

Decentralisation, corruption and economic development

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The main issues

- The study of the **determinants of corruption**
- The study of the relationship between **decentralisation and bureaucratic corruption**
- The **implications for development** of the relationship between these two variables
- Exploring the **reverse causality** between development and corruption

Defining decentralisation

- Decentralisation can be broadly defined as **any form of transfer of powers to subnational levels**
- Decentralisation comes in **diferent forms**: study of these and their interactions is important
- Political economy considerations are essential to assess the **development effects of decentralisation**

The “modern” view on Federalism

“TO WHAT expedient, then, shall we finally resort, for maintaining in practice the necessary partition of power among the several departments, as laid down in the Constitution? The only answer that can be given is, that as all these exterior provisions are found to be inadequate, the defect must be supplied, by so contriving the interior structure of the government as that its several constituent parts may, by their mutual relations, be the means of keeping each other in their proper places.”

James Madison, The Federalist Papers: The Federalist No. 51, 1788

Anecdotal evidence

- Decentralisation of **public services in Latin America** in early 90's (health, education): Argentina, Colombia, Chile, Ecuador among others
- **Devolution of power** to national parliaments (UK)
- **Full-scale decentralisation programmes** in poor countries: Rwanda, South Africa, Uganda, Sudan and Indonesia. Political economy considerations.
- Pro-decentralisation reforms in **India, China and Russia**

Why we focus on corruption?

- Corruption has often been singled out as **the biggest obstacle to economic development**
- Consequences of corruption are well known. The WB estimates the **direct costs of bribery to national economies** at over \$1 trillion
- Yet, there is **much debate over which determinants of corruption** are important
- We ask **whether decentralisation is one such determinant**. We consider different types of decentralisation.

The paper

- We develop a **macroeconomic framework** to analyze the relationship between corruption, development and decentralisation.
- We make **both corruption and development endogenous**. Decentralisation is modeled exogenously
- The **keys to our model** are the incentives for bureaucrats to act dishonestly and the relationship between **informational and efficiency aspects** associated with decentralisation.
- The model yields **interesting implications** as to whether decentralisation is associated with higher or lower corruption

Relevant and related literature

- **Fiscal federalism** and efficiency gains [Oates (1999), Brueckner (1999, 2006), Yilmaz (1999)]
- **Information asymmetries** and **agency costs** [Aghion and Tirole (1997), Carbonara (1998), Bac (1996)]
- **Economic effects of constitutions** [Person and Tabellini (2003), Voigt and Blume (2008)]
- **Joint determination of corruption and development** [Mauro (2004), Ehrlich and Lui (1999), Blackburn et. al. (2006)]

Model overview (I)

- OLG Model with 2-period lived agents. Agents are of two types: either **households** or **bureaucrats**. No occupational choice problem: **agents differentiated at birth**
- Corruption is defined as the **embezzlement of public funds**. In our model, there is **bureaucratic corruption only**. Government as a benevolent decision-maker
- Government chooses **public policy exogenously**.
- **Monitoring is costless and imprecise** $\rightarrow p \in (0, 1)$. Alternatively, we could assume costly monitoring.

Model overview (II)

- Population is normalised to 1, a proportion m of which are households and n bureaucrats, $n < m$.
- To avoid rigidities, we assume that a **proportion $1 - v$ of bureaucrats are honest** regardless of the size of the expected payoff.
- All **markets are perfectly competitive** and factors retributions equal their marginal product
- When the government discovers a corrupt agent, it cannot recover the entire embezzled amount but **only a fraction δ**

Households

- **Households work and save for consumption** in the 2nd period. **Endowment equal to** $\lambda > 1$. Pay taxes and leave bequests.
- In addition, households **receive a bequest** from the older generation but they **pay lump-sum taxes** on their incomes. Households derive linear utility on their income and on leaving bequests.

$$U_i^h = (1 + r_{t+1})[\lambda w_t - \tau_t + b_t] - b_{t+1} + u(b_{t+1})$$

- They **maximise utility** by setting $u_b(.) = 1$

Firms

- Firms hire labour (from households) and rent capital (from households and bureaucrats) to produce output
- The representative firm maximizes profits and the production technology is given by:

$$y_t = A l_t^\alpha K_t^\alpha k_t^{1-\alpha} G^\beta \quad [A > 0; \alpha, \beta \in (0, 1)]$$

- Firms **maximize profits** $\rightarrow w_t = mpl$ and $r_t = mpk$. In equilibrium, $l_t = l = \lambda m$ and $k_t = K$ and replacing G :

$$\begin{aligned} r &= (1 - \alpha)A(\lambda m)^\alpha \sigma^\beta (ng)^\beta \\ w_t &= \alpha A(\lambda m)^{\alpha-1} \sigma^\beta (ng)^\beta k_t \equiv \hat{w}(k_t) \end{aligned}$$

Government

- The government provides **productive public services** [G in the production function, Barro (1990)]. One unit of public spending yields σG ($\sigma \leq 1$) of productive services
- **Government design** public policy (a package of spending and taxes). Run **continuously balanced budget**.
- The government **monitors the behaviour of bureaucrats**. If revenues fall short of what the government expects, then the government investigates. The **probability of detection** is given by p .

