Political Corruption and Firm Access to the Initial Public Offering Market

Dimitrios Gounopoulos
University of Bath

Chen Huang
University of Bath

Xiaoding Liu
Texas A&M University

Introduction

- Corruption is pervasive in the world and results in enormous damage to economy and society.

- When taking in the form of rent-seeking, corruption can set up barriers for firms carrying out business.
  - firms may need to pay bribes to public officials in exchange for the necessary requirements to run business, such as operating permit or patent.

- Only small number of enterprises can enjoy and benefit from the bargaining process,
  - Corrupt officials would only accept bribes from certain companies for the risk-free purpose.

- Firms with no access to the illicit business activities will experience losses from their corrupt-resorted competitors.

What is this study about?

- Political corrupt environment may have an impact on IPO market, because IPO market is featured with high information asymmetry.
- Firms operating in a corrupt environment are highly opaque.
  - Either corruption-resorted companies may use more concentrated decision-making process within the organization;
  - Or firms damaged by corrupt business environment are not willing to let investors know more about their performance.
  - Therefore, a corrupt environment enlarges the problem of information asymmetry between the informed and uninformed investors, and increases the uncertainty of firm value.

- Underwriters working in a corrupt environment should exert their certification role to promote newly listed shares

Motivation

- Empirical evidence shows that rent-seeking activity affects firm performance negatively

- To fill the gap between political corruption and IPO market.

Research Questions

- The effects of corruption on firm performance raise several questions:

a) Does political corruption have an impact for firms to access public capital market?

b) If so, do prestigious underwriters who act as intermediaries in financial market help?

c) Does corrupt environment affect pre-shareholder's benefit?

Theoretical Framework

- The relationship between rent-seeking(corruption), production and economy was first modelled by Murphy, Shleifer and Vishny (1993).

- If rent-seekers, either from public or private sectors, attempt to expropriate values from the society, this will diminish the returns to the production as more resources are allocated to rent-seekers (e.g. corrupt officials).
  - Alternatively, this will result in another party losing the opportunity to share the resources.

- The corrupt business activity breaks the fair competitiveness in the market and results in only those firms benefit from the public resources.

Related Literature-1

- Literature addresses that corruption diverts company's productivity away from its regular operation. Corruption can
  - reduce investment and R&D expenses (Ades and Tella, 1997);
  - make firm inefficient (Dal Bó and Rossi, 2007);
  - obstruct firms to attain business access and regulation (Nguyen and Van Dijk, 2012);
  - deteriorate management and productivity (Athanasouli and Goujard, 2015) and
  - set up barriers for firm to obtain quality certificates (North (1990) and Paunov (2016).

Related literature-2

- Another stream of studies relates to firms that can benefit from rent-seeking behaviour.
  - Corruption can help companies to deal with the low efficient government and bad laws from the local (Leff (1964) and Lui (1985)), and therefore help firm's growth (e.g. Rock and Bonnett (2004); Vial and Hanoteau (2010); and Mironov (2015)).
- However, using briberies in business acts as a bargaining process between corrupt governors and firms (Paunov, 2016).

IPO data-US sample

- Sample covers US IPOs from 1990 to 2015.
  - Following the literature (e.g. Loughran and Ritter, 2002), we exclude IPOs priced below $5 per share, unit offerings, LBOs, rights issues, American Depositary receipts (ADRs), closed-end funds, real estate investment trusts (REITs), spin-offs, and financial institutions

- Database:
  - IPOs: Thomson One Banker
  - Corruption conviction data : Department of Justice (DOJ)
  - Our main sample includes 4670 IPOs

