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ABSTRACT

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Keywords: Corruption, Corporate Investment, Dodd–Frank, Whistleblowers, Bribery, Whistleblower Provision

JEL: G31, G32, G38, D72

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ABSTRACT

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"Shell and five oil services companies agreed to pay $236.5 million to settle probes by the U.S. Justice Department and Securities and Exchange Commission … which admitted to bribing government officials in hundreds of ways … "

~ Bloomberg, (Nov 5th, 2010)

"[The] Whistleblower program … has proven to be an invaluable component of our enforcement efforts."

~ Jay Clayton, Chairman of U.S. Securities and Exchange Commission, (Nov 5th, 2019)

1. Introduction

Political corruption is the misuse of powers by government officials or their network contracts for illegitimate private gain. Typical forms of political corruption include bribery, extortion, graft, embezzlement, fraud, and other forms of rent-seeking activity.[1] A large body of literature suggests that corruption can distort capital allocation (e.g., Shleifer and Vishny, 1993; Butler, Fauver, and Mortal, 2009), decrease economic growth and firm value (e.g., Mauro, 1995; Zeume 2017), and change firm behaviors and innovation (e.g., Svensson, 2003; Dass, Nanda, and Xiao, 2016; Smith, 2016; Ellis, Smith, and White, 2020; Huang and Yuan, 2021).[2] In this study, we examine how political corruption affects corporate investment decisions.

First, we test two competing hypotheses. Previous literature suggests that political corruption can have both beneficial and harmful effects on firms. One stream of literature argues that political corruption creates inefficiencies and imposes losses on firms (e.g., Shleifer and Vishny, 1993; Mauro, 1995). In corrupt environment, corrupt officials can wield their power to solicit firms to pay bribes (Svensson, 2003). Even if firms prefer not to be corrupt, they have

[1] One-third of executives in more than 125 countries believe that companies engage in corruption to secure business (D'Souza and Kaufmann, 2013; Smith, 2016; Zeume, 2017). According to the executive opinion survey by the World Economic Forum, the estimated cost of corruption is about $2.6 trillion in 2012, approximately five percent of global GDP.

[2] Related literature includes Murphy, Shelifer, and Vishny (1993); Ades and Di Tella (1997); Badhan (1997); Tanzi and Davoodi (1998); Wei (2000); Jain (2001); Stulz (2005); Desai, Dyck, and Zingales (2007); Fisman and Svensson (2007); Bénabou and Tirole (2010); Ayyagari, Demirgüç-Kunt, and Maksimovic (2014); Mironov, (2015); Borisov, Goldman, and Gupta (2016); Liu (2016); Dass, Nanda, and Xiao (2016, 2020); Zeume (2017); Parsons, Sualeman, and Titman (2018); Zhang and Zhang (2019); among many others.

limited options as the firms cannot secure their business if they are unwilling to accept bribes (Bardhan, 1997). Firms in need of government contracts, permits, and licenses could be more negatively affected by rent-seeking. According to Murphy, Shleifer, and Vishny (1993), innovative firms are vulnerable to rent seeking since firms bear the risk of investment failure *ex ante*, but corrupt officials expropriate the rents generated from successful investment *ex post*. Thus, we posit that rent-seeking by corrupt officials can interfere firms' investment decisions adversely. Accordingly, our first hypothesis is that political corruption can deter corporate investment.

On the contrary, political corruption can be beneficial, allowing firms to have an efficient manner of political connection (e.g., Lui, 1985; Beck and Maher, 1986; Laffont and Tirole, 1991). For instance, firms can pay a bribe quickly if a corrupt official were using bribes to sell off a government contract or permission. Lui (1985) argues that corruption can speed up processes by paying to jump the regulatory queue. Likewise, corruption could help firms by building bureaucratic ties with government officials *relative* to firms who cannot build connections (Laffont and Tirole, 1991; Shleifer and Vishny, 1994). Incumbent firms can use political connections to facilitate licensing or approval process if they are disrupted by competitors (e.g., Christensen and Bower, 1996). In this case, the detrimental and beneficial effects of corruption can cancel each other out. Thus, our alternative hypothesis is that political corruption has less or no effect on corporate investment.

To test our hypothesis, we measure corruption using the number of corruption convictions data from U.S. Department of Justice (DOJ) Public Integrity Section (PIN). The conviction cases include crimes involving abuses of the public trust committed by government officials. Previous studies indicate that, unlike perception-based measures, conviction-based data are useful because they are standardized, verifiable, and not based on opinion (Glaeser and Saks, 2006; Butler, Fauver,

and Mortal, 2009). Following the literature, we assume that firms located in states with more corruption convictions face more political corruption.[3]

We start our analysis by examining the relationship between political corruption and firms' investment decisions. We find that political corruption has a substantial negative effect on firms' investments. The negative relationship is both statistically robust and economically meaningful. A one-standard-deviation increase in corruption reduces firms' investments by 2.25%, which is equivalent to an approximate USD 2.88 million decrease in total investment. When we compare the firms in the five least-corrupt states to those in the five most-corrupt states, the difference is 7.66%, equivalent to USD 9.8 million.[4] We also find that the effect of corruption is more detrimental to firms with higher investment friction, higher political visibility, and poorer governance. The results are robust to using alternative investment measures, alternative corruption measures, and different regression specifications.

Next, we study the impact of the Dodd–Frank Whistleblower Provision.[5] Under the provision, any individual with information regarding bribes or fraud can submit potential cases (*tips*) of corruption to the SEC. The *tips* can be submitted anonymously with the assistance of an attorney and the whistleblowers can be eligible for cash awards. Previous research documents that whistleblowers play a key role in the investigation process by providing valuable information to regulators and by facilitating enforcement actions (Dyck, Morse, and Zingales, 2010; Call, Martin, Sharp, and Wilde, 2018). In line with these studies, we posit that the Dodd–Frank Whistleblower

[3] The conviction-based measure could be a noisy proxy of corruption if the DOJ is not equally vigilant in prosecuting corruption cases in all districts. However, this concern has relatively little support in the previous literature. The literature finds that there is no crucial variation in the level of enforcement across districts (e.g., Fisman and Gatti, 2002; Glaeser and Saks, 2006; Butler, Fauver, and Mortal, 2009).

[4] The magnitude is comparable to Dass, Nanda, and Xiao (2016) and Brown, Smith, White, and Zutter (2021), which document that a one-standard-deviation increase in state corruption reduces firm value by about 4% ($7.6 million).

[5] The SEC established Office of the Whistleblower after the passage of Dodd–Frank Whistleblower Provision (https://www.sec.gov/whistleblower).

Provision can help firms fend off expropriation by rent-seeking officials. If the provision incentivizes whistleblowers to monitor the bribes between payers and recipients, corrupt officials may hesitate to solicit rents and firms may refuse to engage in corrupt activities. Accordingly, we conjecture that the effect of corruption on investment could be less after the Dodd–Frank Whistleblower Provision was enacted.

Consistent with our conjecture, we find that the negative effect of corruption on firms' investment became insignificant after the enactment of Dodd–Frank Whistleblower Provision. Specifically, we find that the coefficient of corruption is significant only in high-corruption states and became insignificant after the provision was enacted. Our results indicate that the impact of the Whistleblower Provision is stronger for firms that are more deeply embedded in political corruption. Overall, our findings suggest that changes in the legal environments can help firms reduce the decline in investments in highly corrupt states.

Lastly, we address endogeneity concerns of omitted variable bias, reverse causality, and selection bias. First, to rule out potential omitted variable bias, we include additional firm- and state- level variables. Our results remain consistent after the inclusion of additional variables and additional fixed effects. Second, to address the reverse causality, we incorporate two instrument variables: ethnic fractionalization within the state and state population concentration around the capital city. We find that the two-stage regression results remain negative and significant, alleviating the reverse causality concern. Third, to mitigate the concern of selection bias, we conduct a propensity score matching (PSM) analysis. Using matching samples, we find that the treated firms (i.e., firms located in highly corrupt states) invest 26.8% less than the control firms. Overall, our results are robust to additional tests.

The contribution of this paper is threefold. First, our study contributes to the literature on political corruption. A large body of literature suggests that corruption distorts capital allocation, decreases economic growth, decreases firm value and innovation, and changes firm behaviors (e.g., Murphy, Shleifer, and Vishny, 1993; Shleifer and Vishny, 1993; Mauro, 1995; Svensson, 2003; Glaeser and Saks, 2006; Butler, Fauver, and Mortal, 2009, Dass, Nanda, and Xiao, 2016; Smith, 2016; Ellis, Smith, and White, 2020; Huang and Yuan, 2021). In line with these studies, our study sheds light on how political corruption influences firms' investment decisions.

Second, this study adds to the literature on the government policy and whistleblower provision. Previous studies document that whistleblowers provide valuable information to regulators and help facilitate enforcement actions (e.g., Dyck, Morse, and Zingales, 2010; Call, Martin, Sharp, and Wilde, 2018; Berger and Lee, 2019). In a similar vein, our study highlights the role of government policy when corruption pervades in surrounding environments. Our study can be particularly beneficial for firms that make investment decisions in highly corrupt states.

Third, this study adds to the literature on corporate investment. Previous literature has been studied in the context of investment decisions related to capital structure, cash holdings, product pricing, firm location, financial constraints, and competitors (e.g., Chevalier, 1995; Hoberg, Phillips, and Prabhala, 2014; Leary and Robert, 2014; Grieser and Liu, 2019). In addition to the literature, this study provides new insights regarding the implication of political corruption on corporate investment, providing suggestive evidence that higher political corruption could hamper firms' investment decisions.

The rest of the paper is organized as follows. Section 2 reviews the prior literature and discusses our hypotheses. Section 3 describes the data construction and sample statistics. We

present the main empirical results in Sections 4 and 5. Section 6 presents additional tests and Section 7 provides conclusions.

2. Prior Literature and Hypothesis Development

2.1 Political Corruption and Corporate Investment

Previous literature finds that political corruption can have both negative and positive effects on firms. One stream of literature argues that political corruption creates inefficiencies and represents a harmful form of taxation (e.g., Shleifer and Vishny, 1993; Mauro, 1995). The opposite stream argues that political corruption can be beneficial, allowing firms to have an efficient manner of political connection. The empirical literature supports both side of theories (e.g., Borisov, Goldman, Gupta, 2016; Dass, Nanda, Xiao, 2016; Smith, 2016).[6]

Political corruption can affect firms' business decisions negatively in various ways. Svensson (2003) argues that corrupt officials can wield their power to solicit inducements as long as firms are able to pay bribes. Bardhan (1997) argues that, even if firms prefer not to be corrupt, they have limited options as they cannot secure their business if they are unwilling to accept bribes. Rent-seeking by corrupt officials is prevalent in corrupt environments. For example, in 2008, an Arizona Congressman on the House Natural Resources Committee forced firms to include land owned by a specific investor when firms need to swap the property owned by the federal government.[7] Examples such as this illustrate how political corruption can interfere firms' investment decisions adversely.

[6] Many previous studies mainly focus on how corruption affects macroeconomic outcomes and foreign direct investments. (e.g., Wei, 2000; Habib and Zurawicki, 2002; Globerman and Shapiro, 2003; Egger and Winner, 2005; Brouthers, Gao, and McNicol, 2008; Olken and Pande, 2012)

[7] The link for the news is as follows: https://www.nytimes.com/2008/02/22/washington/22cnd-Renzi.html

Likewise, Murphy, Shleifer, and Vishny (1993) argue that entrepreneurial firms are particularly vulnerable to rent-seeking since corrupt officials expropriate the rents generated from successful investment *ex post* while firms bear the risk of investment failure *ex ante* in the risky and long-term nature of investments. Firms that rely on government permits, licenses, inspections, and patents could be more negatively affected by the rent-seeking behaviors of corrupt officials. Thus, if corruption is unfavorable to firms, firms can deter their future investments. In the support of this implication, empirical studies provide evidence that political corruption significantly impedes corporate innovation (e.g., Ellis, Smith, and White, 2020; Huang and Yuan, 2021).

