAR(2,25)	0.0088***	0.0088***	0.0000

Panel C: Low and High CSR Firms (Quartile Classification)

CARs	*Low CSR Firms: A*	*High CSR Firms: B*	*Test of Difference (A-B)*
Pre-event Windows			
CAR(-25,-2)	0.0063	-0.0010	0.0073
CAR(-25,-1)	0.0058	-0.0015	0.0073
CAR(-10,-2)	0.0072**	0.0010	0.0062
CAR(-10,-1)	0.0067*	0.0005	0.0062
CAR(-5,-2)	0.0024	-0.0018	0.0042
Event Windows			
CAR(-1,1)	-0.0001	0.0011	-0.0012
CAR(-2,2)	0.0033	0.0031**	0.0002
CAR(-5,5)	0.0022	0.0001	0.0021
CAR(-10,10)	0.0155*	0.0081**	0.0074
CAR(-25,25)	0.0154**	0.0049	0.0105
Post-event Windows			
CAR(2,5)	0.0000	0.0012	-0.0012
CAR(1,10)	0.0087***	0.0073***	0.0014
CAR(2,10)	0.0078***	0.0060***	0.0018
CAR(1,25)	0.0090*	0.0061*	0.0029
CAR(2,25)	0.0083*	0.0048	0.0035

Panel D: Low and High CSR Firms (Quantile Classification)

CARs	*Low CSR Firms: A*	*High CSR Firms: B*	*Test of Difference (A-B)*
Pre-event Windows			
CAR(-25,-2)	0.0010	-0.0029	0.0039
CAR(-25,-1)	-0.0002	-0.0030	0.0028
CAR(-10,-2)	0.0053	-0.0002	0.0055
CAR(-10,-1)	0.0044	-0.0002	0.0046
CAR(-5,-2)	0.0013	-0.0020	0.0033
Event Windows			
CAR(-1,1)	-0.0009	0.0017	-0.0026
CAR(-2,2)	0.0029	0.0037**	-0.0008
CAR(-5,5)	0.0011	0.0001	0.001
CAR(-10,10)	0.0142***	0.0067*	0.0075
CAR(-25,25)	0.0091	0.0035	0.0056
Post-event Windows			
CAR(2,5)	0.0008	0.0007	0.0001
CAR(1,10)	0.0093***	0.0068***	0.0025
CAR(2,10)	0.0092***	0.0052**	0.0040
CAR(1,25)	0.0083	0.0063*	0.0020
CAR(2,25)	0.0083	0.0047	0.0036

Table 3-A2. Buy and Hold Abnormal Returns (BHARs)

This table presents the Buy and Hold Abnormal Returns (BHARs) calculated over the 1,2 and 3 years following the election month. In Panel A to D, results are presented for firms with high and low CSR scores, classified based on the sample mean, median, quartile and quantile CSR scores, respectively. BHARs are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A: Low and High CSR Firms (Mean Classification)

	Low CSR Firms: A	***High CSR Firms: B***	***Test of Difference (A-B)***
After 1 Year	0.0236***	0.0348***	-0.0112*
After 2 Years	0.0105**	0.0236***	-0.0131**
After 3 Years	0.0217***	0.0245***	-0.0028

Panel B: Low and High CSR Firms (Median Classification)

	Low CSR Firms: A	***High CSR Firms: B***	***Test of Difference (A-B)***
After 1 Year	0.0252***	0.0326***	-0.0074
After 2 Years	0.0127***	0.0208***	-0.0081
After 3 Years	0.0218***	0.0243***	-0.0025

Panel C: Low and High CSR Firms (Quartile Classification)

	Low CSR Firms: A	***High CSR Firms: B***	***Test of Difference (A-B)***
After 1 Year	0.0213***	0.0251***	-0.0038
After 2 Years	0.0155**	0.0207***	-0.0052
After 3 Years	0.0261***	0.0343***	-0.0082

Panel D: Low and High CSR Firms (Quantile Classification)

	Low CSR Firms: A	***High CSR Firms: B***	***Test of Difference (A-B)***
After 1 Year	0.0197**	0.0237***	-0.0040
After 2 Years	0.0172**	0.0233***	-0.0061
After 3 Years	0.0255***	0.0357***	-0.0102

Table 3-A3. Calendar-time Portfolio analysis for long-term abnormal stock returns.

This table reports the results of the calendar-time portfolio regression analysis of post-election long-term abnormal returns for firms facing a gubernatorial election in their headquarter state. I construct equally weighted portfolios for each calendar month for firms with high and low CSR scores (Panel A to D, based on the sample mean, median, quartile, and quantile CSR scores, respectively). Firms remain in the portfolio for 12 (columns 1 and 2), 24 (columns 3 and 4) and 36 (columns 5 and 6) months following the election month, and rebalanced monthly based on whether their holding period reaches to an end or they have just face an election. Then, I estimate the abnormal performance as the intercept of the regression of the portfolio excess return on the four factors of the Carhart (1997) model. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All continuous variables are winsorized at the 1% and 99% tails.

Panel A: Low and High CSR Firms (Mean Classification)

	(1)	(2)	(3)	(4)	(5)	(6)
	After 1 Year		After 2 Years		After 3 Years	
	Low CSR Firm	High CSR Firm	Low CSR Firm	High CSR Firm	Low CSR Firm	High CSR Firm
α	-0.0018	0.0029*	-0.0001	0.0020	0.0016	0.0027**
	(0.0025)	(0.0017)	(0.0019)	(0.0013)	(0.0014)	(0.0011)
$R_M - R_F$	1.1708***	0.9871***	1.1531***	1.0268***	1.0713***	1.0237***
	(0.0774)	(0.0506)	(0.0561)	(0.0390)	(0.0427)	(0.0315)
SMB	0.5398***	0.2671***	0.5308***	0.2525***	0.4784***	0.2273***
	(0.1229)	(0.0797)	(0.0897)	(0.0617)	(0.0691)	(0.0505)
HML	-0.0965	0.0020	-0.0684	-0.0131	-0.0119	0.0288
	(0.1224)	(0.0780)	(0.0889)	(0.0616)	(0.0681)	(0.0503)
UMD	-0.1918**	-0.1035**	-0.1918***	-0.0565	-0.2018***	-0.0804**
	(0.0749)	(0.0492)	(0.0564)	(0.0392)	(0.0439)	(0.0327)

Observations	188	186	371	367	553	547
Adj R-squared	0.688	0.772	0.667	0.741	0.673	0.747

Panel B: Low and High CSR Firms (Median Classification)

	(1)	(2)	(3)	(4)	(5)	(6)
	After 1 Year		After 2 Years		After 3 Years	
	Low CSR Firm	High CSR Firm	Low CSR Firm	High CSR Firm	Low CSR Firm	High CSR Firm
α	-0.0003	0.0025	0.0005	0.0014	0.0011	0.0027**
	(0.0023)	(0.0017)	(0.0015)	(0.0014)	(0.0012)	(0.0011)
$R_M - R_F$	1.1147***	1.0008***	1.1134***	1.0408***	1.0429***	1.0395***
	(0.0707)	(0.0518)	(0.0455)	(0.0412)	(0.0372)	(0.0327)
SMB	0.5842***	0.2988***	0.5871***	0.2555***	0.5372***	0.2204***
	(0.1114)	(0.0818)	(0.0722)	(0.0654)	(0.0597)	(0.0526)
HML	-0.1145	0.0308	-0.1107	0.0779	-0.0510	0.1129**
	(0.1110)	(0.0800)	(0.0720)	(0.0653)	(0.0592)	(0.0523)
UMD	-0.1056	-0.1707***	-0.1483***	-0.0869**	-0.1661***	-0.0909***
	(0.0682)	(0.0505)	(0.0456)	(0.0416)	(0.0382)	(0.0340)
Observations	188	186	371	367	553	547
Adj R-squared	0.705	0.782	0.741	0.732	0.722	0.744

Panel C: Low and High CSR Firms (Quartile Classification)

	(1)	(2)	(3)	(4)	(5)	(6)
	After 1 Year		After 2 Years		After 3 Years	
	Low CSR Firm	High CSR Firm	Low CSR Firm	High CSR Firm	Low CSR Firm	High CSR Firm
α	0.0001	-0.0003	0.0023	0.0020	0.0026	0.0031*
	(0.0032)	(0.0031)	(0.0022)	(0.0020)	(0.0017)	(0.0016)
$R_M - R_F$	1.1250***	0.9524***	1.1652***	1.0445***	1.0709***	1.0185***
	(0.0973)	(0.0952)	(0.0674)	(0.0609)	(0.0520)	(0.0472)
SMB	0.6681***	0.2361	0.6097***	0.1170	0.5551***	0.1537**
	(0.1540)	(0.1499)	(0.1074)	(0.0964)	(0.0839)	(0.0756)
HML	-0.0441	-0.0644	-0.0078	-0.0901	0.0579	-0.0264
	(0.1534)	(0.1467)	(0.1068)	(0.0962)	(0.0828)	(0.0752)
UMD	-0.1880**	-0.1841**	-0.2080***	-0.1067*	-0.1680***	-0.0909*
	(0.0942)	(0.0925)	(0.0677)	(0.0612)	(0.0534)	(0.0488)
Observations	188	186	371	367	553	547
Adj R-squared	0.585	0.478	0.599	0.533	0.589	0.555

