The Confidant: A Model of Nepotism

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Introduction and abstract

Corruption is commonly understood as the use of public office for private gains by self-dealing government officials. Another kind of corruption that is almost equally prevalent but never studied is corruption, or more precisely influence of public office for private gains, by confidants of government officials.

We develop a model of strategic information revelation where a government official, after consulting a bureaucrat, has the option to seek additional information from his confidant. The confidant in turn channels information from her clients after collecting bribery from the latter. To focus on corruption by confidant, we assume the official to be a social welfare maximizer.

We show (1) in his effort to maximize social welfare, the government official always seeks additional information from his confidant ex-post consulting the bureaucrat; (2) anticipating this, the bureaucrat may ex ante conceal its information; (3) the resulting information loss can outweigh the information gain from the confidant, leading to efficiency loss; (4) clients bribery exhibits complementarity and hence requires scale: one client bribes when all clients bribe; (5) hence multiple equilibria are possible: no client bribes when expecting others do not bribe and the confidant, as a result, cannot influence the official.

Our analysis offers three important implications: (a) corruption by confidant can be a cultural phenomenon; (b) having benevolent officials alone does not stop corruption; (c) fighting corruption must not be limited to how public office is used, but also how it is influenced.

Baseline Model

Time horizontal line: Infinite periods
Players: Governor (G), Confidant(C), C's Patrons(P)
Motivation, choice set and pay-off structure:

Benevolent G

(1) In each period, an incumbent benevolent G tries to maximize social welfare as possible. G chooses one initiative out of a unit mass that G has no information.

(2) The implemented initiative produces social welfare ω. When G picks the initiative randomly, the welfare property of the random picked initiative is

$$\omega_0 = \begin{cases} +1 & \text{with probability } 1/2 \\ -1 & \text{with probability } 1/2 \end{cases}$$

(3) In each period, G can also hear recommendation from C.

Self-interested C's Patrons

(1) The size of C's P is $n \in [0,1]$
(2) Each P has one initiative in hand and the initiative will deliver financial return f to P.
(3) If P offers a bribe $\beta < f$ to C, then P's initiative has chance to be recommended to G via C.
(4) The initiatives from bribers also constructs C's recommendation set. So C's recommendation set extends as the size of bribers increase.

The initiative selection and the G's continuation

(1) The implemented initiatives impacts incumbent G's continuation likelihood π.
(2) Among all initiatives:

A unique "star" initiative exists: $\pi = \pi^*$ and the welfare property of star initiative is

$$\omega = \begin{cases} +1 & \text{with probability } w^* \\ -1 & \text{with probability } 1 - w^* \end{cases}$$
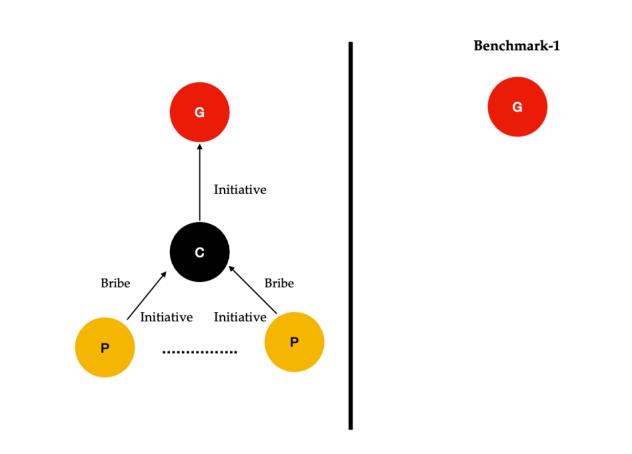
All others $\pi = \pi_0 < \pi^*$

(3) "Star" is unknown to all initially. C can discover π in the recommendation set. C recommends "star" if available among bribers; otherwise recommends a random one.

Self-interested C

(1) Period-t C has specific relationship with period-t G. In period-(t+1), period-t C still has influence on decision-making only when period-t G continues to be in office in period-(t+1), otherwise, period-t C will lose the channel.

(2) C is a self-interest individual who tries to maximize total expected revenue. C and G do not share the same objectives, but their interests are correlated. The correlation increases in the measure of bribers.

