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Firm-Level Political Risk and Bank Loan Contracting*

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We investigate the impact of firm-level political risk on loan contracting. We find that firm-level political risk is positively associated with bank loan cost and that this effect is stronger for firms experiencing increased operation uncertainty and higher default risks. Firm-level political risk also leads to more unfavorable non-pricing loan terms. We establish causality using an instrumental variable approach and placebo tests. We further find that political connections and relationship-based borrowing can attenuate the adverse effect of firm-level political risk on loan contracting.

Keywords: firm-level political risk, bank loan cost, loan covenants, default risk, operation uncertainty

JEL Classification: G21, G32, P16, P26

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Abstract

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1. Introduction

Prior studies document that political uncertainty has a significant effect on business activities. Both theoretical and empirical studies document that higher political uncertainty reduces firm investment (Julio and Yook, 2012; Gulen and Ion, 2016; Lee et al., 2020), depresses employment growth (Baker et al., 2016), dampens IPO and SEO activities (Çolak et al., 2017; Chan et al., 2021), and commands risk premiums in stock and option markets (Pástor and Veronesi, 2012, 2013; Kelly et al., 2016; Liu et al., 2017). These studies typically focus on aggregate political uncertainty. However, recent academic research and anecdotal evidence suggest that aggregate political uncertainty cannot fully capture firm-specific political risk, which is largely heterogeneous among different individual firms. For example, when former US President Trump tweeted that Lockheed Martin's F-35 program was too expensive, the firm's shares declined by about 2%, shaving US\$1.2 billion off its market value.¹

Understanding the impact of firm-specific political risk is important but challenging because it requires an appropriate firm-level political risk measure. Our paper overcomes this challenge by using a new measure of firm-specific political risk proposed by Hassan et al. (2019), which is constructed based on textual analysis of listed firms' earnings conference call transcripts. When firms' conference calls contain more politics-related conversations, their participants exhibit heightened concerns about political issues, suggesting that the firm is associated with higher political risk.² Hassan et al. (2019) also document that this firm-level political risk measure

¹ On December 23rd, 2016, President Trump tweeted that Lockheed Martin's "F-35 program and cost are out of control. Billions of dollars can and will be saved on military (and other) purchases after January 20th" (<https://www.cnn.com/2016/12/22/lockheed-martin-shares-take-another-tumble-after-trump-tweet.html>). One may argue that this is an industry effect. However, when we consider three other prominent companies in the aerospace and defense industry (Raytheon (RTX), General Dynamics (GD), and Northrop Grumman (NOC)), we find that their stock prices changed little.

² It is also likely that firm managers voluntarily disclose and discuss more politics-related issues to get business advantages. However, Hassan et al. (2019) validate that the measure is a risk measure instead of a disclosure-related measure. They find that increases in firm-level political risk are associated with significant increases in stock return volatility.

captures approximately 90% of the cross-firm variation in political exposure. Thus, this firm-specific political risk measure acts as an appropriate firm-level measure and enables researchers to examine not only time-series variation but also—and perhaps more importantly—cross-sectional variation in political risk.

We take advantage of this to examine how firm-level political risk affects firms' bank loan financing activities. We focus on firms' bank loan contracting because bank loans are the predominant source of external financing not only for small firms but also for large corporations (Qian and Strahan, 2007). We argue that firm-level political risk increases loan costs through operation uncertainty and default risk channels. First, firm-level political risk increases loan costs by causing operational uncertainty. Conventional models with irreversible choices under uncertainty show that firms postpone investment or hiring during uncertainty, distorting their business operations (Bernanke 1983; Dixit and Pindyck, 1994), and empirical evidence supports the prediction (Baker et al., 2016; Hassan et al., 2019).³ Thus, banks may charge higher loan costs for firms with higher political risk due to concerns about operation uncertainty. Second, higher firm-level political risk increases default risk (Kavani et al. 2021; Islam et al., 2022), leading to higher loan costs. Hasan et al. (2012) show that default risk is directly linked to borrowers' contract obligations and negatively impacts loan pricing. We therefore hypothesize that firm-level political risk raises bank loan costs by increasing borrower default risk.

Using a sample of 11,463 loan-level observations in the US from 2002 to 2016, we find that firms facing higher firm-level political risk are indeed charged higher loan spreads. In particular, a one-standard-deviation increase in firm-level political risk leads to a six-basis-point increase in

³ Strategic reduction in investment or hiring could increase asset allocation efficiency. However, conventional models suggest that the reduction caused by increased risk exposure, such as increased aggregate political risk, will disrupt a firm's operations and lead to suboptimal outcomes (Pindyck, 1988; Bloom et al, 2007). In the same vein, both Hassan et al.'s (2019) and our study focus on the detrimental impact of firm-level political risk on corporate outcomes for both shareholders and debtholders.

firms' bank loan costs, which is comparable to the findings of prior studies.⁴ This amounts to a US\$1.4 million increase in interest expenses for a typical loan, which is equivalent to 3.74% of total loan expenses. Thus, the observed effect of firm-level political risk is economically meaningful. Our results are robust to different fixed effects specifications and using firm characteristics matched samples.

To shed light on operation uncertainty and default risk channels, we examine how the relationship between firm-level political risk and loan costs varies across firms. The negative impact of firm-level political risk on loan costs should be more pronounced in the presence of factors that exacerbate firms' operation uncertainty, default risk, or both. We use investment reduction and hiring reduction in the previous two years (Baker et al., 2016; Hassan et al., 2019) to measure increases in operation uncertainty. We use the change in default probability in the previous two years (Islam et al., 2022) to measure increases in default risk. Moreover, the impact of firm-level political risk on loan costs should be more pronounced for financially constrained firms. We consider external financing dependency (Rajan and Zingales, 1998; Khwaja and Mian, 2005), cash flow volatility, and the Hadlock and Pierce (2010) index as measures of financial constraints. We find that the adverse effect of firm-level political risk on loan costs is stronger for firms experiencing a decrease in investment or hiring, an increase in default probability, and for more financially constrained firms. These findings help validate and support the operation uncertainty and default risk channels.

To establish a causal interpretation of our findings, we address the endogeneity concern using several methods. Obviously, part of the firm's political risk comes from its decisions, and therefore, it is determined endogenously. Therefore, the impact of firm-level political risk on loan costs might

⁴ For comparison, Bharath et al. (2008), Francis et al. (2012), Hasan et al. (2014, 2017), and Hagendorff et al. (2023) find that a one-standard-deviation increase in accounting quality, board independence, effective tax rate, social capital, and lender trust reduces bank loan costs by 6.65, 5.50, 4.87, 4.33, and 2.7 basis points, respectively.

be biased because of the endogeneity concern, especially for correlated omitted variables.⁵ To address these concerns, we employ several empirical strategies.⁶ First, we apply an instrumental variable (IV) approach using a firm's political distance and the average of local firms' political risks as IVs for the focal firm's political risk. Our IV analysis passes the two-stage regressions and the falsification tests when we instrument non-political risk instead of political risk. We then employ a lead-lag test and find that lagged firm-level political risk affects loan costs but not vice versa. Therefore, our results confirm the causal relation between firm-specific political risk and loan costs. We also tackle alternative explanations for this relation. We find that firm-level political risk is not a re-packaging of existing predictors for firm-level loan costs, and firms' debt-financing acquisitions do not drive the effect of firm-level political risk on loan costs.

In addition to bank loan spreads, banks also impose other contract terms to facilitate monitoring and limit potential losses (Qian and Strahan, 2007; Hasan et al., 2014). If banks evaluate borrowers from the political risk aspect and charge politically risky firms higher spreads, they can also impose unfavorable non-pricing terms to compensate for such risk. Consistent with this prediction, we find that firms facing higher firm-level political risk are subject to more total, general, and financial covenants. They are more likely to suffer collateral requirements and debt issuance sweep restrictions and are charged higher annual fees. Overall, our results support the argument that banks consider firm-level political risk in designing loan contracts, and politically risky firms are charged high spreads and suffer more unfavorable non-pricing loan terms.

Finally, we explore whether political connections and relationship-based loans can alleviate the adverse effects of political risk. Following prior studies, we use a firm's lobbying activity as a

⁵ Firm-level political risk could be a firm's endogenous choice. For example, firms' decisions to locate their facilities, e.g., in China vs. the US, and their decisions to donate to politicians would all affect the political risk to which they are subject. Many other decisions might also alter a firm's political risk. We thank the editor for pointing out this.

⁶ Among different endogeneity concerns, our study is more likely to suffer from the concern of correlated omitted variables than reverse causality. For example, some unobservable variables might affect both firm-level political risk and bank loan costs. Our IV tests help to address this concern. We thank an anonymous referee for pointing out different endogeneity-related concerns in our study.

proxy for political connections (Khwaja and Mian, 2005). We next classify a loan as a relationship-based loan if the loan issuer had a relationship with the lead bank in the past (Bharath et al., 2011). Our results show that the adverse effects of firm-level political risk on loan contacting are mitigated for firms having political connections and borrowing relationship-based loans.

Our paper contributes to the literature in several ways. First, prior studies examining the impact of aggregate measures of political uncertainty (EPU or election events) on firms' financing outcomes focus on the effect of *time-series variation* in *aggregate* political uncertainty on the *average cost* of debt financing for all firms *over time*.⁷ We instead focus on the effect of *cross-sectional variation* in *firm-level* political risk on firm-level debt financing costs at *a single time point*.⁸ Hassan et al. (2019) suggest that *aggregate* political risk cannot capture variation in a firm's political risk over time or heterogeneity in political risk across firms. We regard these approaches as complementary, as one focuses on time-series variation and the other on cross-sectional variation. Our results suggest that *firm-level* political risk is priced in that firm-level political risk positively affects firms' debt financing costs.

Second, our paper adds to the literature on the firm-level determinants of loan contracting. Studies on the cost of debt financing focus mainly on default risk (Huang et al., 2018) and information asymmetry (Qian and Strahan, 2007; Bharath et al., 2008). We show that firm-level political risk is an incremental and significant determinant of credit quality that is separate from existing loan- and firm-specific determinants known to affect the pricing and non-pricing terms of loan contracts.

Finally, our study deepens understanding of the nature of firm-level political risk. Hassan et al. (2019) argue that much of the economic impact of political risk is not well described by

⁷ See Waisman et al. (2015), Liu and Zhong (2017), Wang et al. (2019), Ben-Nasr et al. (2020), Kaviani et al. (2020), and Tran and Phan (2022).

⁸ Moreover, aggregate political uncertainty likely coincides with other macro-level factors, such as inflation, term structure, and economic conditions, which might influence the causal interpretation.

conventional models in which individual firms have relatively stable exposure to aggregate political risk. We find that firm-level political risk, to some extent, lacks persistence, as only one- and two-quarter-lagged firm-level political risk affects firms' loan costs. This supports Hassan et al.'s (2019) argument that measures assuming relatively stable exposure to aggregate political risk may not capture a firm's true political risk.