Panel D: Low and High CSR Firms (Quantile Classification)

	(1)	(2)	(3)	(4)	(5)	(6)
	After 1 Year		After 2 Years		After 3 Years	
	Low CSR Firm	High CSR Firm	Low CSR Firm	High CSR Firm	Low CSR Firm	High CSR Firm
α	-0.0027	0.0000	0.0013	0.0022	0.0020	0.0033**
	(0.0034)	(0.0032)	(0.0024)	(0.0021)	(0.0018)	(0.0016)
$R_M - R_F$	1.1008***	0.9444***	1.1576***	1.0281***	1.0722***	0.9949***
	(0.1048)	(0.0965)	(0.0724)	(0.0615)	(0.0552)	(0.0474)
SMB	0.7183***	0.1766	0.6443***	0.0617	0.5869***	0.1195
	(0.1662)	(0.1522)	(0.1154)	(0.0972)	(0.0892)	(0.0759)
HML	-0.1046	-0.0846	-0.0320	-0.0975	0.0321	-0.0258
	(0.1656)	(0.1490)	(0.1149)	(0.0972)	(0.0881)	(0.0758)
UMD	-0.2551**	-0.1763*	-0.2359***	-0.1013	-0.1796***	-0.0819*
	(0.1020)	(0.0940)	(0.0730)	(0.0620)	(0.0569)	(0.0491)
Observations	188	186	371	367	553	547
Adj R-squared	0.552	0.455	0.567	0.512	0.563	0.536

Appendix 4-A. Variable Definitions

Variables	Definitions
CSR	Equally weighted Overall ESG score from Asset4.
Expected market volatility	Measured by applying GARCH (1,1) model to monthly returns of the NYSE Value-weighted market index.
EPU	The US composite EPU index of Baker et al. (2016).
Recession	The NBER recession indicator.
CSI	The inverted values of the Consumer Sentiment Index of the University of Michigan.
CSR Disaster	A binary variable equal to one for the years 2011 and 2012 if the firms belong to the Oil and Gas Extraction industries (SIC=13).
Default Spread	Spread between the yields of long-term Baa and Aaa securities
Investment Intensity	Gross capital expenditures (Compustat item CAPX) over gross plant, property, and equipment (Compustat item PPEGT) at the beginning of the year.
Market-to-Book	Market value of equity (Compustat item PRCC times item CSHO) over total assets (Compustat item AT).
Leverage	Long-term debt (Compustat item DLTT) over total assets (Compustat item AT).
Cash Flow	Operating income before depreciation (Compustat item OIBDP) over gross plant, property, and equipment (Compustat item PPEGT) at the beginning of the year.
Z score	Altman's (1968) Z-score computed as follows: Z-score = 3.3 × (item EBIT / item AT) + 1.2 × ((item ACT - item LCT) / item AT) + 0.999 × (item SALE / item AT) + 0.6 × ((item CSHO × item PRCC_F) / (item DLTT + item DLC)) + 1.4 × (item RE / item AT). All are Compustat items.
Z score-Dummy	A binary variable equal to one if Z-score is below 1.81, otherwise it equals zero.
CHS-score	CHS score measured based on the coefficients of Column 4 in Table IV of Campbell et al. (2008).
Default probability (CHS)	(1 / (1 + exp (- CHS-score))) * 100

Table 4-A1: Social capital and risk-shifting

This table presents the OLS regression results of social capital and the risk-shifting. The dependent variable, *Investment Intensity* is estimated by using the ratio of gross capital expenditures in a given year to PP&E at the beginning of the year. As a measure of default probability, I use *Z score-Dummy* based on Altman's (1968) model (Panel A) and *CHS-Default Probability based on* Campbell et al.'s (2008) CHS- score (Panel B). *Z score-Dummy* is a dummy variable that equals to one for firms with Z-score below 1.81 at the beginning of the year (classified as firms with higher default probability), and zero otherwise. *CHS-Default Probability* is also a dummy variable that equals to one if the CHS-score associated default probability is above the median value in year *t-1* (classified as firms with higher default probability), and zero otherwise. I estimate *Uncertainty* as the expected market volatility at the beginning of the year by using GARCH (1,1) model (in columns 1 and 2), Economic Policy Uncertainty Index (in columns 3 and 4), Recession (in columns 5 and 6), and Inverted Consumer Sentiment Index (in columns 7 and 8). In all specifications, *Uncertainty* is a binary variable that equals one if the uncertainty measurement is above median value in year *t* (classified as high volatility), and zero otherwise. *CSR* is a dummy variable that equals to one for firms having annual CSR score above the median value of the annual CSR score in year t-1, and zero otherwise. I report heteroscedasticity robust standard errors in parentheses, which are clustered at the firm level. All firm-level financial control variables are lagged by one year. Firm and year fixed effects are included in all specifications. All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at 1%, 5%, and 10% level, respectively.

Panel A: Z score - Dummy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Expected Market Volatility	Expected Market Volatility	EPU	EPU	Recession	Recession	CSI	CSI
Uncertainty	0.0351***	-0.0726***	-0.0312***	0.0445***	-0.0346***	-0.1116***	-0.0311***	0.0444***
	(0.0069)	(0.0155)	(0.0070)	(0.0101)	(0.0069)	(0.0228)	(0.0070)	(0.0101)
Z score-Dummy	-0.0545***	-0.0357***	-0.0579***	-0.0393***	-0.0535***	-0.0357***	-0.0579***	-0.0393***
	(0.0101)	(0.0096)	(0.0099)	(0.0094)	(0.0087)	(0.0084)	(0.0100)	(0.0095)

CSR-Dummy	-0.0026	-0.0032	-0.0036	-0.0041	-0.0024	-0.0032	-0.0036	-0.0042
	(0.0033)	(0.0031)	(0.0034)	(0.0031)	(0.0033)	(0.0031)	(0.0034)	(0.0032)
Uncertainty* Z score-Dummy* CSR-Dummy	0.0063	0.0025	0.0203**	0.0156**	0.0172*	0.0116	0.0193**	0.0152*
	(0.0079)	(0.0071)	(0.0083)	(0.0077)	(0.0091)	(0.0083)	(0.0086)	(0.0080)
Cash Flow		0.0279		0.0280		0.0279		0.0280
		(0.0179)		(0.0179)		(0.0179)		(0.0179)
Market-to-Book		0.0275***		0.0274***		0.0275***		0.0274***
		(0.0050)		(0.0050)		(0.0050)		(0.0050)
Leverage		-0.0208		-0.0199		-0.0207		-0.0201
		(0.0254)		(0.0254)		(0.0254)		(0.0254)
Default Spread		0.1747***		0.1716***		0.1738***		0.1712***
		(0.0344)		(0.0345)		(0.0345)		(0.0345)
Recession		-0.1410***		-0.1843***				-0.1837***
		(0.0286)		(0.0381)				(0.0381)
Constant	0.1071***	-0.0664**	0.1433***	-0.1341***	0.1423***	-0.1376***	0.1433***	-0.1335***
	(0.0029)	(0.0292)	(0.0065)	(0.0440)	(0.0064)	(0.0440)	(0.0065)	(0.0440)
Observations	7,146	7,146	7,146	7,146	7,146	7,146	7,146	7,146
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0792	0.172	0.0803	0.173	0.0794	0.172	0.0802	0.173

