

Can social capital and reputation mitigate political and market competition risk?

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ABSTRACT

We assess whether social capital, captured by CSR, is an effective hedge against risks arising from political and market competition risk. Having a higher CSR score significantly reduces stock return volatility during political uncertainty, but not cash flow volatility. Meanwhile, CSR is also an effective hedge against stock return volatility that arises from peer competition. Finally, the hedging effect of CSR on stock return volatility is transient, but has a positive effect on firms' future performance and growth opportunities.

ARTICLE HISTORY

Received 20 September 2021
Accepted 25 July 2022

KEYWORDS

CSR; ESG; social capital; risk; gubernatorial elections; product market fluidity; operational hedge

JEL CLASSIFICATIONS

G18; G32; G38

1. Introduction

The focus on social capital and CSR (corporate social responsibility) 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, Servaes, and Tamayo 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, Ciciretti, and Hasan 2015). This paper addresses two questions. Can social capital reduce risk? Does CSR have a transient or longer-lasting hedging effect, if any?

Social capital and CSR share many common elements related to cooperative social networks among agents (Scrivens and Smith 2013; Lins, Servaes, and Tamayo 2017). 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). CSR is a core business strategy to build social capital (Degli Antoni and Sacconi 2011). In response to CSR activities, firms can be trustworthy to stakeholders and receive social recognition, which constitutes firm-level social capital (Aoki, 2011). Therefore, CSR activities can be a proxy for firms' social capital.¹ 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, Tharyan, and Whittaker 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, Merrill, and Hansen 2009; Barnett and Salomon 2012)

and economy-wide shocks (Lins, Servaes, and Tamayo 2017). To understand the insurance-like ability of CSR reputation the focus should be on the impact of CSR on firm risk. Therefore, we empirically assess the hedging ability of CSR on firm risk, stock return volatility and cash flow volatility, during times of political and market competition uncertainty.

We analyze all publicly listed US firms, excluding financial and utilities firms, during 2002–2016. Because firm risk can also affect CSR engagement (Hong, Kubik, and Scheinkman 2012), we use for identification two exogenous changes that affect firm risk.² First, we 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 (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).

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, we expect to find that high CSR firms have lower stock return volatility and cash flow volatility compared to low CSR firms during an election year. As gubernatorial elections occur at different times across different States, they give us a powerful econometric test. We also use placebo tests to rule out the possibility that our findings regarding political uncertainty are spurious.

Second, we use exogenous changes in product market competition. We measure market competition by using product market fluidity developed by Hoberg, Phillips, and Prabhala (2014). As product market fluidity is measured by comparing a firm's products with rival firms in a given product market space, this proxy of product market competition reflects the industry dynamics (Hoberg, Phillips, and Prabhala 2014; Boubaker, Saffar, and Sassi 2018). Hence, greater fluidity indicates a higher competition variation 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, Saffar, and Sassi 2018) with large increases in product market competition creating negative shocks to profitability. In turn this reduces the stability of future cash flows and focal firms' propensity to make payouts via dividends (Hoberg, Phillips, and Prabhala 2014). Therefore, higher product market fluidity triggers higher firm risk in a given industry. We argue that high CSR firms will enjoy a reputational hedging benefit during product market competition as stakeholders will value their quality and reliability.

Our 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 persists when the uncertainty on the election outcome is higher. Our results are also economically significant. A one standard deviation increase in CSR score reduces stock return volatility by 15.35% during gubernatorial elections and by 17.43% during closely contested gubernatorial elections for firms headquartered in States facing elections. However, we do not find strong evidence to support the notion that CSR reputation can mitigate cash flow volatility during political uncertainty. We 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. Regarding product market competition we find that having a higher CSR score reduces stock volatility more compared to firms with a lower CSR score.

For robustness, we 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 our baseline results regarding political uncertainty. In addition, we 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 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.

Our contribution is threefold. First, we identify the causal effect of CSR on total firm risk measured by stock return volatility and alternatively by cash flow volatility. Second, we use an IV approach and exogenous variation of firm risk driven by political uncertainty (electoral cycles) and product market competition (market fluidity), to provide causal evidence of CSR on firm risk. Third, we do not restrict our analysis only to firms that have a CSR score; we investigate a comprehensive sample of all US 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, our paper 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).

Our paper 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, Brooks, and Pavelin 2012) and idiosyncratic risk but for a small sample of 541 firms during 2002–2003 (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 ours, 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,³ and not realized risk, as we do in this paper. Jiraporn et al. (2014) find that CSR improves credit ratings, but they use only firms 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.⁴ Bouslah, Kryzanowski, and M'Zali (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 from their study whether social capital overall has a causal negative effect on firm risk. In contrast, Harjoto, Jo, and Kim (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, Koskinen, and Zhang (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; Goyal and Santa-Clara 2003; Gaspar and Massa 2006). Instead, we 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, Kryzanowski, and M'Zali (2018) find that both positive and negative CSR aspects increase firm risk. However, they use the 2007–2009 financial crisis as an exogenous shock on firm risk which can lead to biased estimates since, the 2007–2009 financial crisis had a direct effect on real economic activity and not just on firm risk (Berger, Dew-Becker, and Giglio 2020). Therefore, weakening the validity of the 2007–2009 financial crisis as an exogenous shock only on firm risk. Instead, we use gubernatorial elections and product market fluidity which are staggered exogenous shocks on firm risk and can provide robust causal evidence. Overall, we show that even though CSR investment comes with the trade-off of reduced financial flexibility (Becchetti, Ciciretti, and Hasan 2015), CSR and social capital can hedge against firm risk.

2. Theoretical background and hypotheses development

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. We consider CSR activities as a proxy for firms' social capital (Degli Antoni and Sacconi 2011; Lins, Servaes, and Tamayo 2017). Although CSR is not an exact measure of firm-level social capital (Scrivens and Smith 2013; Sapienza, Toldra-Simats, and Zingales 2013), we follow the argument of Lins, Servaes,

and Tamayo (2017) and use CSR score as a measure of social capital. Solow (1995) suggests that social capital should be measurable even in any inexact way, an identifiable process of ‘investment’/‘depreciation’ is required to identify addition/reduction and a remarkable change in stock of social capital should appear correspond to investment and depreciation. Lins, Servaes, and Tamayo (2017) argue that features of CSR ease Solow’s (1995) reservations on social capital measurement. CSR activity is measurable (though inexactly), has a nonnegative payoff, and the level of CSR can be changed through investment or depreciation.

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, Houston, and Naranjo 2014).⁵ Meanwhile, CSR reputation accumulates social capital by fostering good relationships with external parties such as customers (Lev, Petrovits, and Radhakrishnan 2010), employees (Edmans 2011), investors and creditors (Cheng, Ioannou, and Serafeim 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, Akathaporn, and McInnes 1993; Shiu and Yang 2017), CSR reputation protects firms’ equity value (Godfrey, Merrill, and Hansen 2009; Lins, Servaes, and Tamayo 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, we argue that when a politically driven adverse event occurs, or market competition increases, social capital serves as an operational hedging tool that protects firms during adverse events.⁶ During these 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 Ghouli 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, Tharyan, and Whittaker 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; AÇğca and Mozumdar 2008; Hankins 2011). Therefore, hedging can increase firm value by reducing cash flow volatility (Stulz 1990; Froot, Scharfstein, and Stein 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, Tharyan, and Whittaker 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. 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 (Pantzaletis, Stangeland, and Turtle 2000; Li and Born 2006; Białkowski, Gottschalk, and Wisniewski 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, shareholders assess the firms' reliability in addition to the risk-return trade-off (Guiso, Sapienza, and Zingales 2008). Based on the reputation effects, we argue that investors trust firms with high social capital during elections, which reduces return volatility. Therefore, we expect a negative relationship between CSR reputation and stock return volatility during political uncertainty driven by the staggered US gubernatorial elections.

State governors shape State policies (e.g. State budget, tax code, subsidy policies) (Falk and Shelton 2018), policy changes at the State level have a substantial influence in the economic environment in which firms operate (Chhaochharia, Korniotis, and Kumar 2017) and, therefore, in their investment and financing policies. For instance, investors require a higher risk premium (Gao and Qi 2013) and return volatility is higher (Jens 2017) during US gubernatorial elections. Therefore, we 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, we formulate our 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). We 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. Our next hypothesis is the following:

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

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 paper, we use product market fluidity, developed by Hoberg, Phillips, and Prabhala (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, Phillips, and Prabhala 2014). Meanwhile, firms in more

fluid product markets reduce their propensity to make payouts via dividends (Hoberg, Phillips, and Prabhala 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, Phillips, and Prabhala 2014; Boubaker, Saffar, and Sassi 2018). Therefore, we exploit this exogenous shift in product market competition as a quasi-natural experiment to assess the operational hedging ability of CSR reputation. We argue that this negative flow shock 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, we 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. Our 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.

3. Sample and data

Our study covers all publicly traded US 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. We collect firms' overall Environmental, Social, and Governance (ESG) score from Asset4⁷ provided by Refinitiv (formerly Thomson Reuters). Financial data are from CRSP/Compustat. Data on Gubernatorial elections are collected from online sources such as David Leip's Atlas of US 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 our control variables, the final sample consists of 43,521 firm-year observations for 5802 unique US firms.

We report the descriptive statistics for the main variables in Table 1. Table 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 Ferrell, Liang, and Renneboog (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, we 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 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 shows that the 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.

4. Empirical results

4.1. The hedging effect of CSR during gubernatorial elections

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

$$\begin{aligned} \text{Risk}_{i,t} = & \alpha + \beta_1 \times \text{CSR}_{i,t} + \beta_2 \times \text{Political uncertainty}_t \\ & + \beta_3 \times \text{CSR}_{i,t} \times \text{Political uncertainty}_t + X_{i,t-1} + \theta + \gamma + \varepsilon_{i,t} \end{aligned} \quad (1)$$

where Risk is measured as stock return volatility and alternatively cash flow volatility. We follow Hoberg and Moon (2017) and measure return volatility as the standard deviation of the firms' daily logarithmic returns,

Table 1. Summary statistics.