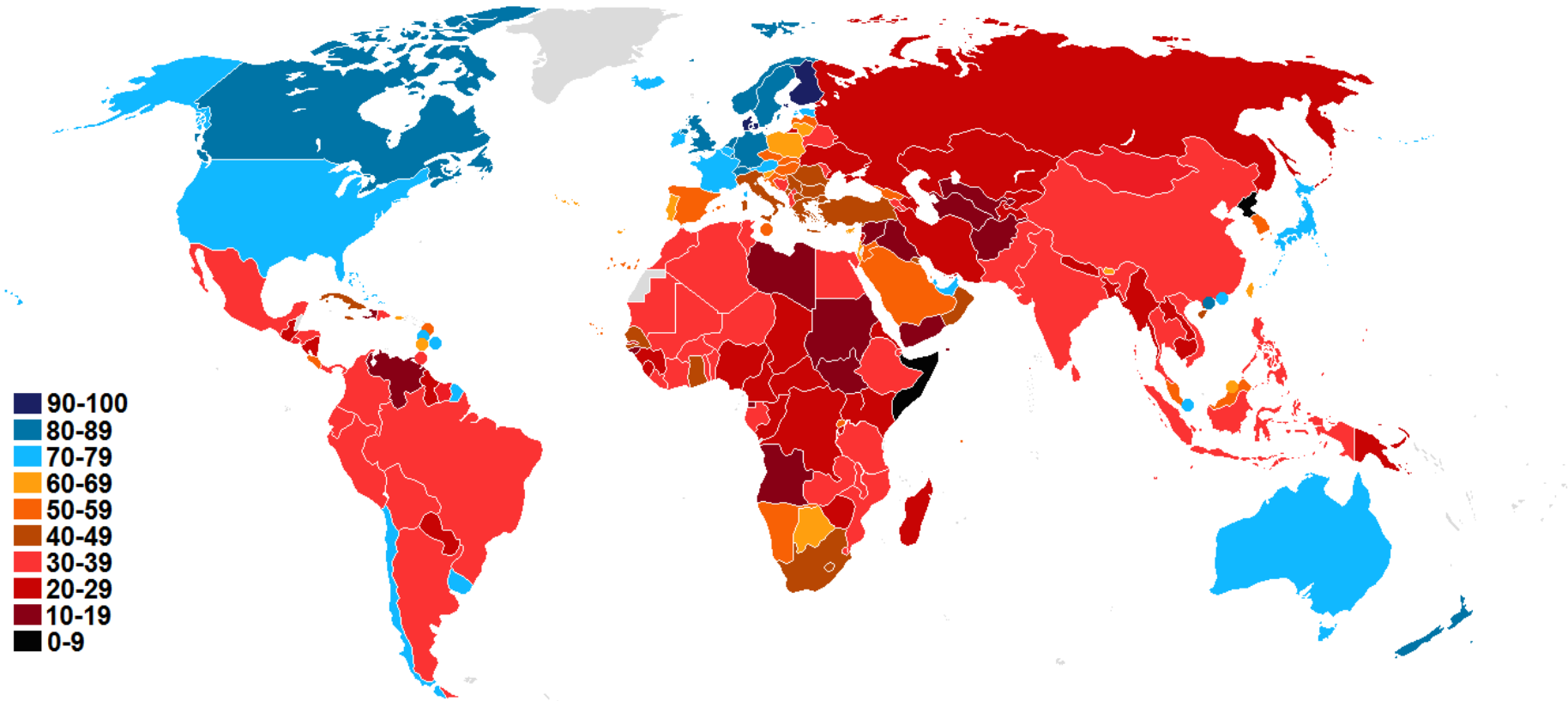
Measuring Corrupt Environment

- **The US level**: We use corruption convictions data from Department of Justice (DOJ) on the US public officials in each state and adopt per capital convictions as our primary link to measure corrupt business environment.
  - This approach is similar to that of Butler, Fauver and Mortal (2009) and Smith (2016)
- We calculate number of public corruption convictions per million people from 1976 to IPO year.