On the one hand, firms could choose to shield their resources from corrupt officials. For instance, firms hold less cash and use more leverage when faced with local political corruption (Smith, 2016). Firms could also choose not to invest until the business environment is not corrupt if there is no cost of deterring investment. However, if the cost of deterring investments outweighs the cost of corruption, firms could be forced to adapt to their local corrupt environments. Another option available to firms is moving their headquarters to less corrupt areas (e.g., Smith, 2016; Bai, Jayachandran, Malesky, and Olken, 2019). The relocation, however, is costly for firms. The businesses of firms are usually clustered in the same state where the headquarter is located. If a firm's customers are predominantly local, proximity to customers helps the firm maintain relationships and save adjustment costs. Firms could face more aggressive local competition by relocation. Thus, if firms operate in certain areas mainly and cannot avoid corruption readily, they are more exposed to rent-seeking officials who have bargaining power to expropriate (Smith, 2016).

Accordingly, based on the discussion above, we conjecture that firms invest less if political corruption adversely influences firms' investment decisions. Therefore, our first hypothesis is:

Hypothesis 1: Political corruption has a negative effect on corporate investment.

On the contrary, a countervailing stream of literature suggests that corruption could be beneficial to firms.[8] This body of research proposes that corruption can help firms by smoothing the regulatory process (e.g., Lui, 1985; Beck and Maher, 1986; Laffont and Tirole, 1991).[9] Lui (1985) provides theoretical support for how corruption can speed up processes by jumping the regulatory queue. For instance, firms can promptly provide a bribe to corrupt officials who are willing to sell off government contracts or permissions. Numerous cases illustrate how corruption works as "*grease the wheels*." For example, in 2008, the former Chief of the Aviation Division of the U.S. Army Test and Evaluation Command misled the government about the performance of firms and favored the selection of a specific company for a government contract.[10] This could be the case that political corruption benefits the firm involving the corrupt activities by influencing the regulatory process.

Firms can also consider bribe opportunities to gain competitive advantage. By building bureaucratic ties, corrupt officials may help firms influence the regulatory structure in their favor *relative* to firms who cannot build connections (Shleifer and Vishny, 1994). Incumbent firms can use political connections to facilitate licensing or approval processes if they are disrupted by competitors (e.g., Christensen and Bower, 1996). This type of influence could also reduce the investment uncertainty of the bribe-paying firms (Laffont and Tirole, 1991). The empirical

[8] Svensson (2005) argues that corruption should be distinguished from rent-seeking because the latter is a socially costly activity, but the former does not necessarily lead to a decline in social welfare. Nevertheless, it does not mean that corruption is value increasing. A corrupt environment reduces firm value on average and jeopardizes property rights. This could be the only option, on the margin, for firms to take advantage of corruption opportunities (Smith, 2016).

[9] In support of this implication, some cross-country empirical studies find that corruption can be valuable to firms in certain countries (e.g., Johnson and Mitton, 2003; Faccio, 2006; Bunkanwanicha and Wiwattanakantang, 2009; Faccio and Parsley, 2009). Zeume (2017) also notes that bribes can facilitate business in some countries.

[10] The case can be found at "Fact Sheet: the Department of Justice Public Corruption Efforts" in 2008.

literature provides supportive evidence for this implication. For example, Borisov, Goldman, and Gupta (2016) find that firms can generate values from corrupt lobbying activities. Similarly, Mironov (2015) notes that firms in corrupt countries benefit from hiring corrupt managers with political connections.

In all, political corruption has less or no effect on corporate investment at the aggregate level if the detrimental and/or beneficial effects of corruption cancel out. Thus, we form the countervailing hypothesis:

Hypothesis 1a: Political corruption has little or no effect on corporate investment.

2.2 The Dodd–Frank Whistleblower Provision

The SEC enacted the Dodd–Frank Whistleblower Provision in 2011.[11] Under the provision, the SEC allows any individuals with information regarding bribes or frauds to submit potential cases (*tips*) of corruption.[12] The *tips* can be submitted anonymously with the assistance of an attorney. For instance, if an employee witnesses or doubts that their company offers any type of bribes to a corrupt official, the person (or an attorney) can file a *tip* to the SEC anonymously.[13] The types of whistleblower *tips* include bribery, extortion, offering fraud, disclosure fraud, market manipulation, improper trading, and government malfeasance. Following an investigation of *tips*, the SEC can then enforce upon individuals or entities remedies such as monetary penalties,

[11] The SEC adopted final rules to implement the Dodd–Frank program in May 2011, and this program became effective in August 2011.

[12] Any individual with information regarding law violations can submit the potential cases (tips) here: https://www.sec.gov/whistleblower/submit-a-tip.

[13] There is no requirement that the person submitted *tips* should be an employee or company insider. According to the Office of the Whistleblowers in the SEC, approximately 68% of the award recipients were current or former insiders of the firms.

disgorgement of ill-gotten gains, injunctions, and restrictions on an individual's ability to work in the securities industry.[14]

The Whistleblower Provision provides three incentives for whistleblowers. The first incentive is a cash reward; whistleblowers can be rewarded if any sanction collected amount is over USD 1 million. The second incentive is protection from workplace retaliation. The third incentive is confidentiality; the SEC establishes confidentiality protections for whistleblowers and prohibits disclosing any information that could be expected to reveal the identity of a whistleblower. In 2020, the SEC received 6,911 *tips* and the largest cash reward is about $50 million. Since the enactment of the Dodd–Frank Whistleblower Provision, the SEC has paid approximately $720 million to whistleblowers and recovered more than $2.5 billion in financial remedies.

Inspired by this, we examine the impact of the Dodd–Frank Whistleblower Provision on the relationship between corruption and investment. Previous research suggests that whistleblowers play an important role in the investigation process. Whistleblowers can provide valuable information to regulators and facilitate the enforcement actions (Dyck, Morse, and Zingales, 2010; Call, Martin, Sharp, and Wilde, 2018).[15] For example, Wilde (2017) finds that whistleblowing can deter financial misreporting and tax aggressiveness. Berger and Lee (2019) show that whistleblowing can reduce the probability of accounting fraud. In line with these studies, we posit that the Whistleblower Provision can fend off expropriation by corrupt local officials by increasing firms' bargaining power against rent-seeking behaviors. The impact of the provision

[14] The SEC impose civil penalties only, not criminal. However, the SEC investigations can coordinate with criminal investigations involving the same conduct. Thus, if an investigated case includes a criminal violation, a court may sentence sanctions such as imprisonment or fines.

[15] Related literature on Dodd–Frank Act includes Dimitrov, Palia, and Tang (2015); Loon and Zhong (2016); and Cumming, Dai, and Johan (2017).

could be stronger for firms that are more deeply embedded in political corruption. In high corrupt areas, if the provision incentivizes whistleblowers to monitor bribes on both corrupt recipients and payers, corrupt officials may be more reluctant to solicit payment and firms are more likely to refuse to pay bribes. Accordingly, we conjecture that the effect of corruption on investment could be less significant or insignificant after the whistleblower provision was enacted. Based on the above discussion, we form our second hypothesis:

Hypothesis 2: The effect of corruption on investment is less significant or insignificant after enactment of the Dodd–Frank whistleblower provision.

3. Data and Summary Statistics

3.1 Measuring Corruption

We follow the literature (Glaeser and Saks 2006; Butler, Fauver, and Mortal, 2009; Dass, Nanda, and Xiao, 2016; Smith, 2016; Ellis, Smith, and White, 2020; Huang and Yuan, 2021) and construct a measure for political corruption based on the number of corruption-related conviction cases. The conviction cases are obtained from the Reports to Congress by the U.S. Department of Justice's (DOJ) Public Integrity Section (PIN). PIN chases political corruption and reports aggregated conviction cases. The conviction cases include crimes involving abuses of the public trust by government officials such as bribery and extortion. Following previous literature, we assume that states with more convictions are associated with higher level of local political corruption.

The PIN data has been widely used in the literature on economics and finance.[16] Glaeser and Saks (2006) point out that the advantage of using this data is that the measures are less subjective, cover longer time span, and are not subject to the problems of sampling error unlike the people's perception-based measure. Previous studies note the conviction-based data are standardized, verifiable, and not based on opinion (Fisman and Gatti 2002; Butler, Fauver, and Mortal, 2009; Dass, Nanda, and Xiao, 2016; Smith, 2016; Ellis, Smith, and White, 2020). The setting of this data is also helpful since it eliminates potential issues with compounding country-level factors such as different rules and regulations in the cross-country international setting.

Despite the advantages of the conviction-based measure, we acknowledge that the conviction-based measure could be a noisy proxy of corruption. The assumption behind using conviction data is that the DOJ identify and prosecute crimes evenly across districts. The degree of corruption, however, could be underestimated if the DOJ is not equally vigilant in prosecuting corruption cases in all districts. This could imply that the relationship between convictions and corruption can be noisy. However, this concern has relatively little support since previous studies suggest that there is no crucial variation in the level of enforcement across districts (e.g., Fisman and Gatti, 2002; Butler, Fauver, and Mortal, 2009; Smith, 2016). Fisman and Gatti (2002) show that there is no significant relation between the conviction and cross-state law enforcement. Glaeser and Saks (2006) support that enforcement is more likely equal over each county.

To mitigate the concern, we also use three alternative survey-based measures of corruption. The survey-based measures represent the perception of corruption level. The first survey measure is from Boylan and Long (2003), who surveyed State House reporters to compare the level of

[16] For example, papers about municipal bond sales and underwriting (Butler, Fauver, and Mortal, 2009), financial policy (Smith, 2016), firm value (Dass, Nanda, and Xiao, 2016; Brown, Smith, White, and Zutter, 2021), firm innovation (Ellis, Smith, and White, 2020; Huang and Yuan, 2021), and accounting and audit choices (Zhang and Zhang, 2019; Jha, Kulchania, and Smith, 2020).

corruption across states.[17] Boylan and Long (2003) take the average of responses by state to come up with a state's overall corruption score. We use the ranking based on the responses to measure the level of corruption. The second survey measure is the measure by the Center for Public Integrity through the State Integrity Project, used in Smith (2016). The Center for Public Integrity compiles qualitative data on the state of transparency, accountability, and anti-corruption mechanisms in all U.S. states. This measure proxies the strength of laws and practices that deter corruption. The third survey measure is Integrity Index by the Better Government Association, used in Butler, Fauver, and Mortal (2009). The Better Government Association produces an Integrity Index based on the quality of states' laws regarding freedom of information, whistleblowing, campaign finance, and conflicts of interest disclosure. The index measures the relative strength of existing laws that promote integrity. Following Butler, Fauver, and Mortal (2009), we rank states based on the index scores and use the rank as a measure of the perceived corruption level in each state. Overall, we include both conviction-based and the survey-based measures for our study for the actual incidence of corruption and the level of perceived corruption.

3.2 Summary Statistics

We construct our sample data covering all U.S. firms from Compustat during the period 1998-2018. Following previous literature, financial firms (SIC codes 6000-6999) and utility firms (SIC 4900-4999) are excluded from our sample since these firms have different characteristics of accounting information. We also require firms to have reasonable accounting data, such as non-negative total asset, non-negative sales, and non-negative book value of equity. Finally, the firms need to have necessary accounting data to construct all the firm-level control variables.

[17] One caveat of Boylan and Lang (2003) measure is that, even if the measure is survey of state house reporters, the perception of corruption is related to the number of corruption to certain degree.

We use the state of firm's headquarter as the linkage between local political corruption and firm-level variables. To capture the state's local corruption environment, we sum up the raw conviction numbers within each state, and scale the measure by population of each state in that year. Data for population is obtained from U.S. Census Bureau. We then extract the firm headquarter information from the SEC filings. Compustat also reports the firm headquarter information, but the data contains only the current headquarter. We notice that there are two to three percentages of firms moving to different states every year.[18]

Table 1 reports the summary statistics for the state-level corruption data, ordered by the median level of corruption. We combine the 94 judicial districts into 50 states and District of Columbia (D.C.). We report the average number of firm-year observations, median, mean, and standard deviation of the state corruption level. Consistent with previous literature, D.C. has the highest corruption level, which is about 0.527 conviction case among every one million population.[19] The average corruption level of the highest five corrupt states (except D.C.) is about 0.066, seven times more than the average corruption in the lowest five corrupt states (0.008). Further, we visualize the corruption data into the choropleth map with six breaks as shown in Figure 1. We observe a large cross-variation of the political corruption level.