| <i>Panel A: All firms</i> | | | | | | |
|--|----------|---------|---------|-----------------|-----------------|--|
| | <i>N</i> | Mean | SD | 10th Percentile | 90th Percentile | |
| CSR | 9,734 | 52.6190 | 29.6339 | 14.8300 | 93.6500 | |
| Return Volatility | 43,521 | 0.5417 | 0.3028 | 0.2477 | 0.9395 | |
| Cash Flow Volatility | 41,795 | 0.0679 | 0.1086 | 0.0078 | 0.1551 | |
| Market-to-Book | 43,521 | 1.5542 | 1.5541 | 0.3199 | 3.3487 | |
| Leverage | 43,521 | 0.1745 | 0.2004 | 0.0000 | 0.4511 | |
| Operating Margin | 43,521 | -0.5646 | 3.8677 | -0.3465 | 0.2935 | |
| Investment | 43,521 | 0.0918 | 0.2245 | -0.0697 | 0.3085 | |
| Sales Growth | 43,521 | 0.0809 | 0.3374 | -0.2102 | 0.3792 | |
| Profitability | 41,795 | -0.0532 | 0.2713 | -0.3294 | 0.1203 | |
| Cash | 41,795 | 0.1546 | 0.1719 | 0.0101 | 0.3838 | |
| Negative Equity | 43,521 | 0.0336 | 0.1801 | 0.0000 | 0.0000 | |
| <i>Panel B: High CSR firms (based on tercile classification)</i> | | | | | | |
| CSR | 3,238 | 87.5024 | 8.9359 | 75.6600 | 95.8900 | |
| Return Volatility | 3,238 | 0.3124 | 0.1508 | 0.1715 | 0.4927 | |
| Cash Flow Volatility | 3,129 | 0.0247 | 0.0382 | 0.0050 | 0.0511 | |
| Market-to-Book | 3,238 | 1.5361 | 1.1947 | 0.4759 | 3.0367 | |
| Leverage | 3,238 | 0.2175 | 0.1392 | 0.0436 | 0.3981 | |
| Operating Margin | 3,238 | 0.1882 | 0.1642 | 0.0677 | 0.3467 | |
| Investment | 3,238 | 0.0532 | 0.1355 | -0.0407 | 0.1605 | |
| Sales Growth | 3,238 | 0.0420 | 0.1688 | -0.1086 | 0.1967 | |
| Profitability | 3,129 | 0.0658 | 0.0839 | 0.0065 | 0.1422 | |
| Cash | 3,129 | 0.0961 | 0.0814 | 0.0158 | 0.2067 | |
| Negative Equity | 3,238 | 0.0158 | 0.1245 | 0.0000 | 0.0000 | |
| <i>Panel C: Low CSR Firms (Based on Tercile Classification)</i> | | | | | | |
| CSR | 3,250 | 20.9098 | 8.9666 | 10.0400 | 34.2650 | |
| Return Volatility | 3,250 | 0.4122 | 0.2080 | 0.2132 | 0.6612 | |
| Cash Flow Volatility | 3,140 | 0.0448 | 0.0744 | 0.0058 | 0.1007 | |
| Market-to-Book | 3,250 | 1.8551 | 1.7660 | 0.4022 | 4.1775 | |
| Leverage | 3,250 | 0.2295 | 0.2112 | 0.0000 | 0.5118 | |
| Operating Margin | 3,250 | -0.1568 | 2.7606 | -0.0025 | 0.3807 | |
| Investment | 3,250 | 0.1328 | 0.2200 | -0.0298 | 0.3710 | |
| Sales Growth | 3,250 | 0.1105 | 0.2985 | -0.1275 | 0.3804 | |
| Profitability | 3,140 | 0.0181 | 0.1682 | -0.1140 | 0.1397 | |
| Cash | 3,140 | 0.1296 | 0.1369 | 0.0102 | 0.2941 | |
| Negative Equity | 3,250 | 0.0385 | 0.1923 | 0.0000 | 0.0000 | |
| <i>Panel D: No CSR firms</i> | | | | | | |
| Return Volatility | 33,787 | 0.5927 | 0.3108 | 0.2890 | 1.0062 | |
| Cash Flow Volatility | 32,389 | 0.0779 | 0.1178 | 0.0092 | 0.1824 | |
| Market-to-Book | 33,787 | 1.5222 | 1.5704 | 0.2949 | 3.3212 | |
| Leverage | 33,787 | 0.1612 | 0.2040 | 0.0000 | 0.4513 | |
| Operating Margin | 33,787 | -0.7448 | 4.2790 | -0.5897 | 0.2599 | |
| Investment | 33,787 | 0.0924 | 0.2359 | -0.0838 | 0.3247 | |
| Sales Growth | 33,787 | 0.0826 | 0.3620 | -0.2381 | 0.4083 | |
| Profitability | 32,389 | -0.0814 | 0.2944 | -0.4123 | 0.1112 | |
| Cash | 32,389 | 0.1668 | 0.1841 | 0.0094 | 0.4249 | |
| Negative Equity | 33,787 | 0.0351 | 0.1840 | 0.0000 | 0.0000 | |

This table consists of summary statistics for our sample of all publicly traded US firms in CRSP/Compustat between 2002 and 2016. We 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. All continuous variables are winsorized at the 1% and 99% tails.

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 $t-1$.⁸ 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 . Initially, we limit our study to the firms for which CSR scores are available. Then we repeat our tests by setting CSR to zero for firms that do not have a CSR score. We follow Ferrell, Liang, and Renneboog (2016) and Attig et al.

Table 2. CSR, no CSR, low CSR and high CSR firms.

| | No CSR firms | | CSR firms | | Difference |
|----------------------|--------------------|--------|---------------------|--------|------------|
| | N | Mean | N | Mean | |
| CSR | – | – | 9,734 | 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*** |

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 Tertile classification) (Panel B) for our sample of all publicly traded US firms in CRSP/Compustat between 2002 and 2016. We exclude financial firms (SIC codes 6000-6999) and utilities (SIC codes 4900-4949). All variables are defined in the Appendix. All continuous variables are winsorized at the 1% and 99% tails. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

(2016) to use the overall ESG score of Asset4 as a proxy of CSR. In alternative specifications we use 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 (2014) and Boubakri et al. (2016); (ii) equally-weighted average of the social, environmental, and governance scores following Cusumano, Kahl, and Suarez (2008), and (iii) equally-weighted average score of the economic, social and environmental score.⁹ We also investigate the environmental score and social score individually. For political uncertainty, we 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 literature¹⁰ to affect return and cash flow volatility. All control variables are defined in the Appendix. As in Jens (2017), we also include State GDP growth rate and State unemployment rate to control for State-level economic conditions. We 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 firm fixed effects respectively to identify changes within firms. Firm-level financial controls, State-level GDP growth rate, and unemployment rate are lagged by one year for all specifications.

Panel A of Table 3 presents the OLS estimates for the impact of CSR reputation on stock return volatility during political uncertainty. Here, our analyses are limited to firms having CSR scores. In line with our hypotheses, we expect the coefficient on the interaction term $CSR \times Political\ Uncertainty$ 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, we add firm-specific financial and State-level macroeconomic control variables in columns (2), (4) and (6). In all specifications, the results show that return volatility is higher when the degree of uncertainty increases during close elections. Column (1) shows that

Table 3. CSR reputation and risk during political uncertainty – firms having CSR scores.

| <i>Panel A: Stock return volatility</i> | | | | | | |
|---|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| CSR | −0.0006*** (0.0001) | −0.0006*** (0.0001) | −0.0006*** (0.0001) | −0.0005*** (0.0001) | −0.0006*** (0.0001) | −0.0006*** (0.0001) |
| Election | −0.0082 (0.0063) | −0.0086 (0.0066) | | | | |
| CSR* Election | 0.0001* (0.0001) | 0.0001 (0.0001) | | | | |
| Close Election | | | 0.0342*** (0.0118) | 0.0360*** (0.0117) | | |
| CSR* Close Election | | | −0.0004** (0.0002) | −0.0004** (0.0002) | | |
| Post-election | | | | | −0.0117** (0.0052) | −0.0117** (0.0053) |
| CSR* Post-election | | | | | 0.0002** (0.0001) | 0.0002*** (0.0001) |
| Market-to-Book | | 0.0009 (0.0025) | | 0.0007 (0.0025) | | 0.0009 (0.0025) |
| Leverage | | 0.1009*** (0.0284) | | 0.1011*** (0.0283) | | 0.1015*** (0.0285) |
| Operating Margin | | −0.0060 (0.0041) | | −0.0062 (0.0040) | | −0.0060 (0.0040) |
| Investment | | 0.0094 (0.0115) | | 0.0093 (0.0115) | | 0.0096 (0.0115) |
| Sales Growth | | −0.0316*** (0.0091) | | −0.0319*** (0.0091) | | −0.0317*** (0.0091) |
| Negative Equity | | 0.0131 (0.0224) | | 0.0134 (0.0224) | | 0.0131 (0.0224) |
| Term Limit | | −0.0005 (0.0050) | | −0.0037 (0.0047) | | |
| Δ GDP | | −0.3436*** (0.0845) | | −0.3380*** (0.0845) | | −0.3410*** (0.0841) |
| Unemployment | | −0.2913 (0.2442) | | −0.2911 (0.2445) | | −0.2866 (0.2454) |
| Constant | 0.5450*** (0.0111) | 0.5491*** (0.0189) | 0.5342*** (0.0108) | 0.5378*** (0.0181) | 0.5433*** (0.0110) | 0.5463*** (0.0183) |
| Observations | 9734 | 9734 | 9734 | 9734 | 9734 | 9734 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | Only | Only | Only | Only | Only | Only |
| Adj R-squared | 0.511 | 0.520 | 0.512 | 0.521 | 0.511 | 0.520 |
| <i>Panel B: Cash flow volatility</i> | | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| CSR | −0.0001* (0.0000) | −0.0000 (0.0000) | −0.0001** (0.0000) | −0.0001* (0.0000) | −0.0001*** (0.0000) | −0.0001* (0.0000) |
| Election | 0.0043* (0.0023) | 0.0034 (0.0026) | | | | |
| CSR* Election | −0.0001** (0.0000) | −0.0000* (0.0000) | | | | |
| Close Election | | | 0.0014 (0.0051) | −0.0014 (0.0049) | | |
| CSR* Close Election | | | −0.0000 (0.0001) | 0.0000 (0.0001) | | |
| Post-election | | | | | −0.0038* (0.0022) | −0.0022 (0.0021) |
| CSR* Post-election | | | | | 0.0000* (0.0000) | 0.0000 (0.0000) |
| Market-to-Book | | 0.0043*** (0.0011) | | 0.0043*** (0.0011) | | 0.0043*** (0.0011) |

(continued)

Table 3. Continued.

| <i>Panel B: Cash flow volatility</i> | | | | | | |
|--------------------------------------|-----------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Leverage | | 0.0251** (0.0109) | | 0.0251** (0.0109) | | 0.0249** (0.0109) |
| Profitability | | -0.1188*** (0.0237) | | -0.1190*** (0.0236) | | -0.1184*** (0.0238) |
| Cash | | 0.0672*** (0.0195) | | 0.0673*** (0.0195) | | 0.0669*** (0.0195) |
| Investment | | -0.0021 (0.0062) | | -0.0021 (0.0062) | | -0.0019 (0.0062) |
| Negative Equity | | 0.0222 (0.0145) | | 0.0222 (0.0145) | | 0.0223 (0.0145) |
| Term Limit | | -0.0075*** (0.0027) | | -0.0070*** (0.0023) | | |
| Δ GDP | | -0.1646*** (0.0419) | | -0.1646*** (0.0422) | | -0.1610*** (0.0415) |
| Unemployment | | -0.0756 (0.0874) | | -0.0786 (0.0867) | | -0.0822 (0.0863) |
| Constant | 0.0415*** (0.0025) | 0.0326*** (0.0070) | 0.0434*** (0.0023) | 0.0346*** (0.0064) | 0.0442*** (0.0023) | 0.0342*** (0.0064) |
| Observations | 9406 | 9406 | 9406 | 9406 | 9406 | 9406 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | Only | Only | Only | Only | Only | Only |
| Adj R-squared | 0.014 | 0.144 | 0.014 | 0.144 | 0.014 | 0.142 |

This table reports OLS estimates of CSR reputation and risk. The tests are limited to firms having CSR scores. As a risk measure, we 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, we 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*, 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. All regressions include firm and year fixed effects. We 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.

in non-election years the coefficient on CSR is -0.0006 . This estimate implies that for one-standard-deviation increase in CSR is associated with a 1.78% ($= 29.63 \times -0.0006$) decrease in return volatility during non-election years. Meanwhile, the coefficient for the interaction term between election and CSR is $\beta_3 = 0.0001$. These estimates indicate that the partial effect of the hedging ability of CSR reputation during election years is equal to -0.0005 ($= \beta_1 + \beta_3 = -0.0006 + 0.0001$). This implies that for one-standard-deviation increase in CSR (29.63) is associated with a 1.48% decrease in return volatility during election years, suggesting that high CSR reputation has a mitigating effect on stock volatility. Although, after adding firm- and State-level control variables (column 2) the results are not statistically significant anymore. Prima facie, this finding suggests that a higher CSR rating does not reduce the return volatility during an election year. However, these results can be biased due to two main factors. First, there can be endogeneity as we discuss and address later in the paper. 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 as governor of Texas in the 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. We address this issue by looking at closely contested elections.