Our work is also related to a number of other studies. Francis et al. (2014) use the *absolute* value of stock return sensitivity to the EPU index as an indirect measure of firm-level political exposure and examine its effect on firms' loan costs. However, using the absolute value of return sensitivity to EPU makes the results difficult to interpret.⁹ We instead use a direct firm-level political risk measure and provide a clearer causality interpretation by examining more cross-firm variations. Bradley et al. (2016) examine the cost of debt in the context of a firm's proximity to political power. In contrast, we focus on the private loan market and investigate the impact of firm-level political risk instead of the cross-state variation in political power. Moreover, our results hold when we control for proximity to political power (the results are available upon request). Gad et al. (2023) investigate the link between firm-specific political risk and capital market outcomes, emphasizing the transmission of political risk from lenders to borrowers. Although they show a similar relationship between firm-level political risk and loan spread in one test, our paper is more specific on the bank loan contracting issue. Both pricing and non-pricing terms are examined in our study. Moreover, by investigating bank loan contracting, we can include more loan-specific control variables and use more stringent model specifications. In terms of underlying mechanisms,

⁹ Francis et al. (2014) find that the *absolute* value of return sensitivity to EPU increases a firm's cost of bank loans. However, economic theory suggests that positive sensitivity means that when EPU is high, a firm's stock performance is better. As a result, the stock can be used to hedge against aggregate political uncertainty risk, so its risk is lower, and it should earn a lower future return or cost of capital and vice versa for a negative sensitivity (Bali et al., 2017). Moreover, the return sensitivity to EPU cannot *promptly* capture the time-series variation of political risk as Hassan et al. (2019) measure because it uses many months of historical data to conduct the regression and estimate the sensitivity.

we identify operational uncertainty and default risk as the primary channels through which political risk adversely affects firm loan financing.

2. Literature review and hypothesis development

As discussed at the onset, aggregate political uncertainty has important effects on economic activities and corporate decisions, such as reducing macroeconomic growth, decreasing capital investments, reducing merger and acquisition activities, increasing risk premiums, and delaying IPOs. In addition, studies suggest that aggregate political uncertainty (including national elections) increases default probability, information uncertainty, and the cost of capital (debt or equity) for all firms.¹⁰ In contrast, we use Hassan et al.'s (2019) methodology to investigate how firm-level political risk affects a firm's loan contracting through operation uncertainty and default risk mechanisms.

We argue that firm-level political risk can affect loan costs by increasing firm operation uncertainty. Conventional models based on the theory of irreversible choices under uncertainty show how uncertainty affects firm investment. These models show that when faced with higher political risk, firms usually postpone investment until the uncertainty is resolved (Bernanke 1983; Dixit and Pindyck, 1994). Firm operations may become unstable when organizational capital investment is also affected by uncertainty (Bernanke 1983). Baker et al. (2016) use option-implied stock price volatility as a proxy for firm-level uncertainty and find that uncertainty adversely impacts investment rates and employment growth. Julio and Yook (2012) find that during election years, firms reduce their investment expenditures by an average of 4.8 percent compared to non-election years, implying that political uncertainty impacts firm operations. Hassan et al. (2019) reveal that firm-level political risk is associated with significantly lower investment and hiring. Firm operation uncertainty also affects borrower creditworthiness and significantly impacts loan

¹⁰ See Waisman et al. (2015), Liu and Zhong (2017), Wang et al. (2019), Ben-Nasr et al. (2020), Kaviani et al. (2020), Chan et al. (2021), and Tran and Phan (2022).

pricing (Waisman et al., 2015). Therefore, higher firm-level political risk increases the operation uncertainty of borrowers, leading to higher loan spreads.

The risk that a borrower fails to meet their financial obligations by struggling to repay a loan or debt as agreed in a contract is known as default risk (Freixas and Rochet, 2008). We conjecture that firms exposed to higher political risk will experience higher default risk and thus face higher loan costs. Kavani et al. (2021) show that default risk is the channel that links aggregate political risk to bond spreads. They find that increases in political risk significantly increase expected default losses, and bondholders charge higher bond spreads to compensate for the increased default risk. Similarly, firm-level political risk can impact a firm's default risk. Islam et al. (2022) find that firm-level political risk has a significantly adverse impact on a firm's default probability and distance to default. Prior research indicates that banks are concerned about default risk and demand a higher loan spread to compensate for increased default risk (Hasan et al., 2012). As a result, we conjecture that firm-level political risk increases default risk, leading to higher loan costs.

Both operation uncertainty and default risk channels predict that firms associated with higher political risk are charged higher loan spreads. The above discussion leads to our first hypothesis.

H1. *Firms exposed to higher political risk have higher bank loan spreads.*

Bank loan contracts also contain multi-dimensional information on factors such as loan maturity, collateral requirements, and covenants. Rajan and Winton (1995) argue that banks mitigate information risk by demanding more collateral or by including more extensive covenant restrictions. Strahan (1999) finds that banks use both the pricing and the non-pricing terms of loans as complements to deal with borrower risk. Studies also find that riskier borrowers pay more for their loans and are subject to unfavorable non-pricing terms for loans that are systematically related to pricing (Li, 2010; Hasan et al., 2014). We thus predict that firm-level political risk will also

affect a loan's non-pricing terms, as formalized in our second hypothesis.

H2. *Firms exposed to higher political risk are subject to unfavorable non-pricing loan terms.*

Finally, we explore the role of political connections and relationship-based loans in alleviating the adverse effect of political risk on loan costs. When a firm faces high political risk, managers may feel uncertain about the future business environment and thus have unclear expectations of the effects of political risk on firm operations. Prior studies find that political connections can reduce political risk and regulatory risk (Correia, 2014; Mehta and Zhao, 2020). We conjecture that those managers connected to politicians can obtain privileged access to political information (e.g., strategic details of upcoming hearings, current policy positions, potential amendments, etc.), decreasing managers' operation uncertainty regarding future prospects. This could improve the accuracy of information transferred to lenders and reduce the cost of debt (e.g., Khwaja and Mian, 2005; Wellman, 2017).

Alternatively, relationship loans could decrease the information risk between managers and lenders. When a firm borrows money from the same bank multiple times, the bank develops perceptions of the firm's fundamentals and information trustworthiness. Bharath et al. (2011) suggest that relationship lending enables a bank to reuse some information and reduce monitoring costs, enabling the firm to obtain better contracting terms. Beck et al. (2018) document that relationship lending alleviates borrowers' credit constraints during an economic downturn. We thus conjecture that such perceptions could reduce the impact of political risk and facilitate the loan contracting process. These considerations lead to our final hypothesis.

H3a. *The positive relation between firm-level political risk and bank loan costs is attenuated by political connections.*

H3b. *The positive relation between firm-level political risk and bank loan costs is attenuated by relationship-based lending.*

3. Sample and data

3.1. Sample

Our data are drawn from five main sources. We obtain data on firm-level political risk from Dr. Hassan's personal website (<https://www.firmlevelrisk.com/>). We collect bank loan data from the DealScan database, which is provided by the Loan Pricing Corporation (LPC). Our sample period covers 2002 to 2016, because data relevant to firm-level political risk are only available for this period. Firms' financial information is obtained from Compustat and stock return information from the Center of Research in Security Prices. We also collect information on macroeconomic variables from the Federal Reserve Bank of St. Louis database.

Following the bank loan literature, we exclude financial firms (SIC codes 6000–6999) and firms in utility industries (SIC codes 4900–4999) from our sample. We also exclude firms with missing firm-level political risk data, loan pricing information, and/or financial information. Following common practice, we winsorize all of the continuous variables (except for the dependent variables) at the top and bottom percentiles to mitigate the effects of outliers. Our final sample consists of 11,463 loan-level observations.

3.2 Measurements of variables

In this section, we discuss the measurements of loan spread, firm-level political risk, and control variables. Detailed definitions of these variables are provided in the Appendix.

3.2.1. Loan spread

The DealScan database provides comprehensive data on loan characteristics, such as loan start dates, end dates, amounts, spreads, and maturities. Following the literature (Bharath et al., 2008; Kim et al., 2011), we include loans that are term loans, revolvers, and 364-day facilities, but we exclude non-fund-based facilities such as standby letters of credit and very short-term bridge loans. To ensure that the loan spreads are comparable, we restrict our sample to loans whose spreads are based on LIBOR. We link the loan data with firm-level accounting data using a link

table between the LPC DealScan and Compustat databases, which is provided by Professor Roberts.¹¹ Following previous work (Bharath et al., 2008; Hasan et al., 2014), we define the loan spread as the natural logarithm of the all-in-spread drawn (AISD), denoted as $Log(Spread)$. The AISD includes the coupon spread over LIBOR on the drawn amount, plus the annual fee, which is denoted in basis points.

3.2.2. Firm-level political risk

Hassan et al. (2019) develop a novel firm-level measure of political risk based on their textual analysis of the quarterly earnings conference call transcripts of US corporations since 2002.¹² They first distinguish political from non-political topics using the pattern-based sequence classification method, in which they define the lexical training libraries of political and non-political texts. The training library for political texts includes an undergraduate political science textbook and texts from the political sections of newspapers. The library for non-political texts includes an accounting textbook, texts from non-political sections of newspapers, and transcripts of non-political speeches.

Hassan et al. (2019) then use adjacent two-word combination bigrams to represent the text classifications and deconstruct the conference call transcripts into lists of bigrams. They count the number of bigrams in conjunction with synonyms for “risk” or “uncertainty,” and they restrict the distance between the words surrounding a synonym for “risk” or “uncertainty” to within 10 words. Thus, the firm i ’s level of political risk in quarter t ($PRisk_{i,t}$) is the weighted number of occurrences of political bigrams divided by the total number of bigrams, calculated as follows:

$$PRisk_{i,t} = \frac{\sum_b^{Bit} (1[b \in P \setminus N] \times 1[|b-r| < 10] \times \frac{f_{b,P}}{B_P})}{Bit},$$

where $1[...]$ is the indicator function, $P \setminus N$ is the set of bigrams contained in political texts, and r

¹¹ See Chava and Roberts (2008) for further details.

¹² Hassan et al. (2019, p. 2136) note that “the vast majority of US listed firms hold regular earnings conference calls with their analysts and other interested parties, in which management gives its view on the firm’s past and future performance and responds to questions from call participants.”

is the position of the nearest synonym for “risk” or “uncertainty.” In addition, $b = 1, \dots, B_{it}$ is the number of bigrams contained in the transcript, $f_{b,p}$ is the frequency of bigram b in the political training library, and B_p is the total number of bigrams in the political training library. $PRisk_{i,t}$ captures the percentage of conversations devoted to risks associated with political topics, adjusted by the total number of bigrams contained in the transcripts. Thus, a larger percentage of $PRisk_{i,t}$ implies more severe firm-level political risk. Following Hassan et al. (2019), we standardize $PRisk_{i,t}$ with its sample to facilitate interpretation.