*** Table 1 Here ***

*** Figure 1 Here ***

Besides the cross-state variation of the corruption level, we present the annual change of total conviction cases in Figure 2. We find the decreasing trend of conviction cases after 2011.

[18] This ratio is similar to previous literature (e.g., Pirinsky and Wang, 2006; Strauss-Kahn, and Vives, 2009; Calluzzo, Wang, and Wu, 2015). Our results do not change if we use the Compustat reported headquarters.

[19] This is comparable with previous literature, see for example, Smith (2016) and Ellis, Smith, and White (2020). Distinguished from other states, D.C. is a political centre and has fewer inhabitants, thus the scaled corruption measure is extremely high. Our results are not affected if we exclude D.C. from our sample.

This trend provides an intuitive idea that the Dodd–Frank Whistleblower Provision is in effect on corruption.

*** Figure 2 Here ***

*** Table 2 Here ***

Table 2 reports the summary statistics of the key variables used in our empirical analyses. Following previous literature, we winsorize all continuous variables at the 1% and 99% percentile to reduce the impact of outliers. The definition of the variables is listed in Appendix. In Panel A, the average total asset of firms is about $2.28 billion and the capital expenditure is $128 million, about 5.6% of total asset. For the control variables, we use Tobin's Q, Sales growth, and Cash flow as our basic control variables following prior literature (e.g., Gulen and Ion, 2015). We also control for additional fundamental firm characteristics, including firm size (total asset), leverage, operational profitability (OP), PP&E, and Z score. These variables are used as our baseline regression specification. To address possible omitted variable concern, we add extra control variables in additional tests, which include the firms' cash-holding (Cash), firm age, the institutional ownership (IOR), firms' product market competition environment (Tnic3hhi), and the firms' tax rate. We also control for two state-level variables, which are average personal income and the unemployment rate.

In Panel B, we report the average values of main variables before and after the Dodd–Frank Whistleblowing Provision. In the post Dodd–Frank period, the corruption level decreases both for high-corruption states and low-corruption states. The investment level also decreases slightly both for high-corruption states and low-corruption states. Although the average investment level during the post Dodd–Frank period is lower than that in the pre Dodd–Frank period, this does not necessarily suggest that the whistleblowing decreases investment. The firm value increases in the

post Dodd–Frank period. Rather, the overall investment level can be subject to other macro-economic factors and states' culture.

4. Empirical Results

In this section, we present empirical results on how political corruption could affect firms' investment decisions. We first show the baseline regression results using the primary investment and corruption measures. We then use alternative measures to check the robustness. We further conduct quantile regression tests and explore cross-sectional heterogeneity.

4.1 Baseline Results

To test our hypothesis, we first analyze the effect of corruption on firms' investment decisions by estimating the following regression model:

$$Investment_{i,t+1} = \alpha + \beta * Corruption_{j,t} + \gamma * X_{i,t} + \epsilon \quad (1)$$

where $Investment_{i,t+1}$ is the investment measure of firm *i* in year *t+1*, measured as the capital expenditure for firm *i* in year *t+1* scaled by the firm's total asset in previous year. $Corruption_{j,t}$ is the corruption level in year *t* for state *j*. All firms headquartered in the same state are associated with the same corruption measure. $X_{i,t}$ are the firm-level control variables for firm *i* in year *t*. We expect the coefficient β to be significantly negative, indicating that higher political corruption will impede firms' future investments.

*** Table 3 Here ***

Our baseline regression results are presented in Panel A of Table 3. In column (1), we conduct univariate regression without adding any control variables. In column (2), we add only the basic control variables as used by Gulen and Ion (2015), which includes Tobin's Q, Sales

growth, and Cash flow. We further add additional control variables in column (3). In all regressions, we control for the time fixed effect and industry fixed effect. The regression standard errors are clustered at the state and year levels.[20]

The results in Panel A provide strong support for *Hypothesis 1*. All coefficients of corruption are significantly negative at the 1% level, indicating that higher political corruption impedes firms' future investments. Specifically, the coefficient of corruption is -0.074 (*t*-stat = -3.972) in column (3), indicating a one standard deviation increase in state level corruption leads to an approximate 13 basis-point decrease in firms' investments. This is equivalent to 2.25% of the average investment level in our sample, or a USD 2.88 million decrease in total investment. The impact of corruption on the level of firms' investments is comparable with the effects of some prominent firm characteristics, including profitability and leverage level. Firms located in the most—top five or top 10%—corrupt states invest 7.66% (or USD 9.8 million) less annually than firms located in the least—bottom five or bottom 10%—corrupt states. In sum, our baseline regression results indicate that firms in corrupt states make significantly less investments. The results are both statistically robust and economically meaningful.

We conducted additional tests to examine how investment decisions are made in the state where the firm operates. Previous studies document that geographically more concentrated firms are more prone to exploitation by corrupt officials. The idea behind tests is that firms with geographically concentrated operations face a higher cost of relocation and therefore are easier targets for political rent seeking (Smith, 2016). If firms operate in certain area mainly, corrupt

[20] Our regression specification follows previous literature (e.g., Smith, 2016; Jha, Kulchania, and Smith, 2020). We use the industry fixed effects because firm and/or state fixed effects might be inappropriate as the corruption could be relatively stable. We also show that our results still hold if we use firm and/or state level fixed effects. Clustering in relatively larger groups generates larger standard errors, which leads to lower *t*-statistics (Smith 2016). Our results are similar if clustering by firm or by firm and year.

officials can have more bargaining power to expropriate; they could control government contracts or permits. Accordingly, we posit that the geographically concentrated firms are more likely to decrease investment when faced with a higher level of corruption.

To test the idea, we utilize data from Garcia and Norli (2012) as a proxy for the geographic concentration of firms' operations. Garcia and Norli (2012) counted the number of times each state is mentioned in a firm's 10-K filings over the period from 1993 to 2008. We define the percentage of a firm's operations in its headquarter state as the number of mentions of the headquarter state relative to all other state mentions in the 10-K filing in the same year. The results are reported in Panel B of Table 3. In column (1), the coefficient is -0.090 (*t*-stat = -2.766), which is consistent with the intuition that greater operating concentration exacerbates the relation between political corruption and investments. We find that the impact of political corruption on geographically concentrated firms is roughly 1.5 times greater than that of not concentrated firms.[21]

Overall, the results in Table 3 are consistent with the idea that a corrupt environment acts as a barrier to firms' future investments, providing supporting evidence for the *Hypothesis 1* that political corruption has a negative effect on corporate investment.

4.2 Alternative Measures of Investments and Corruption

To ensure the robustness of our baseline results, we conduct a set of robustness checks. First, we consider both capital expenditures and non-capital expenditures to measure firms' investments (e.g., Richardson, 2006). We also examine the scaling effect by using different scalers to compute the capital expenditures, such as Property, Plant, and Equipment (PP&E) and annual

[21] One caveat to interpret these results is that geographic concentration could be an outcome factor since firms could choose the location of headquarter (Smith, 2016).

sales (Sales). We compute non-capital expenditure investment as the R&D expense (R&D) scaled by lagged total asset. We also include a measure adjusted by industry median.

*** Table 4 Here ***

Panel A of Table 4 reports the test results. In Panel A column (1) and (2), we scale firms' future investments (CAPEX) by PP&E or Sales respectively. In column (3), we use R&D expense as the alternative investment measure. In column (4), we assign the missing R&D as 0. In column (5), we use the investment measure adjusted by industry median since some industry could have a higher or lower capital expenditure than other industries. [22]

Panel A reports the coefficients. All coefficients of corruption are significantly negative at the 1% level, indicating that our results are robust using alternative investment measures. Specifically, in column (5), the coefficient is -0.068 (*t*-stat = -4.208), implying that the negative association is not driven by industry clusters. In column (3) and (4), the coefficients of corruption on R&D are much larger than those in our baseline results in Table 3, suggesting that R&D expenses are more sensitive to political corruption environment than the general capital expenditure. The coefficients on corruption are comparable with those reported in Huang and Yuan (2021).

Panel B reports the regression results using alternative corruption measures. We use six alternative corruption measures. Three measures are based on convictions: the decile rank of our baseline corruption measure, the raw number of conviction cases, the raw number of conviction cases scaled by the number of listed firms in that state. Another three measures are based on surveys: the measure based on Boylan and Long (2003) survey, the survey measure by the Center for Public Integrity through the State Integrity Project used in Smith (2016), and the Integrity Index

[22] If certain industries cluster in states with high corruption, it is possible to observe an artificial negative correlation between corruption and investment.

by the Better Government Association used in Buttler, Fauver, and Mortal (2009). We adjust the sign of the survey measures so that higher value indicates higher corruption level.

In Panel B, we regress the firms' future capital expenditures on alternative measures of corruption. The results show that all coefficients in column (1), (2), and (3) are significantly negative, suggesting that the negative relation between firm investment and political corruption environment is robust. In column (4) through (6), we test survey-based measures. In column (4), we use the survey measure by Boylan and Long (2003). We find that the coefficient on corruption is -0.001 (*t*-stat = -2.559). In column (5), we use the survey measure by the State Integrity Project. We find that the coefficient on corruption is -0.002 (*t*-stat = -2.133). In column (6), we use the Integrity Index by the Better Government Association but find an insignificant but negative result. Overall, we include both conviction-based and the survey-based measures and find consistent results.

In summary, we find a robust negative relation between state-level political corruption and firm-level investment. Our results presented in Table 4 indicate that political corruption impedes firms' investments, which is consistent with the *hypothesis 1*. These results provide strong support that corruption environment acts as a barrier to firms' investments. [23]

4.3 Quantile Regression Estimation

Our baseline results suggest, on average, political corruption hinders firms' future investments. The average effect, however, may be driven by some extreme values. To address this concern, we examine the relation between corruption and investment using quantile regressions. The quantile regression analysis, developed by Koenker and Bassett (1978), estimates parameters

[23] Beside the alternative measure construction, we also use the average DOJ corruption level in previous 3 year or 5 years as alternative corruption measures. All our results are qualitatively similar.

at multiple points on the conditional distribution of the dependent variable. Using the quantile regression, we can qualify and quantify the effect of political corruption at the different quantiles on firms' investments. We start with checking the normal pattern of firms' investments by drawing the kernel density estimates of firms' capital expenditure. Figure 3 shows that the distribution of individual firm's investment is not perfectly Gaussian.

*** Figure 3 Here ***

*** Table 5 Here ***

Table 5 presents the estimation results using quantile regressions. The estimates for the quantiles are {0.05, 0.25, 0.50, 0.75, 0.95}. Consistent with the baseline results, the results in Table 5 illustrate that corruption generally has a negative effect on firms' investments. The negative effect is significant from the 0.25 quantile to the 0.95 quantile. Importantly, the magnitude of coefficients of the political corruption on investment increases monotonically, i.e., the negative effect is larger in firms with higher level of investment. The results indicate that firms with higher investments suffer more by the negative effect from political corruption. This finding is consistent with previous studies (e.g., Svensson, 2003; Smith, 2016; Mukherjee, Singh, and Zaldokas, 2017; Huang and Yuan, 2021) that rent-seeking activities by corruption officials lower firms' incentive to take a high-risk project which requires high investment, i.e., political corruption forces firms to forgo projects with high investment. To sum up, the results in Table 5 provide suggestive evidence that political corruption hinders firms' investments more substantially for firms with higher investments.

4.4 Cross-sectional Heterogeneity

In this section, we explore the additional factors that could moderate the detrimental effect of political corruption. We examine three potential moderating effects: investment friction, political visibility, and firm governance. Table 6 reports the results for cross-sectional heterogeneity.

*** Table 6 Here ***

Panel A in Table 6 shows the results based on investment friction. We use S&P credit rating and firm's age as the proxy for the investment friction. Previous literature finds that firms without credit rating have greater investment frictions (e.g. Fazzari, Hubbard, and Petersen, 1988; Almeida and Campello, 2007). Likewise, young firms are more likely to face more investment frictions (e.g., Barry and Brown, 1985; Hadlock and Pierce, 2010). The test results in Panel A imply that the deterrent effect of political corruption on firms' future investments is larger for firms without S&P credit rating and younger firms.

