Corruption in turbulent times: a hedge against economic fluctuations?

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MOTIVATIONS

- The relationship between economic instability and governance quality is puzzling:

  - ✓ bad governance contributes to domestic fluctuations (Acemoglu et al. 2003; Mobarak, 2005)

  - ✓ good governance contributes to better absorb external shocks (Rodrik, 2000; Arin et al, 2011)

Economic shocks are more likely to occur and to persist in countries with low governance quality

MOTIVATIONS

- The reverse relationship – **the effect of economic fluctuations on governance quality** – has been so far addressed by few recent studies:

  ✓ **Pro-cyclical effect**: corruption may feed on variations in public and private rents (Voors et al., 2011);

  ✓ **Contra-cyclical effect**: corruption may compensate income losses (Borcan et al., 2012);

  ✓ **Nonlinear effect**: depending on informational asymmetries between politicians and voters (Aidt and Dutta, 2008), or the opportunity cost of corrupt acts (Dalgaard and Olsson, 2008).

Building on these contributions, this paper proposes and tests an analytical framework for the effect of economic instability on corruption

ANALYTICAL FRAMEWORK

- Micro and macroeconomic literature on risk and instability (Elbers et al., 2007; Loayza et al., 2007; Bardhan and Udry, 1999) separate:

  - ✓ the *ex ante* **effect of economic instability**, resulting from the **perception of instability;** from

  - ✓ the *ex post* **effect of economic instability**, resulting from the **experience of instability**.

- Analysis of these *ex ante* and *ex post* **effects of economic instability on corruption prevalence**, considering that

  ***Ex ante* and *ex post* corrupt transactions may be undertaken to hedge against adverse fluctuations, and to benefit from favorable ones.**

ANALYTICAL FRAMEWORK

The *ex ante* effect of instability on corruption

- High **perceptions of instability** may incite agents (especially firms) to engage *ex ante* in corrupt activities aimed at **reducing exposure to shocks** by **locking resource inflows over time**.

- E.g. *ex ante* corrupt strategies aimed at:

  - ✓ influencing procurement processes and winning long-term public contracts (Goldman et al., 2013);

  - ✓ building *ex ante* political connections to ensure financial support during hardships (Faccio et al, 2013); or

  - ✓ obtaining obliging regulations and protections (Grossman and Helpman, 1994).

Positive *ex ante* effect of instability on corruption, resulting from "resource-locking" corruption strategies

ANALYTICAL FRAMEWORK

The *ex post* effect of instability on corruption

- The **experience of shocks** may trigger **two opposite *ex post* corruption strategies**:

  - ✓ **Opportunistic corruption**, pro-cyclical, induced by rises and falls in economic activity;

  - ✓ **Survival corruption**, contra-cyclical, arising from the necessity to mitigate the detrimental effect of adverse shocks on welfare and economic performance.
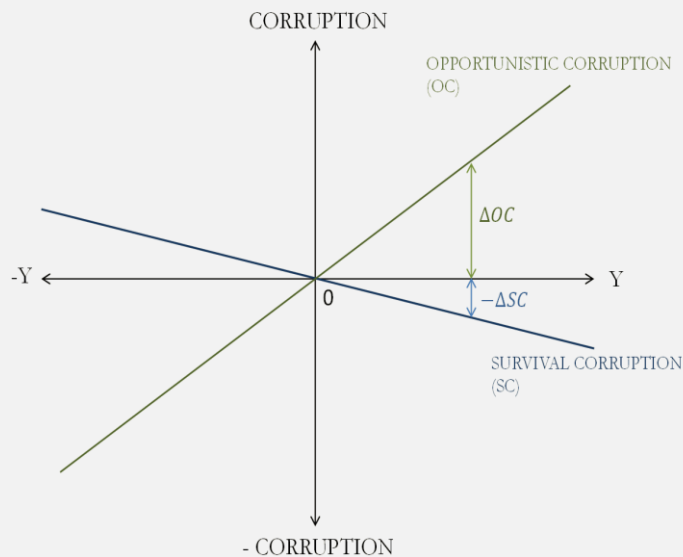
The direction of the net *ex post* effect is *a priori* uncertain, and depends on the marginal effect of shocks on corruption (Dalgaard and Olsson, 2008)
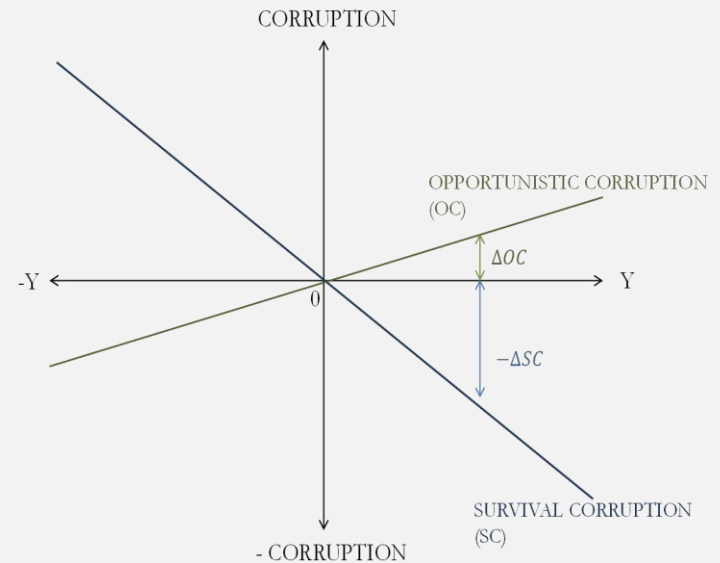
ANALYTICAL FRAMEWORK