3.2.3. Control variables

We select control variables based on previous studies. Following Graham et al. (2008), we include a batch of firm characteristics, such as firm size (*Size*), profitability (*Profit*), total debt ratios (*LEV*), growth potential (*M/B*), asset tangibility (*Tang*), and default probability (*Z-score*). We also include additional firm-level attributes that may correlate with loan costs. Specifically, we include firm investment (*CAPX*), a loss dummy (*Loss*), stock return (*Return*), and institutional holding (*Insti_holding*). We expect that firms with poorer stock performance, fewer investments, or reporting a loss in their financial statements, all else being equal, have higher borrowing costs (Hasan et al., 2014; Ma et al., 2019). High institutional holding certifies good creditworthiness of the firm and thus is associated with lower spreads (Qian and Strahan, 2007; Huang et al., 2018). In addition, we consider a firm’s cash flow risk and overall risk. We use a firm’s cash flow volatility (*CF_Vol*) to capture a firm’s cash flow risk (Bharath et al., 2008; Du et al., 2020), and the stock return volatility (*TVol*) to capture a firm’s overall risk (Ma et al., 2019). We expect firms with higher cash flow risk or overall risk to pay higher loan borrowing costs (Bittlingmayer, 1998). Moreover, to distinguish the impact of firm-level political risk from that of political sentiment, following Hassan et al. (2019), we also include political sentiment (*PSentiment*) to control for the political sentiment (i.e., positive or negative tone) associated with the earnings conference call

participants.¹³

We further control for loan characteristics that may be correlated with loan pricing. We control for loan maturity ($\text{Log}(\text{Mat})$), as lenders require a liquidity premium for longer-term debt and this liquidity premium translates into a higher loan spread (Graham et al., 2008; Huang et al., 2018). We include loan amount ($\text{Log}(\text{Amt})$) and expect it to be negatively related to the loan interest rates, because riskier borrowers are granted smaller loans with higher interest rates (Kim et al., 2011). Following Kim et al. (2011), we further include the number of general covenants (GenCovIndex) and the number of financial covenants (FinCovIndex). We also control for formal contract provisions embedded in the loan facility by including performance pricing provision (Perf_Provision) and collateral requirement indicator (DSecured).

Lastly, we include a set of macro-level variables. Pástor and Veronesi (2012, 2013) find that aggregate political uncertainty affects a firm's financing decisions and financing costs. It is likely that aggregate political uncertainty affects firm-level political risk and loan spread simultaneously. We thus control for the impact of aggregate political uncertainty (PU_a) constructed by Baker et al. (2016) in the regression.¹⁴ We then control for default risk (Default_Rate) because lenders require premiums for increased default risk in times of economic downturn. In addition, we control for the term spread (Term_Spread), which we expect to be positively related to the loan spread (Graham et al., 2008; Huang et al., 2018).

3.3. Descriptive statistics

Panel A of Table 1 reports the annual distribution of loan amounts. Panel B of Table 1 shows the sample distribution across industries. As documented by Hassan et al. (2019), the distribution

¹³ To reflect a manager's willingness to discuss or attitude towards firm-level political risk, Hassan et al. (2019) also construct the political sentiment measure based on the tone of the words used during the discussion. They find that opposite to firm-level political risk, more positive political sentiment is associated with higher stock returns, investment, and hiring.

¹⁴ We thank Baker et al. (2016) for providing the EPU index at <http://www.policyuncertainty.com/>. To make the coefficients comparable, we construct PU_a as EPU divided by 100.

of firm-level political risk demonstrates sector-level (SIC division) clustering. We illustrate this variation between industries by calculating the mean of firm-level political risk for each industry, as classified by the first two-digit SIC code. To save space, we report only the top and bottom five industries with at least 30 observations in our final sample. The *Engineering and Management Services* industry has the highest firm-level political risk, with a mean of 0.90. In contrast, the *Food Stores* industry has the lowest firm-level political risk, with a mean of 0.25. Firms in the top five firm-level political risk industries have an average loan spread of 230 bps, which is about 45 bps higher than that of firms in the bottom five firm-level political risk industries. This provides the first intuitive evidence that higher firm-level political risk leads to higher loan costs.

Table 2 presents the summary statistics for the variables. The mean (median) firm-level political risk is 0.47 (0.24) and it has a wide range: between 0.07 at the 25th percentile and 0.53 at the 75th percentile. In terms of loan characteristics, the average interest spread is 210 bps above LIBOR. The average loan issuance is US\$522 million, with a maturity of 4.47 years. In terms of fundamental characteristics, the profitability of the average loan borrower is 0.14, with a cash flow volatility of 0.13. These descriptive characteristics are comparable to findings in the literature (Bharath et al., 2008; Graham et al., 2008; Kim et al., 2011).

4. Empirical findings

4.1. Regression analysis

Loan pricing is the most important term in a loan contract. We investigate the impact of a firm's exposure to political risk on its loan cost using the following regression model:

$$\text{Log}(\text{Spread}_{t+1}) = \alpha + \beta_1 \times \text{PRisk}_{i,t} + \beta_X \times X_{i,t} + \varepsilon_{i,t+1}, \quad (1)$$

where i is the firm, t is the time, and $X_{i,t}$ contains the set of control variables. We estimate the above model using ordinary least squares (OLS) regression. The t -statistics are computed using standard errors that are robust to heteroscedasticity and clustered at the firm and year levels.

Research suggests that business loans fall into different categories and borrowers take out loans for various reasons, such as to fund corporate initiatives, repay debt, obtain working capital, and implement takeovers (Huang et al., 2018). These different types and purposes of loans are associated with different levels of risk, so they may be priced differently. Thus, we estimate our model regressions by incorporating loan type and loan purpose fixed effects. We also use two-digit SIC codes to control for potential differences in firm-level political risk and loan price across industries. We consider unobserved time-invariant characteristics and include quarter fixed effects.

Table 3 reports the results for different model specifications. Column (1) includes only the firm-level control variables. The coefficient on *PRisk* is significant and positive (coeff = 0.039; *t*-stat = 4.47), which suggests that firms with higher firm-level political risk are, on average, charged higher interest rates. Economically, a one-standard-deviation increase in firm-level political risk leads to a 6-bps increase in a firm's bank loan cost. For a typical loan, this is equivalent to an increase of US\$1.4 million in total interest expense.¹⁵ Thus, the documented effect of firm-level political risk is economically meaningful.

Column (2) of Table 3 adds loan-level control variables. We continue to find a positive relation between firm-level political risk and loan costs. Column (3) further adds aggregate political uncertainty, other macro-level control variables and different fixed effects, forming our *baseline model*. We find that the coefficient of firm-level political risk is positive and significant at the 1% level (coeff = 0.020; *t*-stat = 2.98), suggesting that firm-level political risk leads to higher loan costs.

This finding is nontrivial, as it indicates that *firm-level* political risk is still priced after considering *aggregate* political uncertainty. Banks consider the cross-sectional dispersion of firm-

¹⁵ Based on the summary statistics in Table 2, a typical loan in our sample has a loan issuance amount of US\$522 million and a maturity of 4.47 years. The total interest expense for a typical loan is $0.0006 \times 522 \times 4.47 = \text{US\$}1.4$ million. Because the annual interest expense for a typical loan is US\$8.38 million, the impact of firm-level political risk accounts for around 3.74% ($1.4 \text{ million} / (8.38 \text{ million} \times 4.47) = 3.74\%$).

level political risk regardless of the high/low aggregate policy uncertainty. Moreover, none of the fixed effects have a discernible impact on our findings, this analysis mitigates the concern that our results may be spurious because of omitted correlated variables. Taken together, the results shown in Table 3 are consistent with **H1**, indicating that banks charge higher loan spreads for firms with greater firm-level political risk.¹⁶

In addition, the coefficients on the control variables are significant and consistent with the findings of prior studies (Graham et al., 2008; Kim et al., 2011; Huang et al., 2018). For example, column (3) shows that loan spreads are negatively associated with profitability (coeff = -0.472; t -stat = -5.12), the inverse measure of financial distress (Z-score) (coeff = -0.023; t -stat = -8.93), and capital expenditure (coeff = -0.021; t -stat = -2.72). Loan spreads are positively associated with firm leverage (coeff = 0.006; t -stat = 2.16) and stock return volatility (coeff = 7.349; t -stat = 10.91).

4.2. Controlling for different fixed effects

4.2.1. Firm fixed effects

Our baseline regression controls only for industry fixed effects; it does not include firm fixed effects, for several reasons. First, Hassan et al. (2019) document that their measure mainly reflects cross-sectional variations across firms. Second, firms typically do not issue loans every year. More than 25% of the firms in our sample have fewer than three bank loan issuances during the whole sample period. Wooldridge (2002) shows that firm fixed effects lead to inconsistent estimations in short panels when explanatory variables lack sufficient time-series variation. Including firm fixed effects is thus not suitable for our sample, which has insufficient time-series variation. To address the concern of unobservable time-invariant firm characteristics and to simultaneously consider the insufficient time-series variation, we continue to conduct firm fixed effects analysis but use only

¹⁶ Our results are robust when we exclude the 2008 financial crisis period, control for industry-by-time fixed effects, use the raw measure of firm-level political risk, and use alternative measures of loan spreads. The results are available upon request.

a subset of the sample, which shows some time-series variation.

Panel A of Table 4 presents the results. Column (1) requires a firm to appear in at least three different quarters to ensure some time-series variation. The results in column (1) show that firm-level political risk is still positively related to the loan spread at the 1% significance level, indicating that our main result is still robust when we control for firm fixed effects. In column (2), we further require firms to appear in at least five different quarters during the sample period. The coefficient on firm-level political risk remains positive and significant at the 1% level.

4.2.2. *Lender fixed effects*

Lender's characteristics may also affect the relation between firm-level political risk and loan spreads. That is, there may be a certain type of 'matching' between borrowers and lenders. To mitigate this concern, we include lender fixed effects and control for lender political risk. If the concern holds, the coefficient on firm-level political risk should be insignificant when we control for lender fixed effects or lender political risk.

Panel B of Table 4 presents the results. We find that firm-level political risk positively affects borrowing costs when we control for (i) lender fixed effects (column (1)), (ii) lender political risks (column (2)), and (iii) lender political risks and lender fixed effects (column (3)). These results show that the effect of firm-level political risk on loan costs is not driven by lender characteristics or lender-borrower matching. Even within the same bank, more politically risky firms are charged higher loan spreads.

Overall, we find that firm-level political risk is positively and significantly associated with loan spreads when we include stricter fixed effects. Our results are robust across different specifications.

4.3. Propensity score matching analysis

We next present an alternative regression approach, applying propensity score matching (PSM) analysis, which allows us to compare high versus low politically risky firms whose

characteristics are otherwise similar, as shown in Panel A of Table 5. To do so, we first construct the indicator *DPRisk*, which equals one if a borrower's firm-level political risk is in the top 10% in quarter t (treatment group) and zero if its firm-level political risk is in the bottom 50% (control group).¹⁷ Next, to identify matching firms for the treatment group, we run a logit regression of *DPRisk* on all of the variables. As there are no sound predictors of firm-level political risk, we include all of the firm-related characteristics in the first-step logit regression. The fitted value of *DPRisk* captures the probability (i.e., propensity score) of being in the treatment group. We select a matching sample for each treatment sample based on the closest estimated probability (without replacement). We also require the matching sample to come from the same two-digit SIC industry and quarter. This process results in a matched sample of 1,714 loan facilities: 857 facilities for borrowing firms in the treatment group and 857 facilities for borrowing firms in the control group.

