Corruption and Sovereign Spreads

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Motivation

National governments vary widely in the interest costs of external debt as well as in the amount of debt carried as a fraction of GDP. Enter examples here!

- Quantitative models of sovereign default such as Arellano etc endogenize the risk of default by the sovereign and therefore generate an endogenous theory of sovereign spreads that respond to economic conditions.

- the behavior of interest rates is an important factor accounting for differences between the **business cycles** of emerging and developed economies (eg. Uribe-Yue 2006, Nuemeyer-Perri 2005).

- high debt levels are of particular relevance in emerging

Motivation

- The sovereign default literature tends to focus on the role of income and debt levels as the main source of higher spreads faced by EMEs.

- In this paper we will explore the role of corruption in debt markets and default decisions.

- We think of corruption as the diversion of public resources for private gains.
  - Therefore, it acts as a wedge in the government's budget constraint and leads to:
    - incentives to increase borrowing
    - decrease in the desire to repay

Motivation - what we do

1. Build a database covering 67 countries and 21 years:
   - corruption perception measures (TI, WGI)
   - country spreads (EMBI)
   - macro quantities

2. Uncover robust, stylized facts regarding the influence of corruption on debt mkts.

3. Propose a model of sovereign debt in which corruption levels and borrowing costs are simultaneously determined in equilibrium in order to rationalize these facts.

Empirical evidence – Corruption and Spreads

Table 1: OLS estimation

Dep. variable: Spreads			
	(i)	(ii)	(iii)
Constant	-494.9^{***}	-970.8^{***}	-315.7^{***}
Corruption index (TI)	146.5^{***}	188.6^{***}	147.8^{***}
Debt/GDP		10.7^{***}	11.8^{***}
Y growth		-28.2^{***}	-22.1^{***}
Year and region FE	no	no	yes
Adj. R^2	.13	.34	.41
Sample size	741	603	588

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Fact 1: corrupt governments pay higher spreads

Empirical evidence – Corruption and Spreads

Table 2: OLS estimation

Dep. variable: Spreads			
	(i)	(ii)	(iii)
Constant	354.3^{***}	140.3^{***}	182.2^{***}
Corruption index (WGI)	246.8^{***}	281.5^{***}	249.9^{***}
Debt/GDP		11.0^{***}	12.3^{***}
Y growth		-28.2^{***}	-25.3^{***}
Year and region FE	no	no	yes
Adj. R^2	.10	.31	.40
Sample size	715	581	567

Fact 1: corrupt governments pay higher spreads

CPI - Transparency International

- The CPI scores and ranks countries/territories based on how corrupt a country's public sector is perceived to be by experts and business executives.

- It is a composite index, a combination of 13 surveys and assessments of corruption, collected by a variety of reputable institutions.

- Scale of 0 to 10
  - 10 means that a country is perceived as highly corrupt

back

CPI - Worldwide Governance Indicators

- The Worldwide Governance Indicators (WGI) are a research dataset summarizing the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries.
  - Control of Corruption
    - reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.
    - scale of -2.5 to 2.5
    - 2.5 means that a country is perceived as highly corrupt

- This data is gathered from a number of survey institutes, think tanks, non-governmental organizations, international organizations, and private sector firms.

Model

Model

- Small Open Economy (SOE) with:
  - a continuum of households.
  - a continuum of political agents.
- SOE trades bonds with competitive foreign lenders.
  - can't commit to repay.
- Time is discrete and goes on forever.

Model – Households

- Endowment y follows Markov process w/ trans. fun. $\mu(y'|y)$.

- Preferences:

$$u(c) = \frac{c^{1-\gamma} - 1}{1-\gamma} \tag{1}$$

- Flow budget constraint:

$$c = \begin{cases} (1-\eta)(y + b'q(b', y) - b), & \text{if gov't repays} \\ (1-\eta)y_a, & \text{if gov't defaults} \end{cases} \tag{2}$$

where $y_a \leq y \; \forall y$.

Model – Politicians

- Preferences:

$$u(x) = \frac{x^{1-\gamma} - 1}{1 - \gamma} \tag{3}$$

- Flow budget constraint:

$$x = \begin{cases} \eta(y + b' q(b', y) - b), & \text{if gov't repays} \\ \eta y_a, & \text{if gov't defaults} \end{cases} \tag{4}$$

where $y_a \leq y \; \forall y$.

Model – Politicians

- Choose:
  - whether or not to default, or how much to borrow
  - allocation of resources between the HHs and themselves (η)
  - the allocation determines their prob. to remain in office $P(\eta)$
    - $P(\eta) = 1 \; \forall \eta \leq \hat{\eta}$ (salary)
    - $P(\eta)$ is decreasing in $\eta \; \forall \eta > \hat{\eta}$
    - $P_\eta(\eta)$ differs across countries

$$P(\eta) = 1 - \kappa(\eta - \hat{\eta})^\phi$$

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Model – Government's Problem

$$V(b, y) = max \left\{ V^R(b, y), V^D(y) \right\}$$

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$$c = (1-\eta)y,$$
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$$V^D(y) = \max_{\eta} \Bigg\{ (1-\alpha)u(c) + \alpha u(x) +$$

$$P(\eta)\,\beta\left(\theta \int_{y'} V(0,y')\mu(y',y)dy' + (1-\theta)\int_{y'} V^D(y')\mu(y',y)dy'\right)\Bigg\}$$

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subject to

$$c = (1-\eta)y_a,$$
$$x = \eta y_a,$$

with

$$y_a = \begin{cases} y & \text{if } y \leq \psi\bar{y}, \\ \psi\bar{y} & \text{otherwise,} \end{cases}$$

Model – Default decision

The default policy of the politician in power is characterized by:

$$d(b,y) = \begin{cases} 0 & \text{if } V^R(b,y) \geq V^D(y) \\ 1 & \text{otherwise.} \end{cases} \tag{5}$$

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Default probability:

$$\lambda(b',y) = \int_{\mathcal{D}(b')} \mu(y',y)dy'$$

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$$q(b', y) = \frac{1 - \lambda(b', y)}{1 + r^*} \tag{6}$$

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  - parameters in $P(\eta)$ capture the "effectiveness" of governance
  - corruption leads to:
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- Future work:
  - build a micro-founded model of this prob. function
  - what other features would you like to see?