Preliminary Analysis

Benchmark 1: G completes the decision-making by himself
Observation: The existence of C could induce G to make better decision compared to Benchmark 1 without C. **The role of C is positive for social welfare.**

Benchmark-1

Figure: Baseline Comparison

Benchmark 2: G completes decision-making under help of the bureaucrat (B)
Additional player in baseline model: Bureaucrat (B)
Motivation, choice set and pay-off structure of B

(1) B is not corrupt, and hence cannot be bribed into recommending an initiative on behalf of any P

(2) In each initiative, B can obtain certain political benefit v as the following

$$v = \begin{cases} +1 & \text{large initiative} \\ v^* < 1 & \text{star initiative} \\ 0. & \text{other initiatives} \end{cases}$$

(3) B can identify the "large" initiative with probability almost one

(4) The welfare property of "large" initiative

$$\omega = \begin{cases} +1 & \text{with probability } w^l \\ -1 & \text{with probability } 1 - w^l \end{cases}$$

where $w^l > w^* > 1/2$ ("large" is more efficient than "star")

(5) Different from C, B is not attached to G. The replacement of G will not affect B's position.

C's motivation to sabotage B's proposal

(1) After large initiative is identified and proposed, C is able to discover, with probability ρ, the underlying state of nature that leads the large initiative to success or failure.

(2) Then C decides whether to send message $m = b$ to G or not at an infinitesimal positive cost.

(3) Common knowledge

$$prob(\omega^* = -1 \mid \omega^l = -1) = \alpha$$

"star" and "large" initiatives are uncorrelated when $\alpha = 1 - w^*$, negatively correlated when $\alpha < 1 - w^*$, positively correlated when $\alpha > 1 - w^*$. All the rest of the initiatives are assumed to be uncorrelated with the large initiative in social welfare.

G's choice

Based on the available information, G will compare B's proposal, C's proposal and the random picked initiative to choose the initiative which can generate the highest social welfare

Main question

Question: Given benchmark 2, what's the influence of C on social welfare? Will C still have positive influence as its role in benchmark 1? What are the new things in the interaction between B and C?

When $\alpha > \hat{\alpha}$ where $\hat{\alpha} = \frac{w^l + w^* - 1}{2w^l - 1}$, C's sabotaging large initiative will also lead to rejection of C's own proposal. B has incentive to withhold information when
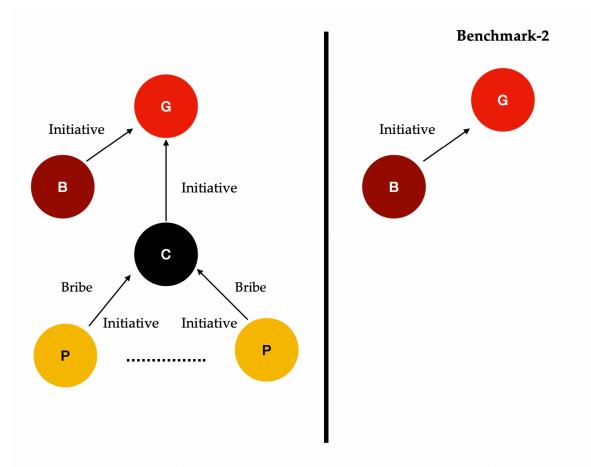

Benchmark-2

Figure: Main Comparison: Introducing the Bureaucrat

Equilibrium analysis

We assume C has commitment power initially, suppose C can commit to disclose information about large initiative if B proposes as the following rule

$$prob(m = b) = \begin{cases} q_1 & \text{if observing negative evidence} \\ q_0 & \text{if not} \end{cases}$$
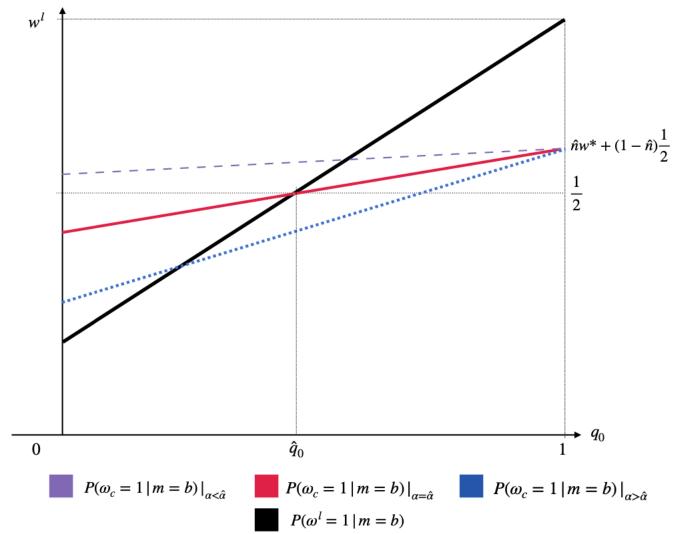
C will choose the optimal disclosure rule (q_0, q_1) to maximize expected pay-off. C has chance to collect bribery only when G rejects B's proposal. So C has incentive to sabotage B's proposal as possible. C's sabotage choice has the following trade-off.