Panel B of Table 5 reports the regression results using the PSM sample. The coefficient on *DPRisk* is 0.059 (t -stat = 2.43), which indicates that the loan spread of the treatment group is about 5.9% higher than that of the matched sample. Using a typical loan spread of 210 bps, the loan spread difference between the treatment and matched groups is about 12 bps.

5. Identification issues

In this section, we address endogeneity concerns in order to establish a causal interpretation between firm-level political risk and loan costs. First, we conduct a series of lead-lag placebo tests to investigate the reverse causality concern. Second, to mitigate the concern about correlated omitted variables, we conduct an IV analysis using a firm's political distance and the average of local firms' political risks as instrumental variables. Furthermore, we conduct a falsification IV analysis using the non-political risk measure. In general, our identification strategies show that

¹⁷ The results are similar when the control group consists of firms whose firm-level political risk falls in the bottom 30%, 40%, or 60%. The results also hold when the treatment group consists of firms whose firm-level political risk falls in the top 15% or 20%.

firm-level political risk increases loan spreads in a positively causal way.

5.1. Lead-lag placebo tests

If our main results suffer from reverse causality, we should observe a significant relation between lagged loan costs and lead firm-level political risk. To test this prediction, we consider a loan contract in quarter $t+1$. The dependent variable is $\text{Log}(\text{Spread})_{i,t+1}$. Column (4) of Table 6 presents the benchmark one-quarter-lagged firm-level political risk for comparison. Columns (5) to (7) present the results of a reverse causality test in which we model borrowing costs in quarter $t+1$ as a function of future exposure to firm-level political risk. These regressions represent a falsification test of a causal relation between firm-level political risk and loan spreads, as a risk to which a firm has not yet been exposed cannot be evaluated by lenders. We find that none of these columns shows a statistically significant coefficient and that the magnitudes of the coefficients are much smaller than those shown in column (4). This suggests that lenders evaluate and respond to firms' political risk and that political risk to which a firm has not yet been exposed does not induce a response from lenders. These results thus support our causal interpretation.

Columns (1) to (3) of Table 6 use four-, three-, and two-quarter-lagged firm-level political risk, respectively, to examine the persistence of the firm-level political risk effect on loan costs. We find that only two-quarter-lagged firm-level political risk (column (3)) has a significant effect on a firm's bank loan costs; earlier firm-level political risk (columns (1) and (2)) does not have a significant impact. These results suggest that the effect of firm-level political risk has short-term persistence (only up to two quarters in our setting).

5.2. Instrumental variable analysis

The above lead-lag tests help alleviate concerns about possible reverse causality. However, the concern about correlated omitted variables may be more important than the concern about reverse causality. For example, firm loans cost could be affected by an unknown factor that is also

correlated with the firm-level political risk. In this case, the regression coefficients and standard errors would become biased, resulting in a spurious correlation. We use two instrumental variables to alleviate this concern, namely, (i) the political distance of a firm and (ii) the average political risk in other local firms.

Kim et al. (2012) document that political geography has a pervasive effect on firm policies. A shift in a firm's location changes the firm's overall exposure to policy risk, making it more difficult for investors to evaluate the firm's future growth opportunities and cash flow. Hill et al. (2013) find that lobbying engagement is negatively related to the distance in miles between a firm's physical headquarters and its corresponding state capital. They argue that as the offices of politicians and lobbyists are typically located in state capital buildings, a firm farther from the state capital will be in greater need of the services of a lobbyist to communicate with politicians, increasing the fixed costs of lobbying engagement. We therefore use a firm's political distance (*Political_distance*), defined as the geographic distance between the firm's headquarters and its corresponding state capital city, as our first instrument. When a firm's headquarters is farther from its state's capital city, it is more difficult for the firm to communicate with and access information from policymakers. Remote firms thus face more political risk. Our instrument satisfies the relevance criterion based on this intuition. Moreover, to the best of our knowledge, prior studies do not document a link between political distance and a firm's loan cost, and thus this instrument also satisfies the exclusion criterion.

Because firms seldom relocate their headquarters, one concern in using geographic distance as an instrument is that it may capture cross-firm variation in a state but not time-series variation within a firm. To address this concern, we use a second instrument, *PRisk_loc*, which is defined as the average political risk of all firms in the same state as the focal firm, excluding the focal firm. Firms headquartered in the same state are affected by the same political environment. Indeed,

Mizruchi (1989) documents that geographic proximity between two firms' corporate headquarters and plant locations leads to similar political behaviors. Pirinsky and Wang (2010) further show that when operating in an uncertain environment, managers look to their peers for ideas about appropriate strategic responses. Thus, a firm's political risk is expected to be highly correlated with the political risk of other firms in the same state, satisfying the relevance criterion. In addition, in line with the exclusion criterion, we see no reason why *other* firms' political risk should directly affect a focal firm's bank loan costs.

We construct the two instruments as follows. Following Alam et al. (2014), we construct *Political_distance* as the geographic distance between a firm's headquarters and the corresponding state capital, using zip codes. A higher value of *Political_distance* indicates that the borrower is exposed to higher firm-level political risk. However, this distance may be correlated with how far lenders are from borrowers, as lenders are more likely to be located in state capitals. To mitigate this concern, we exclude banks located in state capitals. To construct *PRisk_loc*, for each firm, we calculate the average firm-level political risk of other firms located in the same state. The higher a firm's *PRisk_loc*, the higher the borrower's own political risk.

In the first stage, we regress firm-level political risk on *Political_distance* and *PRisk_loc* and all of the control variables used in the second stage. Column (1) of Table 7 shows the results of the first-stage regression. We find that both instruments are significantly and positively associated with firm-level political risk. Moreover, the *F*-statistic of the first-stage regression is 35.26, indicating that our instruments are not likely to be weak. In the second stage, we repeat our baseline analysis but replace the variable of interest, *PRisk*, with instrumented firm-level political risk (*PRisk(Instru)*). Column (2) reports that the coefficient on *PRisk(Instru)* continues to be

positive and significant in the loan spread regression (coeff = 0.217; t -stat = 2.62).¹⁸ The Hansen J-statistic for over-identifying restrictions has a p -value of 0.90 for $PRisk(Instru)$, suggesting that we cannot reject the null hypothesis that the instruments are uncorrelated with the error term. This provides some evidence that the instruments satisfy the exclusion restriction. The IV analysis confirms the causal effect of firm-level political risk on a firm's loan cost.

We conduct a falsification test for our instruments by regressing loan costs on a measure of non-political risk ($NPRisk$) that captures conversations on topics not related to political risk during earnings conference calls. Columns (3) and (4) of Table 7 present the first- and second-stage results for this falsification test. We find that the coefficient on $NPRisk(Instru)$ is not statistically significant. Thus, firm-specific political risk rather than non-political risk has a significant positive effect on the cost of bank loans. This finding helps further mitigate endogeneity concerns related to the OLS estimation for the effect of firm-level political risk on loan costs.¹⁹

6. Cross-sectional analysis

6.1. Operation uncertainty and default risk

Our main argument suggests that the positive relation between firm-level political risk and loan spreads is driven by increasing operation uncertainty and default risk associated with firm-level political risk. In this section, we provide a direct analysis of these channel tests. Specifically, motivated by previous literature (Hassan et al., 2019; Islam et al., 2022), we propose the following two empirical measures associated with increasing operation uncertainty: (i) investment reduction and (ii) hiring reduction, and one associated with increasing default risk: (iii) increases in default

¹⁸ Table 7, column (2) shows that a one-standard-deviation increase in instrumented firm-level political risk (0.211) leads to a 9.62-basis-point increase in a firm's bank loan cost ($0.211 \times 0.217 \times 210 = 9.62$), which is higher than that reported in Table 3, column (1) (i.e., 6 basis points).

¹⁹ We also conduct a quasi-shock analysis to further support the causal link between firm-level political risk and loan costs. We find that if there is a sudden and dramatic increase or decrease in the firm's exposure to political risk, banks pay more attention to firms' creditworthiness. The contracting terms are thus more likely to reflect the impact of political risk. The results are reported in Internet Appendix Table IA1.

probability. We then examine the cross-sectional differences in the impact of firm-level political risk on loan spreads conditional on investment reduction, hiring reduction, and higher default risk.

In the empirical construction, we measure investment reduction as the change in capital expenditure growth in the previous two years (Islam et al., 2022).²⁰ We measure employment reduction as the change of employee numbers scaled by total assets in the previous two years (Hassan et al., 2019). Next, we use the probability of default to measure a firm's default risk and calculate the change in the firm's default probability in the previous two years (Kavani et al., 2021; Islam et al., 2022). We include the interaction terms between firm-level political risk and each of the three measures in our baseline regressions. We predict a stronger positive relation between firm-level political risk and loan costs for firms experiencing investment reduction, hiring decrease, and an increase in default risk.

Panel A of Table 8 reports the results. Column (1) shows that the coefficient on the interaction term $PRisk \times Inv_reduction$ is positive and significant (coeff = 0.083; t -stat = 2.04), suggesting that the impact of firm-level political risk on loan spreads is accentuated for firms experiencing an investment decrease. Column (2) reveals that the coefficient on the interaction term $PRisk \times Emp_reduction$ is positive and significant (coeff = 4.960; t -stat = 2.20), suggesting that the $PRisk$ -loan cost relation is stronger for firms experiencing hiring reduction. In addition, column (3) shows that the coefficient on the interaction term $PRisk \times PD_increase$ is positive and significant (coeff = 3.798; t -stat = 2.30), indicating that the impact of firm-level political risk is amplified when a firm's credit quality deteriorates. Overall, these findings provide direct support to our argument. Firm-level political risk increases loan costs through the operation uncertainty and default risk channels.

6.2. The role of financial constraints

²⁰ Following Hassan et al. (2019), we use a perpetual inventory method to measure capital investment, which is computed as $capx$ over $ppent$.

In addition to the direct channel tests, we also conduct further analyses on the role of financial constraints. Financial constraints are market frictions that can prevent a firm from funding all of its positive NPV projects. The inability to obtain capital may be “due to credit constraints or inability to borrow, inability to issue equity, dependence on bank loans, or illiquidity of assets” (Lamont et al., 2001, p. 529). The literature suggests that financial constraints directly affect a firm’s ability to make major investment decisions and capital structure choices (Hennessy and Whited, 2007). When the political risk of firms with financial constraints is high, the likelihood that they will delay or even abandon profitable projects increases dramatically. Therefore, banks are more likely to charge such loan seekers high interest rates. We thus expect financial constraints to amplify the positive relation between firm-level political risk and loan spreads.

Following Rajan and Zingales (1998) and Khwaja and Mian (2005), we consider three measures of financial constraints: (i) external financing dependency (*Exf*); (ii) cash flow volatility (*CF_Vol*); (iii) Hadlock and Pierce (2010) index (*HP_Index*). In general, the cost of external financing increases if a firm is highly dependent on it, which hinders the growth of the firm (Duchin et al., 2010). Higher cash flow volatility indicates a higher degree of uncertainty regarding a firm’s future performance and a higher likelihood that it will default on loans (Bharath et al., 2008; Ma et al., 2019). The *HP_Index* is constructed based on the firm’s size and age. A higher *HP_Index* score indicates a higher degree of financial constraints. Details of the construction of these measures are provided in the Appendix. To test the impact of financial constraints on the *PRisk*–loan spread relation, we include the interaction term between firm-level political risk and each of the three measures in Eq. (1).