Panel B: CHS-Default Probability

	(1) Expected Market Volatility	(2) Expected Market Volatility	(3) EPU	(4) EPU	(5) Recession	(6) Recession	(7) CSI	(8) CSI
Uncertainty	0.0383***	-0.0701***	-0.0319***	0.0455***	-0.0389***	-0.1093***	-0.0320***	0.0448***
	(0.0064)	(0.0154)	(0.0065)	(0.0099)	(0.0064)	(0.0212)	(0.0065)	(0.0100)
CHS-Default Probability	-0.0322***	-0.0184***	-0.0361***	-0.0216***	-0.0332***	-0.0195***	-0.0372***	-0.0224***
	(0.0038)	(0.0033)	(0.0038)	(0.0033)	(0.0034)	(0.0030)	(0.0040)	(0.0035)
CSR-Dummy	-0.0012	-0.0026	-0.0033	-0.0044	-0.0017	-0.0032	-0.0041	-0.0049
	(0.0035)	(0.0031)	(0.0035)	(0.0032)	(0.0034)	(0.0031)	(0.0036)	(0.0032)
Uncertainty* CHS-Default Probability* CSR-Dummy	-0.0015	-0.0021	0.0128***	0.0096***	0.0097*	0.0096*	0.0151***	0.0112***
	(0.0044)	(0.0039)	(0.0038)	(0.0036)	(0.0052)	(0.0052)	(0.0038)	(0.0035)
Cash Flow		0.0245***		0.0244***		0.0245***		0.0244***
		(0.0061)		(0.0061)		(0.0061)		(0.0061)
Market-to-Book		0.0276***		0.0275***		0.0276***		0.0275***
		(0.0038)		(0.0038)		(0.0038)		(0.0038)
Leverage		-0.0153		-0.0152		-0.0154		-0.0150
		(0.0215)		(0.0214)		(0.0215)		(0.0214)
Default Spread		0.1712***		0.1687***		0.1713***		0.1673***
		(0.0328)		(0.0325)		(0.0326)		(0.0326)
Recession		-0.1350***		-0.1800***				-0.1784***
		(0.0269)		(0.0360)				(0.0361)
Constant	0.1120***	-0.0627**	0.1520***	-0.1282***	0.1507***	-0.1325***	0.1526***	-0.1259***

	(0.0031)	(0.0275)	(0.0058)	(0.0418)	(0.0057)	(0.0419)	(0.0058)	(0.0420)
Observations	8,053	8,053	8,053	8,053	8,053	8,053	8,053	8,053
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0870	0.188	0.0880	0.188	0.0871	0.188	0.0884	0.188

Table 4-A2: Social capital and risk-shifting

This table presents the OLS regression results of social capital and the risk-shifting. The dependent variable, *Investment Intensity* is estimated by using the ratio of gross capital expenditures in a given year to PP&E at the beginning of the year. As a measure of default probability, I use *Z score-Dummy* based on Altman's (1968) model, which is a dummy variable that equals to one for firms with Z-score below 1.81 at the beginning of the year (classified as firms with higher default probability), and zero otherwise. I estimate *Uncertainty* as the expected market volatility at the beginning of the year by using GARCH (1,1) model (in Panel A), Economic Policy Uncertainty Index (in Panel B), Recession (in Panel C), and Inverted Consumer Sentiment Index (in Panel D). In all specifications, *Uncertainty* is a binary variable that equals one if the uncertainty measurement is in the top tercile in year *t* (classified as high volatility), and zero otherwise. *CSR* is a continuous value in columns (1) and (2). In columns (3) and (4), CSR is a dummy variable that equals one if firms have CSR score in year *t-1*, and zero otherwise. For columns (5) to (12), CSR is a dummy variable that equals one if firms have annual CSR score above mean CSR score (in columns 5 and 6), above median CSR score (in columns 7 and 8), in top quartile (in columns 9 and 10) and in top quantile (in columns 11 and 12) in year *t-1*, and zero otherwise. I report heteroscedasticity robust standard errors in parentheses, which are clustered at the firm level. All firm-level financial control variables are lagged by one year. Firm and year fixed effects are included in all specifications. All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at 1%, 5%, and 10% level, respectively.

Panel A: Expected Market Volatility

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	CSR	CSR	CSR/No CSR	CSR/No CSR	Mean	Mean	Median	Median	Quartile	Quartile	Quantile	Quantile
Expected Market Volatility	0.0243***	0.0142***	0.0220***	0.0121***	0.0390***	0.0217***	0.0379***	0.0210***	0.0331***	0.0095	0.0295***	0.0114
	(0.0043)	(0.0040)	(0.0043)	(0.0040)	(0.0072)	(0.0071)	(0.0070)	(0.0070)	(0.0082)	(0.0075)	(0.0088)	(0.0085)
Z score-Dummy	-0.0625***	-0.0401***	-0.0627***	-0.0402***	-0.0566***	-0.0386***	-0.0572***	-0.0390***	-0.0788***	-0.0478**	-0.0695***	-0.0359**
	(0.0050)	(0.0048)	(0.0050)	(0.0048)	(0.0118)	(0.0111)	(0.0120)	(0.0114)	(0.0219)	(0.0187)	(0.0224)	(0.0171)
CSR	0.0001**	0.0001	-0.0012	-0.0057	0.0029	0.0008	0.0008	-0.0015	0.0118	0.0091	0.0204*	0.0184**

	(0.0001)	(0.0001)	(0.0054)	(0.0052)	(0.0039)	(0.0037)	(0.0038)	(0.0035)	(0.0089)	(0.0076)	(0.0106)	(0.0092)
Expected Market Volatility* Z score-Dummy*												
CSR	0.0003***	0.0002*	0.0161*	0.0102	0.0182**	0.0125	0.0187**	0.0129	0.0429**	0.0265	0.0412	0.0214
	(0.0001)	(0.0001)	(0.0093)	(0.0084)	(0.0092)	(0.0080)	(0.0094)	(0.0081)	(0.0203)	(0.0179)	(0.0266)	(0.0239)
Cash Flow		-0.0028		-0.0028		0.0194		0.0194		-0.0107		-0.0163
		(0.0024)		(0.0024)		(0.0216)		(0.0216)		(0.0202)		(0.0200)
Market-to-Book		0.0234***		0.0235***		0.0300***		0.0300***		0.0345***		0.0324***
		(0.0022)		(0.0022)		(0.0059)		(0.0059)		(0.0074)		(0.0083)
Leverage		-0.0523***		-0.0525***		-0.0236		-0.0239		-0.0509		-0.0501
		(0.0130)		(0.0130)		(0.0341)		(0.0340)		(0.0568)		(0.0658)
Default Spread		0.0206***		0.0203***		0.0268***		0.0268***		0.0353***		0.0280**
		(0.0059)		(0.0059)		(0.0077)		(0.0077)		(0.0118)		(0.0117)
Recession		-0.0399***		-0.0379***		-0.0429***		-0.0424***		-0.0435***		-0.0376***
		(0.0054)		(0.0054)		(0.0082)		(0.0080)		(0.0105)		(0.0114)
Constant	0.1141***	0.0761***	0.1172***	0.0794***	0.0991***	0.0305**	0.1005***	0.0320**	0.0984***	0.0366	0.0959***	0.0447
	(0.0033)	(0.0090)	(0.0034)	(0.0091)	(0.0036)	(0.0154)	(0.0035)	(0.0152)	(0.0064)	(0.0267)	(0.0075)	(0.0308)
Observations	21,546	21,546	21,546	21,546	4,942	4,942	4,942	4,942	2,451	2,451	1,958	1,958
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0579	0.0891	0.0576	0.0891	0.0790	0.162	0.0788	0.162	0.0806	0.166	0.0635	0.137

Panel B: EPU

	(1) CSR	(2) CSR	(3) CSR/No CSR	(4) CSR/No CSR	(5) Mean	(6) Mean	(7) Median	(8) Median	(9) Quartile	(10) Quartile	(11) Quantile	(12) Quantile
EPU	-0.0372***	-0.2807***	-0.0355***	-0.2670***	-0.0333***	-0.2298***	-0.0330***	-0.2285***	-0.0321***	-0.2224***	-0.0319***	-0.1989***
	(0.0040)	(0.0305)	(0.0039)	(0.0303)	(0.0056)	(0.0427)	(0.0056)	(0.0427)	(0.0081)	(0.0606)	(0.0080)	(0.0629)
Z score-Dummy	-0.0644***	-0.0422***	-0.0639***	-0.0416***	-0.0630***	-0.0435***	-0.0634***	-0.0436***	-0.0965***	-0.0637***	-0.0839***	-0.0485**
	(0.0057)	(0.0054)	(0.0057)	(0.0054)	(0.0131)	(0.0122)	(0.0133)	(0.0124)	(0.0248)	(0.0213)	(0.0252)	(0.0196)
CSR	0.0002***	0.0001**	0.0030	-0.0022	0.0011	0.0000	0.0001	-0.0007	0.0068	0.0056	0.0102	0.0112
	(0.0001)	(0.0001)	(0.0059)	(0.0057)	(0.0037)	(0.0033)	(0.0036)	(0.0032)	(0.0108)	(0.0087)	(0.0152)	(0.0117)
EPU* Z score-Dummy* CSR	0.0003**	0.0002	0.0080	0.0018	0.0239**	0.0162*	0.0239**	0.0158*	0.0683***	0.0451**	0.0543*	0.0288
	(0.0001)	(0.0001)	(0.0103)	(0.0095)	(0.0101)	(0.0086)	(0.0101)	(0.0087)	(0.0250)	(0.0219)	(0.0325)	(0.0284)
Cash Flow		-0.0034		-0.0034		0.0154		0.0154		-0.0085		-0.0147
		(0.0025)		(0.0025)		(0.0206)		(0.0206)		(0.0185)		(0.0195)
Market-to-Book		0.0248***		0.0249***		0.0303***		0.0303***		0.0333***		0.0311***
		(0.0023)		(0.0023)		(0.0061)		(0.0061)		(0.0077)		(0.0084)
Leverage		-0.0467***		-0.0470***		-0.0255		-0.0257		-0.0461		-0.0562
		(0.0131)		(0.0130)		(0.0318)		(0.0318)		(0.0577)		(0.0669)
Default Spread		0.5141***		0.4901***		0.4290***		0.4268***		0.4225***		0.3730***
		(0.0562)		(0.0559)		(0.0776)		(0.0776)		(0.1121)		(0.1162)
Recession		-0.3810***		-0.3640***		-0.3111***		-0.3097***		-0.3126***		-0.2747***
		(0.0403)		(0.0401)		(0.0560)		(0.0559)		(0.0813)		(0.0841)
Constant	0.1588***	-0.2689***	0.1599***	-0.2494***	0.1421***	-0.2441***	0.1425***	-0.2421***	0.1435***	-0.2269**	0.1398***	-0.1837*
	(0.0027)	(0.0423)	(0.0028)	(0.0422)	(0.0056)	(0.0607)	(0.0056)	(0.0605)	(0.0074)	(0.0925)	(0.0092)	(0.0981)
Observations	20,980	20,980	20,980	20,980	5,077	5,077	5,077	5,077	2,515	2,515	2,005	2,005

Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0657	0.0987	0.0651	0.0984	0.0906	0.176	0.0905	0.176	0.0999	0.173	0.0779	0.144

Panel C: Recession

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	CSR	CSR	CSR/No CSR	CSR/No CSR	Mean	Mean	Median	Median	Quartile	Quartile	Quantile	Quantile
Recession	-0.0348***	-0.1137***	-0.0341***	-0.1056***	-0.0349***	-0.1152***	-0.0346***	-0.1116***	-0.0269***	-0.0684***	-0.0229**	-0.0824***
	(0.0035)	(0.0124)	(0.0035)	(0.0123)	(0.0069)	(0.0234)	(0.0069)	(0.0228)	(0.0085)	(0.0238)	(0.0098)	(0.0278)
Z score-Dummy	-0.0640***	-0.0409***	-0.0644***	-0.0413***	-0.0535***	-0.0356***	-0.0535***	-0.0357***	-0.0730***	-0.0457***	-0.0719***	-0.0385***
	(0.0041)	(0.0039)	(0.0041)	(0.0039)	(0.0087)	(0.0083)	(0.0087)	(0.0084)	(0.0169)	(0.0143)	(0.0185)	(0.0144)
CSR-Dummy	0.0001**	0.0000	0.0006	-0.0050	0.0001	-0.0007	-0.0024	-0.0032	0.0035	0.0065	-0.0018	0.0049
	(0.0001)	(0.0001)	(0.0043)	(0.0040)	(0.0034)	(0.0032)	(0.0033)	(0.0031)	(0.0095)	(0.0074)	(0.0152)	(0.0110)
Recession* Z score-Dummy* CSR	0.0005***	0.0003***	0.0304***	0.0243***	0.0164*	0.0108	0.0172*	0.0116	0.0262	0.0221	0.0156	0.0119
	(0.0001)	(0.0001)	(0.0092)	(0.0089)	(0.0091)	(0.0082)	(0.0091)	(0.0083)	(0.0271)	(0.0252)	(0.0441)	(0.0414)
Cash Flow		-0.0030*		-0.0030*		0.0278		0.0279		-0.0035		-0.0082
		(0.0018)		(0.0018)		(0.0179)		(0.0179)		(0.0177)		(0.0183)
Market-to-Book		0.0253***		0.0254***		0.0275***		0.0275***		0.0338***		0.0366***
		(0.0018)		(0.0018)		(0.0050)		(0.0050)		(0.0064)		(0.0076)
Leverage		-0.0427***		-0.0427***		-0.0205		-0.0207		-0.0444		-0.0490
		(0.0108)		(0.0108)		(0.0254)		(0.0254)		(0.0422)		(0.0467)
Default Spread		0.1722***		0.1577***		0.1805***		0.1738***		0.1132***		0.1444***

		(0.0199)		(0.0199)		(0.0357)		(0.0345)		(0.0381)		(0.0447)
Constant	0.1403***	-0.1110***	0.1409***	-0.0912***	0.1414***	-0.1473***	0.1423***	-0.1376***	0.1372***	-0.0579	0.1413***	-0.0969
	(0.0026)	(0.0253)	(0.0026)	(0.0255)	(0.0063)	(0.0457)	(0.0064)	(0.0440)	(0.0074)	(0.0545)	(0.0096)	(0.0642)
Observations	30,093	30,093	30,093	30,093	7,146	7,146	7,146	7,146	3,536	3,536	2,818	2,818
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0551	0.0935	0.0551	0.0936	0.0792	0.172	0.0794	0.172	0.0824	0.180	0.0711	0.173

Panel D: CSI

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	CSR	CSR	CSR/No CSR	CSR/No CSR	Mean	Mean	Median	Median	Quartile	Quartile	Quantile	Quantile
CSI	-0.0186***	-0.1751***	-0.0175***	-0.1652***	-0.0144***	-0.1253***	-0.0139***	-0.1176***	-0.0069	-0.0501	-0.0118	-0.0648
	(0.0038)	(0.0250)	(0.0036)	(0.0241)	(0.0051)	(0.0332)	(0.0051)	(0.0325)	(0.0074)	(0.0461)	(0.0084)	(0.0549)
Z score-Dummy	-0.0621***	-0.0426***	-0.0622***	-0.0428***	-0.0509***	-0.0354***	-0.0512***	-0.0355***	-0.0593***	-0.0321*	-0.0596***	-0.0291*
	(0.0049)	(0.0051)	(0.0050)	(0.0051)	(0.0084)	(0.0083)	(0.0085)	(0.0084)	(0.0179)	(0.0164)	(0.0192)	(0.0174)
CSR-Dummy	0.0002***	0.0001	0.0062	0.0003	-0.0021	-0.0027	-0.0048	-0.0053	-0.0015	0.0066	-0.0195	-0.0053
	(0.0001)	(0.0001)	(0.0045)	(0.0043)	(0.0036)	(0.0037)	(0.0036)	(0.0035)	(0.0141)	(0.0107)	(0.0240)	(0.0172)
CSI* Z score-Dummy* CSR	0.0003***	0.0002**	0.0175**	0.0124	0.0147*	0.0108	0.0150*	0.0107	0.0469**	0.0277	0.0446*	0.0226
	(0.0001)	(0.0001)	(0.0084)	(0.0077)	(0.0078)	(0.0073)	(0.0078)	(0.0073)	(0.0186)	(0.0175)	(0.0228)	(0.0213)
Cash Flow		-0.0034		-0.0034		0.0330		0.0330		-0.0031		-0.0092
		(0.0023)		(0.0023)		(0.0203)		(0.0203)		(0.0170)		(0.0205)
Market-to-Book		0.0231***		0.0231***		0.0212***		0.0212***		0.0305***		0.0310***
		(0.0023)		(0.0023)		(0.0052)		(0.0052)		(0.0077)		(0.0087)
Leverage		-0.0278**		-0.0277**		-0.0142		-0.0143		-0.0180		-0.0222

		(0.0122)		(0.0122)		(0.0310)		(0.0310)		(0.0536)		(0.0592)
Recession		2.1616***		2.0483***		1.5538***		1.4588***		0.7513		0.9063
		(0.2924)		(0.2850)		(0.3904)		(0.3811)		(0.5527)		(0.6633)
Default Spread		-2.2738***		-2.1557***		-1.6309***		-1.5318***		-0.8005		-0.9567
		(0.3053)		(0.2976)		(0.4083)		(0.3985)		(0.5785)		(0.6949)
Constant	0.1471***	2.6110***	0.1471***	2.4813***	0.1369***	1.8770***	0.1378***	1.7690***	0.1337***	0.9564	0.1442***	1.1367
	(0.0025)	(0.3369)	(0.0026)	(0.3282)	(0.0045)	(0.4487)	(0.0046)	(0.4379)	(0.0068)	(0.6303)	(0.0113)	(0.7565)
Observations	19,025	19,025	19,025	19,025	4,866	4,866	4,866	4,866	2,398	2,398	1,909	1,909
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0577	0.0911	0.0574	0.0910	0.0696	0.146	0.0700	0.146	0.0588	0.126	0.0544	0.120

Table 4-A3: Social capital and risk-shifting

This table reports the OLS estimates of social capital and risk-shifting. The dependent variable, *Investment Intensity* is estimated by using the ratio of gross capital expenditures in a given year to PP&E at the beginning of the year. As a measure of default probability, I use *CHS-Default Probability based on* Campbell et al.'s (2008) CHS- score. *CHS-Default Probability* is also a dummy variable that equals to one if the CHS-score associated default probability is in the top tercile in year *t-1* (classified as firms with higher default probability), and zero otherwise. I estimate *Uncertainty* as the expected market volatility at the beginning of the year by using GARCH (1,1) model (in Panel A), Economic Policy Uncertainty Index (in Panel B), Recession (in Panel C), and Inverted Consumer Sentiment Index (in Panel D). In all specifications, *Uncertainty* is a binary variable that equals one if the uncertainty measurement is in the top tercile in year *t* (classified as high volatility), and zero otherwise. *CSR* is a continuous value in columns (1) and (2). In columns (3) and (4), CSR is a dummy variable that equals one if firms have CSR score in year *t-1*, and zero otherwise. For columns (5) to (12), CSR is a dummy variable that equals one if firms have annual CSR score above mean CSR score (in columns 5 and 6), above median CSR score (in columns 7 and 8), in top quartile (in columns 9 and 10) and in top quantile (in columns 11 and 12) in year *t-1*, and zero otherwise. I report heteroscedasticity robust standard errors in parentheses, which are clustered at the firm level. All firm-level financial control variables are lagged by one year. Firm and year fixed effects are included in all specifications. All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at 1%, 5%, and 10% level, respectively.