In column (3), we estimate the CSR-risk relationship during closely contested elections. The estimated coefficient of close election dummy variable (β_2) indicates that firms having their headquarters in states which have an upcoming close gubernatorial election, have 3.42% higher return volatility than firms having their headquarters in States without an upcoming election. The coefficient for the interaction term between close

election and CSR is -0.0004 , which is negative and statistically significant. This result shows that the hedging ability of CSR reputation is effective 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 -0.0010 ($= -0.0006 - 0.0004$). In turn, a one-standard-deviation increase in CSR is associated with a 2.96% ($= 29.63 \times -0.0010$) 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. We 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. This suggests that CSR has a transient hedging effect on stock volatility during political uncertainty. Overall, our results suggest that CSR reputation reduces stock return volatility during close election years when the degree of uncertainty regarding the gubernatorial race is high.

Panel B of Table 3 presents the OLS estimates for the impact of CSR reputation on cash flow volatility during political uncertainty. Column (1) indicates that CSR reputation reduces cash flow volatility during gubernatorial elections, although, these effects become economically insignificant after we include control variables in column (2). In columns (3) and (4), we find that CSR reputation has no statistically significant hedging effect on cash flow volatility during closely contested elections. Our results in Columns (5) and (6) also show that CSR reputation has no effect on cash flow volatility during post-elections years. Overall, we do not find strong evidence to suggest that CSR reputation reduces cash flow volatility during political uncertainty. Next, we repeat our previous tests for the entire sample, where we set CSR score to zero for firms that do not have a CSR score. We do this to assess whether having CSR credentials at all affects firm risk. Table 4 presents the OLS estimates of CSR on stock return volatility (Panel A) and cash flow volatility (Panel B). Our findings are mixed: CSR has no effect on stock return volatility (inconsistent with Table 3) and no effect on cash flow volatility (consistent with Table 3). However, one should not read too much into these results, since these estimates are potentially biased due to endogeneity between CSR and risk. We address this endogeneity bias with an instrumental variable approach in the next section.

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, Kubik, and Scheinkman 2012). Albuquerque, Koskinen, and Zhang (2019) argue that higher valuation resulting from lower risk allows the firm to invest more in CSR. To tackle this endogeneity between risk and CSR, we employ two alternative strategies. First, we use an IV approach to measure the relationship between CSR and risk by using a set of instruments for CSR. Second, we use product market competition, measured by product market fluidity to isolate the causal effect of risk on CSR. In addition to these two steps, we 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, we follow first the approach of Ferrell, Liang, and Renneboog (2016) and use the industry peers' average of the endogenous variable as an instrument. In this case our 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, Ioannou, and Serafeim 2014; Ioannou and Serafeim 2014). Our 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 Ghouli et al. (2011) and Dunbar, Li, and Shi (2017) also use these IVs to instrument CSR. Similarly, we 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 5 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.¹¹ Here, we limit our tests only to firms having CSR scores.

Table 4. CSR reputation and risk during political uncertainty – all observations.

| <i>Panel A: Stock return volatility</i> | | | | | | |
|---|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| CSR | −0.0005*** (0.0001) | −0.0004*** (0.0001) | −0.0004*** (0.0001) | −0.0003*** (0.0001) | −0.0005*** (0.0001) | −0.0004*** (0.0001) |
| Election | −0.0005 (0.0030) | 0.0001 (0.0032) | | | | |
| CSR* Election | 0.0002*** (0.0000) | 0.0002*** (0.0000) | | | | |
| Close Election | | | 0.0155*** (0.0046) | 0.0159*** (0.0047) | | |
| CSR* Close Election | | | −0.0001 (0.0001) | −0.0001 (0.0001) | | |
| Post-election | | | | | −0.0032 (0.0026) | −0.0024 (0.0026) |
| CSR* Post-election | | | | | 0.0002*** (0.0000) | 0.0002*** (0.0000) |
| Market-to-Book | | −0.0118*** (0.0014) | | −0.0118*** (0.0014) | | −0.0118*** (0.0014) |
| Leverage | | 0.0993*** (0.0144) | | 0.0995*** (0.0144) | | 0.0992*** (0.0144) |
| Operating Margin | | −0.0024*** (0.0006) | | −0.0024*** (0.0006) | | −0.0024*** (0.0006) |
| Investment | | −0.0366*** (0.0063) | | −0.0369*** (0.0063) | | −0.0364*** (0.0063) |
| Sales Growth | | −0.0193*** (0.0044) | | −0.0193*** (0.0044) | | −0.0194*** (0.0044) |
| Negative Equity | | 0.0769*** (0.0125) | | 0.0768*** (0.0125) | | 0.0768*** (0.0125) |
| Term Limit | | −0.0117*** (0.0045) | | −0.0133*** (0.0042) | | |
| Δ GDP | | −0.2887*** (0.0583) | | −0.2702*** (0.0583) | | −0.2848*** (0.0582) |
| Unemployment | | −0.4321** (0.1835) | | −0.4169** (0.1832) | | −0.4426** (0.1841) |
| Constant | 0.6944*** (0.0050) | 0.7316*** (0.0110) | 0.6887*** (0.0046) | 0.7251*** (0.0107) | 0.6948*** (0.0043) | 0.7316*** (0.0109) |
| Observations | 43,521 | 43,521 | 43,521 | 43,521 | 43,521 | 43,521 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | All | All | All | All | All | All |
| Adj R-squared | 0.347 | 0.362 | 0.347 | 0.362 | 0.347 | 0.362 |
| <i>Panel B: Cash flow volatility</i> | | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| CSR | 0.0000 (0.0000) | 0.0000 (0.0000) | 0.0000 (0.0000) | 0.0000 (0.0000) | 0.0000 (0.0000) | 0.0000 (0.0000) |
| Election | 0.0016 (0.0011) | 0.0014 (0.0011) | | | | |
| CSR* Election | −0.0000* (0.0000) | −0.0000 (0.0000) | | | | |
| Close Election | | | 0.0036** (0.0017) | 0.0018 (0.0017) | | |
| CSR* Close Election | | | −0.0001* (0.0000) | −0.0000 (0.0000) | | |
| Post-election | | | | | −0.0011 (0.0009) | −0.0008 (0.0009) |
| CSR* Post-election | | | | | 0.0000 (0.0000) | −0.0000 (0.0000) |
| Market-to-Book | | 0.0076*** (0.0008) | | 0.0076*** (0.0008) | | 0.0076*** (0.0008) |
| Leverage | | 0.0140** | | 0.0140** | | 0.0140** |

(continued)

Table 4. Continued.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|--------------------------------------|-----------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|
| <i>Panel B: Cash flow volatility</i> | | | | | | |
| Profitability | | (0.0063) -0.0888*** | | (0.0063) -0.0888*** | | (0.0063) -0.0888*** |
| Cash | | (0.0057) 0.0636*** | | (0.0057) 0.0635*** | | (0.0057) 0.0635*** |
| Investment | | (0.0079) -0.0052 | | (0.0079) -0.0052 | | (0.0079) -0.0052 |
| Negative Equity | | (0.0032) 0.0151*** | | (0.0032) 0.0151*** | | (0.0032) 0.0151*** |
| Term Limit | | (0.0054) -0.0026 | | (0.0054) -0.0023 | | (0.0054) -0.0023 |
| Δ GDP | | (0.0018) -0.1038*** | | (0.0017) -0.1021*** | | (0.0017) -0.1027*** |
| Unemployment | | (0.0230) -0.1271* | | (0.0229) -0.1283* | | (0.0230) -0.1342* |
| Constant | 0.0802*** (0.0017) | 0.0578*** (0.0048) | 0.0802*** (0.0015) | 0.0582*** (0.0047) | 0.0816*** (0.0015) | 0.0590*** (0.0047) |
| Observations | 41,795 | 41,795 | 41,795 | 41,795 | 41,795 | 41,795 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | All | All | All | All | All | All |
| Adj R-squared | 0.011 | 0.093 | 0.012 | 0.093 | 0.011 | 0.093 |

This table reports OLS estimates of CSR reputation and risk. The tests include the entire sample of firms with or without a CSR score where we set CSR to zero for firms with no CSR score. As a risk measure, we 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, we 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*, 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. All regressions include firm and year fixed effects. We 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 reports the regression estimates for stock return volatility. Columns (1) to (6) report the estimates from the second stage regressions. We also report the Cragg-Donald Wald F-statistics which supports the validity of the employed instruments. Moreover, from additional (unreported for brevity) tests we find that the correlation between risk measures and these instruments are very low, which also indicates the validity of our instruments.

Column (1) confirms that the return volatility for the firms headquartered in States facing a gubernatorial election is higher than other US firms and CSR reputation reduces this volatility. Moreover, our results show that the hedging ability of CSR persists during closely contested elections. For instance, column (2) shows that a one-standard-deviation increase in CSR score is associated with a 4.15% decrease in return volatility during the election period for firms headquartered in States facing a gubernatorial election. According to the estimates of column (4), a one-standard-deviation increase in CSR score is associated with an 3.85% decrease in return volatility during close elections, which indicates that the CSR reputation effect is persistent when the degree of uncertainty is higher. However, both columns (5) and (6) support our earlier findings that the hedging ability of CSR is transient. This finding also supports Lins, Servaes, and Tamayo (2017), who find that the impact of CSR on firm performance becomes insignificant after the 2007–2009 financial crisis. Overall, our 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 5, we report the 2SLS estimates of the impact of CSR reputation on cash flow volatility¹² during political uncertainty by using both industry and State average CSR as instruments. The results of column (1) show that the cash flow volatility of firms having their headquarters in upcoming gubernatorial election States is 1.15% higher than other sample firms. A one standard deviation increase in the CSR score hedges this

Table 5. Instrumental variables: CSR reputation and risk during political uncertainty – firms having CSR scores.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CSR | −0.0021*** (0.0002) | −0.0021*** (0.0002) | −0.0023*** (0.0002) | −0.0020*** (0.0002) | −0.0033*** (0.0003) | −0.0027*** (0.0003) |
| Election | 0.1154*** (0.0254) | 0.0258 (0.0239) | | | | |
| CSR* Election | −0.0028*** (0.0004) | −0.0014*** (0.0004) | | | | |
| Close Election | | | 0.1427*** (0.0456) | 0.0708* (0.0384) | | |
| CSR* Close Election | | | −0.0026*** (0.0008) | −0.0013** (0.0007) | | |
| Post-election | | | | | −0.1472*** (0.0196) | −0.0994*** (0.0192) |
| CSR* Post-election | | | | | 0.0023*** (0.0004) | 0.0018*** (0.0003) |
| Market-to-Book | | −0.0058** (0.0026) | | −0.0085*** (0.0026) | | −0.0081*** (0.0026) |
| Leverage | | 0.0582* (0.0316) | | 0.0612* (0.0317) | | 0.0663** (0.0316) |
| Operating Margin | | −0.0050 (0.0040) | | −0.0056 (0.0042) | | −0.0052 (0.0042) |
| Investment | | 0.0044 (0.0140) | | 0.0039 (0.0141) | | 0.0052 (0.0142) |
| Sales Growth | | 0.0003 (0.0104) | | 0.0078 (0.0102) | | 0.0085 (0.0103) |
| Negative Equity | | 0.0087 (0.0254) | | 0.0124 (0.0251) | | 0.0126 (0.0252) |
| Term Limit | | 0.0069 (0.0068) | | −0.0304*** (0.0063) | | |
| Δ GDP | | −1.3845*** (0.0858) | | −1.2529*** (0.0856) | | −1.1963*** (0.0797) |
| Unemployment | | −2.4799*** (0.1093) | | −2.5370*** (0.1068) | | −2.5304*** (0.1055) |
| Constant | 0.4834*** (0.0125) | 0.6976*** (0.0169) | 0.4871*** (0.0117) | 0.6864*** (0.0155) | 0.5424*** (0.0148) | 0.7159*** (0.0170) |
| Observations | 9,591 | 9,591 | 9,591 | 9,591 | 9,591 | 9,591 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | Only | Only | Only | Only | Only | Only |
| Cragg-Donald Wald | 55.39 | 53.63 | 79.16 | 77.98 | 44.93 | 44.53 |