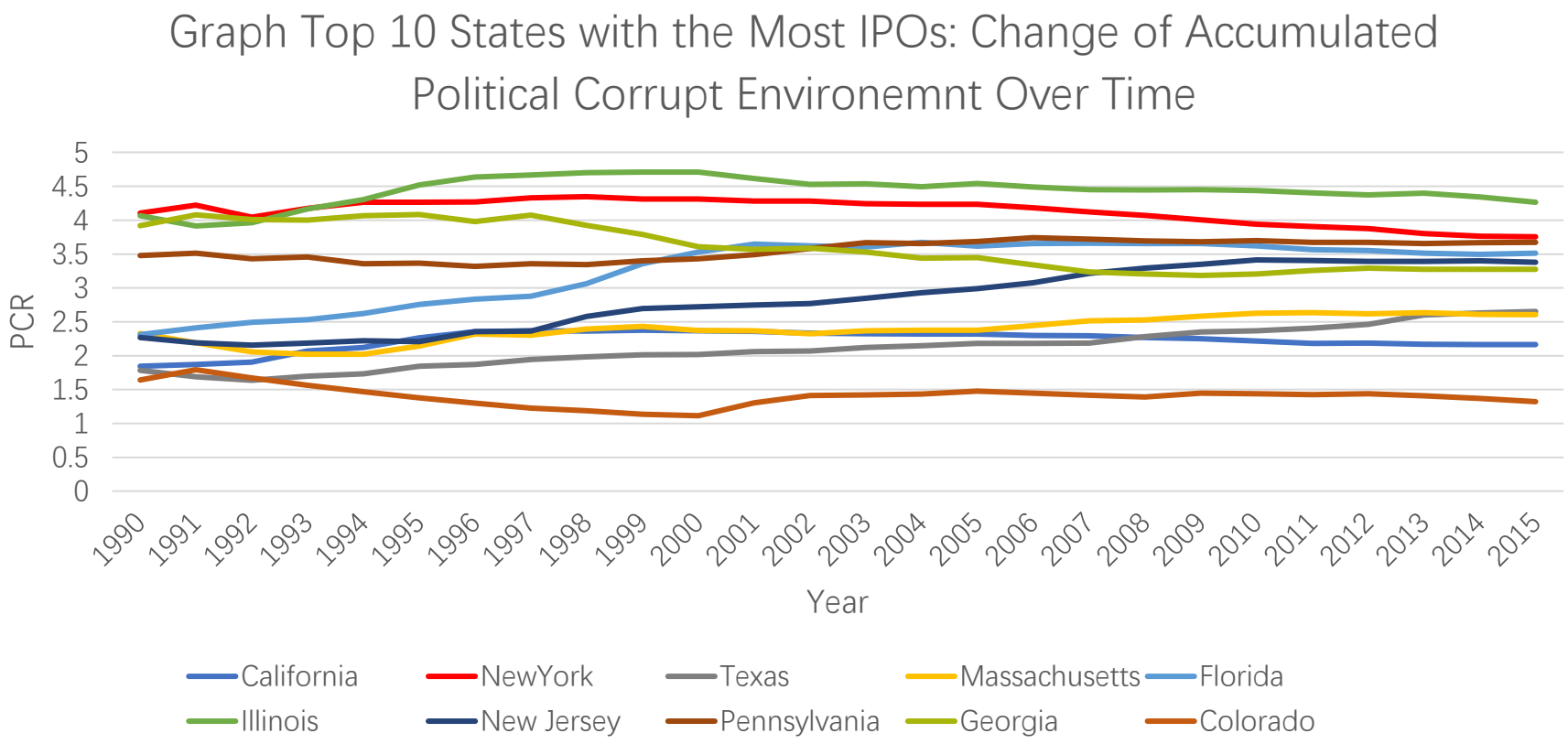
$$PCR = \frac{number\ of\ convictions_{(From\ 1976\ to\ IPO\ year)}}{Population\ in\ million_{(From\ 1976\ to\ IPO\ year)}}$$