Panel B of Table 8 presents the results. Column (1) shows that the coefficient on the interaction term $PRisk \times Exf$ is positive and significant (coeff = 0.021; t -stat = 2.71), indicating that the effect of firm-level political risk on loan costs is more pronounced for firms that are highly

dependent on external financing. Column (2) reveals that the coefficient on the interaction term $PRisk \times CF_Vol$ is also positive and significant (coeff = 0.105; t -stat = 2.91), suggesting that the influence of firm-level political risk on bank loan costs is exacerbated for firms with greater uncertainty about their future performance. Last, we observe a positive and significant coefficient on the interaction term $PRisk \times HP_Index$, which implies that creditors charge higher interest rates when borrowers exhibit higher levels of political risk, particularly if they are subject to greater financial constraints. The results thus generally support our assumption that the impact of firm-level political risk on loan interest rates is more (less) pronounced in firms with greater (lesser) financial constraints.

7. Additional analyses

7.1 Firm-level political risk and non-pricing loan terms

Bank loan contracts contain multi-dimensional information on the risks affecting borrowers in addition to the pricing term. Rajan and Winton (1995) suggest that banks seek to mitigate information risk by monitoring some borrowers more vigilantly, which typically involves demanding more collateral and other loan covenants. Studies (Qian and Strahan, 2007; Li, 2010; Huang et al., 2018) document that banks typically set customized contracts that may involve both pricing and non-pricing terms to facilitate monitoring and limit potential losses. We measure the relation between non-pricing loan terms and firm-level political risk using the following regression:

$$Loan\ term_{i,t+1} = \alpha + \beta_1 \times PRisk_{i,t} + \beta_X \times X_{i,t} + \varepsilon_{i,t+1}, \quad (2)$$

where *Loan term* represents a set of non-pricing terms used in the loan contracts, including number of total covenants (*TotCovIndex*), number of general covenants (*GenCovIndex*), number of financial covenants (*FinCovIndex*), collateral requirements (*DSecured*), debt issuance sweep restrictions (*DDebt*), and transaction fees (*Annual_fee*). The control variables are the baseline controls except for *GenCovIndex*, *FinCovIndex*, and *DSecured*.

We first test the effect of firm-level political risk on the number of loan covenants, and manually count the covenants included in each loan deal. Consistent with Kim et al. (2011), we find 30 types of covenants in the DealScan database, including 18 types of financial covenants and 12 types of general covenants. We then construct three covenant variables. *GenCovIndex* is the number of general covenants that are related to restrictions on prepayments, dividends, voting rights, or other business activities. *FinCovIndex* is the number of financial covenants. *TotCovIndex* is the sum of financial and general covenants. Following Graham et al. (2008) and Huang et al. (2018), we conduct an OLS regression on the number of loan covenants.

Table 9 presents the findings. Column (1) shows that firm-level political risk is positively and significantly related to the number of total covenants (coeff = 0.125; t -stat = 3.60), which indicates that firms with high firm-level political risk are subjected to more total number of covenants. Columns (2) and (3) report results for general and financial covenants, respectively, and suggest that politically risky firms suffer more general and financial covenants. Overall, these results support the notion that borrowers with higher firm-level political risk are subjected to more total, general, and financial covenants.

We also examine how firm-level political risk affects other loan terms, including the collateral requirements, debt issuance sweep restrictions, and transaction fees. We first consider the two requirements. We define *DDebt* as an indicator variable that equals one if the loan facility has a debt issuance sweep restriction, and zero otherwise. *DSecured* is an indicator variable that equals one if the loan facility is secured with collateral, and zero otherwise. Next, *Annual_fee* is defined as the annual charge against the entire loan commitment amount, whether it is used or unused; this is also known as a facility fee. Following the literature (e.g., Graham et al., 2008; Huang et al., 2018; Du et al., 2020), we conduct probit regressions for the indicator variables and

an OLS regression for the annual fee.²¹ Columns (4) to (6) of Table 9 report the results. Firm-level political risk is positively and significantly associated with each of the three measures. Thus, lenders are more likely to impose collateral requirements and debt issuance sweep restrictions and to charge higher annual fees to compensate for increased firm-level political risk.²² Taken together, the results in Table 9 are consistent with **H2**.

7.2. The role of political connections and relationship-based loans

Above, we document that firm-level political risk has adverse effects on borrowers' pricing and non-pricing loan terms. We next examine the extent to which political connections (*PConnection*) through engaging in lobbying activities and/or relationship-based loans can mitigate the adverse effects of political risk. Studies show that managers seek political connections and improve access to debt financing by engaging in lobbying (Khwaja and Mian, 2005). We thus expect politically connected firms to enjoy preferential loan pricing over non-connected firms.²³ Firms can also alleviate the adverse effects of political risk by pursuing relationship-based loans. Banks can obtain proprietary information about loan borrowers through prior lending (Bharath et al., 2011). Borrowing relationship-based loans rather than transitory loans can reduce the information risk between firms and banks, thus lowering borrowing costs for firms with higher political risk.

We obtain lobbying data from the Center for Responsible Politics (CRP), which tracks

²¹ Because of limited data availability, our regressions of annual fees are based on only 1,926 observations of annual fees. The observations involving such fees account for 17% of our full sample, consistent with the 19% of Graham et al. (2008).

²² Table 9 shows that a one-standard-deviation increase in *PRisk* leads to an increase of 0.1 total covenants (3.3% of average total covenants), an increase of 9% in the likelihood that the loan facility is secured with collateral, and an increase of \$28.6 thousand annual fees (3.4% of average annual fees).

²³ At first glance, it seems that our results are inconsistent with those of Hassan et al. (2019) who find that lobbying firms are those with high firm-level political risk, i.e., lobbying is positively correlated with *PRisk*, rather than reduces *PRisk*. In fact, both studies argue the same thing that lobbying or political connection is an effective risk management activity for high *PRisk* firms. Hassan et al. (2019) document that high *PRisk* firms will conduct more lobbying activities in the future to alleviate the detrimental impact. We use the concurrent lobbying activities as the moderating factor for the concurrent *PRisk*, and our results suggest that more lobbying activities indeed mitigate the adverse effect of political risk.

lobbying money in politics and its effects on political elections and policies.²⁴ Following Bharath et al. (2011), we classify a loan as a relationship-based loan (*Relation*) if the loan issuer had a relationship with the lead bank in the past, and as a transactional loan otherwise. We present the results in Table 10. We add interaction terms to our baseline regression to assess the impact of political connections and relationship loans. We find negative and significant coefficients on $PRisk \times PConnection$ and $PRisk \times Relation$, suggesting that political connections and relationship-based loans significantly alleviate the effect of political risk on loan spreads, consistent with **H3a** and **H3b**.²⁵

7.3. Alternative explanations

We consider two alternative explanations in this section. First, we examine whether a firm-level political risk is an idiosyncratic risk that affects loan spreads or whether it is simply a proxy for existing firm-level predictors for loan pricing. To test this conjecture, we form decile groups based on firm-level political risk and report the median values for firm fundamental attributes. Panel A of Table 11 shows no monotonic pattern in any of the firm characteristics considered, which indicates that the decile groups do not differ in terms of fundamental characteristics for borrowers exposed to different levels of political risk. Thus, firm-level political risk does not directly reflect any existing firm characteristics.

The documented relation between firm-level political risk and loan spreads may be influenced by other external financing activities, particularly debt-financed acquisitions. To test this conjecture, we use a firm's acquisition intensity as a measure of the firm's debt-financed acquisitions. We split all firms into two groups, The *High_aqc* group is the sub-sample of firms

²⁴ The CRP website is OpenSecrets.org, which provides public access to clear and unbiased information about federal campaign contributions, lobbying engagement by firms, contribution amounts, and related lobbying issues. This database has no common identifier with Compustat, so we manually match company names in CRP with those in Compustat.

²⁵ We also conduct change regressions as in Table 10. Internet Appendix Table IA2 reports the results. We find that increased in political connections and switching to relationship borrowing reduce the adverse effect of firm-level political risk on loan financing costs.

in the top tercile of acquisition expenditures and the *Low_aqc* group is the sub-sample of remaining firms. The results in Panel B of Table 11 suggest that the significant and positive effect of firm-level political risk on loan spreads holds across the two groups of firms. Thus, external acquisitions do not seem to drive the relation that we document between firm-level political risk and firms' loan financing costs.

8. Conclusion

The effect of political uncertainty on firm outcomes has attracted a great deal of academic attention in recent years, especially given the 2008 global financial crisis, the COVID-19 pandemic, and the recent Russia–Ukraine war. Firms face different levels of political risk. However, except for Hassan et al. (2019), studies consider only the effect of aggregate-level political uncertainty. In this paper, we examine the effect of *firm-level* political risk on bank loan cost and other non-pricing loan terms. Through the channels of operation uncertainty and default risks, we hypothesize that firms with greater firm-level political risk are subject to more unfavorable pricing and non-pricing bank loan terms.

Using a large sample of US firms from 2002 to 2016, we find that firms with greater firm-level political risk are charged higher loan spreads. We investigate the channels behind this effect and find that the impact of firm-level political risk is more pronounced for firms with higher operation uncertainty and higher default risk. We also find that firms with greater firm-level political risk are subject to unfavorable non-pricing loan terms, specifically more covenants, more collateral requirements, and higher transaction fees. Finally, we document that political connections and relationship-based loans alleviate the adverse effect of political risk on loan spreads.