Panel B: Cash Flow Volatility- Industry and State Average CSR as Instruments

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------|----------------------|-----------------------|---------------------|-----------------------|---------------------|-----------------------|
| CSR | −0.0000 (0.0001) | −0.0001** (0.0001) | −0.0001 (0.0001) | −0.0002** (0.0001) | −0.0001 (0.0001) | −0.0002** (0.0001) |
| Election | 0.0115** (0.0059) | 0.0063 (0.0053) | | | | |
| CSR* Election | −0.0002* (0.0001) | −0.0001 (0.0001) | | | | |
| Close Election | | | 0.0098 (0.0126) | −0.0027 (0.0122) | | |
| CSR* Close Election | | | −0.0001 (0.0002) | 0.0000 (0.0002) | | |
| Post-election | | | | | −0.0027 (0.0044) | −0.0037 (0.0041) |
| CSR* Post-election | | | | | 0.0000 (0.0001) | 0.0001 (0.0001) |
| Market-to-Book | | 0.0044*** (0.0010) | | 0.0044*** (0.0010) | | 0.0043*** (0.0010) |
| Leverage | | 0.0273** | | 0.0274*** | | 0.0277*** |

(continued)

Table 5. Continued.*Panel B: Cash Flow Volatility- Industry and State Average CSR as Instruments*

| | (1) | (2) | (3) | (4) | (5) | (6) |
|-------------------|-----------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|------------------------------------|
| Profitability | | (0.0106) -0.1188*** (0.0239) | | (0.0106) -0.1194*** (0.0239) | | (0.0107) -0.1185*** (0.0240) |
| Cash | | 0.0681*** (0.0194) | | 0.0679*** (0.0193) | | 0.0675*** (0.0194) |
| Investment | | -0.0032 (0.0064) | | -0.0030 (0.0063) | | -0.0030 (0.0063) |
| Negative Equity | | 0.0217 (0.0144) | | 0.0217 (0.0144) | | 0.0219 (0.0145) |
| Term Limit | | -0.0073*** (0.0026) | | -0.0076*** (0.0024) | | |
| Δ GDP | | -0.1367*** (0.0330) | | -0.1355*** (0.0336) | | -0.1214*** (0.0304) |
| Unemployment | | 0.0175 (0.0281) | | 0.0125 (0.0281) | | 0.0081 (0.0285) |
| Constant | 0.0354*** (0.0042) | 0.0283*** (0.0051) | 0.0375*** (0.0038) | 0.0298*** (0.0049) | 0.0394*** (0.0039) | 0.0303*** (0.0053) |
| Observations | 9,257 | 9,257 | 9,257 | 9,257 | 9,257 | 9,257 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | Only | Only | Only | Only | Only | Only |
| Cragg-Donald Wald | 49.72 | 47.98 | 65.51 | 64.51 | 40.50 | 39.96 |

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. The tests are limited to firms having CSR scores. As a risk measure, we 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. Columns 1, 3 and 5 contain the results of 2nd stage regression without control variables. In columns 2, 4 and 6, we report the 2nd stage regression outcomes with control variables. To measure political uncertainty, we 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*, 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. All regressions include firm and year fixed effects. We 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.

volatility during election year by 0.59%. But the impact of CSR during elections is not statistically significant when including other control variables to mitigate the concern of omitted variable bias. Also, similar to our earlier OLS results, the hedging effect of CSR reputation on cash flow volatility during closely contested elections or after election is not statistically significant. 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. In addition to these reasons, we 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).

We repeat the IV tests for the entire sample of firms where we set CSR to zero for firms with no CSR and the results are presented in Table 6. The results on stock return volatility reported in Panel A, confirm our previous findings that having CSR credentials reduces stock return volatility during elections but not afterwards. For instance, columns (2) and (4) show that a one standard deviation increase in the CSR score hedges return volatility by 15.35% ($= 26.02 \times 0.0059$) during election years and 17.43% ($= 26.02 \times 0.0067$) during closely contested election years, respectively. However, the results on cash flow volatility do not support our earlier findings. The results in Panel B of Table 6 suggest that CSR reputation can reduce cash flow volatility during both election and closely contested election years. As these estimates are contradictory with our previous OLS and IV estimates, we do not find strong evidence that suggest that CSR reputation can hedge cash flow volatility during political uncertainty.

Table 6. Instrumental variables: CSR reputation and risk during political uncertainty – all observations.

| <i>Panel A: Stock return volatility – Industry and State Average CSR as Instruments</i> | | | | | | |
|---|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| CSR | −0.0015*** (0.0003) | −0.0008*** (0.0003) | −0.0020*** (0.0003) | −0.0009*** (0.0003) | −0.0037*** (0.0003) | −0.0026*** (0.0003) |
| Election | 0.0706*** (0.0061) | 0.0297*** (0.0054) | | | | |
| CSR* Election | −0.0080*** (0.0006) | −0.0059*** (0.0005) | | | | |
| Close Election | | | 0.1694*** (0.0110) | 0.0977*** (0.0091) | | |
| CSR* Close Election | | | −0.0110*** (0.0011) | −0.0067*** (0.0007) | | |
| Post-election | | | | | −0.0675*** (0.0034) | −0.0760*** (0.0040) |
| CSR* Post-election | | | | | 0.0025*** (0.0002) | 0.0045*** (0.0003) |
| Market-to-Book | | −0.0198*** (0.0016) | | −0.0216*** (0.0016) | | −0.0223*** (0.0016) |
| Leverage | | 0.0699*** (0.0160) | | 0.0743*** (0.0160) | | 0.0736*** (0.0159) |
| Operating Margin | | −0.0028*** (0.0007) | | −0.0029*** (0.0007) | | −0.0029*** (0.0007) |
| Investment | | −0.0192*** (0.0071) | | −0.0212*** (0.0071) | | −0.0187*** (0.0071) |
| Sales Growth | | −0.0054 (0.0048) | | −0.0022 (0.0048) | | −0.0034 (0.0048) |
| Negative Equity | | 0.0763*** (0.0138) | | 0.0792*** (0.0137) | | 0.0809*** (0.0136) |
| Term Limit | | −0.0066 (0.0060) | | −0.0469*** (0.0051) | | |
| Δ GDP | | −2.0117*** (0.0561) | | −1.8120*** (0.0543) | | −1.8318*** (0.0513) |
| Unemployment | | −3.3082*** (0.0736) | | −3.3010*** (0.0734) | | −3.5136*** (0.0709) |
| Constant | 0.5619*** (0.0036) | 0.8641*** (0.0077) | 0.5608*** (0.0034) | 0.8506*** (0.0075) | 0.5958*** (0.0035) | 0.8924*** (0.0076) |
| Observations | 43,427 | 43,427 | 43,427 | 43,427 | 43,427 | 43,427 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | All | All | All | All | All | All |
| Cragg-Donald Wald | 153.72 | 144.69 | 231.70 | 223.56 | 169.53 | 167.29 |

Panel B: Cash Flow Volatility- Industry and State Average CSR as Instruments

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CSR | −0.0006*** (0.0001) | −0.0006*** (0.0001) | −0.0006*** (0.0001) | −0.0007*** (0.0001) | −0.0006*** (0.0001) | −0.0007*** (0.0001) |
| Election | 0.0064*** (0.0013) | 0.0060*** (0.0013) | | | | |
| CSR* Election | −0.0004*** (0.0001) | −0.0006*** (0.0001) | | | | |
| Close Election | | | 0.0106*** (0.0026) | 0.0059** (0.0026) | | |
| CSR* Close Election | | | −0.0004*** (0.0001) | −0.0004*** (0.0002) | | |
| Post-election | | | | | 0.0010 (0.0011) | 0.0009 (0.0011) |
| CSR* Post-election | | | | | −0.0001 (0.0001) | 0.0000 (0.0001) |
| Market-to-Book | | 0.0077*** (0.0008) | | 0.0076*** (0.0008) | | 0.0076*** (0.0008) |
| Leverage | | 0.0147** | | 0.0152** | | 0.0152** |

(continued)

Table 6. Continued.*Panel B: Cash Flow Volatility- Industry and State Average CSR as Instruments*

| | (1) | (2) | (3) | (4) | (5) | (6) |
|-------------------|-----------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|
| Profitability | | (0.0063) −0.0897*** | | (0.0063) −0.0898*** | | (0.0063) −0.0900*** |
| Cash | | (0.0057) 0.0636*** | | (0.0057) 0.0633*** | | (0.0057) 0.0635*** |
| Investment | | (0.0079) −0.0052 | | (0.0079) −0.0050 | | (0.0079) −0.0049 |
| Negative Equity | | (0.0032) 0.0133** | | (0.0032) 0.0136** | | (0.0032) 0.0136** |
| Term Limit | | (0.0054) −0.0025 | | (0.0054) −0.0040** | | (0.0054) −0.0040** |
| Δ GDP | | (0.0018) −0.1341*** | | (0.0017) −0.1250*** | | (0.0017) −0.1247*** |
| Unemployment | | (0.0175) 0.0894*** | | (0.0172) 0.0782*** | | (0.0166) 0.0637** |
| Constant | 0.0737*** (0.0013) | 0.0455*** (0.0034) | 0.0747*** (0.0012) | 0.0467*** (0.0033) | 0.0754*** (0.0012) | 0.0475*** (0.0034) |
| Observations | 41,700 | 41,700 | 41,700 | 41,700 | 41,700 | 41,700 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | All | All | All | All | All | All |
| Cragg-Donald Wald | 145.24 | 136.83 | 216.10 | 208.73 | 160.78 | 158.91 |

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. The tests include the entire sample of firms with or without a CSR score where we set CSR to zero for firms with no CSR score. As a risk measure, we 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. Columns 1, 3 and 5 contain the results of 2nd stage regression without control variables. In columns 2, 4 and 6, we report the 2nd stage regression outcomes with control variables. To measure political uncertainty, we 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*, 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. All regressions include firm and year fixed effects. We 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.

Finally, political connectivity may affect firm value (Borisov, Goldman, and Gupta 2016) and the cost of equity capital (Boubakri et al. 2012). Therefore, we repeat the IV regressions by adding firms' political connections¹³ as a control variable. By following Colak et al. (2021) and Di Giuli and Kostovetsky (2014) we construct two alternative measures of political connectivity. These measures are constructed based on hand collected data on lobbying activities from OpenSecrets (opensecrets.org). Our results, unreported for brevity, are consistent with our previous findings that CSR reputation has a hedging effect on stock return volatility.