- PCR (political corruption rate) represents the measure of public corrupt environment

Corruption Perception Index



Change of Accumulated Corrupt Environment in the US



Hypothesis development-1

- IPO underpricing (initial returns) refers to the percentage changes from the stock price on the first day of trading to the offer price
  - The higher underpricing, the less capital that the firm can raise from going public, of which will benefit investors.
  - IPO underpricing is mainly caused by information asymmetry in the market (e.g. “lemon problem”).
- Corruption increases market uncertainty and asymmetric information (e.g., Athanasouli and Goujard (2015)). For example:
  - firms tend to adopt opaque disclosure policies to protect resources when they are surrounded by risks in a rent-seeking business environment (Stulz,2005)
  - using bribes for business may lead firms to centralize their decision-making processes to prevent information leakage (Athanasouli and Goujard,2015)
- **Hypothesis 1**: IPOs from a strong political corrupt environment are associated with higher initial returns.

Hypothesis development-2

- Underwriters are frequent market players
- Less informed investors and more uninformed investors in a more corrupt environment
- During IPO bookbuilding process, underwriters work hard to extract private information from investors
  - A lower filing price range is attractive for investors during the roadshow
  - IPO revision is treated as an effective means for investment banks to collect private information from informed investors and induce them to reveal it (Benveniste and Spindt (1989); Hanley (1993)).
- **Hypothesis 3**: The demand of collecting information in the corrupt environment is higher, reflected by greater offer price revisions**.**
- **Hypothesis 4**: Prestigious underwriters can price issues accurately in political corrupt environment.

Summary Statistics- The US sample

Variable	Low-corrupt areas	High-corrupt areas	difference in means (p-value)
IPO Initial returns	**15.73**	**21.73**	**0.00**
Firm Age	15.67	14.53	0.03
Total Assets	348.44	341.24	0.44
Leverage	0.38	0.36	0.03
High-tech	0.35	0.44	0.00
Top-tier	0.72	0.74	0.07
Venture Capital	0.39	0.49	0.00
Auditor	0.62	0.70	0.00
Nasdaq	0.70	0.74	0.00
Share Overhang	3.78	3.74	0.00
No.of Bookrunners	1.27	1.35	0.00
Hot market	0.77	0.69	0.00
Revision	-0.45	0.58	0.00
Revision dummy	0.62	0.67	0.00
Insider's wealth dummy	0.53	0.57	0.01
Proceeds(in millions)	84.50	92.60	0.21

IPO underpricing: the US evidence

	(1)	(2)	(3)	(4)	(5)	(6)
PCR	**1.253****	**1.297*****	**1.357*****	**1.327*****	**0.925****	
	(2.58)	**(2.69)**	**(2.80)**	**(2.77)**	**(2.16)**	
High-corrupt areas						**2.761*****
						(2.61)
Firm Age		-3.186***	-3.036***	-3.111***	-3.175***	-3.133***
		(-5.79)	(-5.75)	(-5.90)	(-5.97)	(-5.92)
Total Assets		3.301***	3.091***	3.103***	3.054***	3.143***
		(4.42)	(3.88)	(3.91)	(3.88)	(3.95)
Leverage		-15.683***	-14.193***	-14.102***	-14.245***	-14.333***
		(-4.09)	(-4.10)	(-4.25)	(-4.29)	(-4.29)
High-tech		5.682***	5.099***	4.700***	4.756***	4.674**
		(3.04)	(2.78)	(2.59)	(2.63)	(2.57)
Top-tier			1.321	0.943	1.018	0.874
			(1.11)	(0.77)	(0.85)	(0.72)
Venture capital			4.413***	3.902***	4.129***	3.811***
			(2.85)	(2.66)	(2.81)	(2.59)
Auditor			-0.482	-0.248	-0.116	-0.306
			(-0.47)	(-0.24)	(-0.11)	(-0.30)
Nasdaq			1.655	1.555	1.628	1.539
			(1.42)	(1.34)	(1.40)	(1.33)
Share Overhang				0.552**	0.559**	0.554**
				(2.01)	(2.00)	(2.03)
No. of Bookrunners				-1.547***	-1.554***	-1.461**
				(-2.67)	(-2.68)	(-2.51)
Hot Market				5.893	5.980	5.714
				(1.61)	(1.63)	(1.56)
Intercept	4.806	8.670*	6.726	7.363	9.541**	10.199**
	(1.28)	(1.89)	(1.31)	(1.44)	(2.01)	(2.09)
Year control	Yes	Yes	Yes	Yes	Yes	Yes
Industry control	Yes	Yes	Yes	Yes	Yes	Yes
Region control	Yes	Yes	Yes	Yes	No	Yes
Adjusted R2	0.1745	0.2010	0.2045	0.2095	0.2092	0.2097
Number of observations	4655	4655	4655	4655	4655	4655