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Appendix: Variable definition

Variable	Definition and description	Source
<i>PRisk</i>	Firm <i>i</i> 's political risk measure at time <i>t</i> , standardized by its standard deviation.	Hassan et al. (2019)
<i>NPRisk</i>	Firm <i>i</i> 's non-political risk measure at time <i>t</i> , standardized by its standard deviation.	Hassan et al. (2019)
Loan variables		
<i>Log(Spread)</i>	Natural logarithm of loan spread (over LIBOR) for each individual loan contract.	Deal Scan
<i>Log(Amt)</i>	Natural logarithm of the US\$ loan amount of the facility in millions.	Deal Scan
<i>Log(Mat)</i>	Natural logarithm of the number of months to loan maturity.	Deal Scan
<i>TotCovIndex</i>	Total covenant index equals to the number of financial and general covenants in the bank loan issuance sample.	Deal Scan
<i>GenCovIndex</i>	General covenant index, constructed by counting the number of general covenants included in a loan contract.	Deal Scan
<i>FinCovIndex</i>	Financial covenant index, constructed by counting the number of financial covenants included in a loan contract.	Deal Scan
<i>Perf_Provision</i>	Binary dummy that equals one if the loan includes performance pricing provisions, and zero otherwise.	Deal Scan
<i>Loan type dummies</i>	Dummy variable for loan types, including term loans, revolvers greater than 1 year, revolvers less than 1 year, and 364-day facilities.	Deal Scan
<i>Loan purpose dummies</i>	Dummy variable for loan purposes, including corporate initiatives, debt repayment, working capital, or takeovers.	Deal Scan
Firm-level variables		
<i>Size</i>	Firm size, measured by the natural logarithm of total assets.	Compustat
<i>Tang</i>	Tangibility, measured by total property, plant, and equipment, scaled by total assets.	Compustat
<i>LEV</i>	Leverage, measured by the total debt, scaled by the market value of equity.	Compustat
<i>M/B</i>	Market-to-book ratio.	Compustat
<i>Profit</i>	Profitability, measured by operating income before depreciation, scaled by total assets.	Compustat
<i>Z-score</i>	Modified Altman's (1968) Z-score, calculated as $(1.2 \times (\text{ACT} - \text{LCT}) + 1.4 \times \text{RE} + 3.3 \times \text{EBIT} + 0.999 \times \text{SALE}) / \text{AT} + 0.6 \times \text{CSHO} \times \text{PRCC_C} / (\text{DLTT} + \text{DLC})$.	Compustat

<i>CF_Vol</i>	Cash flow volatility, defined as the standard deviation of quarterly cash flows from operations over the previous four fiscal years, scaled by total debt.	Compustat
<i>TVol</i>	Return volatility, defined as the standard deviation of a firm's daily stock return over the fiscal year.	Compustat
<i>HP_Index</i>	Hadlock and Pierce index (2010), calculated as $(-0.737 \times \text{Assets} + 0.043 \times \text{Assets}^2 - 0.040 \times \text{Age})$.	Compustat
<i>Exf</i>	External financing dependency, measured by $(\text{Capital expenditures (CAPX)} - \text{funds from operations (FOPT)}) / \text{capital expenditures (CAPX)}$.	Compustat
<i>Loss</i>	Binary dummy that equals one if the firm reports a loss, and zero otherwise.	Compustat
<i>CAPX</i>	Capital expenditures, measured by the natural logarithm of capital expenditures.	Compustat
<i>Return</i>	Return, defined as the average of a firm's daily stock return over the previous quarter.	Compustat
<i>Insti_holding</i>	Institutional holding, measured by the percentage of a firm's shares held by institutional investors.	Thomson Reuters 13f
<i>PSentiment</i>	Political sentiment, measure by the frequency of political bigrams in conjunction with positive and negative tone words used in a conference call.	Hassan et al. (2019)
<i>Inv_reduction</i>	Investment reduction, measured as the change of capital expenditure growth in previous two years.	Compustat
<i>Emp_reduction</i>	Employment reduction, measured as the change of employee numbers scaled by total asset in previous two years.	Compustat
<i>PD_increase</i>	Default probability increase, measured as the change of the firm's default probability in previous two years.	Credit Research Initiative
Macro-level variables		
<i>PU_a</i>	Aggregate political uncertainty, measured by EPU divided by 100.	Baker et al. (2016)
<i>Term_Spread</i>	The difference between the 10-year and the 1-year government bond yield.	FRED
<i>Default_Rate</i>	The yield spread between Moody's seasoned Baa and Aaa corporate bonds.	FRED
<i>Inflation_Rate</i>	Inflation rate, defined as the monthly growth rate of the Consumer Price Index for all urban consumers.	FRED
<i>Production_Rate</i>	Production rate, defined as the growth rate as shown by the monthly Industrial Production Index.	FRED
<i>Unemployment_Rate</i>	Unemployment rate, defined as the monthly civilian unemployment rate.	FRED

<i>Recession_Rate</i>	Binary dummy that equals one if an observation time falls in an NBER business cycle, and zero otherwise.	NBER
<i>Shortterm_Rate</i>	Short-term rate, defined as the one-month nominal Treasury bill rate.	Prof. French's website

Table 1. Sample distributions

This table reports the sample distribution of bank loan issuances for the period of 2002:Q2-2017:Q1. This time period has been selected to match the availability of firm-level political risk (*PRisk*). Panel A reports the year distribution and Panel B the mean values of firm-level political risk and loan costs in different industries. The industry classification is based on the first two digits of the Standard Industrial Classification (SIC) code. The number of observations (Obs.) is the number of bank loans in that industry. We require the number of observations to be ≥ 30 .

Panel A. Sample year distribution

Year	Firm frequency	Loan frequency
2002	150	217
2003	435	633
2004	604	919
2005	579	927
2006	556	883
2007	547	877
2008	375	527
2009	273	371
2010	413	605
2011	634	987
2012	543	840
2013	589	1007
2014	585	967
2015	539	875
2016	466	784
2017:Q1	31	44
Total	7,319	11,463

Panel B. Sample distribution by industry

Industry	SIC code (2 digit)	Obs.	<i>PRisk</i> mean	Spread mean
Engineering and Management	87	270	0.90	222.27
Agricultural Production – Crops	1	32	0.87	244.84
Health Services	80	297	0.78	270.55
Metal, Mining	10	32	0.73	206.41
Heavy Construction, Except Building	16	85	0.71	208.63
...
Textile Mill Products	22	52	0.30	202.31
Paper and Allied Products	26	223	0.29	179.14
Petroleum & Coal Products	29	121	0.27	189.64
Apparel & Accessory Stores	56	143	0.25	184.55
Food Stores	54	69	0.25	170.47

Table 2. Summary statistics

This table presents descriptive statistics for the variables used in the regressions. See the Appendix for variable definitions.

Variable (Obs. = 11,463)	Mean	Std Dev	25%	Median	75%
<i>Spread (bps)</i>	210	143	125	175	275
<i>PRisk</i>	0.47	0.78	0.07	0.24	0.53
<i>PSentiment</i>	0.90	0.92	0.39	0.86	1.38
<i>Size</i>	7.65	1.54	6.55	7.57	8.61
<i>M/B</i>	3.39	7.33	1.38	2.14	3.41
<i>LEV</i>	1.14	3.67	0.32	0.61	1.12
<i>Profit</i>	0.14	0.08	0.09	0.13	0.17
<i>Tang</i>	0.53	0.39	0.21	0.43	0.79
<i>Z-score</i>	3.59	3.00	1.91	2.93	4.40
<i>CF_Vol</i>	0.13	0.37	0.06	0.08	0.13
<i>TVol</i>	0.02	0.01	0.02	0.02	0.03
<i>Loss</i>	0.18	0.38	0.00	0.00	0.00
<i>CAPX</i>	4.28	1.82	3.00	4.24	5.41
<i>Return</i>	0.01	0.08	-0.02	0.01	0.05
<i>Insti_holding</i>	0.75	0.26	0.64	0.81	0.92
<i>Log(Mat)</i>	3.90	0.47	3.87	4.09	4.09
<i>Log(Amt)</i>	19.26	1.34	18.42	19.34	20.21
<i>Maturity(month)</i>	53.67	17.52	48.00	60.00	60.00
<i>Loan Amount(million)</i>	522	931	100	250	600
<i>Perf_Provision</i>	0.45	0.50	0.00	0.00	1.00
<i>DSecured</i>	0.54	0.50	0.00	1.00	1.00
<i>GenCovIndex</i>	1.69	1.71	0.00	1.00	3.00
<i>FinCovIndex</i>	1.31	1.25	0.00	1.00	2.00
<i>PUa</i>	1.13	0.39	0.84	1.01	1.39
<i>Default_Rate</i>	1.02	0.36	0.84	0.92	1.15
<i>Term_Spread</i>	1.74	1.02	1.14	1.87	2.57

Table 3. Firm-level political risk and loan costs

This table reports results for the effect of firm-level political risk on loan costs using $Log(Spread)_{i,t+1} = \alpha + \beta_1 \times PRisk_{i,t} + \beta_X \times X_{i,t} + \varepsilon_{i,t+1}$, where the dependent variable $Log(Spread)$ is the natural logarithm of the loan spread (over LIBOR) of each individual loan contract. $PRisk$ is firm i 's firm-level political risk measure at year-quarter t (standardized). Column (1) only controls for firm-level variables, column (2) adds loan-level controls, and column (3) reports the baseline results. The sample period is from 2002 to 2016. The industry classification is based on the 2-digit SIC code. All explanatory variables are winsorized at the 1% level on both tails. The Appendix provides variable definitions. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dependent variable: $Log(Spread)$		
	(1) Firm-Control	(2) Loan-Control	(3) Baseline
<i>PRisk</i>	0.039*** (4.47)	0.028*** (3.80)	0.020*** (2.98)
<i>PSentiment</i>	-0.013 (-1.61)	-0.011* (-1.85)	-0.009 (-1.57)
<i>Size</i>	-0.111*** (-9.28)	0.005 (0.45)	-0.016* (-1.68)
<i>M/B</i>	-0.000 (-0.15)	0.000 (0.29)	0.000 (0.68)
<i>LEV</i>	0.008* (1.80)	0.006* (1.91)	0.006** (2.16)
<i>Profit</i>	-0.533*** (-4.24)	-0.404*** (-3.95)	-0.472*** (-5.12)
<i>Tang</i>	-0.043* (-1.70)	0.014 (0.64)	0.009 (0.43)
<i>Z-score</i>	-0.044*** (-11.96)	-0.027*** (-9.27)	-0.023*** (-8.93)
<i>CF_Vol</i>	0.048*** (2.85)	0.031* (1.68)	0.015 (1.47)
<i>TVol</i>	12.890*** (14.76)	8.190*** (10.86)	7.349*** (10.91)
<i>Loss</i>	0.136*** (6.71)	0.077*** (4.56)	0.078*** (5.33)
<i>CAPX</i>	-0.037*** (-3.85)	-0.032*** (-3.89)	-0.021*** (-2.72)
<i>Return</i>	-0.094 (-0.94)	-0.154* (-1.78)	-0.281*** (-3.71)
<i>Insti_holding</i>	0.074*** (2.80)	0.022 (1.01)	0.055*** (2.80)
<i>Log(Mat)</i>		0.278*** (18.62)	0.040** (2.16)
<i>Log(Amt)</i>		-0.130*** (-19.71)	-0.118*** (-19.00)
<i>Perf_Provision</i>		-0.196*** (-15.78)	-0.101*** (-8.89)
<i>DSecured</i>		0.372*** (23.53)	0.262*** (18.35)
<i>GenCovIndex</i>		0.048*** (9.49)	0.028*** (6.40)
<i>FinCovIndex</i>		-0.013** (-2.27)	-0.005 (-1.00)
<i>PUa</i>			0.023 (0.73)
<i>Default_Rate</i>			0.006

<i>Term_Spread</i>			(0.09)
			0.119***
			(3.29)
Intercept	5.966***	6.370***	7.449***
	(72.25)	(49.22)	(42.65)
Loan purpose & type FEs	No	No	Yes
Industry FE	No	Yes	Yes
Year-quarter FE	Yes	Yes	Yes
Observations	11,463	11,463	11,463
Adjusted R ²	0.390	0.563	0.664

Table 4. Firm-level political risk and loan costs: Additional analyses

This table presents the results of the effect of firm-level political risk on loan costs after controlling for different fixed effects. Panel A reports the results of the effect of firm-level political risk on loan costs after controlling for firm fixed effects. Column (1) of Panel A controls the firm fixed effects using a sub-sample (Sub-sample 1) that requires the firm to appear at least in three different quarters, and column (2) includes the firm fixed effects using a sub-sample (Sub-sample 2) that requires the firm to appear at least in five different quarters. Panel B reports the results of the effect of firm-level political risk on loan costs after controlling for lender fixed effect and lender political risk. Column (1) reports the results controlling for the lender fixed effect, column (2) for the lender political risk, and column (3) for lender political risk and lender fixed effects. The *t*-statistics in parentheses are computed using standard errors robust to both clustering at the firm and year levels and to heteroscedasticity. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Controlling for firm fixed effect