Panel B shows the results based on political visibility. Kerr, Lincoln, and Mishra (2014) document that firms located far-away from the political center are less visible to the political parties and are less likely to conduct lobbying. Firms could maintain higher level of leverage to shield their resources from political solicitation (Smith, 2016). To proxy the political visibility, we use a geographic distance to capital city and firm leverage. We find firms close to the state capital city are more severely affected by political corruption. We also find firms with low leverage are more substantially affected by political corruption. The coefficients are significantly larger for the high-visible subgroup. Overall, our results in Panel B are consistent with the intuition that political visibility could moderate the effect of corruption by affecting the rent-seeking behaviors of corrupt officials.

Panel C in Table 6 shows the results based on firm governance. Previous literature documents that independent board structure and higher institutional ownership enhance the firms' governance (Shleifer and Vishny, 1986; Weisbach, 1988; Byrd and Hickman, 1992; Hartzell and Starks, 2003; Aghion, Reenen, and Zingales. 2013). If the better governance increases firms' bargaining power against the rent-seeking corrupt officials, the effect of political corruption could be attenuated by monitoring strength (governance level). To proxy the level of firm governance, we use the percentage of independent board members and percentage of institutional ownership. We find that firms with the low percentage of independent board members are more substantially affected by political corruption. Overall, the results in Panel C indicate that the effect of political corruption is attenuated in firms with better governance.

In summary, the results in Table 6 suggest that political corruption has more pronounced effect on investment for firms with higher investment friction, higher visibility to politicians, and poorer firm governance.

5. The Dodd–Frank Whistleblower Provision

5.1 The Impact of the Dodd–Frank Whistleblower Provision

In this section, we examine whether the Dodd–Frank Whistleblower Provision has a differential impact on the relationship between political corruption and firm-level investment. To test this relationship, we divide our sample into two sub-samples: pre-Dodd–Frank and post-Dodd–Frank. If the firm-year is on or before year 2010, we include the firm in the pre-Dodd–Frank

subsample. Similarly, if the firm-year is on or after 2011, we incorporate the firm into the post-Dodd–Frank subsample.[24]

*** Table 7 Here ***

Panel A in Table 7 presents the regression results. Following previous tests, we add control variables including firm size, sales growth, cash flow, leverage, operational profitability, Tobin's Q, property, plant & equipment (PP&E), and Z score. These variables are consistent with our baseline regression specification. The coefficient of corruption in the pre-Dodd–Frank period is -0.066 (*t*-stat = -3.109). However, the coefficient is smaller and insignificant in the post-Dodd–Frank period. The results support the negative effect of political corruption on firms' investments became insignificant after the enactment of Dodd–Frank Whistleblower Provision. It is noteworthy that the coefficients and levels of significances of control variables do not change across the pre- and post- Dodd–Frank periods.[25] In sum, the results in Panel A imply that the Dodd–Frank Whistleblower Provision has a significant impact on corruption, but has no significant impact on other control variables.[26]

Next, we examine the impact using the survey-based corruption measure. The survey-based measure provides a proxy of the perception of corruption level. We use the survey measure of the Center for Public Integrity through the State Integrity Project used in Smith (2016). The State Integrity Project measures allow compilation of qualitative information on the transparency and corruption mechanisms in all U.S. states. Thus, we expect tests using these survey measures and the conviction-based measures to provide robust results, given survey-based measures represent

[24] Since the Dodd–Frank Whistleblower Provision is implemented on May 25, 2011 and the whistleblowers can be eligible to receive an award for information after July 22, 2010, we group the sample into pre-Dodd–Frank if the firm-year is on or before year 2010.
[25] In untabulated tests, we find consistent results when we test different sample periods and when we test excluding the observation in 2011.
[26] We find the consistent results using the district-level conviction data.

the overall perceived corruption level while conviction-based measures correspond to the enforcement level.

The regression results are presented in Panel B of Table 7. In column (1), the coefficient of corruption is significantly negative. In column (2), the coefficient is insignificant in the period of post-Dodd–Frank. Overall, the test results are consistent with those in Panel A. The results indicate that the negative effect of political corruption on firms' investments became insignificant after the enactment of the Dodd–Frank Whistleblower Provision.

To further investigate the impact of the Whistleblower Provision, we conduct additional tests. Specifically, we test the impact of the Whistleblower Provision on firms' cash holding and leverage. As documented in Smith (2016), firms in corrupt states hold less cash, and use more leverage. We expect that, if the Dodd–Frank Whistleblower Provision curtailed the negative effect of political corruption, we similarly observe a differential impact on firms' cash holding and leverage. Panel C reports our test results on the relationship between political corruption and firms' cash holding and leverage. In the pre-Dodd–Frank period, we observe that higher corruption leads firms to hold less cash and maintain more leverage, a result consistent with Smith (2016). In the post-Dodd–Frank period, the relationship between corruption and firms' leverage levels is insignificant (coeff. = -0.055, *t*-stat = -0.478), and the relationship between corruption and cash holdings is also attenuated from -0.584 (*t*-stat = -6.080) to -0.329 (*t*-stat = -2.512).

Taken together, the results in Table 7 are consistent with the idea that the negative effect of political corruption on firms' investment decisions became insignificant after enactment of the Dodd–Frank Whistleblower Provision, providing supporting evidence for *Hypothesis 2*.

5.2 Heterogeneous Treatment Effects

To further support our hypotheses, we explore heterogeneous treatment effects. If the impact of Whistleblower Provision on corporate investment is truly due to the increased bargaining power of firms in more corrupt states, firms that are more deeply embedded in corruption will benefit more from the Whistleblower Provision. Thus, we expect the Whistleblower Provision has a more substantial impact on firms in more corrupt states. If the monitoring of whistleblowers increases the cost of corruption, then firms may suffer less from rent-seeking and be more willing to engage in investment.

*** Table 8 Here ***

To capture the level of corruption in different states, we divide our sample into quartile subgroups based on the average corruption level during the sample period. We define the top and bottom quartiles as high- and low-corruption states, respectively. Panel A reports the results of high- or low- corruption subsamples. In both subsamples, the coefficients of corruption are larger in the pre-Dodd–Frank period than those in the post-Dodd–Frank period. More importantly, the coefficient of corruption is only significant in the high-corruption states in the pre-Dodd–Frank subsample (coeff. = -0.148, *t*-stat = -2.425), but insignificant in the post- Dodd–Frank subsample. This result indicates that the impact of provision is more pronounced in high-corruption states.

Next, we examine whether the size of firms affects the impact of Dodd–Frank Whistleblower Provision on the relationship between corruption and investment. Small firms in corrupt states may be an easier target for rent-seeking by corrupt officials. It is also plausible that larger firms are more likely to secure better monitoring through voluntary or involuntary means. We presume that small firms are more vulnerable to expropriation by corrupt officials. Thus, we expect the impact of the Whistleblower Provision to be more significant on small firms.

We conduct the same test on small and large firms separately. Panel B of Table 8 reports the results. Small firms are defined as those with total assets less than USD 750 million (Parsons, Sualeman, and Titman, 2018). First, we find that the coefficient of corruption is only significant in the small-firm sample in the pre-Dodd–Frank period (coeff. = -0.061, *t*-stat = -2.438). This result indicates that the negative effect of political rent seeking is more pronounced in the small firms. We further find that the coefficient of corruption is insignificant in the post- Dodd–Frank period. The results imply that the impact of provision is more crucial on small firms.

Overall, the results in Table 7 and 8 provide supporting evidence that the Dodd–Frank Whistleblower Provision has an impact on the relationship between the political corruption and corporate investment. Our findings show that the effect of the Whistleblower Provision is stronger for firms that are more deeply embedded in political corruption.

6. Additional Tests

In this section, we address endogeneity concerns by conducting omitted variable bias, reverse causality, and selection bias tests. Additionally, we examine tests on vulnerable industries and on the impact of the Foreign Corrupt Practices Act.

6.1 Endogeneity

6.1.1 Omitted Variables

Corporate investment could be affected by unobserved factors that affect both the level of public corruption and the policies of the state where firms located. To rule out some potential omitted variables, we include additional control variables and extra fixed effects.

*** Table 9 Here ***

We report the results in Table 9. The overall results are robust and comparable to our baseline results. In column (1), we add additional control variables, including firms' cash holding (Cash), firm age, the institutional ownership (IOR), the text-based product market competition (Tnic3hhi), and firms' marginal tax rate.[27] Internal cash holding provides capital to support firms' future investments even if the external financing environment becomes constrained (e.g., Han and Qiu, 2007). Younger firms generally have lower reputation and face more investment frictions (e.g., Hadlock and Pierce, 2010). The institutional ownership reflects the firms' governance level. Firms' future investments could also be affected by their product market competition environment (e.g., Grieser and Liu, 2019). The tax rate directly affects the NPV estimation of potential investment (e.g., Gordon, Kalambokidis, and Slemrod, 2003). We also add additional state-level control variables, including the personal income and unemployment rate. Further, we test the state fixed effect in column (2), and firm fixed effect in column (3).

All the coefficients of corruption on investment are statistically significant. The magnitude of coefficient and significance level in column (3) decreases slightly compared to the result in Table 3, but the result (coeff. = -0.059; *t*-stat = -2.468) is still robust and meaningful. Overall, the results in Table 9 help rule out the time-invariant, firm-level, and/or state-level omitted variable bias.

6.1.2 Reverse Causality

Our results could suffer from the issue of reverse causality. The causal relation between political corruption and firms' investment decisions could be bidirectional. Firms reduce the

[27] We thank Prof. Gerard Hoberg and Prof. Gordon Phillips for making their text-based competition data publicly available. See Hoberg and Phillips (2010, 2016) for more details. The marginal tax rate is constructed following Blouin, Core, and Guay (2010).

capital expenditures then bribe the government officials, leading to a higher political corruption environment. To address this issue, we apply the instrumental variable approach. We employ two instrumental variables (IV): the ethnic fractionalization and the state population concentration around the capital city.

The first instrumental variable is the ethnic fractionalization within each state, which reflects the degree of population fragmented or diversified across various ethnic groups. Previous literature shows that politicians are more likely to corrupt in the ethnically diverse area (e.g., Mauro, 1995; Glaeser and Saks, 2006; Dass, Nanda, and Xiao, 2020), but it is unlikely that the ethnic diversification would affect the firms' investment decisions. We define the ethnic fractionalization as 1 minus the ethnic concentration (i.e., HHI index among different ethnic groups). We extract the number of populations of different ethnic groups within each state from the U.S. Census Bureau, and use the five race classification including 1) White, 2) Black or African American, 3) American Indian and Alaska Native, 4) Asian, and 5) Native Hawaiian and other Pacific Islander.

The second instrumental variable is the state population concentration around the capital city (i.e., isolated capital city). Campante and Do (2010, 2014) find that isolated capital cities are associated with more corruption due to the less oversight of the electorate. Following Smith (2016) and Ellis, Smith, and White (2020), we measure the isolated capital city by the Gravity-based Centered Index for Spatial Concentration (GCISC).

*** Table 10 Here ***

We present the two-stage least square regression results in Table 10. We predict that the two instrumental variables should be positively correlated with the corruption measure. The first stage regression results are consistent with our prediction. The coefficients for ethnic fractionalization and GCISC concentration are 0.025 (*t*-stat = 3.454) and 0.038 (*t*-stat = 4.034)

respectively, indicating that the two instrumental variables are positively associated with the corruption level. The magnitude of coefficients and significance levels are comparable to Ellis, Smith, and White (2020).