The *ex post* effect of instability on corruption

Constant marginal effect of shocks

Scenario 1: *(Net) pro-cyclical effect*   *Scenario 2: (Net) contra-cyclical effect*
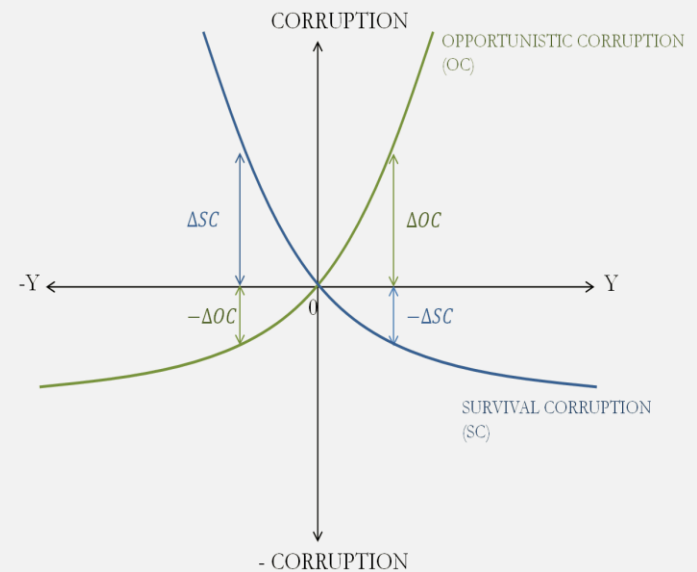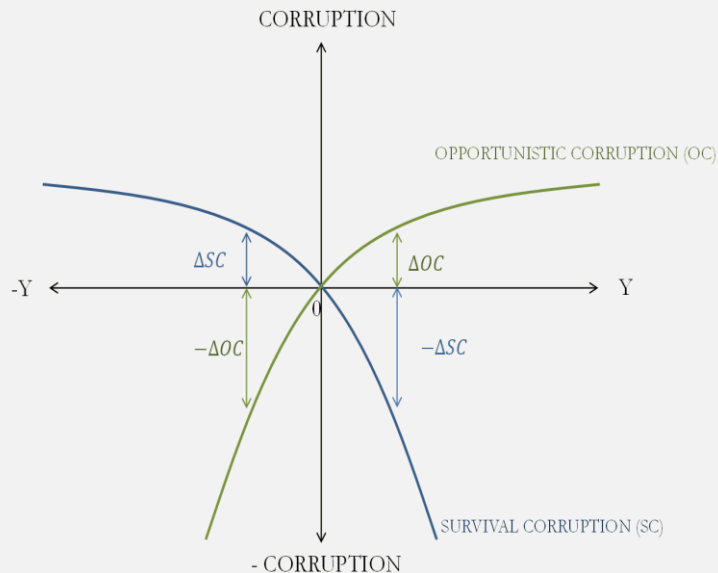

Symmetric responses to shocks

ANALYTICAL FRAMEWORK

The *ex post* effect of instability on corruption

Non constant marginal effect of shocks

Scenario 3: *Symmetric deterrent effect of shocks*   **Scenario 4**: *Symmetric positive effect of shocks*

Asymmetric responses to positive and negative shocks

ANALYTICAL FRAMEWORK

The *ex post* effect of instability on corruption

- **The institutional environment** may determine the marginal effect of shocks by affecting **the marginal cost** of corrupt acts.