	Dependent variable: <i>Log(Spread)</i>	
	(1)	(2)
	+ Firm FE Sub-sample 1	+ Firm FE Sub-sample 2
<i>PRisk</i>	0.021** (2.42)	0.021** (2.09)
Baseline controls	Yes	Yes
Loan purpose & type FEs	Yes	Yes
Industry FE	No	No
Firm FE	Yes	Yes
Year-quarter FE	Yes	Yes
Observations	5,902	4,097
Adjusted R ²	0.768	0.771

Panel B. Controlling for lender fixed effect and lender political risk

	Dependent variable: <i>Log(Spread)</i>		
	(1)	(2)	(3)
	+ Lender FE	+ Lender political risk	+ Lender FE and Lender political risk
<i>PRisk</i>	0.019*** (2.82)	0.020*** (2.80)	0.020*** (2.77)
<i>PRisk_lender</i>	-	0.009 (1.40)	0.004 (0.63)
Baseline controls	Yes	Yes	Yes
Lender FE	Yes	No	Yes
Loan purpose & type FEs	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes
Observations	10,923	9,576	9,576
Adjusted R ²	0.679	0.667	0.675

Table 5. Firm-level political risk and loan costs: The PSM sample

This table presents the results of the effect of firm-level political risk on loan costs using the propensity score matching (PSM) sample. *DPRisk* is an indicator that equals one if a firm's firm-level political risk is ranked in the top 10% in quarter *t* (treatment group) and zero if ranked in the bottom 50% (control group). Panel A reports the differences in firm-, loan- and macro-level characteristics between the treatment and control groups. Panel B reports the OLS regression results using the PSM sample. The *t*-statistics in parentheses are computed using standard errors robust to both clustering at the firm and year levels and to heteroscedasticity. All of continuous variables are winsorized at the 1% level. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Firm-, loan- and macro-level characteristics

Variables	Treatment group	Control group	<i>t</i> -statistics
<i>Size</i>	7.73	7.72	0.01 (0.09)
<i>M/B</i>	3.26	3.14	0.12 (0.57)
<i>LEV</i>	1.03	1.00	0.03 (0.42)
<i>Profit</i>	0.14	0.13	0.01 (1.00)
<i>Tang</i>	0.50	0.47	0.03 (1.51)
<i>Z-score</i>	3.74	3.71	0.03 (0.21)
<i>CF_Vol</i>	0.12	0.12	0.00 (0.37)
<i>TVol</i>	0.02	0.02	0.00 (0.23)
<i>Log(Mat)</i>	3.90	3.90	0.00 (0.13)
<i>Log(Amt)</i>	19.31	19.32	-0.01 (-0.22)
<i>Perf_Provision</i>	0.45	0.45	0.00 (0.10)
<i>Default_Rate</i>	1.01	1.01	0.00 (0.10)
<i>Term_Spread</i>	1.73	1.74	-0.01 (-0.36)

Panel B. Regression results from the PSM sample

	Dependent variable: <i>Log(Spread)</i>
<i>DPRisk</i>	0.059** (2.43)
Baseline controls	Yes
Loan purpose & type FEs	Yes
Industry FE	Yes
Year-quarter FE	Yes
Observations	1,714
Adjusted R ²	0.654

Table 6. Firm-level political risk and loan costs: Lead-lag placebo tests

This table reports the impact of leads and lags of the firm-level political risk measure on the firm's loan spread. Column (4) repeats the baseline results (firm-level political risk measured in quarter t) shown in column (3) of Table 3 and serves as the benchmark. In columns (1) and (3), we replace the 1-period lag firm-level political risk with the 2-period-lag, 3-period-lag, and 4-period-lag firm-level political risk as the variable of interest, respectively. In columns (5) and (7), we replace the 1-period lag firm-level political risk with the contemporary 1-period-lead, 2-period-lead, and 3-period-lead firm-level political risk as the variable of interest, respectively, and serve as placebo tests. The t -statistics in parentheses are computed using standard errors robust to both clustering at the firm and year levels and to heteroscedasticity. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dependent variable: $\text{Log}(\text{Spread})_{i,t+1}$						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$PRisk_{i,t-3}$	0.006 (0.96)						
$PRisk_{i,t-2}$		0.005 (1.01)					
$PRisk_{i,t-1}$			0.016** (2.40)				
$PRisk_{i,t}$				0.020*** (2.98)			
$PRisk_{i,t+1}$					0.003 (0.50)		
$PRisk_{i,t+2}$						0.001 (0.09)	
$PRisk_{i,t+3}$							0.002 (0.29)
Intercept	7.557*** (41.19)	7.492*** (41.37)	7.484*** (41.81)	7.449*** (42.65)	7.570*** (41.59)	7.610*** (41.51)	7.638*** (41.02)
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan purpose FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan type FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,307	10,646	10,898	11,463	10,665	10,380	10,065
Adjusted R ²	0.665	0.663	0.665	0.664	0.662	0.660	0.660

Table 7. Firm-level political risk and loan costs: Instrumental variable regression

This table presents the results of two-stage least squares regressions. The instrumental variables are *PRisk_loc* and *Political_distance*. *Prisk_loc* is the average firm-level political risk of all firms within the same state except for the focal firm itself. *Political_distance* is the distance between the borrower's headquarter city and its state capital city. We exclude the banks located in state capitals to purify the *Political_distance* measure. *NPRisk* is the measure of non-political risk. The fixed effects and control variables are the same as in Table 3. The *t*-statistics in parentheses are computed using standard errors robust to both clustering at the firm and year levels and to heteroscedasticity. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	(1) IV (First stage)	(2) IV (Second stage)	(3) Placebo (First stage)	(4) Placebo (Second stage)
<i>PRisk_loc</i>	0.446*** (4.27)		-0.001 (-0.01)	
<i>Political_distance</i>	0.023** (2.01)		0.017 (1.53)	
<i>PRisk(Instru)</i>		0.217*** (2.62)		
<i>NPRisk(Instru)</i>				0.626 (1.25)
Baseline controls	Yes	Yes	Yes	Yes
Loan purpose & type FEs	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes
Observations	8,310	8,310	8,310	8,310
Adjusted R ²	0.069	0.553	0.019	0.005

Table 8. Firm-level political risk and loan costs: Cross-sectional analysis

This table reports the results of cross-sectional analyses. Panel A explores the roles of a firm's operation uncertainty and default risk. *Inv_reduction* refers to investment reduction. *Emp_reduction* refers to employment reduction. *PD_increase* refers to default probability increase. Panel B explores the role of financial constraints proxied by *Exf*, *CF_Vol*, and *HP_Index*. *Exf* refers to external financing dependency. *CF_Vol* refers to cash flow volatility and is defined as the standard deviation of quarterly cash flows from operations over the previous four fiscal years, scaled by total debt. *HP_Index* is the Hadlock and Pierce index (2010). The *t*-statistics in parentheses are based on standard errors corrected for heteroscedasticity and clustered at the firm and year levels. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A. The role of operation uncertainty and default risk

	Dependent variable: <i>Log(Spread)</i>		
	(1)	(2)	(3)
<i>PRisk</i>	0.017** (2.49)	0.017** (2.37)	0.023*** (2.64)
<i>PRisk</i> × <i>Inv_reduction</i>	0.083** (2.04)		
<i>PRisk</i> × <i>Emp_reduction</i>		4.960** (2.20)	
<i>PRisk</i> × <i>PD_increase</i>			3.798** (2.30)
<i>Inv_reduction</i>	-0.009 (-0.17)		
<i>Emp_reduction</i>		-0.856 (-0.41)	
<i>PD_increase</i>			-0.211 (-0.34)
Baseline controls	Yes	Yes	Yes
Loan purpose & type FEs	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes
Observations	11,395	11,122	6,373
Adjusted R ²	0.665	0.667	0.687

Panel B. The role of financial constraints

	Dependent variable: <i>Log(Spread)</i>		
	(1)	(2)	(3)
<i>PRisk</i>	0.017** (2.52)	0.004 (0.46)	0.141*** (2.81)
<i>PRisk</i> × <i>Exf</i>	0.021*** (2.71)		
<i>PRisk</i> × <i>CF_Vol</i>		0.105*** (2.91)	
<i>PRisk</i> × <i>HP_Index</i>			0.031** (2.30)
<i>Exf</i>	0.001 (0.24)		
<i>HP_Index</i>			0.094*** (7.16)
Baseline controls	Yes	Yes	Yes
Loan purpose & type FEs	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes
Observations	11,463	11,463	11,463
Adjusted R ²	0.665	0.665	0.668

Table 9. Firm-level political risk and non-pricing loan terms

This table reports the results of the effect of firm-level political risk on non-pricing loan terms. *GenCovIndex* is the general covenant index, defined as the number of general covenants, and *FinCovIndex* is the financial covenant index, defined as the number of financial covenants in a loan contract. *TotCovIndex* is the sum of *GenCovIndex* and *FinCovIndex*. *DDebt* is an indicator variable that equals one if the loan facility has the debt issuance sweep restriction, and zero otherwise. *DSecured* is an indicator variable that equals one if the loan facility is secured with collateral, and zero otherwise. *Annual_fee* is the annual charge against the entire loan commitment amount, whether it is used or not. The control variables include all the baseline control variables except for *GenCovIndex*, *FinCovIndex*, and *DSecured*. The regressions in columns (4) and (5) are performed by Logit and those in other columns are performed by OLS, with the *t*-statistics (in parentheses) computed by using standard errors robust to both clustering at the firm and year levels and to heteroscedasticity. The baseline control variables from Table 3 are included. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent variable	<i>TotCovIndex</i>	<i>GenCovIndex</i>	<i>FinCovIndex</i>	<i>DDebt</i>	<i>DSecured</i>	<i>Annual_fee</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>PRisk</i>	0.125*** (3.60)	0.076*** (3.35)	0.049*** (2.80)	0.118*** (2.89)	0.110*** (2.59)	0.715** (2.02)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Loan purpose & type FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,463	11,463	11,463	11,383	11,463	1,926
Adjusted R ²	0.387	0.350	0.341	0.222	0.330	0.498

Table 10. The role of political connections and relationship-based loans

This table reports the results of the role of political connections and relationship-based loans in alleviating the adverse effect of political risk on bank loan spreads. *PConnection* is an indicator variable that equals one if the firm engages in lobbying activity in that year, and zero otherwise. *Relation* is an indicator variable measuring a firm's bank connection. The *t*-statistics in parentheses are based on standard errors corrected for heteroscedasticity and clustered at the firm-year level. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dependent variable: Log(Spread)	
	(1)	(2)
<i>PRisk</i>	0.119*** (3.92)	0.038*** (4.20)
<i>PRisk</i> × <i>PConnection</i>	-0.091*** (-2.71)	
<i>PRisk</i> × <i>Relation</i>		-0.029** (-2.37)
<i>Lobbying</i>	0.074 (1.28)	
<i>Relation</i>		-0.011 (-0.86)
Baseline controls	Yes	Yes
Loan purpose & type FEs	Yes	Yes
Industry FE	Yes	Yes
Year-quarter FE	Yes	Yes
Observations	3,229	11,463
Adjusted R ²	0.730	0.665

Table 11. Firm-level political risk and loan costs: Alternative explanations

This table presents the results of alternative explanations for the effect of firm-level political risk on loan costs. Panel A reports the univariate analysis exploring whether a firm-level political risk is a proxy for existing firm-level controls in the loan pricing regression. All firms are sorted into 10 groups by firm-level political risk and the median values of firm characteristics in each group are reported. *Size* is the median value of total assets (in millions), *M/B* is market-to-book equity, *Tang* is tangibility, *Profit* is profitability, *Z-score* is the Z-score, and *Age* is firm age. Panel B examines whether the positive relation between firm-level political risk and loan costs is driven by external acquisition activities. *High_aqc* is the sub-sample of firms in the top tercile of acquisition expenditures and *Low_aqc* is the sub-sample of remaining firms. The *t*-statistics in parentheses are based on standard errors corrected for heteroscedasticity and clustered at the firm and year levels. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Is firm-level political risk the proxy for existing firm-level attributes?