Omitted variable and fix effect analysis

	Adding more controls			fixed effects analysis	
	(1)	(2)	(3)	(4)	(5)
PCR	**1.056****	**1.685*****	**1.471****	**0.329****	**0.677****
	(2.20)	**(2.62)**	**(2.14)**	**(2.02)**	**(2.53)**
Ln (GDP)	0.330		-0.732		
	(0.47)		(-0.17)		
Unemployment	0.398		0.571		
	(0.65)		(0.71)		
Education attainment	-0.068		-0.125		
	(-0.47)		(-0.68)		
Ln (Police)		-3.422	-2.930		
		(-0.92)	(-0.63)		
Ln (Judicial)		4.015	3.797		
		(1.09)	(1.00)		
Intercept	5.707	-3.806	-3.115	2.942	-0.933
	(0.83)	(-0.36)	(-0.14)	(0.57)	(-0.14)
Other controls	Yes	Yes	Yes	Yes	Yes
Year control	Yes	Yes	Yes	No	No
Industry control	Yes	Yes	Yes	No	No
Region control	Yes	Yes	Yes	No	No
State-year control	No	No	No	Yes	No
State-Year-Industry control	No	No	No	No	Yes
Adjusted R2	0.2093	0.2248	0.2243	0.1602	0.0827
Number of observations	4655	3078	3078	4655	4655

- PCR are district level measured in columns 4 and 5.

Endogeneity challenge

- We use a two-stage least squares (2SLS) analysis to address this self-selection of IPO firm’s headquarter location concern.

- The model requires the use of proper exogenous variables that can affect the dependent variable through a main explanatory variable but do not have a direct impact on the outcome (Wooldridge, 2015).

- Ideally, the variable should influence the choice of a firm's location of its headquarters in terms of the local, politically corrupt environment but should not influence the IPO's initial returns directly.

Instrumental variable selection

- Gravity-based Centered Index for Spatial Concentration (GCISC) developed by Campante and Do (2010)
  - isolated capitals are associated with reduced public accountability, leading to higher levels of political corruption in the US, and vice versa.
- Cordis and Warren (2014) find that Freedom of Information Act (FOIA) enables people to access public information easily and increases transparency in government, thereby effectively deterring corrupt activities
  - scores ranging from 1 to 11 to each of the 50 states. A state with strong FOIA laws has a score above 6; otherwise a state has weak FOIA laws.
  - the effect is obvious in the long run after 7 years if the state experiences a transition from weak to strong FOIA laws.
- How many days that a citizen is required to reside in a state before becoming eligible to vote
  - the electorate faces more constraints to punish political corruption if a resident has to wait for a longer period to be qualified the right to vote. (e.g., Dass et al. (2016); Huang and Yuan (2019)).