(1) Credibility: G will reject B's proposal after hearing C's message only when C's message is credible enough. The credible sabotage requires C to choose large q_1 and small q_0.

(2) Maximization: C also has incentive to choose large q_0 as possible to maximize the chance to sabotage B's proposal under the credibility constraint.

Lemma 1: $q_1 = 1$ is C's dominant strategy

Given C's disclosure rule $(q_0, 1)$, after hearing message $m = b$, G's posterior belief about C's proposal and B's proposal are characterized in the following figure
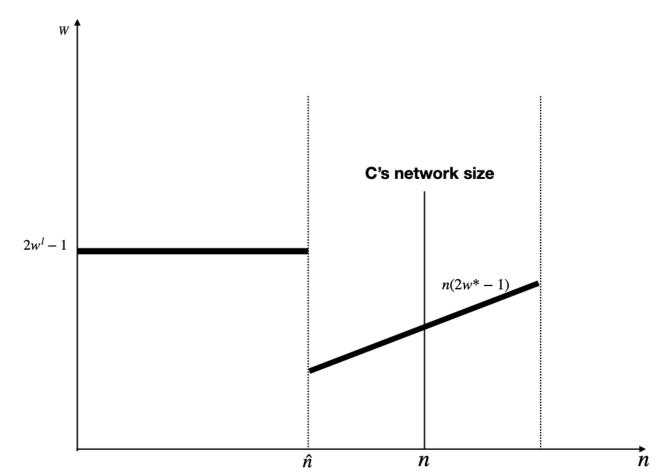

$P(\omega_c = 1 \mid m = b)|_{\alpha<\hat{\alpha}}$ $P(\omega_c = 1 \mid m = b)|_{\alpha=\hat{\alpha}}$ $P(\omega_c = 1 \mid m = b)|_{\alpha>\hat{\alpha}}$
$P(\omega^l = 1 \mid m = b)$

Observation

Observation: The parameters α and n influence G's posterior belief significantly

Influence of α and $\hat{n}$

When $\alpha > \hat{\alpha}$ where $\hat{\alpha} = \frac{w^l + w^* - 1}{2w^l - 1}$, C's sabotaging large initiative will also lead to rejection of C's own proposal. B has incentive to withhold information when

$$n \geq \hat{n} = \frac{1 - \rho(1 - w^l) - q_0^c(1 - \rho(1 - w^l))}{v^*}$$

Welfare result

Proposition 1: When $\alpha > \hat{\alpha}$ and $n > \hat{n}$, the equilibrium welfare could be worse-off compared to the environment where only B proposes without C

(1) Given benchmark 2, when large and star initiatives are strongly positive correlated (α is large enough), existence of C has **negative influence** on social welfare. The information gain from C outweighs information loss as B's information withholding.

(2) The welfare changes is non-monotone on network size.

(3) Multiple equilibrium exists: If all Ps believe G will always ignore C's proposal, no P will pay bribery to C. So the equilibrium without bribery exists under certain belief.

C's network size

Extension

Extension 1: Personnel problem in multiple hierarchies

The baseline model can be extended to a situation with multiple hierarchies. We consider a government with two hierarchies including high and low rank. High rank G_H appoints low rank G_L based on B_H and C_H's personnel proposals. Each G_L candidate has own private confidant has own C_L. All of G_L candidates are different in competence and the attached C_L's network size. The appointed low rank G_L will select and implement initiative based on the information from B_L and C_L's proposals.

In this extension with multiple hierarchies, the analysis follows the similar logic in baseline model. In equilibrium, we can find:

(1) It is possible that the mediocre candidate beats competent candidate in the appointment process of G_L.

(2) The confidant of high rank C_H charges more bribery than the low rank C_L.

(3) The total distortion under this situation with multiple hierarchies can be decomposed into two sources: The personnel appointment distortion as C_H's influence and the initiative selection distortion as C_L's distortion.

Extension 2: A big patron with exclusive deal with C

The baseline model presumes all of C's patrons are equal, a natural extension is to consider a situation where one big P has measure $m < n$ initiatives and all of others are small patrons. The big P can make a contract with C such that C ignores small P's proposal and only follow big P's proposal. In this situation, the existence of big P may induce the reduction of equilibrium social welfare as the exclusive deal with C restricts the C's available information.

Conclusions

(1) Government actions are to advance people's well-being. Therefore, people's voices need to be heard.
(2) **In our model, the benevolent G tap into C as a channel for voice, which could paradoxically hurt people's well-being in the end.**
(3) Disciplining G so that G can commit to institutionalized channels for voice to justify actions.
(4) C's patron network size has a non-monotone influence on social welfare
(5) G's initial good willingness would be the original source of C's corruption
(6) Corruption is a cultural phenomenon which depends on belief structure

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