We report the second-stage regression results using the predicted corruption from the first-stage regression. The regression coefficient is -0.291 (*t*-stat = -4.029), which is significantly negative at the 1% level. The coefficient of the instrumented corruption shows a similar pattern as documented in Smith (2016). More importantly, the weak identification *F*-test and the over-identification *J*-test can both pass the critical value, indicating that the two instrument variables are appropriate instruments. Overall, the results using instrumental variables help alleviate the concern of reverse causality.[28]

6.1.3 Selection Bias

Selection bias can be a potential issue of endogeneity. Firms may self-select to base their operations in states with certain level of corruption. For example, if there are firms trying to avoid rent-seeking corrupt officials in high corruption states, then political corruption may not be associated with investment as we posit. If this is the case, there could be some omitted factor related to corruption that causes firms with some different prospects to select into corrupt states. Thus, it might be possible that firms could choose to locate in areas with different levels of political corruption and this selection could be correlated with corporate investment.[29]

To mitigate this concern, we conduct a propensity score matching (PSM) analysis. The analysis allows us to compare firms that are observably similar along the dimensions in our

[28] In addition, we use the lead-lag specification in the time alignment to mitigate the reverse causality concern.
[29] Firms may consider relocation of headquarter. However, as Pirinsky and Wang (2006) show, relocation of corporate headquarter is a rare event.

baseline set of controls, but that differ in the corruption they confront in their environment. These matched samples help purify the effect of corruption on firms' investment decisions. First, we identified matching firms with the same two-digit Standard Industrial Classification. Specifically, we define high-corruption states as those with corruption level in the top 10%. We then calculate the Mahalanobis distance (i.e., nearest neighbors) based on the firms' characteristics, incorporating the key characteristics used in our baseline specification including Tobin's Q, Sales growth, Cash flow, Total asset, Leverage, operating profitability (OP), PP&E, and Z score. We use a one-to-one matching and choose the one with the closest Mahalanobis distance as the matched sample.[30] The treated firms and control firms share similar characteristics but locate in different states with different corruption levels.

*** Table 11 Here ***

Table 11 presents the results. Panel A compares the firm characteristics in the treatment and control groups, and Panel B reports the regression results based on the matched sample. The results in Panel A show that the treatment group and control group exhibit a good parallel trend. In Panel B, we find a negative and statistically significant result. The coefficient is larger in magnitude than results from our baseline regression analysis. We find that treated firms (i.e., those located in high-corruption states) invest less than control firms. This difference accounts for approximate 26.8% of the firms' total investment. Overall, the results in Table 11 suggest that the matching process purifies the effect of corruption and provides supporting evidence that the political corruption affects firms' investment decisions.

[30] In addition to the overall distance, we also implement constrains on the distance of each characteristic separately to improve the matching quality. Specifically, we require the distance of each single characteristic to be within one standard deviation of the corresponding characteristic. We also try 1.25 standard deviation or 0.75 standard deviation. We consider a various set of different covariates since the validity of matching depends on the matching variables. For testing the different set of covariates of firms, we find consistent results.

6.2 Vulnerable Industry

In this section, we investigate whether firms in certain industries are more susceptible to political corruption. Svensson (2003) argues that bribes are an outcome of a bargaining process between firms and rent-seeking corrupt officials. If firms operate in certain industry only, corrupt officials can have more bargaining power to expropriate. For example, they could control government contracts or permits. Accordingly, we posit that firms in industries which rely heavily on government contracts, licenses, or permits could be more negatively affected by rent-seeking. To examine the disparate impact of corruption on different industries, we analyze the following regression model:

$$Investment_{i,t+1} = \alpha + \beta_1 * Corruption_{j,t} * Vulnerable\ industries_{i,t}$$
$$+\beta_2 * Corruption_{j,t} + \gamma * X_{i,t} + \epsilon \qquad (2)$$

where $Invstment_{i,t+1}$ is the investment ratio of firm *i* in year *t+1*. $Corruption_{j,t}$ is the corruption level in year t for state j. $Vulnerable\ industries$ is an indicator variable equal to one for vulnerable industries, zero for other industries. We define vulnerable industries as coal, oil, precious metal and gold, mining, communication, transportation, food processing, restaurant and hotel, retail, and entertainment industries.[31] $X_{i,t}$ are the firm-level control variables.

*** Table 12 Here ***

Table 12 reports the test results. In column (1), we include the baseline control variables. In column (2), we add additional control variables. We expect to see a negative and significant coefficient of the interaction term between *corruption* and *vulnerable industries*. In column (1)

[31] We classify all the firms into 48 industries based on the Fama-French 48 industry classification. The results are similar if we use 2-digit SIC industry classification.

and (2), the coefficients of interaction term are significantly negative at the 1% level. In column (1), the coefficient is -0.146 (*t*-stat = -3.226). In column (2), the coefficient is -0.142 (*t*-stat = -3.142). The results indicate that firms in more vulnerable industries invest less than firms in other industries when they are exposed to a higher level of corruption. Overall, the results in Table 12 suggest that the impact of political corruption is relatively more crucial for firms in more vulnerable industries.

6.3 Heterogeneous Exposure to the FCPA

In this section, we investigate the heterogenous exposure to the Foreign Corrupt Practices Act (FCPA). In 2010, the SEC created a specialized unit for FCPA enforcement.[32] This reform raises the concern that our results may be driven by the FCPA enforcement. The anti-bribery provision by the FCPA mainly covers the U.S. firms' unlawful payment to a foreign official for the purpose of winning or securing business. Previous research suggests that firms changed the way they conduct business in high-corruption countries (e.g., Hines 1995). Many studies, however, find no significant evidence of FCPA effects on U.S. firms (e.g., Graham 1984; Wei 2000).

*** Table 13 Here ***

Table 13 reports the test results. To distinguish the confounding impact from the FCPA reform, we divide firms into FCPA firms and non-FCPA firms. We collect the reported customer information from the Compustat historical segments data and check whether the firm has any foreign customers. If a firm has at least one large foreign customer during our sample period, we define the firm as the FCPA firm. We conjecture that there should be no difference in the non-FCPA firms in pre- and post- Dodd–Frank periods if the effect purely comes from the FCPA

[32] The related information can be found at the SEC website: (https://www.sec.gov/news/press/2010/2010-5.htm)

reform. In Table 13, we find similar results reported in Table 7. The impact of corruption became insignificant both for FCPA firms and non-FCPA firms. The results indicate that the impact of the Dodd–Frank Whistleblower Provision has not been affected by the FCPA.

7. Conclusion

In this study, we find that political corruption has a negative effect on corporate investment. We find that firms in more corrupt states invest less than firms in less corrupt states. The effect of corruption is more detrimental to firms with higher investment friction, higher political visibility, and poorer governance. Our results are robust to using alternative investment measures, alternative corruption measures, and different regression specifications. The findings indicate that corruption hinders firms' investment decisions. We further find that the negative effect of corruption on investment became insignificant after the enactment of Dodd–Frank Whistleblower Provision. We find that the impact of Whistleblower Provision on investments is stronger for firms in high-corruption states. Overall, our findings indicate corruption impedes corporate investment, but changes in legal environments can help firms reduce the decline in firms' investments located in highly corrupt states.

Our study has essential policy implications. Our findings can be beneficial for firms that make investment decisions in highly corrupt districts. If surrounding environments are pervasive with corruption, a better government policy and enforcement can have a real economic consequence in firms' business decisions. Specifically, policies that shield firms in vulnerable industries from rent-seeking behaviors can help reduce underinvestment issues. This study could also shed light on how local political corruption influences overall economic growth, given that firms' investment decisions are often the key driver of economic growth.

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Appendix

Variable Definition

Variable	Description and definition
Corruption	State level total number of corruption convictions scaled by the population (in 1,000,000) in the state. Source: DOJ and Census Bureau.
Total asset	Total asset [AT]. Source: Compustat.
LnAT	Natural logarithm of total asset [AT]. Source: Compustat.
Investment_{t+1}	Leading one period capital expenditures [CAPEX] scaled by total asset [AT]. Source: Compustat.
Tobins' Q	Total asset [AT] – common equity [CEQ] + common shares outstanding ∗ share price at fiscal yearend [CSHO*PRCC_F] scaled by total asset. Source: Compustat.
Cash flow	Cash flow from operating activities [OANCF] – cash flow from extraordinary items and discontinued operation [XIDOC] scaled by total asset [AT]. Source: Compustat.
PP&E	Property, plant, and equipment [PPEGT] scaled by total asset [AT]. Source: Compustat.
Sales growth	Annual sales [SALE] growth rate from year t-1 to year t. Source: Compustat.
Leverage	Long-term debt [DLTT] plus debt in current liabilities [DLC] divided by total asset [AT]. Source: Compustat.
OP	Operation Profitability, defined as revenue [REVT] – cost of good sold [COGS] – SG&A [XSGA] + R&D expense [XRD], scaled by total asset [AT]. If R&D expense is missing, replace it with 0. Source: Compustat.
Z score	Altman's Z score, defined as 1.2×(working capital/total assets) +1.4×(retained earnings/total assets) +3.3×(EBIT/total assets) + 0.6×(Public value of equity/Book value of total liabilities) + (Sales/Total Assets). Source: Compustat.
Cash	Firms' cash holding level, defined as cash or equivalent [CHE] scaled by total asset [AT]. Source: Compustat.

Frim age	Firms' age, defined as the years from the first year appeared in Compustat. Source: Compustat.
IOR	Institutional ownership. Source: 13F.
Tnic3hhi	Textual based competition measure. Source: Prof. Gerard Hoberg and Prof. Gordon Phillips.
Tax rate	Firms' marginal tax rate. Source: Compustat and Prof. Jennifer Blouin, Prof. John Core, and Prof. Wayne Guay.
Geographical concentration	The geographical concentration level, estimated using the number of states mentioned in the firm's Form 10-K. See Garcia and Norli (2012) for a more detailed discussion.
Personal income	Average personal income within a state. Source: Federal Reserve.
Unemployment	Average unemployment rate within a state. Source: Federal Reserve.
Soc_Cap	County-level social capital, estimated as the first principal component of a principal component analysis based on NRCRD data in each year. Source: NRCRD
Ln(GDP)	Natural logarithm of GDP in each county. Source: BEA
Ln(Population)	Natural logarithm of the population in each county. Source: BEA

Figure 1: Corruption Level Across Different States

This map visualizes the median corruption level of each state as reported in Table 1. The states are divided into six groups based on the median level of corruption. Darker color indicates higher level of corruption for that state.

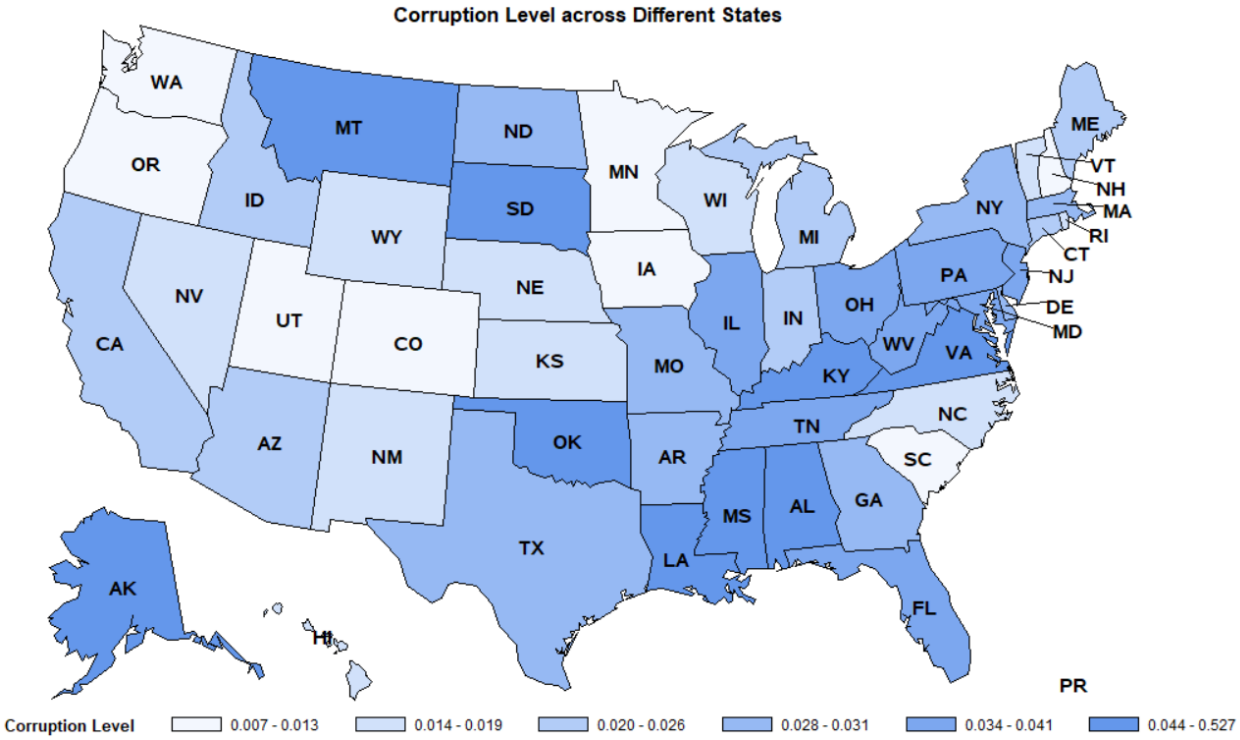

Figure 2: Time Trend of the Total DOJ Conviction Cases

This figure shows the time series trend of the total DOJ conviction cases at the country-level. In each year, we add up all the conviction cases among each state to get the country-level aggregate statistic, and plot the time series trend as in the figure.