- **The marginal cost** depends on,

  - ✓ **access to financial markets**, affecting the opportunity cost of corrupt acts (Wang and You, 2012);

  - ✓ **the quality of democratic institutions,** affecting the probability of detection/sanction of corruption acts (Ahlin et Pang, 2008; Lederman et al. 2005); and

  - ✓ **the intensity of economic fluctuations** (Dalgaard and Olson, 2008), making previous democratic and financial constraints binding.

Financial and democratic institutions → key channels for the direction of the *ex post* effect of instability on corruption

EMPIRICAL FRAMEWORK

Corruption equation

Corruption = f(ex ante; ex post; controls)

- **Dynamic panel estimations (FE, sys-GMM)** using **corruption perception** data from the ICRG (and CPI in robustness checks):

  1125 observations from 62 developed and developing countries.

- **Cross-section estimations (OLS)** using data on **bribery incidence (in % of firms)** from the WBES:

  Aggregated data from over 22,000 firms' bribe reported in 38 developing countries

- **Controls**: government size, human capital, democracy, political regime durability, population size, natural resource endowments, openness, firms' characteristics (in cross section estimations)

EMPIRICAL FRAMEWORK

Variables of interest: export instabilities

- **Instability of exports in constant USD** around a rolling estimated **mixed trend** (deterministic + stochastic) estimated over (t; t-15):

  → proxy for **overall economic instability** in both developed and developing countries

- **Perception of instability** (*ex ante* effect)**: standard deviation of exports** (in % of the mixed trend), calculated over a **long period** (t; t-15)

- **Experience of instability** (*ex post* effect): **skewness of exports** (in % of the mixed trend)**,** calculated over a **short period** (t; t-5)

  → reflects both the asymmetry and the intensity of fluctuations (Rancière et al, 2008 QJE).

EMPIRICAL FRAMEWORK

Econometric models

1. The **baseline corruption equation** (*ex ante* and *ex post*):

$$corruption = f(std\ dev;\ skewness).$$

2. Accounting for **asymmetric corruption responses to shocks** (*ex post effect*):

$$corruption = f(std\ dev\ ;\ \textbf{\textit{skew>0, skew<0}}).$$

3. Accounting for the **intensity of export fluctuations** (*ex post effect*):

$$corruption = f(std\ dev;\ \textbf{\textit{skew>0, skew<0; [skew>0]}}^2\textbf{\textit{, [skew<0]}}^2).$$

4. The **credit access** and **democracy channels** (*ex post effect*):

$$corruption = f(\ std\ dev;\ \textbf{\textit{skew>0, skew<0; [skew>0}} \times \textbf{\textit{inst]; [skew<0}} \times \textbf{\textit{inst]}}).$$

5. The **credit access** channel (*ex ante effect*):

$$corruption = f(\textbf{\textit{std dev ; [std dev}} \times \textbf{\textit{financial inst]}};\ skew).$$

RESULTS

Evidence on the *ex post* effect of instability

Results support that the *ex post* effect of instability is **nonlinear**, depending on **the channels underlying the marginal effect of** shocks on corruption

RESULTS

Evidence on the *ex post* effect of instability

Model 3: the **intensity of fluctuations** channel

Corruption = f(std dev; **skew>0, skew<0; [skew>0]², [skew<0]²***)*

RESULTS

Table 3a. Dynamic panel estimations of equation (6a): evidence from the ICI

| Dependent variable:	Corruption perceptions		
	Within fixed effects		Sys-GMM
Lagged Corruption	0.715*** (0.00)	0.695*** (0.00)	0.735*** (0.00)
Export skew>0	**-0.004*** (0.00)**	**-0.003*** (0.00)**	**-0.007*** (0.00)**
Export skew<0	**-0.003*** (0.00)**	**-0.003*** (0.00)**	**-0.004* (0.07)**
[Export skew >0]^2	**1e-05*** (0.00)**	**1e-05*** (0.00)**	**3e-05*** (0.00)**
[Export skew <0]^2	**1e-05*** (0.00)**	**1e-05*** (0.00)**	**1e-05 (0.35)**

Table 3b. OLS estimation of equation (6b): evidence from the WBES

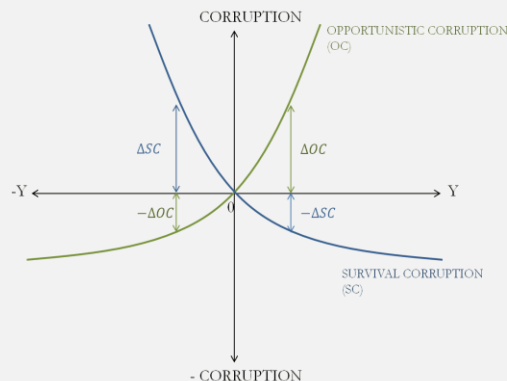| Dependent variable:	Bribery incidence
Export std_dev	1.723* (0.07)
Export skewness > 0	**-0.249† (0.11)**
Export skewness < 0	**0.037 (0.79)**
[Export skew >0]^2	**0.003** (0.02)**
[Export skew <0]^2	**0.001 (0.51)**