4.3. Product market fluidity as exogenous variation on product market competition

We exploit the exogenous variation 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 peer competition. The product market fluidity measure, developed by Hoberg, Phillips, and Prabhala (2014)¹⁴, 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. We argue that firms can use their social capital as a reputational hedge against greater product market competition. Therefore, firms

Table 7. How CSR affects firm risk during a firm-specific product market threat.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|--------------------------------|------------------------|------------------------|------------------------|--------------------------|------------------------------|-------------------------------|
| | | CSR score | | High CSR score (Mean) | High CSR score (Terciles) | High CSR score (Quintiles) |
| CSR | -0.0003** (0.0001) | -0.0003** (0.0001) | -0.0003* (0.0002) | 0.0043 (0.0079) | 0.0013 (0.0127) | 0.0360* (0.0191) |
| Greater Fluidity | 0.0424*** (0.0090) | | | | | |
| CSR* Greater Fluidity | -0.0006*** (0.0001) | | | | | |
| Adjusted greater Fluidity | | 0.0424*** (0.0090) | | | | |
| CSR* Adjusted greater Fluidity | | -0.0006*** (0.0001) | | | | |
| Fluidity | | | 0.0097*** (0.0019) | 0.0083*** (0.0014) | 0.0094*** (0.0018) | 0.0080*** (0.0027) |
| CSR* Fluidity | | | -0.0001** (0.0000) | -0.0031** (0.0012) | -0.0044** (0.0019) | -0.0068** (0.0027) |
| Market-to-Book | 0.0010 (0.0025) | 0.0010 (0.0025) | 0.0010 (0.0025) | 0.0007 (0.0025) | 0.0017 (0.0034) | 0.0040 (0.0040) |
| Leverage | 0.1015*** (0.0285) | 0.1015*** (0.0285) | 0.1026*** (0.0283) | 0.1014*** (0.0284) | 0.0574 (0.0358) | 0.0182 (0.0403) |
| Operating Margin | -0.0055 (0.0041) | -0.0055 (0.0041) | -0.0050 (0.0043) | -0.0050 (0.0042) | -0.0034 (0.0036) | -0.0066** (0.0031) |
| Investment | 0.0114 (0.0114) | 0.0114 (0.0114) | 0.0108 (0.0114) | 0.0121 (0.0115) | 0.0210 (0.0139) | 0.0220 (0.0219) |
| Sales Growth | -0.0378*** (0.0091) | -0.0378*** (0.0091) | -0.0380*** (0.0091) | -0.0394*** (0.0091) | -0.0235* (0.0123) | -0.0366** (0.0165) |
| Negative Equity | 0.0109 (0.0230) | 0.0109 (0.0230) | 0.0082 (0.0230) | 0.0088 (0.0229) | 0.0181 (0.0334) | 0.0740 (0.0518) |
| Constant | 0.5021*** (0.0149) | 0.5021*** (0.0149) | 0.4601*** (0.0170) | 0.4553*** (0.0156) | 0.4672*** (0.0209) | 0.4814*** (0.0254) |
| Observations | 9,527 | 9,527 | 9,527 | 9,527 | 6,336 | 3,792 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| Adj R-squared | 0.519 | 0.519 | 0.522 | 0.520 | 0.528 | 0.531 |

| <i>Panel B: Cash flow volatility</i> | | | | | | |
|--------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| CSR | -0.0001** (0.0000) | -0.0001** (0.0000) | -0.0002*** (0.0001) | -0.0069** (0.0029) | -0.0135** (0.0057) | -0.0140* (0.0079) |
| Greater Fluidity | -0.0045 (0.0030) | | | | | |
| CSR* Greater Fluidity | 0.0000 (0.0000) | | | | | |
| Adjusted greater Fluidity | | -0.0045 (0.0030) | | | | |
| CSR* Adjusted greater Fluidity | | 0.0000 (0.0000) | | | | |
| Fluidity | | | -0.0015* (0.0008) | -0.0005 (0.0005) | -0.0020** (0.0009) | -0.0010 (0.0011) |
| CSR* Fluidity | | | 0.0000** (0.0000) | 0.0008* (0.0005) | 0.0018** (0.0009) | 0.0011 (0.0010) |
| Market-to-Book | 0.0040*** (0.0010) | 0.0040*** (0.0010) | 0.0040*** (0.0010) | 0.0040*** (0.0010) | 0.0045*** (0.0014) | 0.0024 (0.0018) |
| Leverage | 0.0261** (0.0110) | 0.0261** (0.0110) | 0.0257** (0.0110) | 0.0258** (0.0110) | 0.0303* (0.0156) | 0.0303 (0.0249) |
| Profitability | -0.1175*** (0.0240) | -0.1175*** (0.0240) | -0.1180*** (0.0238) | -0.1180*** (0.0239) | -0.1278*** (0.0315) | -0.1391*** (0.0307) |
| Cash | 0.0711*** (0.0202) | 0.0711*** (0.0202) | 0.0714*** (0.0202) | 0.0711*** (0.0202) | 0.0925*** (0.0322) | 0.0508* (0.0270) |

(continued)

Table 7. Continued.*Panel B: Cash flow volatility*

| | (1) | (2) CSR score | (3) | (4) High CSR score (Mean) | (5) High CSR score (Terciles) | (6) High CSR score (Quintiles) |
|-----------------|-----------------------|-----------------------|-----------------------|---------------------------------|-------------------------------------|--------------------------------------|
| Investment | −0.0017 (0.0063) | −0.0017 (0.0063) | −0.0013 (0.0062) | −0.0017 (0.0063) | −0.0061 (0.0101) | −0.0093 (0.0127) |
| Negative Equity | 0.0243 (0.0149) | 0.0243 (0.0149) | 0.0241 (0.0149) | 0.0242 (0.0149) | 0.0357 (0.0254) | 0.0540 (0.0361) |
| Constant | 0.0270*** (0.0043) | 0.0270*** (0.0043) | 0.0340*** (0.0045) | 0.0269*** (0.0040) | 0.0329*** (0.0059) | 0.0359*** (0.0097) |
| Observations | 9,203 | 9,203 | 9,203 | 9,203 | 6,123 | 3,664 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| Adj R-squared | 0.133 | 0.133 | 0.135 | 0.133 | 0.148 | 0.182 |

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, we 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 (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. *High CSR Score (Quintiles)* is a binary variable that takes the value of one for those firms with a CSR score that is in the top quintile of the annual CSR score in year t , excluding firms that have no CSR score, and zero for firms having CSR score in the bottom quintile. *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 our 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 our 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. We 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.

with more social capital should experience lower volatility. Finally, we estimate the following model:

$$\text{Risk}_{i,t} = \alpha + \beta_1 \text{CSR}_{i,t} + \beta_2 \text{Fluidity}_{i,t} + \beta_3 \text{CSR}_{i,t} \times \text{Fluidity}_{i,t} + Y_{i,t-1} + \theta + \gamma + u_{i,t} \quad (2)$$

Here, $\text{Risk}_{i,t}$ is measured as the stock return volatility and alternatively as the cash flow volatility of firm i during time t . First, we use continuous value of *Fluidity* of firm i during time t . We also identify those firms that face greater market competition. Therefore, the variable *Greater Fluidity* takes the value of one for those firms having a fluidity measure greater than the annual average fluidity across all the firms in our sample, and zero otherwise. Alternatively, we 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 our sample, excluding the firm in question from the average estimation, and zero otherwise.

We test the hedging effectiveness of CSR within the reduced sample of firms that have a CSR score. $\text{CSR}_{i,t}$ is the overall CSR score of firm i at time t . Alternatively, we use $\text{CSR}_{i,t}$ as a binary variable equal to one for firms with a high CSR score and zero for firms with a low CSR score. We identify firms as having high or low CSR relative to the sample's average CSR score and the tercile and quintile classifications. For the *mean classification* we classify as high-CSR firms those firms with a CSR score higher the sample's average CSR score and as low-CSR those firms below the average CSR score. For the *Tercile classification*, the set of observations are divided into equal terciles based on the CSR score. Firms in the top tercile are classified as high CSR firms, and those in the bottom tercile are classified as low CSR firms. For the *Quintile classification*, the set of observations are divided into equal quintiles based on the CSR score. Firms in the top quintile are classified as high CSR firms, and those in the bottom quintile are classified as low CSR firms.¹⁵ 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 firm fixed effects, respectively. If CSR can mitigate firm risk driven by market competition, we expect the coefficient on the interaction term $\text{CSR} \times \text{Fluidity}$ to be negative.

Table 8. Placebo test.*Panel A: Stock return volatility*

| | (1) OLS | (2) OLS | (3) OLS | (4) OLS | (5) 2SLS | (6) 2SLS | (7) 2SLS | (8) 2SLS |
|-------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CSR | -0.0006*** (0.0001) | -0.0005*** (0.0001) | -0.0004*** (0.0001) | -0.0004*** (0.0001) | -0.0029*** (0.0003) | -0.0024*** (0.0003) | -0.0032*** (0.0003) | -0.0020*** (0.0003) |
| Election | 0.0042 (0.0048) | 0.0022 (0.0048) | -0.0011 (0.0020) | -0.0015 (0.0020) | -0.0591*** (0.0205) | -0.0349* (0.0197) | -0.0175*** (0.0035) | -0.0257*** (0.0037) |
| CSR* Election | -0.0001 (0.0001) | -0.0001 (0.0001) | 0.0001 (0.0000) | 0.0001 (0.0000) | 0.0011*** (0.0004) | 0.0007** (0.0004) | 0.0009*** (0.0002) | 0.0017*** (0.0002) |
| Market-to-Book | | 0.0009 (0.0025) | | -0.0118*** (0.0014) | | -0.0084*** (0.0026) | | -0.0217*** (0.0016) |
| Leverage | | 0.1009*** (0.0284) | | 0.0992*** (0.0144) | | 0.0625** (0.0317) | | 0.0735*** (0.0159) |
| Operating Margin | | -0.0061 (0.0040) | | -0.0024*** (0.0006) | | -0.0055 (0.0043) | | -0.0029*** (0.0007) |
| Investment | | 0.0094 (0.0115) | | -0.0366*** (0.0063) | | 0.0029 (0.0142) | | -0.0189*** (0.0071) |
| Sales Growth | | -0.0314*** (0.0090) | | -0.0194*** (0.0044) | | 0.0069 (0.0102) | | -0.0020 (0.0048) |
| Negative Equity | | 0.0131 (0.0224) | | 0.0768*** (0.0125) | | 0.0122 (0.0253) | | 0.0796*** (0.0137) |
| Term Limit | | -0.0018 (0.0047) | | -0.0109*** (0.0042) | | -0.0283*** (0.0063) | | -0.0384*** (0.0047) |
| Δ GDP | | -0.3433*** (0.0845) | | -0.2900*** (0.0583) | | -1.2513*** (0.0841) | | -1.9059*** (0.0536) |
| Unemployment | | -0.2828 (0.2445) | | -0.4345** (0.1839) | | -2.5591*** (0.1051) | | -3.4862*** (0.0706) |
| Constant | 0.5403*** (0.0109) | 0.5441*** (0.0182) | 0.6946*** (0.0043) | 0.7324*** (0.0108) | 0.5176*** (0.0148) | 0.7044*** (0.0172) | 0.5818*** (0.0036) | 0.8814*** (0.0075) |
| Observations | 9,734 | 9,734 | 43,521 | 43,521 | 9,591 | 9,591 | 43,427 | 43,427 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES | YES | YES |
| CSR obs | Only | Only | All | All | Only | Only | All | All |
| Adj R-squared | 0.511 | 0.520 | 0.347 | 0.362 | | | | |
| Cragg-Donald Wald | | | | | 41.36 | 40.97 | 177.8 | 176.6 |

Panel B: Stock return volatility

| | | | | | | | | |
|------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CSR | -0.0006*** (0.0001) | -0.0006*** (0.0001) | -0.0005*** (0.0001) | -0.0004*** (0.0001) | -0.0026*** (0.0002) | -0.0022*** (0.0002) | -0.0031*** (0.0003) | -0.0016*** (0.0003) |
| Election | -0.0292*** (0.0104) | -0.0286*** (0.0102) | -0.0094** (0.0047) | -0.0079* (0.0047) | 0.0113 (0.0271) | 0.0165 (0.0296) | -0.0318*** (0.0082) | 0.0089 (0.0096) |
| CSR* Election | 0.0004*** (0.0001) | 0.0004*** (0.0001) | 0.0004*** (0.0001) | 0.0004*** (0.0001) | 0.0001 (0.0005) | 0.0011** (0.0005) | 0.0021*** (0.0005) | 0.0048*** (0.0006) |
| Market-to-Book | | 0.0009 (0.0025) | | -0.0118*** (0.0014) | | -0.0095*** (0.0026) | | -0.0217*** (0.0016) |
| Leverage | | 0.1008*** (0.0284) | | 0.0990*** (0.0144) | | 0.0645** (0.0317) | | 0.0732*** (0.0160) |
| Operating Margin | | -0.0060 (0.0041) | | -0.0023*** (0.0006) | | -0.0050 (0.0041) | | -0.0028*** (0.0007) |
| Investment | | 0.0097 (0.0115) | | -0.0366*** (0.0063) | | 0.0069 (0.0140) | | -0.0183*** (0.0071) |
| Sales Growth | | -0.0322*** (0.0091) | | -0.0194*** (0.0044) | | 0.0049 (0.0102) | | -0.0038 (0.0048) |
| Negative Equity | | 0.0138 (0.0224) | | 0.0769*** (0.0125) | | 0.0120 (0.0247) | | 0.0803*** (0.0136) |
| Term Limit | | -0.0010 (0.0048) | | -0.0104** (0.0042) | | -0.0272*** (0.0065) | | -0.0346*** (0.0047) |
| Δ GDP | | -0.3349*** (0.0846) | | -0.2858*** (0.0587) | | -1.4450*** (0.0890) | | -2.0593*** (0.0561) |
| Unemployment | | -0.2852 | | -0.4392** | | -3.1207*** | | -4.0017*** |