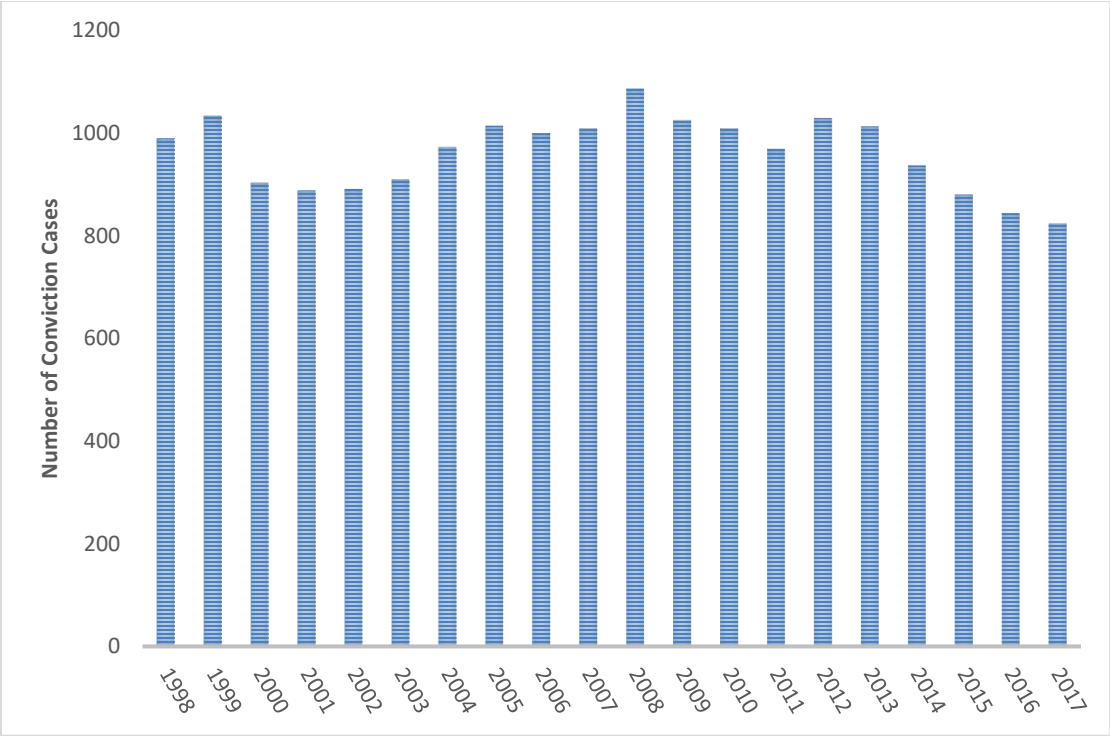

Figure 3: Distribution of the Firms' Future Investment in Our Sample

This figure shows the histogram distribution of investment measure in our sample. The investment measure is defined as firms' future capital expenditure (CAPEX) scaled by the current year total asset (AT).

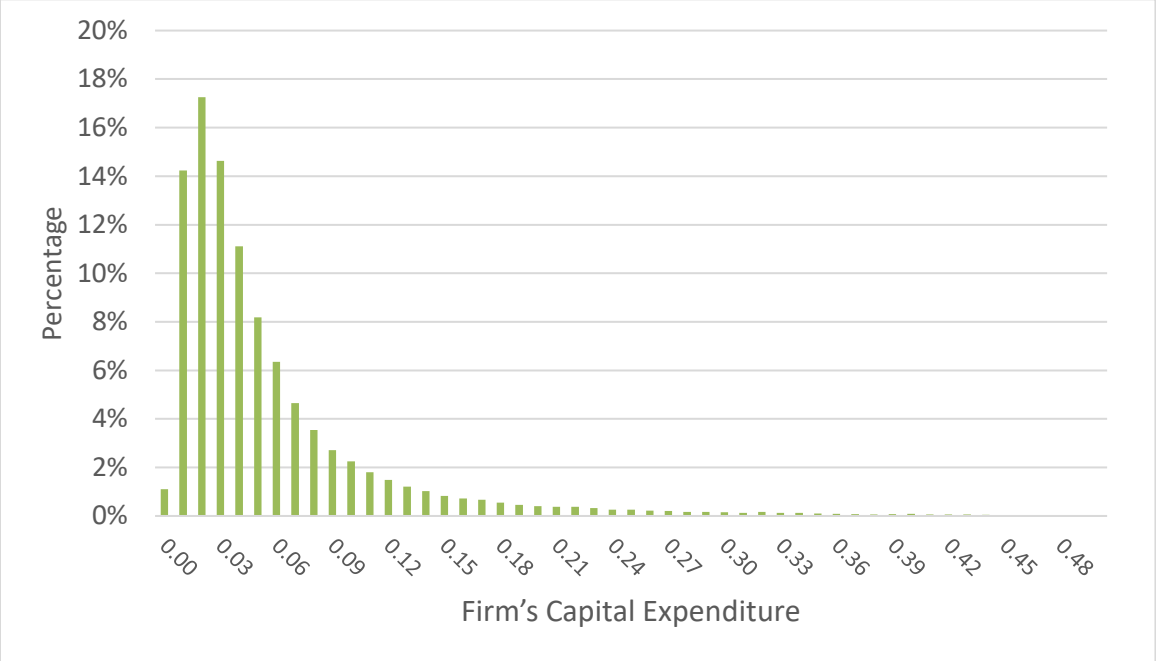

Table 1: Summary Statistics of Political Corruption at Each State

This table provides the summary statistics for the number of corruption convictions per 1,000,000 population for each U.S. state and the average number of firm-year observation in each state. We combine the 94 judicial districts into 50 US state and District of Columbia. We exclude Puerto Rico, Guam & NMI, and Virgin Islands from our analysis. The corruption data period covers from 1998 to 2017. Data are ordered by median of the corruption convictions.

Rank	State	Code	Firm number	Median	Mean	Std	P25	P75
1	District of Columbia	DC	8	0.527	0.560	0.342	0.271	0.758
2	Louisiana	LA	22	0.085	0.082	0.024	0.062	0.103
3	Montana	MT	3	0.073	0.089	0.076	0.039	0.122
4	Kentucky	KY	17	0.063	0.059	0.020	0.042	0.070
5	Mississippi	MS	6	0.057	0.061	0.042	0.030	0.081
6	Alaska	AK	1	0.054	0.066	0.069	0.015	0.086
7	South Dakota	SD	3	0.052	0.069	0.051	0.026	0.103
8	Virginia	VA	75	0.048	0.052	0.019	0.041	0.067
9	Alabama	AL	12	0.044	0.048	0.026	0.030	0.058
10	Oklahoma	OK	28	0.044	0.042	0.018	0.029	0.058
11	Maryland	MD	41	0.041	0.047	0.032	0.018	0.064
12	New Jersey	NJ	134	0.041	0.043	0.014	0.032	0.052
13	Ohio	OH	98	0.040	0.037	0.018	0.024	0.048
14	Pennsylvania	PA	117	0.037	0.039	0.010	0.031	0.046
15	West Virginia	WV	4	0.035	0.042	0.026	0.025	0.049
16	Tennessee	TN	38	0.035	0.038	0.015	0.026	0.049
17	Florida	FL	144	0.034	0.040	0.017	0.028	0.049
18	Illinois	IL	126	0.034	0.037	0.012	0.027	0.048
19	North Dakota	ND	1	0.031	0.055	0.063	0.000	0.089
20	Texas	TX	296	0.030	0.032	0.010	0.025	0.036
21	Delaware	DE	8	0.029	0.039	0.031	0.012	0.059
22	Missouri	MO	43	0.029	0.029	0.011	0.020	0.036
23	Massachusetts	MA	158	0.028	0.030	0.010	0.024	0.038
24	New York	NY	279	0.028	0.030	0.010	0.023	0.038
25	Georgia	GA	74	0.028	0.029	0.016	0.014	0.038
26	Arkansas	AR	10	0.028	0.032	0.020	0.016	0.049

27	Arizona	AZ	40	0.026	0.029	0.020	0.015	0.038
28	Michigan	MI	54	0.024	0.022	0.008	0.018	0.027
29	Maine	ME	4	0.023	0.022	0.016	0.011	0.034
30	Connecticut	CT	63	0.023	0.023	0.017	0.010	0.033
31	Idaho	ID	9	0.020	0.022	0.017	0.007	0.034
32	Indiana	IN	35	0.020	0.022	0.011	0.014	0.029
33	California	CA	561	0.020	0.020	0.004	0.016	0.022
34	New Mexico	NM	3	0.019	0.023	0.016	0.011	0.032
35	Wisconsin	WI	44	0.019	0.019	0.007	0.013	0.023
36	Hawaii	HI	6	0.019	0.027	0.027	0.011	0.034
37	Rhode Island	RI	9	0.019	0.027	0.022	0.010	0.038
38	Wyoming	WY	2	0.019	0.027	0.038	0.000	0.038
39	Nevada	NV	28	0.018	0.017	0.014	0.002	0.026
40	North Carolina	NC	51	0.017	0.017	0.007	0.012	0.022
41	Vermont	VT	3	0.017	0.026	0.025	0.000	0.033
42	Kansas	KS	16	0.014	0.014	0.010	0.007	0.020
43	Nebraska	NE	13	0.014	0.015	0.013	0.003	0.022
44	South Carolina	SC	15	0.013	0.014	0.010	0.007	0.019
45	Iowa	IA	13	0.013	0.015	0.010	0.008	0.024
46	Washington	WA	57	0.011	0.014	0.008	0.009	0.019
47	Minnesota	MN	103	0.011	0.012	0.007	0.007	0.016
48	Utah	UT	34	0.009	0.012	0.010	0.004	0.020
49	Colorado	CO	94	0.008	0.013	0.013	0.005	0.017
50	Oregon	OR	32	0.008	0.009	0.007	0.003	0.011
51	New Hampshire	NH	13	0.007	0.009	0.011	0.000	0.012

Table 2: Summary Statistics

This table reports the descriptive summary statistics of the primary variables used in this paper. In Panel A, we report the mean, standard deviation, and different percentile distributions for the whole sample. In Panel B, we show the characteristics in high-corruption states and low-corruption states, both before and after the Dodd-Frank Whistleblowing Provision. Financial firms (SIC 6000-6999) and utility firms (SIC 4900-4999) are excluded from our analysis. We require firms to have positive total asset, sales, and book equity. All the continuous variables are winsorized at 1% and 99% percentile. The primary sample contains 60,876 firm-year observations with 8,009 unique firms from 1999 to 2018. The detailed variable definition is listed in the Appendix.