Panel A: Expected Market Volatility

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	CSR	CSR	CSR/No CSR	CSR/No CSR	Mean	Mean	Median	Median	Quartile	Quartile	Quantile	Quantile
Expected Market Volatility	0.0193***	0.0100**	0.0170***	0.0077	0.0380***	0.0216***	0.0378***	0.0216***	0.0373***	0.0170**	0.0338***	0.0156
	(0.0051)	(0.0050)	(0.0050)	(0.0050)	(0.0071)	(0.0073)	(0.0071)	(0.0073)	(0.0097)	(0.0082)	(0.0105)	(0.0098)
CHS-Default Probability	-0.0712***	-0.0620***	-0.0713***	-0.0620***	-0.0657***	-0.0386***	-0.0670***	-0.0395***	-0.0847***	-0.0576***	-0.0923***	-0.0677***
	(0.0040)	(0.0042)	(0.0041)	(0.0042)	(0.0089)	(0.0082)	(0.0090)	(0.0083)	(0.0182)	(0.0171)	(0.0249)	(0.0250)

CSR	0.0000	0.0000	-0.0111	-0.0143**	-0.0023	-0.0040	-0.0041	-0.0054	0.0187	0.0108	0.0059	0.0003
	(0.0001)	(0.0001)	(0.0071)	(0.0069)	(0.0049)	(0.0043)	(0.0049)	(0.0045)	(0.0142)	(0.0104)	(0.0155)	(0.0130)
Expected Market Volatility*CHS - Default Probability*												
CSR	0.0004***	0.0004***	0.0176***	0.0149**	0.0254***	0.0191***	0.0283***	0.0208***	0.0326***	0.0203*	0.0440**	0.0301*
	(0.0001)	(0.0001)	(0.0060)	(0.0062)	(0.0071)	(0.0065)	(0.0071)	(0.0065)	(0.0124)	(0.0119)	(0.0179)	(0.0165)
Cash Flow		-0.0040**		-0.0040**		0.0268***		0.0267***		0.0158***		0.0112*
		(0.0018)		(0.0018)		(0.0053)		(0.0053)		(0.0058)		(0.0062)
Market-to-Book		0.0209***		0.0210***		0.0228***		0.0228***		0.0215***		0.0227***
		(0.0020)		(0.0020)		(0.0030)		(0.0030)		(0.0044)		(0.0047)
Leverage		-0.0501***		-0.0499***		0.0004		0.0004		-0.0570		-0.0205
		(0.0150)		(0.0150)		(0.0291)		(0.0290)		(0.0463)		(0.0546)
Default Spread		0.0213***		0.0213***		0.0217***		0.0219***		0.0199**		0.0227**
		(0.0078)		(0.0078)		(0.0064)		(0.0064)		(0.0095)		(0.0107)
Recession		-0.0388***		-0.0367***		-0.0372***		-0.0377***		-0.0358***		-0.0346***
		(0.0068)		(0.0067)		(0.0083)		(0.0082)		(0.0105)		(0.0120)
Constant	0.1448***	0.1002***	0.1484***	0.1038***	0.1162***	0.0409***	0.1173***	0.0417***	0.1108***	0.0618***	0.1192***	0.0592**
	(0.0042)	(0.0103)	(0.0043)	(0.0103)	(0.0042)	(0.0135)	(0.0041)	(0.0135)	(0.0097)	(0.0221)	(0.0106)	(0.0262)
Observations	18,678	18,678	18,678	18,678	3,690	3,690	3,690	3,690	1,871	1,871	1,495	1,495
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0686	0.101	0.0686	0.101	0.122	0.209	0.123	0.209	0.131	0.190	0.129	0.182

Panel B: EPU

	(1) CSR	(2) CSR	(3) CSR/No CSR	(4) CSR/No CSR	(5) Mean	(6) Mean	(7) Median	(8) Median	(9) Quartile	(10) Quartile	(11) Quantile	(12) Quantile
EPU	-0.0443***	-0.3049***	-0.0425***	-0.2898***	-0.0442***	-0.2902***	-0.0443***	-0.2916***	-0.0383***	-0.2515***	-0.0326***	-0.2354***
	(0.0051)	(0.0366)	(0.0051)	(0.0362)	(0.0071)	(0.0471)	(0.0071)	(0.0471)	(0.0096)	(0.0684)	(0.0090)	(0.0672)
CHS-Default Probability	-0.0688***	-0.0604***	-0.0687***	-0.0602***	-0.0666***	-0.0403***	-0.0676***	-0.0408***	-0.0901***	-0.0663***	-0.0945***	-0.0728***
	(0.0044)	(0.0046)	(0.0044)	(0.0046)	(0.0092)	(0.0083)	(0.0093)	(0.0084)	(0.0194)	(0.0179)	(0.0250)	(0.0242)
CSR	0.0002**	0.0001	-0.0036	-0.0092	-0.0018	-0.0025	-0.0017	-0.0018	0.0120	0.0068	-0.0046	-0.0091
	(0.0001)	(0.0001)	(0.0075)	(0.0072)	(0.0045)	(0.0040)	(0.0046)	(0.0041)	(0.0181)	(0.0133)	(0.0200)	(0.0175)
EPU*CHS - Default Probability* CSR	0.0003***	0.0003***	0.0126*	0.0110	0.0255***	0.0193***	0.0276***	0.0201***	0.0450**	0.0322*	0.0308	0.0169
	(0.0001)	(0.0001)	(0.0075)	(0.0074)	(0.0077)	(0.0072)	(0.0077)	(0.0072)	(0.0199)	(0.0191)	(0.0339)	(0.0323)
Cash Flow		-0.0044**		-0.0043**		0.0254***		0.0253***		0.0113**		0.0068
		(0.0019)		(0.0019)		(0.0049)		(0.0049)		(0.0056)		(0.0057)
Market-to-Book		0.0225***		0.0227***		0.0215***		0.0215***		0.0207***		0.0235***
		(0.0022)		(0.0022)		(0.0029)		(0.0029)		(0.0044)		(0.0047)
Leverage		-0.0493***		-0.0491***		-0.0148		-0.0145		-0.0620		-0.0264
		(0.0153)		(0.0153)		(0.0260)		(0.0260)		(0.0457)		(0.0529)
Default Spread		0.5548***		0.5283***		0.5270***		0.5296***		0.4585***		0.4334***
		(0.0671)		(0.0665)		(0.0842)		(0.0842)		(0.1228)		(0.1221)
Recession		-0.4109***		-0.3920***		-0.3785***		-0.3806***		-0.3343***		-0.3151***
		(0.0482)		(0.0477)		(0.0605)		(0.0605)		(0.0888)		(0.0888)

Constant	0.1929***	-0.2738***	0.1947***	-0.2517***	0.1660***	-0.3020***	0.1661***	-0.3041***	0.1590***	-0.2325**	0.1638***	-0.2154**
	(0.0039)	(0.0499)	(0.0040)	(0.0494)	(0.0068)	(0.0630)	(0.0069)	(0.0630)	(0.0109)	(0.0952)	(0.0139)	(0.0980)
Observations	18,285	18,285	18,285	18,285	3,798	3,798	3,798	3,798	1,922	1,922	1,542	1,542
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0674	0.101	0.0670	0.101	0.129	0.209	0.130	0.210	0.142	0.190	0.143	0.194