Group	1	2	3	4	5	6	7	8	9	10
<i>Size</i>	1,137	1,968	1,982	2,186	2,184	1,930	2,176	2,122	1,953	1,826
<i>M/B</i>	1.99	2.20	2.22	2.18	2.17	2.13	2.15	2.17	2.10	2.17
<i>Tang</i>	0.47	0.43	0.38	0.44	0.44	0.43	0.46	0.45	0.43	0.37
<i>Profit</i>	0.13	0.13	0.13	0.13	0.13	0.12	0.13	0.13	0.12	0.13
<i>Z-score</i>	2.98	2.86	2.99	2.94	2.89	2.99	2.97	2.80	2.87	3.00
<i>Age</i>	18	20	18	20	19	19	19	20	18	20

Panel B. Is the positive relation between firm-level political risk and loan costs driven by external acquisition?

	Dependent variable: Log(Spread)	
	(1)	(2)
	<i>High_aqc</i> sample	<i>Low_aqc</i> sample
<i>PRisk</i>	0.024** (2.51)	0.018** (2.13)
Baseline controls	Yes	Yes
Loan purpose & type Fes	Yes	Yes
Industry FE	Yes	Yes
Year-quarter FE	Yes	Yes
Observations	2,462	9,001
Adjusted R ²	0.663	0.668
<i>p</i> -value of difference	0.620	

Internet Appendix for Firm-Level Political Risk and Bank Loan Contracting

In this Internet Appendix, we provide two sets of additional tests, including: (i) further establishment of the causal link by a quasi-shock study (Table IA1) and (ii) the role of increased political connections and switching to relationship loans (Table IA2).

To further establish the causal link between firm-level political risk and loan cost, we explore the sudden changes in the firm-specific political risk and conduct a quasi-shock study. Intuitively, when there is a sudden increase or decrease in the firm's exposure to political risk, banks may pay more attention to the firm's condition. The contracting terms are thus more likely to reflect the impact of political risk.

To define a quasi-shock, we follow the literature on tariff reduction and product market competition. More specifically, we first estimate the annual firm-level political risk by using the average of the quarterly firm-level political risk within the year. We define that year as a shock year, when the magnitude of annual change of firm-level political risk in a certain year is at least three times larger than the average annual change among all the years for the firm. We also exclude the transitory changes by comparing the annual firm-level political risk change in the ± 3 -year window of the shock year.¹ We use a similar algebra to identify either a significant and persistent increase or decrease in the firm's political risk. We next define a dummy variable, *Post*, which equals one if the loan issuance year is within the 3-year period *after* the shock year and zero if the year is within the 3 years *before* the shock year.² We then run the regression using this sub-sample and replace *PRisk* with the dummy variable *Post*.

Table IA1 reports the results. We find that when the firm experiences a dramatic increase in firm-level political risk, the coefficient on *Post* is significantly positive on loan costs with a large magnitude. This suggests that the surge of a firm's political risk leads to a sizeable increase in loan spreads (i.e., six times larger than the baseline result). When there is a shock causing a dramatic decrease in firm-level political risk, the coefficient on *Post* is significantly negative on loan costs, and the magnitude is about ten times larger than the baseline regression coefficient. Collectively, this quasi-shock analysis helps to identify the causal relation between firm-level political risk and loan costs.

¹ See Frésard (2010) for more detailed discussions.

² We include the loans within the 3-year window only because our quasi-shock is estimated using the 3-year window. We further require the firm to issue at least one loan in both the pre-shock period and the post-shock period. We exclude bank loans in the shock year to isolate the effect of the significant change in firm-specific political risks.

We also explore whether the adverse impact of political risk should also be reduced when firms *increase* political connections or *switch* their loans from non-relationship-based loans to relationship-based loans. Specifically, we use whether firms increase lobbying expenses to indicate their increase in political connections or not. *Lobby_increase* is an indicator variable that equals one if the firm increases its lobbying expense in that quarter, and zero otherwise. We then define *Move_to_Relationship* as an indicator variable that equals one if the firm changes its loan borrowing from transactional loans to relationship-based loans, and zero otherwise.

We focus on the interaction terms between firm-level political risk and the two dummy variables and report the result in Table IA2. We find that the coefficients on $PRisk \times Lobby_increase$ are negative and significant on loan costs and loan covenants. This implies that the increased political connections significantly alleviate the effect of political risk on loan contracts. Moreover, we also find the coefficients on $PRisk \times Move_to_Relationship$ are negative and significant on loan costs, while insignificant on loan covenants. Overall, the adverse effects of firm-level political risk on the borrowing costs is mitigated by increased political connections or switching to relationship-based financing.

List of Tables:

- Table IA1. Quasi-shock analysis
- Table IA2. The role of increased political connections and switching to relationship-based loans
- Additional References

Table IA1. Quasi-shock analysis

This table presents the regression results of the shock analysis. *Post* is a dummy variable that equals one if the year is after the year of a significant change in firm-specific political risk, and zero if the year is before the year of the significant change in firm-specific political risk. The *t*-statistics in parentheses are computed using standard errors robust to both clustering at firm and year levels and to heteroscedasticity. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dependent variable: Log(Spread)	
	(1) <i>Prisk</i> dramatically increase	(2) <i>Prisk</i> dramatically decrease
<i>Post</i>	0.136** (2.29)	-0.215** (-2.17)
<i>PSentiment</i>	0.010 (0.38)	0.043 (1.15)
<i>Size</i>	0.023 (0.37)	-0.161** (-2.10)
<i>M/B</i>	-0.002 (-0.89)	-0.028 (-0.98)
<i>LEV</i>	0.079** (2.48)	0.073 (1.04)
<i>Profit</i>	0.396 (0.49)	-1.324 (-1.45)
<i>Tang</i>	0.037 (0.17)	-0.111 (-0.56)
<i>Z-score</i>	-0.009 (-0.66)	-0.004 (-0.18)
<i>CF_Vol</i>	0.224 (0.52)	0.444 (1.23)
<i>TVol</i>	9.006** (2.38)	5.502 (0.77)
<i>Loss</i>	0.198** (2.12)	-0.118 (-1.11)
<i>CAPX</i>	-0.034 (-0.66)	0.133** (1.97)
<i>Return</i>	0.429 (1.08)	0.381 (0.47)
<i>Insti_holding</i>	0.192 (1.45)	-0.137 (-0.69)
<i>Log(Mat)</i>	-0.044 (-0.52)	0.006 (0.06)
<i>Log(Amt)</i>	-0.123*** (-4.66)	-0.179*** (-4.62)
<i>Perf_Provision</i>	-0.242*** (-3.26)	0.020 (0.22)
<i>DSecured</i>	0.568*** (5.93)	0.382*** (4.51)
<i>GenCovIndex</i>	-0.048* (-1.81)	0.044 (1.09)
<i>FinCovIndex</i>	0.077** (2.14)	-0.096** (-2.08)
<i>PUa</i>	0.034 (0.44)	-0.353 (-0.97)
<i>Default_Rate</i>	0.076 (0.77)	0.988 (1.32)
<i>Term_Spread</i>	0.189*** (6.01)	0.143 (0.43)
Intercept	7.137*** (12.43)	8.340*** (5.82)
Loan purpose & type FEs	Yes	Yes
Industry & Year-quarter FEs	Yes	Yes
Observations	332	331
Adjusted R ²	0.805	0.663

Table IA2. The role of increased political connections and switching to relationship-based loans

This table reports the results of the role of increased political connections and switching to relationship-based loans. *Lobby_increase* is an indicator variable that equals one if the firm increases its lobbying amount in that quarter, and zero otherwise. *Move_to_Relationship* is an indicator variable that equals one if the firm changes its loan borrowing from transactional loans to relationship-based loans, and zero otherwise. The *t*-statistics in parentheses are computed using standard errors robust to both clustering at the firm and year levels and to heteroscedasticity. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A. The role of increased political connections

Dependent variable	<i>Log(Spread)</i>	<i>TotCovIndex</i>	<i>GenCovIndex</i>	<i>FinCovIndex</i>
<i>PRisk</i>	0.046*** (3.19)	0.187** (2.48)	0.080* (1.74)	0.107*** (2.91)
<i>PRisk</i> × <i>Lobby_increase</i>	-0.045** (-2.05)	-0.210** (-2.08)	-0.118* (-1.87)	-0.092* (-1.71)
<i>Lobby_increase</i>	0.003 (0.10)	-0.027 (-0.23)	-0.017 (-0.21)	-0.011 (-0.19)
Baseline controls	Yes	Yes	Yes	Yes
Loan purpose & type FEs	Yes	Yes	Yes	Yes
Industry & Year-quarter FEs	Yes	Yes	Yes	Yes
Observations	2,347	2,347	2,347	2,347
Adjusted R ²	0.732	0.490	0.459	0.419

Panel B. The role of switching to relationship-based loans

Dependent variable	<i>Log(Spread)</i>	<i>TotCovIndex</i>	<i>GenCovIndex</i>	<i>FinCovIndex</i>
<i>PRisk</i>	0.023*** (3.28)	0.127*** (3.48)	0.075*** (3.17)	0.051*** (2.79)
<i>PRisk</i> × <i>Move_to_Relationship</i>	-0.035* (-1.77)	-0.007 (-0.07)	0.017 (0.23)	-0.024 (-0.47)
<i>Move_to_Relationship</i>	0.044 (0.43)	0.023 (0.24)	0.017 (0.27)	0.007 (0.12)
Baseline controls	Yes	Yes	Yes	Yes
Loan purpose & type FEs	Yes	Yes	Yes	Yes
Industry & Year-quarter FEs	Yes	Yes	Yes	Yes
Observations	11,463	11,463	11,463	11,463
Adjusted R ²	0.664	0.387	0.350	0.341

Additional references

Frésard, Laurent, 2010, Financial strength and product market behavior: The real effects of corporate cash holdings. *Journal of Finance* 65(3), 1097-1122.