Panel A: Descriptive Statistics

Variable	N	Mean	SD	P1	P25	P50	P75	P99
Investment_{t+1}	60876	0.056	0.074	0.000	0.015	0.032	0.064	0.459
Corruption	60876	0.029	0.017	0.000	0.018	0.026	0.038	0.088
Tobin's Q	60876	2.106	1.857	0.537	1.093	1.504	2.324	12.390
Sales growth	60876	0.219	0.711	-0.638	-0.031	0.077	0.236	5.234
Cash flow	60876	0.039	0.233	-1.258	0.004	0.079	0.143	0.478
Total asset ($m)	60876	2280	6671	2	50	253	1230	47604
Leverage	60876	0.463	0.223	0.057	0.283	0.461	0.626	0.958
OP	60876	0.113	0.251	-1.264	0.058	0.138	0.222	0.712
PP&E	60876	0.242	0.224	0.005	0.071	0.166	0.342	0.899
Z score	60876	4.371	7.304	-17.811	1.685	3.233	5.524	43.217
Cash	60873	0.198	0.210	0.000	0.034	0.118	0.299	0.852
Firm age	60876	19	15	3	8	15	26	63
IOR	54220	0.518	0.333	0.000	0.206	0.555	0.812	1.130
Tnic3hhi	53600	0.326	0.286	0.031	0.109	0.213	0.461	1.000
Tax rate	53348	0.262	0.104	0.014	0.181	0.316	0.343	0.359
Personal income	60876	10.557	0.228	10.090	10.397	10.547	10.710	11.075
Unemployment	60876	5.804	1.996	2.700	4.500	5.300	6.600	12.200

(Table 2 continued)

Panel B: Descriptive Statistics on main variables before and after the Dodd–Frank Whistleblowing Provision

	Low Corruption		High Corruption	
	pre- Dodd–Frank	post- Dodd–Frank	pre- Dodd–Frank	post- Dodd–Frank
Investment_{t+1}	0.055	0.049	0.060	0.053
Change of Investment_{t+1}	-0.010	-0.005	-0.009	-0.005
Corruption	0.019	0.018	0.039	0.034
Tobin's Q	2.264	2.349	1.950	1.978
Sales growth	0.250	0.189	0.225	0.140
Cash flow	0.024	0.036	0.046	0.057
Total asset ($m)	1447	3338	1973	4069
Leverage	0.431	0.470	0.474	0.498
OP	0.115	0.113	0.114	0.113
Z score	5.086	4.101	4.174	3.670
Cash	0.235	0.233	0.169	0.169

Table 3: Regressions on Investment Decisions and State Corruption

This table reports the results of our baseline analysis of regression firms' future investments on state level corruption. Panel A reports the results using one period leading investment measure. Panel B reports the results using different geographical concentration. The results using different model specifications are reported. All the variables are winsorized at 1% and 99% to mitigate the outlier problem. Financial firms (SIC 6000-6999) and utilities (SIC 4900-4999) are excluded from our analysis. All regressions include two-digit SIC industry fixed effect and year fixed effect. All the standard errors are clustered by state and year. *t*-statistics are reported in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: Baseline analysis

	Investment $_{t+1}$		
	(1) Univariate	(2) Basic	(3) Baseline
Corruption	-0.096***	-0.073***	-0.074***
	(-4.393)	(-3.556)	(-3.972)
Tobin's Q		0.007***	0.008***
		(27.141)	(27.733)
Sales growth		0.009***	0.009***
		(12.990)	(13.627)
Cash flow		0.035***	0.013***
		(14.273)	(4.055)
LnAT			-0.001***
			(-3.781)
Leverage			-0.020***
			(-14.247)
OP			0.017***
			(7.351)
PP&E			0.137***
			(47.533)
Z score			-0.000
			(-1.194)
Intercept	0.059***	0.040***	0.017***
	(69.300)	(48.679)	(14.575)
Time fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
Observations	60,876	60,876	60,876
Adjusted R^2	0.285	0.329	0.406

Panel B: Geographical concentration

	Investment $_{t+1}$	
	(1) Concentrated	(2) Not concentrated
Corruption	-0.090***	-0.060**
	(-2.766)	(-2.167)
Tobin's Q	0.008***	0.009***
	(17.513)	(17.140)
Sales growth	0.009***	0.011***
	(8.077)	(8.357)
Cash flow	0.004	0.020***
	(0.967)	(3.173)
LnAT	-0.000	-0.001***
	(-1.048)	(-4.877)
Leverage	-0.019***	-0.028***
	(-6.210)	(-9.549)
OP	0.025***	0.016***
	(6.693)	(3.351)
PP&E	0.144***	0.148***
	(29.256)	(27.561)
Z score	-0.000	-0.000*
	(-1.258)	(-1.713)
Intercept	0.015***	0.024***
	(6.902)	(9.091)
Time fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Observations	16,048	15,766
Adjusted R^2	0.384	0.462

Table 4: Alternative Investment and Corruption Measures

This table reports the regression results using alternative investment measures or corruption measures. Panel A reports the effect of corruption on different investment measures, and Panel B reports the regression results using different corruption measures. We adjust the sign of the three survey measures so that higher value indicates higher corruption level. All regressions include two-digit SIC industry fixed effect and year fixed effect. All the standard errors are clustered by state and year. *t*-statistics are reported in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: Results using different investment measures

	$Capex_{t+1}$ scaled by different scaler		$R\&D_{t+1}$ scaled by total asset		Adjusted by industry median
	(1) PP&E	(2) Sales	(3) R&D1	(4) R&D2	(5) Investment
Corruption	-0.386***	-0.331***	-0.263***	-0.245***	-0.068***
	(-3.675)	(-4.447)	(-6.847)	(-8.137)	(-4.208)
Baseline controls	Yes	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes
Observations	60,167	60,205	38,986	60,876	60,305
Adjusted R^2	0.263	0.391	0.489	0.465	0.171

(Table 4 continued)

Panel B: Results using different corruption measures

	(1) Corruption Decile Rank	(2) Raw conviction number	(3) Corruption scaled by firm number	(4) Boylan and Long (2003) survey	(5) Survey measure by the State Integrity Project	(6) Integrity Index by the Better Government Association
Corruption	-0.005***	-0.004***	-0.007**	-0.001**	-0.002**	-0.001
	(-3.973)	(-2.914)	(-2.495)	(-2.559)	(-2.133)	(-0.854)
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	60,876	60,876	60,876	54,607	60148	60148
Adjusted R^2	0.406	0.406	0.406	0.411	0.408	0.408

Table 5: Quantile Regression Analysis

This table reports the results from quantile regressions of future investment on corruption and control variables. In each column, the reported coefficient on corruption represents its relationship to firms' future investment at different points in the conditional distribution. All regressions include two-digit SIC industry fixed effect and year fixed effect. All the standard errors are clustered by state and year. *t*-statistics are reported in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

	(1) 5th Quantile	(2) 25th Quantile	(3) 50th Quantile	(4) 75th Quantile	(5) 95th Quantile
Corruption	-0.006	-0.012**	-0.025***	-0.052***	-0.105***
	(-1.440)	(-2.076)	(-3.534)	(-4.889)	(-3.927)
Tobin's Q	0.001***	0.003***	0.005***	0.009***	0.020***
	(16.332)	(29.445)	(29.446)	(29.733)	(18.676)
Sales growth	-0.000	0.001***	0.004***	0.010***	0.020***
	(-0.351)	(6.937)	(10.484)	(13.170)	(7.984)
Cash flow	0.001	0.002**	0.002*	0.004**	0.003
	(1.100)	(2.102)	(1.703)	(2.243)	(0.461)
LnAT	0.001***	0.001***	0.001***	-0.002***	-0.007***
	(33.709)	(22.176)	(7.831)	(-16.307)	(-22.344)
Leverage	-0.002***	-0.006***	-0.009***	-0.013***	-0.016***
	(-6.117)	(-12.147)	(-16.765)	(-14.672)	(-6.170)
OP	0.008***	0.017***	0.021***	0.021***	0.006
	(12.863)	(20.358)	(16.651)	(12.611)	(0.944)
PP&E	0.019***	0.062***	0.111***	0.178***	0.319***
	(22.802)	(44.056)	(59.650)	(52.496)	(38.886)
Z score	-0.000***	-0.000***	-0.000**	0.000	0.000**
	(-2.855)	(-4.809)	(-2.454)	(0.459)	(1.987)
Intercept	-0.005***	-0.002	0.002	0.006	0.054***
	(-3.165)	(-0.919)	(0.833)	(1.595)	(5.098)
Time fixed effect	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes
Observations	60,876	60,876	60,876	60,876	60,876
Pseudo R^2	0.180	0.366	0.394	0.396	0.374

Table 6: Cross-sectional Analysis Based on Investment Friction, Political Visibility, and Firm Governance

This table reports cross-sectional analysis of the corruption impact among different firms. For each state-year, we divide the firms into two subgroups based on different firm characteristics, so the firms in the two subgroups have the same corruption exposure. Panel A partitions the whole sample into high investment friction group and low investment friction group. Panel B partitions the whole sample into high political visible firms and low political visible firms. Panel C partitions the whole sample into good governance firms and poor governance firms. All regressions include two-digit SIC industry fixed effect and year fixed effect. All the standard errors are clustered by state and year. *t*-statistics are reported in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: Investment friction

	Firm Age		SP Long Term Rating	
	Old	Young	Yes	No
Corruption	-0.045**	-0.102***	-0.047	-0.078***
	(-2.189)	(-3.858)	(-1.419)	(-4.066)
Baseline controls	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Observations	30,783	30,093	14,714	46,162
Adjusted R^2	0.436	0.396	0.542	0.372
F statistics	92.375		94.667	
Prob > F	0.000		0.000	

Panel B: Political visibility

	Distance to Capital City		Leverage Level	
	Far	Close	High	Low
Corruption	-0.024	-0.122***	-0.056**	-0.101***
	(-1.102)	(-4.484)	(-2.339)	(-4.313)
Baseline controls	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Observations	29,040	28,348	30,700	30,175
Adjusted R^2	0.379	0.445	0.424	0.400
F statistics	43.739		66.668	
Prob > F	0.000		0.000	

Panel C: Firm Governance

	% of Board Independence		Institutional Ownership	
	Low	High	Low	High
Corruption	-0.074**	-0.004	-0.106***	-0.049**
	(-2.531)	(-0.151)	(-4.125)	(-2.210)
Baseline controls	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Observations	9,690	10,152	26,826	27,392
Adjusted R^2	0.537	0.566	0.374	0.526
F statistics	61.260		20.963	
Prob > F	0.000		0.000	

Table 7: The Impact of Dodd–Frank Act Whistleblower Provision

This table reports the results of the impact of state level corruption in the pre- and post- Dodd–Frank Act Whistleblower Provision period. Panel A shows the results of firms' investment decisions, Panel B reports results using alternative corruption measure, and Panel C shows the results of firms' cash holding policy and leverage policy. Pre-Dodd–Frank is defined as the year in or before 2010, and Post-Dodd–Frank is defined as the year 2011 and afterwards. All regressions include two-digit SIC industry fixed effect and year fixed effect. All the standard errors are clustered by state and year. *t*-statistics are reported in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: The Impact of Dodd–Frank Act Whistleblower Provision and Investment Decisions

	Pre-Dodd–Frank	Post-Dodd–Frank
Corruption	-0.065***	-0.060
	(-3.109)	(-1.439)
Tobin's Q	0.008***	0.006***
	(23.787)	(14.569)
Sales growth	0.009***	0.012***
	(11.878)	(7.118)
Cash flow	0.011***	0.016***
	(3.127)	(2.752)
LnAT	-0.001***	-0.000*
	(-3.400)	(-1.709)
Leverage	-0.023***	-0.014***
	(-13.563)	(-5.164)
OP	0.019***	0.009*
	(7.396)	(1.802)
PP&E	0.138***	0.140***
	(39.118)	(30.362)
Z score	-0.000	-0.000
	(-1.148)	(-0.364)
Intercept	0.019***	0.012***
	(13.000)	(5.861)
Time fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Observations	43,830	17,046
Adjusted R^2	0.405	0.421
F statistics	53.081	
Prob > F	0.000	

(Table 7 continued)

Panel B: Survey measure by the State Integrity Project

	Pre-Dodd–Frank	Post-Dodd–Frank
Survey measure by the State Integrity Project	-0.003***	-0.000
	(-3.109)	(-1.400)
Tobin's Q	0.008***	0.006***
	(24.290)	(14.308)
Sales growth	0.009***	0.012***
	(11.878)	(7.258)
Cash flow	0.011***	0.015***
	(3.086)	(2.635)
LnAT	-0.001***	-0.000*
	(-3.321)	(-1.683)
Leverage	-0.024***	-0.013***
	(-13.607)	(-5.081)
OP	0.019***	0.009*
	(7.607)	(1.942)
PP&E	0.138***	0.142***
	(38.710)	(30.198)
Z score	-0.000	-0.000
	(-1.420)	(-0.429)
Intercept	0.016***	0.010***
	(1.394)	(5.431)
Time fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Observations	43,328	16,820
Adjusted R^2	0.406	0.425
F statistics	52.835	
Prob > F	0.000	