Panel C: Recession

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	CSR	CSR	CSR/No CSR	CSR/No CSR	Mean	Mean	Median	Median	Quartile	Quartile	Quantile	Quantile
Recession	-0.0334***	-0.1112***	-0.0328***	-0.1037***	-0.0377***	-0.1086***	-0.0379***	-0.1078***	-0.0374***	-0.0707**	-0.0325***	-0.0606*
	(0.0041)	(0.0145)	(0.0041)	(0.0144)	(0.0074)	(0.0252)	(0.0074)	(0.0249)	(0.0092)	(0.0293)	(0.0105)	(0.0351)
CHS-Default Probability	-0.0701***	-0.0597***	-0.0702***	-0.0598***	-0.0663***	-0.0402***	-0.0665***	-0.0404***	-0.0777***	-0.0538***	-0.0874***	-0.0641***
	(0.0034)	(0.0035)	(0.0034)	(0.0035)	(0.0070)	(0.0062)	(0.0071)	(0.0062)	(0.0133)	(0.0120)	(0.0179)	(0.0170)
CSR	0.0000	-0.0000	-0.0038	-0.0103**	-0.0041	-0.0053	-0.0059	-0.0071*	0.0161*	0.0140*	0.0084	0.0054
	(0.0001)	(0.0001)	(0.0051)	(0.0048)	(0.0041)	(0.0038)	(0.0041)	(0.0038)	(0.0097)	(0.0073)	(0.0116)	(0.0091)
Recession*CHS - Default Probability* CSR	0.0004***	0.0003***	0.0179***	0.0159**	0.0270***	0.0295***	0.0273***	0.0294***	0.0178	0.0088	0.0357*	0.0239
	(0.0001)	(0.0001)	(0.0067)	(0.0071)	(0.0086)	(0.0098)	(0.0085)	(0.0097)	(0.0140)	(0.0123)	(0.0202)	(0.0172)
Cash Flow		-0.0044***		-0.0044***		0.0292***		0.0292***		0.0168***		0.0120**
		(0.0015)		(0.0015)		(0.0050)		(0.0050)		(0.0050)		(0.0050)

Market-to-Book		0.0232***		0.0233***		0.0201***		0.0201***		0.0210***		0.0220***
		(0.0017)		(0.0017)		(0.0025)		(0.0025)		(0.0038)		(0.0044)
Leverage		-0.0492***		-0.0493***		-0.0104		-0.0104		-0.0610*		-0.0426
		(0.0116)		(0.0116)		(0.0224)		(0.0224)		(0.0330)		(0.0387)
Default Spread		0.1686***		0.1554***		0.1652***		0.1629***		0.0966**		0.0841
		(0.0235)		(0.0235)		(0.0386)		(0.0379)		(0.0475)		(0.0573)
Constant	0.1639***	-0.0871***	0.1645***	-0.0689**	0.1566***	-0.1163**	0.1577***	-0.1121**	0.1508***	-0.0187	0.1554***	0.0011
	(0.0033)	(0.0297)	(0.0033)	(0.0297)	(0.0069)	(0.0482)	(0.0072)	(0.0471)	(0.0085)	(0.0642)	(0.0105)	(0.0772)
Observations	26,070	26,070	26,070	26,070	5,311	5,311	5,311	5,311	2,702	2,702	2,176	2,176
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0618	0.101	0.0618	0.102	0.121	0.205	0.122	0.206	0.125	0.189	0.128	0.186

Panel D: CSI

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	CSR	CSR	CSR/No CSR	CSR/No CSR	Mean	Mean	Median	Median	Quartile	Quartile	Quantile	Quantile
CSI	-0.0215***	-0.2095***	-0.0207***	-0.1993***	-0.0129*	-0.1263***	-0.0135*	-0.1236***	-0.0162*	-0.0567	-0.0085	0.0059
	(0.0051)	(0.0319)	(0.0049)	(0.0314)	(0.0073)	(0.0424)	(0.0071)	(0.0411)	(0.0093)	(0.0612)	(0.0086)	(0.0650)
CHS-Default Probability	-0.0588***	-0.0510***	-0.0585***	-0.0508***	-0.0748***	-0.0497***	-0.0762***	-0.0507***	-0.0799***	-0.0583***	-0.0883***	-0.0680***
	(0.0042)	(0.0047)	(0.0043)	(0.0047)	(0.0097)	(0.0082)	(0.0098)	(0.0083)	(0.0180)	(0.0167)	(0.0237)	(0.0222)
CSR	0.0001	0.0000	0.0054	-0.0032	-0.0071	-0.0084	-0.0094*	-0.0108**	0.0163	0.0168	-0.0038	-0.0041
	(0.0001)	(0.0001)	(0.0057)	(0.0054)	(0.0054)	(0.0051)	(0.0055)	(0.0053)	(0.0131)	(0.0104)	(0.0159)	(0.0136)

CSI*CHS - Default Probability* CSR	0.0003***	0.0002***	0.0086	0.0067	0.0349***	0.0300***	0.0381***	0.0319***	0.0559***	0.0404***	0.0552***	0.0409**
	(0.0001)	(0.0001)	(0.0072)	(0.0073)	(0.0086)	(0.0077)	(0.0086)	(0.0077)	(0.0168)	(0.0153)	(0.0200)	(0.0183)
Cash Flow		-0.0048***		-0.0048***		0.0298***		0.0298***		0.0177***		0.0170**
		(0.0018)		(0.0018)		(0.0066)		(0.0066)		(0.0068)		(0.0071)
Market-to-Book		0.0222***		0.0223***		0.0169***		0.0168***		0.0204***		0.0203***
		(0.0022)		(0.0022)		(0.0026)		(0.0026)		(0.0033)		(0.0036)
Leverage		-0.0372***		-0.0371***		-0.0119		-0.0120		-0.0459		-0.0357
		(0.0139)		(0.0139)		(0.0262)		(0.0262)		(0.0427)		(0.0464)
Default Spread		-2.7526***		-2.6313***		-1.7292***		-1.6833***		-0.7895		-0.0485
		(0.3859)		(0.3822)		(0.5089)		(0.4928)		(0.7544)		(0.8213)
Recession		2.6161***		2.4998***		1.6401***		1.5961***		0.7392		0.0309
		(0.3696)		(0.3660)		(0.4876)		(0.4722)		(0.7227)		(0.7863)
Constant	0.1755***	3.1574***	0.1753***	3.0243***	0.1624***	2.0032***	0.1640***	1.9547***	0.1531***	0.9675	0.1558***	0.1568
	(0.0037)	(0.4267)	(0.0038)	(0.4225)	(0.0061)	(0.5597)	(0.0064)	(0.5421)	(0.0077)	(0.8269)	(0.0094)	(0.8970)
Observations	16,509	16,509	16,509	16,509	3,603	3,603	3,603	3,603	1,841	1,841	1,485	1,485
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0552	0.0937	0.0550	0.0935	0.123	0.206	0.125	0.207	0.122	0.183	0.130	0.187

Table 4-A4: Social capital and risk-shifting (difference-in-difference)

This table reports the difference-in-difference estimates of the social capital and risk-shifting. The dependent variable, *Investment Intensity* is estimated by using the ratio of gross capital expenditures in a given year to PP&E at the beginning of the year. I measure CSR by using overall ESG score in Panel A and Environmental score in Panel B. As a measure of default probability, I use *Z score-Dummy* based on Altman's (1968) model (columns 1 and 2) and *CHS-Default Probability based on* Campbell et al.'s (2008) CHS- score (columns 3 and 4). *Z score-Dummy* is a dummy variable that equals to one for firms with Z-score below 1.81 at the beginning of the year (classified as firms with higher default probability), and zero otherwise. *CHS-Default Probability* is also a dummy variable that equals to one if the CHS-score associated default probability is above the median value in year *t-1* (classified as firms with higher default probability), and zero otherwise. Here, I use the BP oil spill event as a source of uncertainty and an exogenous shock to firms' CSR performance. *CSR Disaster* is a dummy variable that equals one for the firms of the treated industries which are exposed to the BP oil spill in the years of the disaster and afterwards. I consider Oil and Gas Extraction industries (SIC=13) and Petroleum Refining and Related Industries (SIC=29) as the treatment industry. *CSR* is a binary variable that equals one for those firms with annual CSR score above the median CSR score in year *t-1*, and zero otherwise. I report heteroscedasticity robust standard errors in parentheses, which are clustered at the firm level. All firm-level financial control variables are lagged by one year. Firm and year fixed effects are included in all specifications. All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at 1%, 5%, and 10% level, respectively.