(continued)

Table 8. Continued.*Panel B: Stock return volatility*

| | (1) OLS | (2) OLS | (3) OLS | (4) OLS | (5) 2SLS | (6) 2SLS | (7) 2SLS | (8) 2SLS |
|-----------------------|-----------------------|-----------------------------------|-----------------------|-----------------------------------|-----------------------|-----------------------------------|-----------------------|-----------------------------------|
| Constant | 0.5444*** (0.0109) | (0.2440) 0.5472*** (0.0183) | 0.6954*** (0.0044) | (0.1837) 0.7330*** (0.0108) | 0.4986*** (0.0119) | (0.1156) 0.7350*** (0.0163) | 0.5783*** (0.0034) | (0.0775) 0.9081*** (0.0077) |
| Observations | 9,734 | 9,734 | 43,521 | 43,521 | 9,591 | 9,591 | 43,427 | 43,427 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES | YES | YES |
| CSR obs | Only | Only | All | All | Only | Only | All | All |
| Adj <i>R</i> -squared | 0.511 | 0.520 | 0.347 | 0.362 | | | | |
| Cragg-Donald Wald | | | | | 41.33 | 40.73 | 116.45 | 113.44 |

This table reports the results of placebo tests. We conduct 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. We report the results of OLS in columns (1) to (4), and IV in columns (5) to (8). 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. All regressions include firm and year fixed effects. We 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.

The results from the impact of product market fluidity on the hedging ability of social capital are reported in Table 7. Panel A, reports the results for stock return volatility. In columns (1) and (2) we 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 a decrease of 1.19% in return volatility during greater product market fluidity. In Column (3), we use the continuous measures value for *Fluidity* and *CSR* and our results are consistent. In columns (4) to (6) we use the binary definition of high- and low-CSR firms, based on the mean, terciles, and quintiles classifications discussed earlier. The results are consistent across all specifications, supporting our earlier findings that CSR has a mitigating effect on firms' market risk. In Panel B, we repeat our estimations with cash flow volatility as the risk measure. We do not find evidence to suggest that the interaction between *Fluidity* and *CSR* affect cash flow volatility, consistent with our earlier findings. Overall, our findings suggest that CSR is an effective reputational hedge against market risk emerging from a firm-specific product market threat.

4.4. Placebo tests

We 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 8, we conduct placebo tests by choosing election years for each State randomly. Then, we 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) to (4), whereas the results based on our earlier IV approach are reported in columns (5) to (8). All specifications show that for the placebo election years, CSR is not an effective hedge against market risk. This suggests our results are not spurious. In Panel B, we repeat the placebo tests by choosing the close election years randomly and we do not find any hedging effect of CSR on stock return volatility during these falsified close election years. Hence, we can conclude that the reputational hedging effect of CSR is specific to election and closely contested election years.

5. CSR investment, performance and growth surrounding election cycles

To explore the real effects of CSR investment during election year in more detail, we also focus on firms' performance and growth surrounding election cycles. In Table 9, we 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

Table 9. Future growth and performance.

| 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 | 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*** | -0.117*** | -0.036*** | 0.160*** | 0.052*** | -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*** | -0.049*** | -0.033*** | 0.035 | 0.037*** | -0.049*** | -0.033*** | 0.035 | 0.037*** |
| t+3 | -0.600*** | -0.098*** | -0.152*** | 0.017*** | -0.036*** | -0.032*** | 0.015 | 0.035*** | -0.036*** | -0.032*** | 0.015 | 0.035*** | -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*** | -0.110*** | -0.090*** | 0.190 | 0.118*** | -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 | 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*** | -0.050** | -0.037*** | 0.069 | 0.037*** | -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*** | -0.052** | -0.032*** | -0.005 | 0.030*** | -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*** | -0.053 | -0.037*** | 0.057 | 0.031*** | -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*** | -0.110 | -0.088*** | 0.206 | 0.096*** | -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 | 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*** | -0.141*** | -0.036*** | 0.189*** | 0.056*** | -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*** | -0.048*** | -0.034*** | 0.050 | 0.040*** | -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*** | -0.032** | -0.030*** | -0.001 | 0.036*** | -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*** | -0.112*** | -0.092*** | 0.178 | 0.126*** | -0.112*** | -0.092*** | 0.178 | 0.126*** |

In this table, we 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, we 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.

Table 10. CSR investment and performance surrounding gubernatorial election cycle.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|-------------------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|
| | Operating margin | Operating margin | Profitability | Profitability | Tobin's Q | Tobin's Q | Sales growth | Sales growth |
| CSR _{Election-Year} | −0.0004 (0.0008) | −0.0006 (0.0008) | −0.0000 (0.0001) | −0.0001 (0.0001) | 0.0025*** (0.0008) | 0.0027*** (0.0008) | 0.0001 (0.0002) | −0.0000 (0.0002) |
| Market-to-Book | | 0.0037 (0.0436) | | 0.0242*** (0.0033) | | | | 0.0489*** (0.0044) |
| Leverage | | −0.2604 (0.2639) | | −0.0631** (0.0272) | | −0.2699** (0.1255) | | 0.0752** (0.0364) |
| Sales Growth | | 1.0435*** (0.2205) | | 0.0332*** (0.0118) | | 0.1392** (0.0594) | | |
| Profitability | | | | | | −0.2912*** (0.1049) | | |
| Operating Margin | | | | | | | | −0.0209*** (0.0040) |
| Negative Equity | | 0.6167* (0.3554) | | 0.0450* (0.0248) | | 0.7716*** (0.1158) | | −0.0067 (0.0346) |
| Term Limit | | 0.0251 (0.0774) | | 0.0147*** (0.0056) | | 0.0536 (0.0349) | | 0.0163* (0.0097) |
| Δ GDP | | −1.0630 (1.1569) | | 0.2228** (0.0980) | | −0.5189 (0.5478) | | 0.2902* (0.1717) |
| Unemployment | | −1.8061 (3.0732) | | 0.5325** (0.2640) | | 0.2895 (1.5619) | | 0.8041* (0.4604) |
| Constant | −0.5642*** (0.0351) | −0.5204*** (0.2007) | −0.1005*** (0.0036) | −0.1694*** (0.0171) | 1.7495*** (0.0186) | 1.7315*** (0.0850) | 0.0004 (0.0059) | −0.1581*** (0.0265) |
| Observations | 12,470 | 12,470 | 12,527 | 12,527 | 12,364 | 12,364 | 12,483 | 12,483 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES | YES | YES |
| CSR obs | All | All | All | All | All | All | All | All |
| Adj R-squared | 0.00233 | 0.0286 | 0.0318 | 0.0665 | 0.0818 | 0.0955 | 0.0313 | 0.0885 |
| <i>Panel B: Post-election years</i> | | | | | | | | |
| CSR _{Election-Year} | −0.0006 (0.0007) | −0.0002 (0.0007) | 0.0002*** (0.0001) | 0.0001** (0.0001) | 0.0013** (0.0007) | 0.0015** (0.0006) | −0.0003** (0.0001) | −0.0004*** (0.0001) |
| Market-to-Book | | −0.0587* (0.0350) | | 0.0244*** (0.0023) | | | | 0.0464*** (0.0032) |
| Leverage | | 0.2779 (0.2399) | | −0.0366** (0.0168) | | −0.4489*** (0.0893) | | 0.0681*** (0.0248) |
| Sales Growth | | 1.1314*** (0.1478) | | 0.0497*** (0.0063) | | 0.1033*** (0.0324) | | |
| Profitability | | | | | | −0.3149*** (0.0745) | | |
| Operating Margin | | | | | | | | −0.0317*** (0.0026) |
| Negative Equity | | 0.2120 (0.1882) | | 0.0221 (0.0153) | | 0.6413*** (0.0734) | | −0.0038 (0.0217) |
| Δ GDP | | −0.3279 (0.8210) | | 0.2484*** (0.0651) | | 1.1290*** (0.3793) | | 0.5720*** (0.1114) |
| Unemployment | | 1.6621 (2.7277) | | 0.4735** (0.1848) | | 0.0825 (1.2209) | | 1.4468*** (0.2866) |
| Constant | −0.4680*** (0.1063) | −0.6299*** (0.2016) | −0.0849*** (0.0107) | −0.1602*** (0.0153) | 1.8224*** (0.0451) | 1.8032*** (0.0796) | 0.0750*** (0.0159) | −0.1308*** (0.0231) |
| Observations | 30,884 | 30,884 | 30,985 | 30,985 | 30,652 | 30,652 | 30,892 | 30,892 |
| Firm FE | YES | YES | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES | YES | YES |
| CSR obs | All | All | All | All | All | All | All | All |
| Adj R-squared | 0.000104 | 0.0287 | 0.0228 | 0.0558 | 0.0812 | 0.0928 | 0.0631 | 0.144 |

In this table, we 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-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 firm and year fixed effects. We 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.

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 10, we regress firms' performance and growth measures on CSR investment during election year. Here, $CSR_{Election-Year}$ 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 market valuation (Tobin's Q) during election years. During post-election years, firms' profitability increases significantly, whereas 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.

6. Conclusion

We 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, Phillips, and Prabhala (2014). We contribute to the literature by investigating the CSR-risk relationship during times of political uncertainty and peer competition while considering the potential reverse causality between CSR and firm risk. Our 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 product market competition. Moreover, we 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.

Notes

1. Hereafter, we use the term 'social capital' and 'CSR' interchangeably.
2. 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.
3. The authors 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%.
4. Jiraporn et al. (2014) use a smaller sample of 2516 firm-year observations during 1995–2007 which also includes the start of the 2007–2009 financial crisis and can potentially affect the results on credit ratings.
5. We assume that CEOs align, at least partially, their personal reputation with their firms' reputation.
6. We refer 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, Hankins, and Harford 2014), and geographic diversification for multinational corporations (Allayannis, Ihrig, and Weston 2001; Kim, Mathur, and Nam 2006), and acquisitions (Hankins 2011), are considered as operational hedging mechanisms.
7. Asset4 provides ESG information for more than 4300 companies globally (of which 2693 are US 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 pillar. In addition to company-reported data, Asset4 collects information from NGOs, stock exchange filings, and other independent news sources.
8. We 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. Our results are consistent across all cash flow volatility measures.
9. The results are qualitatively similar across almost all alternative specifications of overall ESG score (available upon request).

10. See Vuolteenaho (2002), Bae, Chan, and Ng (2004), Chen et al. (2013), Hoberg and Moon (2017), Michaely, Rossi, and Weber (2018), among others.
11. We repeat the 2SLS estimations with each instrument (industry average CSR and State average CSR) separately. The results, presented in the Appendix (Tables A1, A2, A3 and A4), show that the instruments are also significant individually and, most importantly, the results remain qualitatively similar and significant (both statistically and economically).
12. We also repeat our OLS and IV estimations by using the cash flow volatility measurement of Keefe and Yaghoubi (2016) based on the $\sigma_{i,t}$ for cash flow volatility over one year and alternatively over three and four years. Our results are consistent and suggest that CSR does not affect cash flow volatility during political uncertainty.
13. We thank an anonymous referee for highlighting this point to us.
14. We use the product market fluidity data from Hoberg and Phillips Data Library available at <http://hobergphillips.tuck.dartmouth.edu/>.
15. For alternative measures of cash flow volatility and CSR, as discussed before, the results remain consistent in most of the specifications.