2SLS analysis

	(1)	(2)
	First stage	Second stage
Dependent variable:	PCR	IPO initial returns
GCISC	-0.575***	
	(12.09)	
FOIA	-0.326**	
	(2.50)	
Voting	0.003***	
	(3.62)	
PCR		3.579***
		(3.44)
Intercept	3.427***	1.749
	(11.31)	(0.30)
Baseline controls	Yes	Yes
Year control	Yes	Yes
Industry control	Yes	Yes
Region control	Yes	Yes
Weak identification F-statistics		52.50
Overidentification J-statistic (p-value)		0.167
Adjusted R2	0.4065	0.2148
Number of observations	4650	4650

Propensity score matching analysis

- Statistically compare the outcome of a treated observation (IPO firm) with an effect (high corrupt environment) to the same observation but not treated based on a number of covariates.
- We define our treatment observations as those IPOs from high corrupt areas and include rich sets of covariates from the previous analysis.
- We extend our testing by controlling for year, industry, and region effects.

	IPO initial returns
ATET	
High corrupt environment vs. Low corrupt environment	3.686**
	(2.29)
Year control	Yes
Industry control	Yes
Region control	Yes
Number of observations	4655

Impact of Public Corruption on IPO Revisions

	OLS		Logit Model
	(1)	(2)	(3)
	Absolute Revisions	Revisions	Revision Dummy
PCR	**-0.200**	**0.405****	**0.099*****
	(-1.20)	**(2.20)**	**(2.94)**
Intercept	7.371***	-3.699*	0.731*
	(3.96)	(-1.74)	(1.90)
Other controls	Yes	Yes	Yes
Year control	Yes	Yes	Yes
Industry control	Yes	Yes	Yes
Region control	Yes	Yes	Yes
Adjusted R2/Pseudo R2	0.0436	0.1203	0.062
Number of observations	4655	4655	4655

- IPO firms operating in highly corrupted environment are hard to value, because the sign PCR in column 1 is not significant;
- As shown in column 2, underwriters need to increase offer price revisions because of high information asymmetry under political corruption;
- There are more upward offer price revisions in politically corrupted environment, which is consistent with the third hypothesis that underwriters are likely to use revisions to induce private information.

Analysis of Underwriter's role in a Corrupt Environment

	(1)	(2)
PCR	2.222***	2.967***
	(3.54)	(3.15)
PCR*Top-tier	**-1.539****	
	(-2.22)	
PCR*Underwriter Rank		**-0.251****
		(-2.31)
Intercept	-0.936	-2.921
	(-0.12)	(-0.46)
Other controls	YES	YES
Year control	YES	YES
Industry control	YES	YES
Region control	YES	YES
Adjusted R2	0.2028	0.2030
Number of observations	4655	4655

- Top-tier underwriters know the market better, they can pay more to hire excellent analysts to overcome the problems from analysing new issues in a corrupt environment.
- In unreported results, we find that underwriters charge higher fees (e.g., gross spread and selling concessions) from issuers in highly corrupted environments.
- Thus, underwriters make efforts to reduce information asymmetry and lower IPO initial returns when political corruption is high.

Political Corruption, Initial Returns and Business Operations

- Following Garcia and Norli (2012) and Smith (2016), a firm's operation concentration is measured as the citation of the HQ state over all states in a 10-K report.
- Results suggest that when an IPO firm has more operations concentrated around the HQ location, the increased local corrupt environment has more impact on initial returns and revisions.

	(1)	(2)
	Initial returns	Revisions
PCR	-0.163	-0.233
	(-0.36)	(-0.90)
Operation Concentration%	-7.186**	-3.964***
	(-2.72)	(-3.57)
PCR*Operation Concentration%	**2.856*** **	**1.318** **
	(3.09)	**(2.60)**
Intercept	-10.214	-7.682**
	(-1.13)	(-2.16)
Other controls	Yes	Yes
Year control	Yes	Yes
Industry control	Yes	Yes
Region control	Yes	Yes
Adjusted R2	0.2150	0.1500
Number of observations	3026	3026

Corruption and S-1 language

- Loughran and McDonald (2013) conclude that the tone of the S-1 affects investor's ability to value the IPO.
  - They find that the more uncertain/negative words result in higher underpricing. Therefore, we should expect IPO firms use less positive, and more negative/uncertain words to describe their business strategies and operations in corrupt environments.