Bureaucrats (I)

- There are n **bureaucrats who are in charge of implementing** policy. They are allocated government money to carry out public spending.
- Bureaucrat **endowment** equals $\lambda = 1$. Receive w_t in exchange for the services to the government
- Corruptible bureaucrats may:
 - Steal fraction $\theta_t^i \in (0, 1)$ of government funds
 - With probability p , they are caught earning $(1 - \delta)\theta_t g$
 - With probability $1 - p$, they earn $w_t^b(1 + r_{t+1}) + \theta_t g$

Bureaucrats (II)

- The utility of a corruptible bureaucrat is given by:

$$U^{b,nc} = w_t^b(1 + r_{t+1})$$

$$U^{b,c} = w_t^b(1 + r_{t+1})(1 - p) + \theta_t g(1 - p\delta)$$

- A corruptible bureaucrat will then weigh $U^{b,c}$ against $U^{b,nc}$ arriving at his incentive condition:

$$\theta g(1 - p\delta) \geq pw_t(1 + r)$$

- Note that this IC depends on θ , g , p , w and r

Conditions for the existence of corruption

- Now, let's assume all bureaucrats are honest. In this case, each bureaucrat spends the total amount that is allocated to him and the IC becomes:

$$\theta g(1 - p\delta) \geq (1 + \hat{r})p\hat{w}_t \equiv \hat{\zeta}(k_t)$$

- where

$$\begin{aligned}\hat{r} &= (1 - \alpha)A(\lambda m)^\alpha \sigma^\beta (ng)^\beta \\ \hat{w}_t &= \alpha A(\lambda m)^{\alpha-1} \sigma^\beta (ng)^\beta k_t \equiv \hat{w}(k_t)\end{aligned}$$

Conditions for the existence of corruption (II)

- On the other hand, if all bureaucrats are corrupt, they divert some of the money (the fraction θ) thereby reducing the effective amount of public spending:

$$\theta g(1 - p\delta) \geq (1 + \tilde{r})p\tilde{w}_t \equiv \tilde{\zeta}(k_t)$$

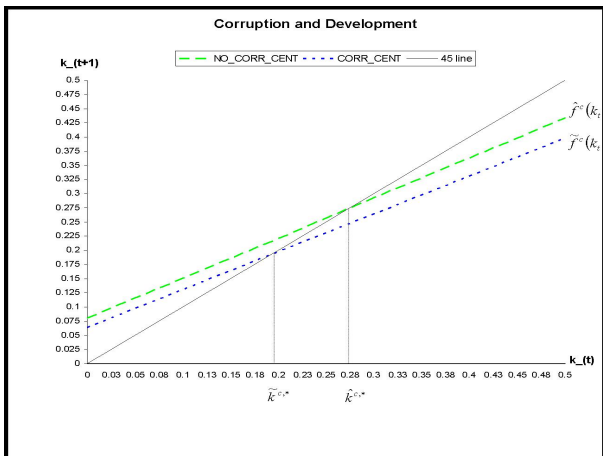
- where

$$\begin{aligned}\tilde{r} &= (1 - \alpha)A(\lambda m)^\alpha \sigma^\beta (ng)^\beta (1 - \theta)^\beta \\ \tilde{w}_t &= \alpha A(\lambda m)^{\alpha-1} \sigma^\beta (ng)^\beta (1 - \theta)^\beta k_t \equiv \tilde{w}(k_t)\end{aligned}$$

Existence of equilibria

- In our model, corruption and development are determined jointly. Note that $\hat{\zeta}(k_t) > \tilde{\zeta}(k_t)$
- Equilibria
 - For $k_t < k_{1,b}$ → equilibrium where **all bureaucrats corrupt**
 - For $k_t > k_{2,b}$ → equilibrium where **all bureaucrats non-corrupt**
 - For $k_{1,b} < k_t < k_{2,b}$ → multiple equilibria where **some are corrupt and some remain honest**

Diagrams



Regimes: Centralisation (I)

- Provision \Rightarrow **Central** level bureaucrats (full centralisation)
- σ^c captures **economic** efficiency of centralisation
- θ^c captures **political** aspects of centralisation
- Informational asymmetry is relatively **small**
 - Hierarchical closeness; better monitoring
 - Homogeneity of bureaucratic sector
- Thus $\longrightarrow \sigma^c < \sigma^d = 1$ and $\theta^c < \theta^d$

Regimes: Centralisation (II)