Acknowledgements

The authors are grateful to Christian Andres, Celine Azemar, Diogenis Baboukardos, Kais Bouslah, Magnus Blomkvist, Jo Danbolt, Gianfranco Gianfrate, Hue Hwa Au Yong, Gael Imad'eddine, Tae-Nyun Kim, Piotr Korczak, Timo Korkeamaki, Maria Marchica, Tiago Rodrigues-Loncan, Pedro Saffi, Zoe Tsemelidakis, Eliza Wu, Moqi Xu, Yaqiong (Chelsea) Yao, Steve Young and participants at the 2019 Annual FMA meeting, the 2019 INFINITI Conference on International Finance, the 3rd Conference on CSR the Economy and Financial Markets, the 37th International Conference of the French Finance Association (AFFI), the 2021 FMA European meeting, and the research seminar participants at the University of Lille and the University of Strathclyde, for their helpful comments. Any errors are our own.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by Commonwealth Scholarship Commission [grant number BDCA-2016-1].

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Appendices

Appendix 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 our 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 our 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 A1. The relationship between CSR reputation and risk during political uncertainty – only firms with CSR scores.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CSR | −0.0021*** (0.0002) | −0.0021*** (0.0002) | −0.0023*** (0.0002) | −0.0020*** (0.0002) | −0.0033*** (0.0003) | −0.0027*** (0.0003) |
| Election | 0.1208*** (0.0256) | 0.0284 (0.0240) | | | | |
| CSR* Election | −0.0029*** (0.0004) | −0.0014*** (0.0004) | | | | |
| Close Election | | | 0.1351*** (0.0449) | 0.0618 (0.0378) | | |
| CSR* Close Election | | | −0.0025*** (0.0008) | −0.0012* (0.0007) | | |
| Post-election | | | | | −0.1496*** (0.0198) | −0.1006*** (0.0193) |
| CSR* Post-election | | | | | 0.0024*** (0.0004) | 0.0018*** (0.0004) |
| Market-to-Book | | −0.0058** (0.0026) | | −0.0084*** (0.0026) | | −0.0081*** (0.0026) |
| Leverage | | 0.0582* (0.0316) | | 0.0613* (0.0317) | | 0.0664** (0.0316) |
| Operating Margin | | −0.0050 (0.0040) | | −0.0056 (0.0042) | | −0.0052 (0.0042) |
| Investment | | 0.0044 (0.0140) | | 0.0039 (0.0141) | | 0.0051 (0.0142) |
| Sales Growth | | 0.0003 (0.0104) | | 0.0078 (0.0102) | | 0.0085 (0.0103) |
| Negative Equity | | 0.0087 (0.0254) | | 0.0123 (0.0251) | | 0.0126 (0.0252) |
| Term Limit | | 0.0068 (0.0068) | | −0.0302*** (0.0063) | | |
| Δ GDP | | −1.3846*** (0.0858) | | −1.2529*** (0.0855) | | −1.1964*** (0.0797) |
| Unemployment | | −2.4775*** (0.1091) | | −2.5397*** (0.1065) | | −2.5297*** (0.1056) |
| Constant | 0.4827*** (0.0126) | 0.6972*** (0.0170) | 0.4878*** (0.0118) | 0.6871*** (0.0155) | 0.5434*** (0.0148) | 0.7164*** (0.0170) |
| Observations | 9,591 | 9,591 | 9,591 | 9,591 | 9,591 | 9,591 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | Only | Only | Only | Only | Only | Only |
| Cragg-Donald Wald | 60.70 | 58.82 | 86.83 | 85.59 | 48.84 | 48.40 |

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CSR | −0.0008*** (0.0003) | −0.0014*** (0.0003) | −0.0020*** (0.0002) | −0.0019*** (0.0002) | −0.0054*** (0.0004) | −0.0044*** (0.0004) |
| Election | 0.4566*** (0.0653) | 0.2332*** (0.0521) | | | | |
| CSR* Election | −0.0088*** (0.0011) | −0.0051*** (0.0009) | | | | |
| Close Election | | | 0.5219*** (0.1129) | 0.3133*** (0.0818) | | |
| CSR* Close Election | | | −0.0093*** (0.0020) | −0.0056*** (0.0014) | | |
| Post-election | | | | | −0.4823*** (0.0569) | −0.3603*** (0.0491) |
| CSR* Post-election | | | | | 0.0084*** (0.0010) | 0.0065*** (0.0009) |
| Market-to-Book | | −0.0059** (0.0027) | | −0.0092*** (0.0026) | | −0.0074*** (0.0028) |
| Leverage | | 0.0543* | | 0.0609* | | 0.0822** |

(continued)

Table A1. Continued.*Panel B: Stock return volatility – State Average CSR as Instruments*

| | (1) | (2) | (3) | (4) | (5) | (6) |
|-------------------|-----------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|
| Operating Margin | | (0.0327) –0.0060 | | (0.0320) –0.0063 | | (0.0330) –0.0047 |
| Investment | | (0.0039) 0.0025 | | (0.0042) 0.0026 | | (0.0044) 0.0064 |
| Sales Growth | | (0.0147) 0.0036 | | (0.0144) 0.0073 | | (0.0159) 0.0066 |
| Negative Equity | | (0.0111) 0.0095 | | (0.0104) 0.0144 | | (0.0115) 0.0142 |
| Term Limit | | (0.0258) 0.0024 | | (0.0250) –0.0353*** | | (0.0254) –0.0353*** |
| Δ GDP | | (0.0094) –1.3925*** | | (0.0074) –1.2516*** | | (0.0074) –1.2174*** |
| Unemployment | | (0.0910) –2.3138*** | | (0.0877) –2.4526*** | | (0.0840) –2.4186*** |
| Constant | 0.4140*** (0.0157) | 0.6496*** (0.0195) | 0.4672*** (0.0127) | 0.6728*** (0.0163) | 0.6569*** (0.0236) | 0.7974*** (0.0231) |
| Observations | 9,591 | 9,591 | 9,591 | 9,591 | 9,591 | 9,591 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | Only | Only | Only | Only | Only | Only |
| Cragg-Donald Wald | 18.97 | 17.13 | 24.03 | 22.90 | 13.57 | 13.13 |

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. The tests are limited to firms having CSR scores. As a risk measure, we 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). Columns 1, 3 and 5 contain the results of 2nd stage regression without control variables. In columns 2, 4 and 6, we report the 2nd stage regression outcomes with control variables. To measure political uncertainty, we 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*, 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. All regressions include firm and year fixed effects. We 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.

Table A2. The relationship between CSR reputation and risk during political uncertainty – all observations.*Panel A: Stock return volatility – Industry Average CSR as Instruments*

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CSR | −0.0014*** (0.0003) | −0.0007*** (0.0003) | −0.0020*** (0.0003) | −0.0009*** (0.0003) | −0.0038*** (0.0003) | −0.0028*** (0.0003) |
| Election | 0.0762*** (0.0070) | 0.0336*** (0.0061) | | | | |
| CSR* Election | −0.0085*** (0.0006) | −0.0063*** (0.0005) | | | | |
| Close Election | | | 0.1750*** (0.0127) | 0.0996*** (0.0098) | | |
| CSR* Close Election | | | −0.0115*** (0.0012) | −0.0069*** (0.0008) | | |
| Post-election | | | | | −0.0699*** (0.0036) | −0.0804*** (0.0045) |
| CSR* Post-election | | | | | 0.0027*** (0.0003) | 0.0049*** (0.0004) |
| Market-to-Book | | −0.0197*** (0.0016) | | −0.0216*** (0.0016) | | −0.0223*** (0.0016) |
| Leverage | | 0.0696*** (0.0160) | | 0.0744*** (0.0160) | | 0.0737*** (0.0159) |
| Operating Margin | | −0.0028*** (0.0007) | | −0.0029*** (0.0007) | | −0.0029*** (0.0007) |
| Investment | | −0.0193*** (0.0072) | | −0.0212*** (0.0071) | | −0.0187*** (0.0071) |
| Sales Growth | | −0.0055 (0.0048) | | −0.0022 (0.0048) | | −0.0036 (0.0048) |
| Negative Equity | | 0.0762*** (0.0139) | | 0.0791*** (0.0137) | | 0.0810*** (0.0136) |
| Term Limit | | −0.0063 (0.0061) | | −0.0471*** (0.0051) | | |
| Δ GDP | | −2.0131*** (0.0564) | | −1.8111*** (0.0543) | | −1.8360*** (0.0513) |
| Unemployment | | −3.2938*** (0.0748) | | −3.2960*** (0.0742) | | −3.5163*** (0.0712) |
| Constant | 0.5604*** (0.0038) | 0.8625*** (0.0078) | 0.5603*** (0.0035) | 0.8503*** (0.0075) | 0.5966*** (0.0036) | 0.8944*** (0.0077) |
| Observations | 43,427 | 43,427 | 43,427 | 43,427 | 43,427 | 43,427 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | All | All | All | All | All | All |
| Cragg-Donald Wald | 158.32 | 148.52 | 240.27 | 232.59 | 175.23 | 172.74 |

Panel B: Stock return volatility – State Average CSR as Instruments

| | | | | | | |
|---------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CSR | −0.0009*** (0.0003) | −0.0005* (0.0003) | −0.0019*** (0.0003) | −0.0010*** (0.0003) | −0.0041*** (0.0003) | −0.0032*** (0.0003) |
| Election | 0.1069*** (0.0073) | 0.0581*** (0.0065) | | | | |
| CSR* Election | −0.0113*** (0.0007) | −0.0085*** (0.0006) | | | | |
| Close Election | | | 0.2090*** (0.0134) | 0.1214*** (0.0106) | | |
| CSR* Close Election | | | −0.0146*** (0.0014) | −0.0089*** (0.0009) | | |
| Post-election | | | | | −0.0780*** (0.0040) | −0.0982*** (0.0049) |
| CSR* Post-election | | | | | 0.0034*** (0.0003) | 0.0064*** (0.0004) |
| Market-to-Book | | −0.0194*** (0.0016) | | −0.0215*** (0.0016) | | −0.0225*** (0.0016) |
| Leverage | | 0.0681*** (0.0162) | | 0.0754*** (0.0161) | | 0.0739*** (0.0160) |

(continued)

Table A2. Continued.*Panel B: Stock return volatility – State Average CSR as Instruments*

| | (1) | (2) | (3) | (4) | (5) | (6) |
|-------------------|-----------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|
| Operating Margin | | −0.0028*** (0.0007) | | −0.0029*** (0.0007) | | −0.0029*** (0.0007) |
| Investment | | −0.0203*** (0.0072) | | −0.0220*** (0.0071) | | −0.0189*** (0.0072) |
| Sales Growth | | −0.0062 (0.0049) | | −0.0024 (0.0048) | | −0.0043 (0.0049) |
| Negative Equity | | 0.0752*** (0.0140) | | 0.0787*** (0.0137) | | 0.0815*** (0.0136) |
| Term Limit | | −0.0046 (0.0069) | | −0.0486*** (0.0054) | | |
| Δ GDP | | −2.0223*** (0.0582) | | −1.8004*** (0.0546) | | −1.8528*** (0.0517) |
| Unemployment | | −3.1984*** (0.0745) | | −3.2368*** (0.0742) | | −3.5312*** (0.0717) |
| Constant | 0.5541*** (0.0038) | 0.8529*** (0.0078) | 0.5592*** (0.0035) | 0.8460*** (0.0075) | 0.6001*** (0.0036) | 0.9020*** (0.0078) |
| Observations | 43,427 | 43,427 | 43,427 | 43,427 | 43,427 | 43,427 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | All | All | All | All | All | All |
| Cragg-Donald Wald | 116.06 | 106.45 | 180.68 | 171.55 | 128.25 | 125.76 |

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. The tests include the entire sample of firms with or without a CSR score where we set CSR to zero for firms with no CSR score. As a risk measure, we 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). Columns 1, 3 and 5 contain the results of 2nd stage regression without control variables. In columns 2, 4 and 6, we report the 2nd stage regression outcomes with control variables. To measure political uncertainty, we 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*, 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. All regressions include firm and year fixed effects. We 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.