(Table 7 continued)

Panel C: The Impact of Dodd–Frank Act Whistleblower Provision and Firms' Other Financial Policies

	Cash holding $_{t+1}$		Leverage $_{t+1}$	
	Pre-Dodd–Frank	Post-Dodd–Frank	Pre-Dodd–Frank	Post-Dodd–Frank
Corruption	-0.576***	-0.342**	0.758***	0.169
	(-6.080)	(-2.512)	(2.587)	(0.518)
Tobin's Q	0.020***	0.029***	0.079**	0.056***
	(17.153)	(17.694)	(2.379)	(4.526)
Sales growth	-0.005**	-0.008**	-0.024	0.047
	(-2.224)	(-2.250)	(-0.604)	(0.953)
Cash flow	-0.039***	-0.131***	0.526	-0.060
	(-4.306)	(-6.719)	(1.041)	(-0.658)
LnAT	-0.006***	-0.008***	0.013***	0.027***
	(-8.497)	(-10.832)	(5.175)	(8.188)
Leverage	-0.297***	-0.232***		
	(-35.283)	(-20.334)		
OP	0.002	0.061***	-0.950	-0.182**
	(0.170)	(3.500)	(-1.373)	(-2.155)
PP&E	-0.255***	-0.198***	-0.131	0.036
	(-29.738)	(-17.295)	(-0.634)	(1.349)
Z score	-0.001***	-0.001***	-0.030***	-0.020***
	(-3.540)	(-2.789)	(-3.958)	(-8.493)
Intercept	-0.576***	-0.342**	0.525***	0.317***
	(-6.080)	(-2.512)	(4.817)	(12.017)
Time fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Observations	43,819	17,046	43,822	17,046
Adjusted R^2	0.362	0.361	0.005	0.072
F statistics	47.067		5.297	
Prob > F	0.000		0.000	

Table 8: The Impact of Dodd–Frank Whistleblower Provision: Heterogeneity Test

This table reports the test of the heterogeneous impact of the Dodd–Frank Act Whistleblower Provision among different states. We divide the 51 states into four groups based on the mean value of state corruption level. High-corruption states are those with corruption level ranked the top quartile, and low-corruption states are those ranked the bottom quartile. The corruption is scaled by the corresponding state population. All regressions include two-digit SIC industry fixed effect and year fixed effect. All the standard errors are clustered by state and year. t-statistics are reported in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: High-corruption states vs. low-corruption states

	High-corruption states		Low-corruption states	
	Pre-Dodd–Frank	Post-Dodd–Frank	Pre-Dodd–Frank	Post-Dodd–Frank
Corruption	-0.148**	-0.038	-0.079	-0.046
	(-2.525)	(-0.562)	(-1.035)	(-0.323)
Baseline controls	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Observations	5,184	1,912	7,263	2,945
Adjusted R^2	0.454	0.565	0.375	0.455
F statistics	16.765		14.780	
Prob > F	0.000		0.000	

Panel B: Small firms vs. large firms

	Small firms (AT<$750M)		Large firms (AT>=$750M)	
	Pre-Dodd–Frank	Post-Dodd–Frank	Pre-Dodd–Frank	Post-Dodd–Frank
Corruption	-0.061**	-0.049	-0.050	-0.045
	(-2.438)	(-1.144)	(-1.481)	(-0.896)
Baseline controls	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Observations	30,068	9,836	13,370	7,029
Adjusted R^2	0.357	0.356	0.537	0.570
F statistics	33.260		46.418	
Prob > F	0.000		0.000	

Table 9: Additional Analysis with more Fixed Effect and Control Variables

This table reports the results of regression of investment on state level corruption with adding more control variables and more fixed effects. Column (1) reports the results with addition firm-level control variables and state-level control variables, and column (2) reports the results using firm fixed effect, and Column (3) reports results with state fixed effect. All the standard errors are clustered by state and year. *t*-statistics are reported in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

	Dependent variable: Investment $_{t+1}$		
	(1)	(2)	(3)
Corruption	-0.074***	-0.075***	-0.059**
	(-3.972)	(-3.128)	(-2.468)
Cash	0.005***	-0.002	-0.002
	(2.935)	(-0.686)	(-0.720)
Firm age	-0.000***	0.001	0.001
	(-10.211)	(0.955)	(1.254)
IOR	0.006***	0.011***	0.010***
	(5.316)	(6.078)	(5.836)
Tnic3hhi	-0.002**	0.000	0.000
	(-2.223)	(0.358)	(0.174)
Tax rate	0.019***	0.044***	0.044***
	(4.256)	(7.226)	(7.270)
Personal income	-0.004**	0.000	-0.028**
	(-1.987)	(0.058)	(-1.964)
Unemployment	-0.001***	-0.001***	-0.002***
	(-3.662)	(-3.137)	(-4.227)
Baseline controls	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	No	No
Firm fixed effect	No	Yes	Yes
State fixed effect	No	No	Yes
Observations	48,174	48,174	48,174
Adjusted R^2	0.449	0.622	0.623

Table 10: Regression Analysis Using Instrumental Variable

This table reports the results of two-stage least squares regressions. Our first instrumental variable is the state ethnic fractionalization. Our second instrumental variable is the concentration of a state population around its capital city, measured by the Gravity-based Centered Index for Spatial Concentration (GCISC) from Campante and Do (2010, 2014). The weak identification test is a Kleibergen-Paap Wald statistic. The over identification J-statistic p-value is from the Sargan-Hansen test of overidentifying restrictions. All regressions include two-digit SIC industry fixed effect and year fixed effect. All the standard errors are clustered by state and year. *t*-statistics are reported in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

	First stage regression	Investment $_{t+1}$
Ethnic fractionalization	0.025***	
	(3.454)	
GCISC concentration	0.038***	
	(4.034)	
Corruption		-0.291***
		(-4.029)
Tobin's Q	-0.000***	0.008***
	(-6.717)	(26.950)
Sales growth	-0.000	0.009***
	(-1.387)	(13.582)
Cash flow	0.002***	0.013***
	(4.003)	(4.195)
LnAT	-0.000	-0.001***
	(-0.541)	(-3.833)
Leverage	0.004***	-0.020***
	(6.171)	(-13.871)
OP	-0.002***	0.017***
	(-2.593)	(7.219)
PP&E	0.002***	0.137***
	(3.693)	(46.735)
Z score	0.000***	-0.000
	(3.740)	(-1.154)
Intercept	-0.011*	0.012**
	(-1.692)	(2.257)
Time fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Observations	60,876	60,876
Adjusted R^2	0.123	0.405
Over-identification J-stat		0.193
Weak identification F-test		26.547

Table 11: Propensity Score Matching Analysis

This table reports the average treatment effect of state corruption on firms' future investments. We define a firm-year observation associated with high corruption as the treated group, where high corruption is defined as if the corruption level falls in the top 10% in that year. For each treated firm-year observation, we find a matched firm-year observation from the rest sample. We require the matched firm operate in the same two-digit SIC industry and has the smallest Mahalanobis distance (i.e., nearest neighbor) based on the firm characteristic in the same year. Panel A shows the difference of firm characteristics in the treatment group and matched group, and Panel B shows the regression analysis results. All regressions include two-digit SIC industry fixed effect and year fixed effect. All the standard errors are clustered by state and year. *t*-statistics are reported in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Panel A: Firm characteristics in year *t*

	Treatment group	Control group	*t*-statistics
Tobin's Q	1.639	1.660	0.858
Sales growth	0.107	0.105	0.260
Cash flow	0.080	0.082	0.734
LnAT	6.005	6.041	0.721
Leverage	0.498	0.493	1.031
OP	0.146	0.151	1.508
PP&E	0.256	0.261	0.961
Z score	3.650	3.653	0.032

Panel B: PSM matched results

	Investment $_{t+1}$
Treated (high_corruption)	-0.015***
	(-10.191)
Baseline controls	Yes
Time fixed effect	Yes
Industry fixed effect	Yes
Observations	6,423
Pseudo R^2	0.604

Table 12: Vulnerable Industry

This table explores the impact of the political corruption across different industries. Vulnerable Industry is an indicator variable that equals to 1 if the firm belongs to a vulnerable industry and 0 otherwise. In column (1), we use the baseline regression specification, and in column (2), we control for additional county level characteristics. All regressions include two-digit SIC industry fixed effect and year fixed effect. All the standard errors are clustered by state and year. *t*-statistics are reported in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

	Investment $_{t+1}$	Investment $_{t+1}$
	(1)	(2)
Corruption	-0.034**	-0.035***
	(-2.561)	(-2.663)
Corruption* Vulnerable Industry	-0.146***	-0.142***
	(-3.226)	(-3.142)
Tobin's Q	0.007***	0.007***
	(27.459)	(27.747)
Sales growth	0.009***	0.009***
	(12.890)	(12.746)
Cash flow	0.015***	0.015***
	(4.616)	(4.666)
LnAT	-0.001***	-0.001***
	(-4.215)	(-4.241)
Leverage	-0.018***	-0.018***
	(-13.328)	(-13.270)
OP	0.014***	0.013***
	(5.669)	(5.534)
PP&E	0.119***	0.119***
	(47.780)	(47.392)
Z score	-0.000*	-0.000*
	(-1.928)	(-1.924)
Soc_Cap		0.000
		(0.726)
Unempolyment		-0.001***
		(-4.762)
Ln(GDP)		0.001**
		(1.961)
Ln(Population)		-0.000
		(-0.967)
Personal income		-0.001
		(-0.540)
Intercept	-0.035***	-0.031***
	(-35.615)	(-2.979)
Time fixed effect	Yes	Yes
Firm fixed effect	Yes	Yes
Observations	59,990	59,990
Adjusted R^2	0.157	0.157

Table 13: The Impact of FCPA and Investment Decisions

This table reports the subsample analysis of FCPA firms and non-FCPA firms. FCPA firms are define as those have large foreign customers, and the others are non-FCPA firms. Pre- Dodd–Frank is defined as the year in or before 2011, and Post- Dodd–Frank is defined as the year 2011 and afterwards. All regressions include two-digit SIC industry fixed effect and year fixed effect. All the standard errors are clustered by state and year. t-statistics are reported in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

	FCPA firms		Non-FCPA firms	
	Pre-Dodd–Frank	Post-Dodd–Frank	Pre-Dodd–Frank	Post-Dodd–Frank
Corruption	-0.057***	-0.029	-0.064**	-0.088
	(-2.643)	(-0.841)	(-2.203)	(-1.503)
Tobin's Q	0.007***	0.005***	0.009***	0.007***
	(17.975)	(14.352)	(19.787)	(10.226)
Sales growth	0.008***	0.005***	0.009***	0.013***
	(7.039)	(2.944)	(10.390)	(6.316)
Cash flow	0.006	0.005	0.013***	0.020**
	(1.180)	(1.132)	(2.909)	(2.317)
LnAT	-0.001***	-0.001***	0.000	0.001
	(-5.585)	(-2.894)	(1.132)	(1.489)
Leverage	-0.019***	-0.007**	-0.026***	-0.023***
	(-9.860)	(-2.537)	(-10.763)	(-4.532)
OP	0.027***	0.027***	0.017***	0.002
	(7.860)	(4.934)	(5.033)	(0.283)
PP&E	0.150***	0.141***	0.131***	0.137***
	(29.988)	(29.495)	(32.444)	(21.892)
Z score	-0.000***	-0.000	-0.000	-0.000
	(-2.667)	(-1.465)	(-0.009)	(-0.232)
Intercept	0.014***	0.008***	0.021***	0.015***
	(7.445)	(3.724)	(9.716)	(4.695)
Time fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Observations	20,205	9,520	23,624	7,526
Adjusted R^2	0.378	0.409	0.409	0.409
F statistics	52.617		28.032	
Prob > F	0.000		0.000	