- Under full centralisation, capital accumulation in the no corruption and corruption cases are given by:

$$\hat{k}_{t+1}^c = \alpha A (\lambda m)^\alpha (\sigma^c)^\beta (ng)^\beta k_t - ng + mb \equiv \hat{f}^c(k_t)$$

$$\begin{aligned} \tilde{k}_{t+1}^c &= \alpha A (\lambda m)^\alpha (\sigma^c)^\beta (ng)^\beta (1 - \theta^c)^\beta k_t - \\ &ng[1 + \nu\theta^c(1 - p\delta)] + mb \equiv \tilde{f}^c(k_t) \end{aligned}$$

Regimes: Decentralisation

- Provision \Rightarrow **Local** level bureaucrats (full decentralisation)
- σ^d captures **economic** efficiency of decentralisation
- θ^d captures **political** aspects of decentralisation
- Informational asymmetry is relatively large
 - Hierarchical distance; weak accountability
 - Heterogeneity of bureaucratic sector
- Recall that $\longrightarrow \sigma^c < \sigma^d = 1$ and $\theta^c < \theta^d$

Regimes: Decentralisation (II)

- Under full decentralisation, capital accumulation in the no corruption and corruption cases are given by:

$$\hat{k}_{t+1}^d = \alpha A(\lambda m)^\alpha (ng)^\beta k_t - ng + mb \equiv \hat{f}^d(k_t)$$

$$\begin{aligned} \tilde{k}_{t+1}^d &= \alpha A(\lambda m)^\alpha (ng)^\beta (1 - \theta^d)^\beta k_t \\ &\quad - ng[1 + \nu\theta^d(1 - p\delta)] + mb \equiv \tilde{f}^d(k_t) \end{aligned}$$

Analysis

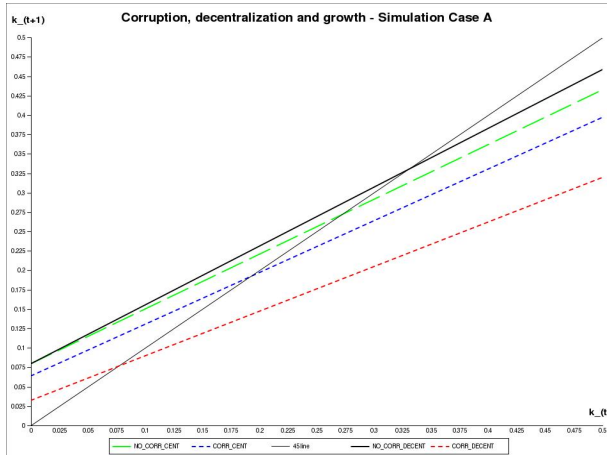
- Comparing steady-states, we arrive at the following relationships between capital accumulation in different regimes with and without corruption:

$$\hat{f}^d(k_t) > \tilde{f}^d(k_t) \quad \text{and} \quad \hat{f}^c(k_t) > \tilde{f}^c(k_t)$$

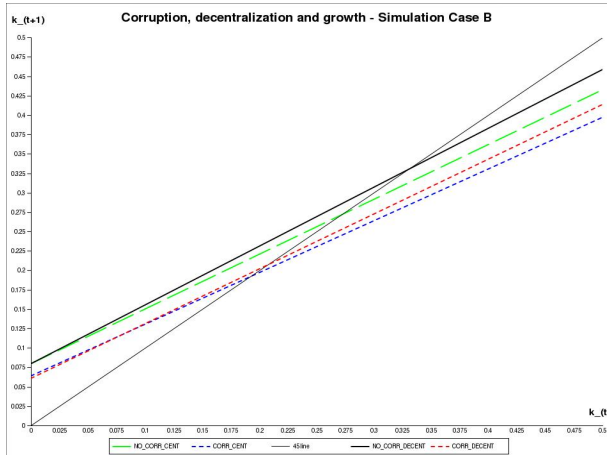
- But,

$$\tilde{f}^d(k_t) \geq \tilde{f}^c(k_t) \quad \text{since} \quad [1 - \theta^d]^\beta < (\sigma^c)^\beta [1 - \theta^c]^\beta$$

Case A



Case B



Implications from the model

- Bureaucratic corruption is **always** bad for development.
Interdependence between corruption and development
- If **corruption is absent, decentralisation is the best choice**
- But, **if corruption is pervasive, decentralisation may be the worst** alternative:
 - The weaker the local institutions
 - The less significant the efficiency gains
- Available **empirical evidence gives mixed** and ambiguous results

Policy considerations

- Often, suggestions for decentralisation reforms **fail to consider the interrelations and potential conflicts** between different forms of decentralisation
- No one-size-fits-all solution. **More decentralisation does not necessarily means better governance and higher development**
- To think: is it possible that **the decentralisation of certain aspects is better matched with the centralisation of others?** [i.e. China vs Russia]