Table A3. The Relationship between CSR reputation and risk during political uncertainty – only firms with CSR scores.*Panel A: Cash Flow Volatility – Industry Average CSR as Instrument*

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------|-----------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|
| CSR | −0.0001 (0.0001) | −0.0001** (0.0001) | −0.0001 (0.0001) | −0.0002** (0.0001) | −0.0001 (0.0001) | −0.0002** (0.0001) |
| Election | 0.0096 (0.0062) | 0.0046 (0.0056) | | | | |
| CSR* Election | −0.0001 (0.0001) | −0.0001 (0.0001) | | | | |
| Close Election | | | 0.0053 (0.0141) | −0.0052 (0.0133) | | |
| CSR* Close Election | | | −0.0000 (0.0003) | 0.0001 (0.0002) | | |
| Post-election | | | | | −0.0004 (0.0045) | −0.0026 (0.0042) |
| CSR* Post-election | | | | | −0.0000 (0.0001) | 0.0001 (0.0001) |
| Market-to-Book | | 0.0044*** (0.0010) | | 0.0044*** (0.0010) | | 0.0043*** (0.0010) |
| Leverage | | 0.0273** (0.0106) | | 0.0275*** (0.0106) | | 0.0277*** (0.0106) |
| Profitability | | −0.1189*** (0.0239) | | −0.1195*** (0.0239) | | −0.1185*** (0.0240) |
| Cash | | 0.0681*** (0.0194) | | 0.0679*** (0.0192) | | 0.0675*** (0.0194) |
| Investment | | −0.0031 (0.0063) | | −0.0030 (0.0063) | | −0.0030 (0.0063) |
| Negative Equity | | 0.0217 (0.0144) | | 0.0217 (0.0144) | | 0.0219 (0.0145) |
| Term Limit | | −0.0073*** (0.0026) | | −0.0075*** (0.0025) | | |
| Δ GDP | | −0.1365*** (0.0330) | | −0.1355*** (0.0336) | | −0.1212*** (0.0303) |
| Unemployment | | 0.0162 (0.0281) | | 0.0121 (0.0280) | | 0.0077 (0.0286) |
| Constant | 0.0358*** (0.0042) | 0.0287*** (0.0050) | 0.0380*** (0.0038) | 0.0301*** (0.0048) | 0.0387*** (0.0040) | 0.0300*** (0.0053) |
| Observations | 9,257 | 9,257 | 9,257 | 9,257 | 9,257 | 9,257 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | Only | Only | Only | Only | Only | Only |
| Cragg-Donald Wald | 54.57 | 52.74 | 72.02 | 71.02 | 43.82 | 43.27 |

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

| | | | | | | |
|---------------------|------------------------|------------------------|-----------------------|-----------------------|------------------------|------------------------|
| CSR | 0.0001 (0.0001) | −0.0000 (0.0001) | −0.0000 (0.0001) | −0.0001 (0.0001) | −0.0002*** (0.0001) | −0.0003*** (0.0001) |
| Election | 0.0421*** (0.0133) | 0.0354*** (0.0121) | | | | |
| CSR* Election | −0.0007*** (0.0002) | −0.0006*** (0.0002) | | | | |
| Close Election | | | 0.0637** (0.0304) | 0.0462* (0.0265) | | |
| CSR* Close Election | | | −0.0011** (0.0005) | −0.0008* (0.0005) | | |
| Post-election | | | | | −0.0210* (0.0109) | −0.0307*** (0.0104) |
| CSR* Post-election | | | | | 0.0004* (0.0002) | 0.0006*** (0.0002) |
| Market-to-Book | | 0.0044*** (0.0010) | | 0.0042*** (0.0010) | | 0.0044*** (0.0010) |
| Leverage | | 0.0268** (0.0106) | | 0.0273** (0.0106) | | 0.0293*** (0.0108) |

(continued)

Table A3. Continued.*Panel B: Cash Flow Volatility – State Average CSR as Instrument*

| | (1) | (2) | (3) | (4) | (5) | (6) |
|-------------------|-----------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|
| Profitability | | −0.1169*** (0.0242) | | −0.1177*** (0.0238) | | −0.1168*** (0.0238) |
| Cash | | 0.0682*** (0.0193) | | 0.0677*** (0.0195) | | 0.0657*** (0.0194) |
| Investment | | −0.0032 (0.0064) | | −0.0034 (0.0064) | | −0.0031 (0.0063) |
| Negative Equity | | 0.0219 (0.0144) | | 0.0223 (0.0145) | | 0.0222 (0.0145) |
| Term Limit | | −0.0079*** (0.0027) | | −0.0084*** (0.0023) | | |
| Δ GDP | | −0.1397*** (0.0335) | | −0.1353*** (0.0342) | | −0.1254*** (0.0309) |
| Unemployment | | 0.0385 (0.0294) | | 0.0256 (0.0304) | | 0.0195 (0.0278) |
| Constant | 0.0286*** (0.0055) | 0.0208*** (0.0063) | 0.0341*** (0.0044) | 0.0264*** (0.0058) | 0.0453*** (0.0042) | 0.0383*** (0.0060) |
| Observations | 9,257 | 9,257 | 9,257 | 9,257 | 9,257 | 9,257 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | Only | Only | Only | Only | Only | Only |
| Cragg-Donald Wald | 17.31 | 15.56 | 19.11 | 18.16 | 11.89 | 11.31 |

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. The tests are limited to firms having CSR scores. As a risk measure, we 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). Columns 1, 3 and 5 contain the results of the 2nd stage regression without control variables. In columns 2, 4 and 6, we report the 2nd stage regression outcomes with control variables. To measure political uncertainty, we 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*, 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. All regressions include firm and year fixed effects. We 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.

Table A4. The relationship between CSR reputation and risk during political uncertainty - all observations.*Panel A: Cash Flow Volatility – Industry Average CSR as Instrument*

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CSR | −0.0006*** (0.0001) | −0.0006*** (0.0001) | −0.0006*** (0.0001) | −0.0007*** (0.0001) | −0.0006*** (0.0001) | −0.0007*** (0.0001) |
| Election | 0.0063*** (0.0013) | 0.0062*** (0.0013) | | | | |
| CSR* Election | −0.0004*** (0.0001) | −0.0006*** (0.0001) | | | | |
| Close Election | | | 0.0104*** (0.0025) | 0.0061** (0.0025) | | |
| CSR* Close Election | | | −0.0004*** (0.0001) | −0.0004*** (0.0002) | | |
| Post-election | | | | | 0.0013 (0.0011) | 0.0010 (0.0011) |
| CSR* Post-election | | | | | −0.0001 (0.0001) | −0.0000 (0.0001) |
| Market-to-Book | | 0.0077*** (0.0008) | | 0.0076*** (0.0008) | | 0.0076*** (0.0008) |
| Leverage | | 0.0147** (0.0064) | | 0.0152** (0.0063) | | 0.0152** (0.0064) |
| Profitability | | −0.0897*** (0.0057) | | −0.0898*** (0.0057) | | −0.0899*** (0.0057) |
| Cash | | 0.0636*** (0.0079) | | 0.0632*** (0.0079) | | 0.0635*** (0.0079) |
| Investment | | −0.0052 (0.0032) | | −0.0051 (0.0032) | | −0.0049 (0.0032) |
| Negative Equity | | 0.0133** (0.0054) | | 0.0136** (0.0054) | | 0.0135** (0.0054) |
| Term Limit | | −0.0024 (0.0018) | | −0.0040** (0.0017) | | |
| Δ GDP | | −0.1342*** (0.0175) | | −0.1250*** (0.0172) | | −0.1246*** (0.0165) |
| Unemployment | | 0.0908*** (0.0306) | | 0.0794*** (0.0303) | | 0.0645** (0.0301) |
| Constant | 0.0739*** (0.0013) | 0.0454*** (0.0034) | 0.0748*** (0.0012) | 0.0466*** (0.0033) | 0.0754*** (0.0013) | 0.0475*** (0.0034) |
| Observations | 41,700 | 41,700 | 41,700 | 41,700 | 41,700 | 41,700 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | All | All | All | All | All | All |
| Cragg-Donald Wald | 149.92 | 140.82 | 221.49 | 214.96 | 166.50 | 164.45 |

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

| | | | | | | |
|---------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CSR | −0.0005*** (0.0001) | −0.0006*** (0.0001) | −0.0006*** (0.0001) | −0.0007*** (0.0001) | −0.0006*** (0.0001) | −0.0007*** (0.0001) |
| Election | 0.0074*** (0.0016) | 0.0084*** (0.0017) | | | | |
| CSR* Election | −0.0005*** (0.0001) | −0.0008*** (0.0001) | | | | |
| Close Election | | | 0.0123*** (0.0030) | 0.0085*** (0.0031) | | |
| CSR* Close Election | | | −0.0005*** (0.0002) | −0.0006*** (0.0002) | | |
| Post-election | | | | | 0.0015 (0.0013) | 0.0011 (0.0013) |
| CSR* Post-election | | | | | −0.0001 (0.0001) | −0.0000 (0.0001) |
| Market-to-Book | | 0.0077*** (0.0008) | | 0.0076*** (0.0008) | | 0.0076*** (0.0008) |
| Leverage | | 0.0145** (0.0064) | | 0.0152** (0.0063) | | 0.0152** (0.0064) |

(continued)

Table A4. Continued.*Panel B: Cash Flow Volatility – State Average CSR as Instrument*

| | (1) | (2) | (3) | (4) | (5) | (6) |
|-------------------|-----------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|
| Profitability | | −0.0896*** (0.0057) | | −0.0898*** (0.0057) | | −0.0899*** (0.0057) |
| Cash | | 0.0637*** (0.0079) | | 0.0631*** (0.0079) | | 0.0635*** (0.0079) |
| Investment | | −0.0053* (0.0032) | | −0.0051 (0.0032) | | −0.0049 (0.0032) |
| Negative Equity | | 0.0132** (0.0054) | | 0.0136** (0.0054) | | 0.0135** (0.0054) |
| Term Limit | | −0.0023 (0.0019) | | −0.0042** (0.0017) | | |
| Δ GDP | | −0.1352*** (0.0176) | | −0.1242*** (0.0172) | | −0.1244*** (0.0166) |
| Unemployment | | 0.0983*** (0.0308) | | 0.0845*** (0.0305) | | 0.0647** (0.0301) |
| Constant | 0.0737*** (0.0014) | 0.0446*** (0.0034) | 0.0748*** (0.0013) | 0.0462*** (0.0034) | 0.0755*** (0.0014) | 0.0474*** (0.0034) |
| Observations | 41,700 | 41,700 | 41,700 | 41,700 | 41,700 | 41,700 |
| Firm FE | YES | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES | YES |
| CSR obs | All | All | All | All | All | All |
| Cragg-Donald Wald | 108.56 | 99.58 | 165.65 | 157.34 | 122.58 | 120.46 |

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. The tests include the entire sample of firms with or without a CSR score where we set CSR to zero for firms with no CSR score. As a risk measure, we 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). Columns 1, 3 and 5 contain the results of the 2nd stage regression without control variables. In columns 2, 4 and 6, we report the 2nd stage regression outcomes with control variables. To measure political uncertainty, we 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*, 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. All regressions include firm and year fixed effects. We 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.