

ACCOUNTABILITY IN COMPLEX PROCUREMENT TENDER

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CORRUPTION IN PROCUREMENT

- × A recent study on procurement on Europe shows that **the public loss in corrupt projects amounts to between 16% and 29% of the project value .**
- × The **direct cost of corruption** is estimated to **1.4 -- 2.2 billion euros**, the **probability** of corruption to as much as **53%** of e.g., (airport) runway construction works.
- × Corruption can occur at each of the five stages of the procurement process including: 1. Needs assessment; **2. Preparation of bidding documents including the technical specification**; 3. Contractor selection; 4. Contract execution; 5. Final accounting and audit.
⇒ We shall be interested in favoritism at stage 2.

× Often when a tender is announced **the winner is already known**: the project has been “**fine-tailored**” to one of the bidder.

× BUT, “fine-tailoring” that is **favoritism at the design stage** has received very **little attention**.

⇒ Objective of the paper: investigate how to combat favoritism by holding the procurement officer accountable

RELATED LITERATURE

Political sciences

- × Persson et al., 1997

Optimal Monitoring with costly verification:

- × Townsend, 1979, and Gale and Hellwig, 1985

Persuasion

- × Glazer and Rubinstein, 2004, 2006,
- × Forges and Koessler 2008

THE CHALLENGE OF ACCOUNTABILITY

- × **The agent's mandate:** translate social preferences into a technical specification.
- × Accountability is about **challenging the public official's decision by requesting a justification** for his action.
- × **BUT** Requesting that the procurement agent justifies every detail of its technical decisions is **not feasible**
- ⇒ **efficient accountability demands targeting justification request.**
- ⇒ **Efficient targeting requires information unknown to the citizens** or its representatives.
- ⇒ **Competitors hold relevant information for targeting.**
- × In this research, we investigate the properties of a simple mechanism of accountability based on alerts from competing firms.

THE MODEL

× Project

- A project is decided by the community to fulfill specific **social economic objectives**;
- The community **lacks both knowledge and expertise** to formulate the corresponding technical specification.
- That task is **delegated to a public officer**.
- **Complexity**: A project is a n-dimensional vector of specification items which may take two values (standard or sophisticated)

× Private contractors

- Several **firms compete** to become the sole contractor
- They have **different comparative advantages (costs)**
- The firms **know each other's** technology profile.

× The procurement process

- A technical specification of the project is publicly **announced** by the agent
- A competitive procedure **awards the project** to the bidder with the **lowest cost offer** (first price auction), the profit if win for firm α

$$\pi_{\alpha}(q) = C(q, \theta_{\beta}) - C(q, \theta_{\alpha})$$

where $C(q, \theta) = c \cdot \#\{i; q_i=1, \theta_i=0\}$

× Corruption

- The PO accepts bribes in exchange for **favors in terms of a distortion of the technical specification** (compared with “best” translation of needs);
- The **firm and the agent** share information and **collude** (before the project spec announcement) **to distort** the true specification. We are NOT interested in the fine details of rent sharing only by the profitability to the coalition.

× Accountability

- The PO can be requested to **justify** his decision with respect to some **spexitems**
- **The PO's failure** to provide justification is **evidence of misconduct**.
- In case of misconduct the PO is **punished**, he is fired and **the auction is re-launched with true spex**.
- **Only 1 out of the n aspects** can be justified (too costly to produce and process evidence).
- **The question is how to select that 1 spexitem?**

MECHANISMS OF ACCOUNTABILITY

Two mechanisms of accountability are investigated

- **Random Challenge Accountability (RCA):** the spexitem is selected at random among the n spextitems;
- **Alert Based Accountability (ABA)** the spexitem is selected by the **competing firm**.
- ✘ The accountability mechanism is announced before the tender and played **before** the firms submit their official offer.

AN ILLUSTRATIVE EXAMPLE

- ✗ Consider a project with n spexitem $q = (q_1, \dots, q_n)$ with prob ε , we have the true $\underline{q}_i = 1$ and with prob. $(1 - \varepsilon)$ $\underline{q}_i = 0$.
- ✗ The firms are characterized by their technological profile θ_a, θ_b vectors of 0 and 1. The cost per component $c = 1$.

Assumption:

θ_a and θ_b **only differ** with respect to a **smaller number** of tech dimensions:

$$\theta_a = (1, 1, 0, \dots)$$

$$\theta_b = (0, 0, 1, \dots) \text{ so } \theta_a^i = \theta_b^i \text{ for } i > 4$$

- ✗ L is the fine (value of the punishment) imposed for misconduct

RANDOM CHALLENGE ACCOUNTABILITY

RESULT 1

With Random Challenge Accountability

- i. For $L > n-1$ there is **no corruption**;
- ii. For $L < n-1$ there is corruption with probability 1 in some states (q);
- iii. The **largest risk** of corruption is in states (q) where the **connected firm would lose (or tie)**.

This result generalizes directly for **arbitrary market structure** (our Theorem 1).

× We learn that

- with RCA **the more complex the project** (large n) **the more difficult to prevent corruption** (larger penalty needed) .
- **The largest risk of corruption is when the firm loses unless it is favored.**

Intuition: 1. the larger the dimensionality the more diluted the risk of detection;

2. the firm trades-off the expected loss (when it could have won with less profit) with the expected gain. At zero expected gain, loss is null.

× RESULT 2

× With Alert Based Accountability

- i. Whenever $L > 1$ or if the contender is dominated **we have no corruption ;**
- ii. When $L < 1$, corruption occurs but **may yield no net gain;**
- iii. Favoritism tends to lead to **more standardized projects.**

- Result 2 *i.* generalizes to arbitrary market structure with $L > s_d^{\max}$ # of spexitems the contender has a comparative advantage over and the threshold is tight. *ii* means that the corruptor plays mixed strategy; *iii* could not be established generally.

× We learn

- Accountability deters corruption with a **small penalty** even when the project are very complex. Market structure is determinant; a dominant firm never engages in corruption.
- ABA ($\varepsilon < 1/2$): corruption when it occurs tends to be **less socio-economically costly**, it occurs with prob. < 1 and tends to favor standardized spexitems.;
- *Intuition*:
 1. The contender uses his information to target the justification request, only spexitems where firms differ are suspected so much smaller L needed to fully deter;
 2. The contender randomizes in eq. and accounts for asymmetry in preferences so he looks more often at suspected upgrades, in response the corrupt firm upgrades much less often so corruption moves toward standardization.

CONCLUDING REMARKS

- × **Accountability is crucial instrument in the fight against corruption.**
- × An important lesson from the political economy literature is that **accountability benefits** from an appropriate structure of check and balances, that is **using and creating conflicts of interest to contain abuses of power.**
- × A major issue in bureaucratic accountability is to **challenge the public official on the “right” aspects of his decision** i.e., that are suspected to have been distorted.
- × Relying on the competing firm’s interest to win **enables a dramatic increase in the efficiency of targeting** the request for justification.

CONCLUDING REMARKS CTD

- × **Anticipating well-targeted challenge on her decision** the public official **refrains** from corruption for relatively low level of punishment and **changes strategically** her patterns of corruption leading to less socially costly forms of favoritism.
- × **A well-designed accountability mechanism has a powerful potential to contain corruption!**
- × **ABA is simple and easy to operate.** It does not rely on unrealistic information assumption from the citizen. It is also **very little costly** as it is played before the submission of the official offers.