- We follow Loughran and McDonald (2013) to measure the language tone used in IPO firms' prospectuses (e.g., S-1).

- We count number of positive, negative, uncertain, and constraining words in S-1 based on word lists provided by McDonald's website.

	(1)	(2)	(3)	(4)
	%Positive	%Negative	%Uncertainty	%Constraining
PCR	**-0.010****	**0.019***	**0.017****	**0.015***
	(-2.02)	**(1.68)**	**(2.07)**	**(1.84)**
Intercept	2.117***	4.660***	1.599***	1.339***
	(60.08)	(66.98)	(36.90)	(23.76)
Control variables	Yes	Yes	Yes	Yes
Year control	Yes	Yes	Yes	Yes
Industry control	Yes	Yes	Yes	Yes
Adjusted R2	0.4607	0.2092	0.5062	0.1332
Obs.	2648	2648	2648	2648

Analysis of Insider Wealth Gains in a Corrupt Environment

- Pre-IPO shareholder's wealth gains depend on greater offer price revisions and reduced initial returns, relative to the share that insiders retain
- Underwriters increase revisions and reduce initial returns in a corrupt environment (Table 5 and Table 6).
- Underwriters have to benefit issuers in a corrupt environment in order to maintain their reputations
- In unreported results, underwriters charge higher fees from issuers when local political corruption increases.

	Insider's wealth dummy
PCR	**0.113*** **
	(2.87)
Initial return residuals	0.079***
	(10.35)
Ln (Proceeds)	0.407***
	(8.22)
Float Ratio	-6.681***
	(-11.39)
Intercept	-0.856*
	(-1.91)
Year control	Yes
Industry control	Yes
Region control	Yes
Pseudo R2	0.317
Number of observations	4323

Robustness Checks

(1)Measure PCR from the firm founding year to IPO year;

(2)Use raw conviction data (NOT convictions per million people);

(3)Use government employee based PCR (e.g. not scaled by whole population);

(4)Adopt a survey based corruption measure developed by Boyland and Long (2003);

(5)Use operation concentration weighted PCR;

(6)&(7)Use conviction data from alternative database (e.g. Transactional Records Access Clearinghouse);

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Measuring from firm founding year	Raw conviction	PCR (govt employee)	Boyland and Long (2003)	Operation weighted PCR	TRAC	TRAC
PCR	1.489***	0.002**	0.097***	2.210**	1.865**	0.853***	0.768***
	(3.97)	(2.03)	(2.88)	(2.01)	(2.14)	(5.07)	(4.18)
WCC							0.121
							(1.31)
Intercept	-0.033	4.196	1.079	-0.023	-14.632	3.236	0.450
	(-0.01)	(0.72)	(0.18)	(-0.00)	(-1.31)	(0.56)	(0.08)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year control	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry control	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region control	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R2	0.2039	0.2021	0.2027	0.2166	0.2155	0.2027	0.2028
Number of observations	4655	4655	4655	3339	3026	4655	4655

Contribution

- The study provides the first empirical evidence that political corruption imposes additional costs on firms to access IPO market.

- It contributes to the literature which argues that the market is riskier and more uncertain under corruption.

- It adds new evidences on how corruption affects firm performance on the growing literature within country studies.

- We address a new influential factor of IPO short-run returns in the stock market-political corruption.

Conclusion

- Corruption increases market uncertainty and information asymmetry
    - Results in a higher level of IPO underpricing

- Underwriters exert certification roles in a corrupt environment:
    - extract useful information in the market, reflected by high revisions;
    - reduce IPO initial returns;
    - help insiders to manage positive gains;

Thank you!
Any questions?