Panel A: Overall CSR Score

	(1)	(2)	(3)	(4)
	SIC=13 & SIC=29			
	Investment Intensity	Investment Intensity	Investment Intensity	Investment Intensity
CSR Disaster	-0.0287	-0.0248	-0.0344*	-0.0297
	(0.0185)	(0.0183)	(0.0193)	(0.0189)
CSR	-0.0040	-0.0061	-0.0079*	-0.0091**
	(0.0037)	(0.0039)	(0.0046)	(0.0046)
Z score-Dummy	-0.0557***	-0.0389***		
	(0.0165)	(0.0124)		
CSR Disaster* Z score-Dummy *CSR	0.0394***	0.0297**		
	(0.0125)	(0.0122)		
CHS- Default Probability			-0.0335***	-0.0261***
			(0.0069)	(0.0064)

CSR Disaster* CHS-Default Probability *CSR			0.0131	0.0107
			(0.0187)	(0.0184)
Cash Flow		0.0273*		0.0092
		(0.0140)		(0.0060)
Market-to-Book		0.0173***		0.0181***
		(0.0053)		(0.0039)
Leverage		-0.0942*		-0.0773
		(0.0538)		(0.0513)
Default Spread		-0.0229**		-0.0445***
		(0.0114)		(0.0140)
Recession		0.0134		0.0288**
		(0.0095)		(0.0114)
Constant	0.1129***	0.1297***	0.1221***	0.1672***
	(0.0043)	(0.0204)	(0.0048)	(0.0207)
Observations	2,348	2,348	2,649	2,649
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Adj R-squared	0.0355	0.0762	0.0426	0.0732

Panel B: Environmental Score

	(1)	(2)	(3)	(4)
		SIC=13 & SIC=29		
	Investment Intensity	Investment Intensity	Investment Intensity	Investment Intensity
CSR Disaster	-0.0287	-0.0250	-0.0343*	-0.0297
	(0.0185)	(0.0183)	(0.0194)	(0.0190)
CSR	-0.0084	-0.0063	-0.0070	-0.0046
	(0.0071)	(0.0071)	(0.0066)	(0.0068)
Z score-Dummy	-0.0553***	-0.0390***		
	(0.0165)	(0.0124)		
CSR Disaster* Z score-Dummy *CSR	0.0438***	0.0302**		
	(0.0141)	(0.0140)		
CHS- Default Probability			-0.0329***	-0.0257***
			(0.0068)	(0.0063)
CSR Disaster* CHS-Default Probability *CSR			0.0104	0.0074

			(0.0199)	(0.0203)
Cash Flow		0.0267*		0.0088
		(0.0136)		(0.0058)
Market-to-Book		0.0173***		0.0180***
		(0.0053)		(0.0039)
Leverage		-0.0922*		-0.0756
		(0.0542)		(0.0517)
Default Spread		-0.0232**		-0.0446***
		(0.0114)		(0.0140)
Recession		0.0137		0.0290**
		(0.0095)		(0.0115)
Constant	0.1151***	0.1299***	0.1214***	0.1647***
	(0.0056)	(0.0198)	(0.0056)	(0.0194)
Observations	2,348	2,348	2,649	2,649
Firm FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Adj R-squared	0.0364	0.0761	0.0422	0.0722

Table 4-A5: CSR investment of firms with higher default probability during uncertainty

This table reports the OLS estimates of the CSR investment-volatility sensitivity of the firms with higher default probability. The dependent variable, *CSR Investment* is estimated by the change in CSR score from year *t-1* to year *t*. As a measure of default probability, I use *Z score-Dummy* based on Altman's (1968) model (Panel A) and *CHS-Default Probability based on* Campbell et al.'s (2008) CHS- score (Panel B). *Z score-Dummy* is a dummy variable that equals to one for firms with Z-score below 1.81 at the beginning of the year (classified as firms with higher default probability), and zero otherwise. *CHS-Default Probability* is also a dummy variable that equals to one if the CHS-score associated default probability is in the top tercile in year *t-1* (classified as firms with higher default probability), and zero otherwise. I estimate *Uncertainty* as the expected market volatility at the beginning of the year by using GARCH (1,1) model (in columns 1 and 2), Economic Policy Uncertainty Index (in columns 3 and 4), Recession (in columns 5 and 6), and Inverted Consumer Sentiment Index (in columns 7 and 8). In all specifications, *Uncertainty* is a binary variable that equals one if the uncertainty measurement is in the top tercile in year *t* (classified as high volatility), and zero otherwise. I report heteroscedasticity robust standard errors in parentheses, which are clustered at the firm level. All firm-level financial control variables are lagged by one year. Industry and year fixed effects are included in all specifications. All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at 1%, 5%, and 10% level, respectively.

Panel A: Z score-Dummy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Expected Market Volatility	Expected Market Volatility	EPU	EPU	Recession	Recession	CSI	CSI
Uncertainty	-4.1880***	-4.1332***	-1.7379***	-1.7629***	0.7716***	0.7975***	-5.9607***	-5.9308***
	(0.2943)	(0.2963)	(0.3406)	(0.3449)	(0.2956)	(0.2967)	(0.3553)	(0.3616)
Z score-Dummy	-0.5805**	-0.7762***	-0.5060	-0.6565*	-0.4097**	-0.3875**	-1.4589***	-1.4027***
	(0.2493)	(0.2751)	(0.3099)	(0.3413)	(0.1686)	(0.1904)	(0.3401)	(0.3701)
Uncertainty * Z score-Dummy	0.5150*	0.5464**	0.7425**	0.7535**	0.5690	0.5726	1.8055***	1.7936***

	(0.2743)	(0.2749)	(0.3539)	(0.3555)	(0.3816)	(0.3813)	(0.3725)	(0.3737)
Cash Flow		-0.0047		-0.0184		0.0036		0.0030
		(0.0188)		(0.0208)		(0.0174)		(0.0282)
Market-to-Book		0.0146		0.0379		0.0948*		0.0807
		(0.0616)		(0.0715)		(0.0505)		(0.0783)
Leverage		1.1783**		0.9373		0.2221		-0.1775
		(0.5237)		(0.5892)		(0.4428)		(0.6430)
Investment		-0.4932		-0.9393***		-0.2939		-0.7790*
		(0.3485)		(0.3355)		(0.2544)		(0.4208)
Constant	4.4855***	4.2751***	1.7707***	1.6894***	0.6131***	0.4938***	4.0950***	4.0950***
	(0.2367)	(0.2721)	(0.2594)	(0.3204)	(0.1251)	(0.1614)	(0.2496)	(0.3133)
Observations	21,876	21,876	21,311	21,311	30,547	30,547	19,294	19,294
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0241	0.0241	0.0236	0.0236	0.0346	0.0346	0.0392	0.0391

Panel B: CHS - Default Probability

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Expected Market Volatility	Expected Market Volatility	EPU	EPU	Recession	Recession	CSI	CSI
Uncertainty	-4.0333***	-3.9821***	-1.7146***	-1.7415***	1.6974***	1.7095***	-6.2300***	-6.1978***
	(0.3364)	(0.3384)	(0.3828)	(0.3875)	(0.3706)	(0.3705)	(0.4294)	(0.4361)

CHS-Default Probability	-0.3524*	-0.4453**	-0.5568**	-0.6270***	0.1797	0.1910	-1.7227***	-1.6831***
	(0.1933)	(0.1958)	(0.2175)	(0.2203)	(0.1548)	(0.1593)	(0.3017)	(0.3105)
Uncertainty * CHS-Default Probability	1.1191***	1.1239***	1.8091***	1.7994***	-1.0998***	-1.0907***	2.9879***	2.9828***
	(0.2568)	(0.2565)	(0.3080)	(0.3071)	(0.3549)	(0.3549)	(0.3491)	(0.3491)
Cash Flow		-0.0134		-0.0217		0.0043		0.0077
		(0.0152)		(0.0157)		(0.0119)		(0.0180)
Market-to-Book		0.0077		0.0104		0.0428		0.0527
		(0.0453)		(0.0534)		(0.0412)		(0.0695)
Leverage		0.7795		0.4404		-0.0648		-0.6002
		(0.5263)		(0.5932)		(0.4696)		(0.7264)
Investment		-0.8019**		-0.9227***		-0.3167		-0.7267**
		(0.3186)		(0.2989)		(0.2566)		(0.3706)
Constant	3.7644***	3.7354***	1.2966***	1.3829***	0.2262	0.2209	4.2345***	4.3067***
	(0.2621)	(0.2973)	(0.2814)	(0.3472)	(0.1446)	(0.1777)	(0.3127)	(0.3786)
Observations	19,002	19,002	18,614	18,614	26,512	26,512	16,771	16,771
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0215	0.0216	0.0213	0.0214	0.0295	0.0294	0.0379	0.0378

Table 4-A6: CSR investment of firms with higher default probability during uncertainty (uncertainty as a continuous variable)

This table reports the OLS estimates of the CSR investment-volatility sensitivity of the firms with higher default probability. The dependent variable, *CSR Investment* is estimated by the change in CSR score from year *t-1* to year *t*. As a measure of default probability, I use *Z score-Dummy* based on Altman's (1968) model (Panel A) and *CHS-Default Probability based on* Campbell et al.'s (2008) CHS- score (Panel B). *Z score-Dummy* is a dummy variable that equals to one for firms with Z-score below 1.81 at the beginning of the year (classified as firms with higher default probability), and zero otherwise. *CHS-Default Probability* is also a dummy variable that equals to one if the CHS-score associated default probability is in the top tercile in year *t-1* (classified as firms with higher default probability), and zero otherwise. I estimate *Uncertainty* as the expected market volatility at the beginning of the year by using GARCH (1,1) model (in columns 1 and 2), Economic Policy Uncertainty Index (in columns 3 and 4) and Inverted Consumer Sentiment Index (in columns 5 and 6). Here, *Uncertainty* is a continuous variable. I report heteroscedasticity robust standard errors in parentheses, which are clustered at the firm level. All firm-level financial control variables are lagged by one year. Industry and year fixed effects are included in all specifications. All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at 1%, 5%, and 10% level, respectively.