RESULTS

Evidence on the *ex post* effect of instability

Estimates of model 3 show that:
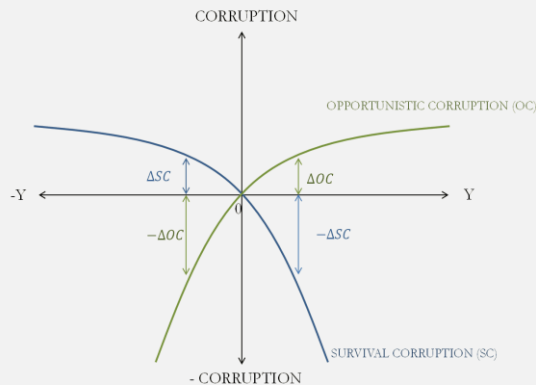
both **positive and negative shocks deter corruption** when **fluctuations are normal** (high frequency, low size)

both **positive and negative shocks increase corruption** when **fluctuations are intense** (low frequency, large size)

RESULTS

Evidence on the *ex post* effect of instability

Model 4: the **institutional channel**

Corruption = f(std dev; ***skew>0, skew<0; [skew>0 × inst]; [skew<0 × inst]****)*

RESULTS

Access to credit channel

Table 4a. Dynamic panel estimation of equation (7a): evidence from the ICRG

Dependent variable:	Corruption perceptions		
	Within fixed effects		Sys-GMM
	(1)	(2)	(3)
Corruption t- 1	0.713*** (0.00)	0.693*** (0.00)	0.825*** (0.00)
Export skew>0	0.002† (0.14)	0.001 (0.26)	0.004 (0.39)
Export skew<0	0.003† (0.11)	0.002 (0.28)	0.002 (0.55)
Skew>0 × credit access	-0.001** (0.4)	-5e-04† (0.14)	-0.001 (0.29)
Skew<0 × credit access	-0.001* (0.09)	-5e-04 (0.24)	-0.001 (0.44)

Table 4b. OLS estimation of equation (7b): evidence from the WBES.

Dependent variable:	Bribery incidence	
	(1)	(2)
Export std_dev	0.218 (0.77)	0.780 (0.40)
Export skew>0	**0.550* (0.07)**	**0.791** (0.05)**
Export skew<0	**0.563* (0.10)**	**0.674** (0.05)**
Skew>0 × credit access	**-0.118 (0.16)**	**-0.179† (0.11)**
Skew<0 × credit access	**-0.127 (0.20)**	**-0.147† (0.11)**

RESULTS

Democracy channel (ICRG)

Table 5a. Dynamic panel estimations of equation (8a): evidence from the ICRG

| Dependent variable:	Corruption perceptions					
	Within fixed effects			Sys-GMM		
	(1)	(2)	(3)	(4)	(6)	(7)
Corruption t- 1	0.607*** (0.00)	0.604*** (0.00)	0.593*** (0.00)	0.847*** (0.00)	0.801*** (0.00)	0.605*** (0.00)
Export skew>0	-0.0001 (0.81)	-0.002 (0.31)	-0.001 (0.26)	0.001 (0.56)	-0.018† (0.14)	-0.012* (0.09)
Export skew<0	0.0004 (0.55)	-0.004† (0.11)	-0.006*** (0.00)	0.001 (0.31)	-0.026* (0.07)	-0.018*** (0.01)
Skew>0 × democracy	-0.0001 (0.28)			-5e-04† (0.15)		
Skew<0 × democracy	-0.0001 (0.20)			-6e-04* (0.10)		
Skew>0 × free press		-4e-04 (0.43)			-0.005 (0.16)	
Skew<0 × free press		-0.001† (0.12)			-0.007* (0.09)	
Skew>0 × econ. infl. media			-3e-04 (0.49)			-0.005* (0.10)
Skew<0 × econ. infl. media			-0.002*** (0.00)			-0.008*** (0.01)

RESULTS

Democracy channel (WBES)

Table 5b. OLS estimations of equation (8b): evidence from the WBES.