Panel A: Z score-Dummy

	(1) Expected Market Volatility	(2) Expected Market Volatility	(3) EPU	(4) EPU	(5) CSI	(6) CSI
Uncertainty	-35.7440***	-35.7913***	1.8088***	1.8112***	-113.1498***	-113.2982***
	(1.4721)	(1.4744)	(0.0748)	(0.0749)	(4.6593)	(4.6652)
Z score-Dummy	-1.1778***	-1.1536***	-1.8015***	-1.7624***	-3.4450***	-3.4050***
	(0.1732)	(0.1738)	(0.4408)	(0.4430)	(0.8677)	(0.8693)
Uncertainty * Z score-Dummy	1.7785***	1.7714***	0.0087**	0.0086**	2.1173***	2.1028***
	(0.6419)	(0.6417)	(0.0036)	(0.0036)	(0.6982)	(0.6985)

Cash Flow		-0.0165		-0.0147		-0.0164
		(0.0145)		(0.0146)		(0.0145)
Market-to-Book		0.0323		0.0339		0.0332
		(0.0420)		(0.0420)		(0.0420)
Leverage		-0.4760		-0.4523		-0.4594
		(0.4161)		(0.4167)		(0.4164)
Investment		-0.0401		-0.0469		-0.0510
		(0.2168)		(0.2167)		(0.2167)
Constant	11.1462***	11.1732***	-191.0312***	-191.2738***	128.7193***	128.8994***
	(0.6793)	(0.6797)	(7.9476)	(7.9598)	(5.2944)	(5.2999)
Observations	29,048	29,048	29,048	29,048	29,048	29,048
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0383	0.0382	0.0382	0.0381	0.0383	0.0382

Panel B: CHS - Default Probability

	(1)	(2)	(3)	(4)	(5)	(6)
	Expected Market Volatility	Expected Market Volatility	EPU	EPU	CSI	CSI
Uncertainty	-29.0786***	-29.2344***	1.4388***	1.4463***	-91.0687***	-91.5415***
	(1.4930)	(1.4902)	(0.0739)	(0.0737)	(4.6114)	(4.5994)

CHS-Default Probability	-1.4933***	-1.4931***	-3.3283***	-3.3177***	-3.9051***	-3.9118***
	(0.1522)	(0.1522)	(0.3534)	(0.3532)	(0.8190)	(0.8194)
Uncertainty * CHS-Default Probability	1.6488**	1.6647**	0.0190***	0.0189***	2.1905***	2.1976***
	(0.6470)	(0.6482)	(0.0029)	(0.0029)	(0.6595)	(0.6596)
Cash Flow		-0.0232**		-0.0220**		-0.0227**
		(0.0100)		(0.0099)		(0.0100)
Market-to-Book		0.0069		0.0020		0.0084
		(0.0301)		(0.0301)		(0.0302)
Leverage		-0.7395*		-0.6447		-0.7082*
		(0.4120)		(0.4103)		(0.4098)
Investment		-0.2445		-0.2623		-0.2662
		(0.1866)		(0.1868)		(0.1868)
Constant	9.4105***	9.4510***	-151.5364***	-152.3333***	104.0585***	104.5882***
	(0.5302)	(0.5325)	(7.8366)	(7.8146)	(5.2290)	(5.2154)
Observations	25,098	25,098	25,098	25,098	25,098	25,098
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0355	0.0354	0.0365	0.0364	0.0356	0.0356

Table 4-A7: CSR investment of firms with higher default probability during uncertainty

This table reports the OLS estimates of the CSR investment-volatility sensitivity of the firms with higher default probability. The dependent variable, *CSR Investment* is estimated by the change in CSR score from year *t-1* to year *t*. As a measure of default probability, I use *Z score-Dummy* based on Altman's (1968) model (Panel A) and *CHS-Default Probability based on* Campbell et al.'s (2008) CHS- score (Panel B). *Z score-Dummy* is a dummy variable that equals to one for firms with Z-score below 1.81 at the beginning of the year (classified as firms with higher default probability), and zero otherwise. *CHS-Default Probability* is also a dummy variable that equals to one if the CHS-score associated default probability is above the median value in year *t-1* (classified as firms with higher default probability), and zero otherwise. I estimate *Uncertainty* as the expected market volatility at the beginning of the year by using GARCH (1,1) model (in columns 1 and 2), Economic Policy Uncertainty Index (in columns 3 and 4) and Inverted Consumer Sentiment Index (in columns 5 and 6). In all specifications, *Uncertainty* is a binary variable that equals one if the uncertainty measurement is above the median value in year *t* (classified as high volatility), and zero otherwise. I report heteroscedasticity robust standard errors in parentheses, which are clustered at the firm level. All firm-level financial control variables are lagged by one year. Industry and year fixed effects are included in all specifications. All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at 1%, 5%, and 10% level, respectively.

Panel A: Z score-Dummy

	(1)	(2)	(3)	(4)	(5)	(6)
	Expected Market Volatility	Expected Market Volatility	EPU	EPU	CSI	CSI
Uncertainty	-4.7144***	-4.7179***	0.1701	0.1538	0.0270	0.0102
	(0.2566)	(0.2563)	(0.2147)	(0.2184)	(0.2149)	(0.2185)
Z score-Dummy	-0.7012***	-0.6752***	-1.0307***	-1.0041***	-1.4941***	-1.4698***
	(0.1639)	(0.1655)	(0.1591)	(0.1610)	(0.1702)	(0.1724)
Uncertainty * Z score Dummy	-0.1760	-0.1812	0.4712**	0.4616**	1.1508***	1.1457***

	(0.2137)	(0.2137)	(0.2197)	(0.2198)	(0.2103)	(0.2104)
Cash Flow		-0.0156		-0.0149		-0.0155
		(0.0146)		(0.0145)		(0.0144)
Market-to-Book		0.0352		0.0342		0.0336
		(0.0420)		(0.0420)		(0.0420)
Leverage		-0.4814		-0.4542		-0.4457
		(0.4164)		(0.4165)		(0.4158)
Investment		-0.0469		-0.0472		-0.0527
		(0.2166)		(0.2166)		(0.2167)
Constant	4.2163***	4.2323***	-0.4530	-0.4429	-0.3198	-0.3095
	(0.5586)	(0.5593)	(0.5310)	(0.5319)	(0.5307)	(0.5316)
Observations	29,048	29,048	29,048	29,048	29,048	29,048
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0381	0.0380	0.0382	0.0381	0.0386	0.0385

Panel B: CHS - Default Probability

	(1)	(2)	(3)	(4)	(5)	(6)
	Expected Market Volatility	Expected Market Volatility	EPU	EPU	CSI	CSI
Uncertainty	-4.2802***	-4.3020***	0.0987	0.1106	-0.3986**	-0.3903**

	(0.2304)	(0.2308)	(0.2010)	(0.2032)	(0.1967)	(0.1988)
CHS-Default Probability	-0.9096***	-0.9117***	-1.1132***	-1.1166***	-1.7879***	-1.7923***
	(0.1223)	(0.1222)	(0.1176)	(0.1178)	(0.1407)	(0.1411)
Uncertainty * CHS-Default Probability	0.0092	0.0053	0.4328**	0.4298**	1.4237***	1.4236***
	(0.1695)	(0.1694)	(0.1735)	(0.1734)	(0.1785)	(0.1785)
Cash Flow		-0.0217**		-0.0217**		-0.0204**
		(0.0100)		(0.0099)		(0.0098)
Market-to-Book		0.0091		0.0054		0.0092
		(0.0278)		(0.0279)		(0.0279)
Leverage		-0.4446		-0.4237		-0.4291
		(0.3875)		(0.3872)		(0.3858)
Investment		-0.3675**		-0.3722**		-0.3782**
		(0.1755)		(0.1756)		(0.1759)
Constant	4.1173***	4.1324***	-0.0603	-0.0703	0.2639	0.2555
	(0.4800)	(0.4809)	(0.4605)	(0.4615)	(0.4761)	(0.4771)
Observations	37,664	37,664	37,664	37,664	37,664	37,664
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adj R-squared	0.0378	0.0378	0.0380	0.0380	0.0394	0.0394

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