| Dependent variable:	Bribery incidence		
	(1)	(2)	(3)
Export std_dev	1.528 * (0.06)	1.542† (0.13)	0.748 (0.50)
Export skew>0	**0.344*** (0.01)**	**-1.120 (0.24)**	**-1.401* (0.10)**
Export skew<0	**0.349** (0.03)**	**-1.148 (0.29)**	**-1.467† (0.14)**
Skew>0 × democracy	-0.030* (0.07)		
Skew<0 × democracy	-0.033† (0.12)		
Skew>0 × free press		-0.342 (0.24)	
Skew<0 × free press		-0.433 (0.27)	
Skew>0 × econ. infl. media			-0.601* (0.07)
Skew<0 × econ. infl. media			-0622* (0.10)

RESULTS

Evidence on the *ex post* effect of instability

- Estimates of model 4 show that:
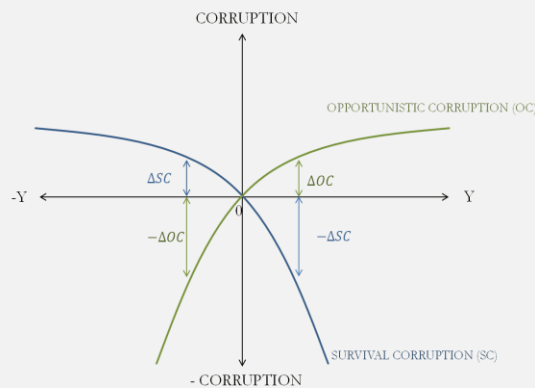
both **positive and negative shocks deter corruption** when **access to credit is facilitated** and when **democratic institutions are effective**
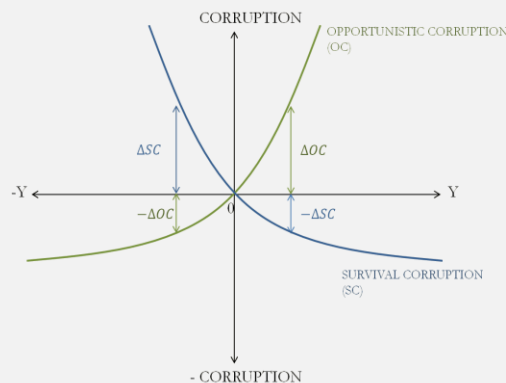
both **positive and negative shocks increase corruption** when **access to credit is restricted** and **when democracy is low**

RESULTS

Evidence on the *ex ante* effect of instability

Model 5: the financial **institution channel**

Corruption = f(std dev ; [std dev × financial inst]; skew).

RESULTS

Table 6a. Dynamic panel estimations of equation (9a): evidence from the ICRG.

Dependent variable:	Corruption perceptions		
	Within fixed effects		Sys-GMM
	(1)	(2)	(3)
Corruption t- 1	0.710*** (0.00)	0.687*** (0.00)	0.749*** (0.00)
Export skewness	-0.0004*** (0.00)	-0.0002† (0.11)	-0.0005 (0.50)
Export std_dev	**0.057** (0.03)**	**0.04* (0.07)**	**0.101 (0.70)**
Std dev × credit access	**-0.019** (0.02)**	**-0.017* (0.07)**	**-0.035 (0.65)**

Table 6b. OLS estimations of equation (9b): evidence from the WBES.

Dependent variable:	Bribery incidence	
	(1)	(2)
Export skewness	0.010 (0.77)	-0.003 (0.77)
Export std_dev	**2.924* (0.09)**	**1.040* (0.07)**
Std dev × credit access	**-0.483 (0.39)**	**-0.226 (0.31)**

RESULTS

Evidence on the *ex ante* effect of instability

The *ex ante* effect of instability is also **nonlinear**, depending on financial market access:

Estimations of model 5 also support a **positive *ex ante* effect of instability on corruption**, especially **when access to financial markets is restricted**.

CONCLUSION

When economies are unstable and institutions are failing, economic agents are likely to engage in corruption to hedge against adverse fluctuations and to benefit from favorable ones.

→ Improving access to credit markets and supporting democratic institutions should dampen the adverse *ex ante* and *ex post* effects of instability on governance quality.

Avenues for future researches :

- ✓ **Theoretical approach** for the *ex ante* and *ex post* effect of instability on corruption;

- ✓ analysis applied to **developed countries** using **financial instability variables**;

- ✓ Analysis applied to **developing countries** using exogenous domestic source of instability such as **climate shocks and natural disasters**;

- ✓ analysis applied to resource-dependent **developing countries** using **commodity price instability variables**.

Thank you for your attention