

My colleague is corrupt: Information disclosure to control corruption

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Abstract. *The paper argues that the co-workers of a corrupt public official are in the best position to provide proof of corruption. It, with the help of a game-theoretic model, discusses the incentive structure that will allow a co-worker to disclose the information on a corrupt public servant. The study argues that incentives for the co-worker may work best if they are based on the cost of disclosing the information and are contingent upon successfully proving corruption.*

Keywords: corruption; co-worker; information disclosure.

JEL Classification: D73.

1. Introduction

The main obstacle in controlling corruption is that the probability of being punished for corruption is often low. This low probability cannot be substituted with heavy punishments. In a democratic country, it is often not possible to impose a very heavy punishment for corruption. Even when such a punishment is possible, its effectiveness is doubtful (Wedeman, 2005; Zhu, 2012).

The studies have suggested increasing competition among public servants (Shleifer and Vishny, 1993), asymmetric punishment (Basu et al., 2016), increasing transparency (Lindstedt and Naurin, 2010; Kolstad and Wiig, 2009) and providing higher incentives to change the cultural equilibrium (Barr and Serra, 2010; Kaushik Basu, 2011) to tackle this problem. Though these policy measures may lower the corruption to some extent, they may not increase the probability of punishing the corrupt. The effect of competition is found to be ambiguous (Bliss and Di Tella, 1997). Asymmetric punishment proposed by Basu et al. (2016) may prove effective only in a small number of cases where the victim may have an incentive to report corruption to the authorities.

There are three major weaknesses of these proposals. First, the bribe that most people pay in their daily lives is much smaller than the cost of approaching higher authorities or court to avoid it. Paying bribe often makes availing public services relatively hassle-free which encourage people to bribe rather than completing the formalities. Second, the bribe payment by businesses in many cases is a repeated game. It considerably increases a business person's cost of reporting it. The cost of reporting is especially high if there is policy uncertainty and the businesses require additional time to adjust to the new law. In such a scenario, the businesses may prefer the public officials to turn a blind eye towards their operations for some time. Third, having a competing department is not possible in several cases due to the nature of service such as policing or the high cost of having multiple providers of public service such as schooling in rural areas. These drawbacks mean that despite the usefulness of these policies, we need an effective strategy to increase the probability of a corrupt public servant being punished. The present paper discusses one such possibility.

The probability of being found guilty of corruption is a function of the information available to the court or authorities. Thus, corruption can be analyzed as an information problem. The people, who often have the maximum information on the corruption, are the co-workers of a corrupt public official. A significant share of public officials does not benefit from the corruption of other public officials. In most of such cases, their interest is not aligned with that of the bribe payers. Therefore, they are less susceptible to policy uncertainties or bribe payer's incentives.

Many of these public officials can provide detailed information on their corrupt colleagues. They are also in the most suitable position to keep a record of the corruption that happened on multiple occasions, especially if the corrupt official has broken a law. Proving corruption becomes much easier when there is proof that the public official has accepted a bribe on multiple instances.

There are many instances when the authors asked a public official about the working of their departments. These public officials could always provide detailed information on the corrupt acts of their colleagues. They could even tell the ways the money is exchanged or how rules are manipulated. In several instances, they even knew the bribe payers.

Despite this, the reporting by a co-worker is rare. Honest public officials find it costly to testify against their colleagues. The corruption inquiries are lengthy and stressful for witnesses. They may face harassment at the hands of other colleagues for providing information. If the corrupt official is a senior, then the informant may find herself at the receiving end. On the other hand, co-workers hardly ever have any incentive to provide this information to the authorities. The governments do provide incentives to whistle-blowers in a few situations such as reporting tax evasion. However, such a policy is largely absent in majority of corruption cases. Hence, co-workers usually prefer not to disclose this information.

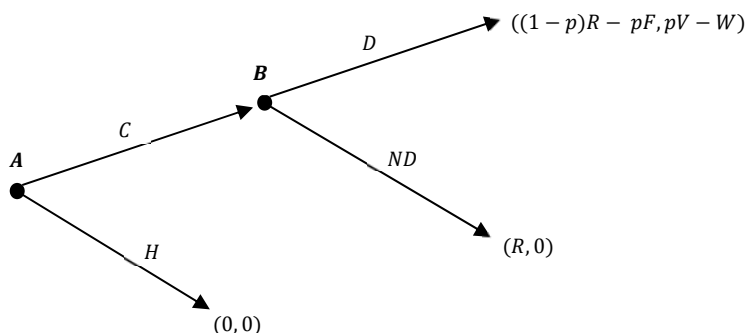
This whole situation can be analyzed as a game. Like the rest of the literature, the paper considers corruption as a public servant using his/her position for personal gains.

The paper is divided into four sections. The next section develops a simple model of corruption and information. It provides the conditions under which a co-worker will disclose the information about corruption of a public servant. The third section discusses the right amount of incentives that should be paid to the informant. The last section concludes the study.

2. The model

Let us assume a game with two players, A & B (Figure 1). Player A is a public official who may use her position for corruption. Player B is A 's co-worker who has information that can be used to prove A 's corruption. We shall assume that B does not benefit from corruption in any way. Both the players are assumed to be risk-neutral.

Figure 1. Corruption game



A plays first. She has two strategies available to her. She can choose corruption (C) or honesty (H). If she chooses H , then the game will end with a payoff vector of $(0, 0)$. In case, A engages in corruption, player B has two choices, either to disclose (D) or not to

disclose (*ND*) the information to the authorities. If *B* chooses *D*, then she must bear a cost W for disclosing the information and may gain V where $W > 0$ and $V \geq 0$. Player *B* may gain if she is competing with the corrupt official for promotion or it could be a reward by the government for disclosing the information. Here, the reward may be given in form of monetary benefits or extra points in promotion which are valued at V by the informant. We shall assume that the realization of V depends on *A* being proved guilty. This assumption ensures that people cannot gain by spreading rumors.

For simplicity, we shall consider that player *B* is the only one who can provide the information. If *B* discloses information, then *A* is found guilty with probability $p > 0$. *A*'s probability of being fined is zero (that is, $p = 0$) if *B* choose *ND*. Let R be *A*'s gains from corruption. If found guilty, *A* will lose R and has to pay a fine F . We shall assume that $R > 0$ and $F > 0$. Thus, *B*'s payoffs of choosing *D* are $pV - W$ and *A* gets payoffs $(1 - p)R - pF$. If *B* chooses *ND*, then she does not have to bear the cost W and *A* will not pay any fine. Thus, the game will end with a payoff vector $(R, 0)$.

Before analyzing the game, let us assume that *A* will choose *H* whenever choosing *C* or *H* give equal payoffs and *B* will choose *D* whenever her payoffs from *D* and *ND* are the same. Analyzing the game using backward induction, player *B* will choose *D* if $pV - W \geq 0$. This condition can be rewritten as $pV \geq W$. If $pV < W$, she will choose *ND*. If *B* chooses *ND*, then *A* will choose *C* as $R > 0$. If *B* chooses *D*, then *A* will choose *C* only if $(1 - p)R - pF > 0$ or $(1 - p)R > pF$. If $(1 - p)R \leq pF$, *A* will choose *H*. Now we shall discuss two simple propositions to understand how incentives to disclose information matter.

Proposition 1. If $V = 0$, then *A* will choose *C*.

Proof: *B* will choose *ND* if $pV < W$. Given $V = 0$, this condition requires $0 < W$. Since $W > 0$ as per the assumption, *B* will choose *ND*. Given that there is a complete information and $R > 0$, *A* will choose *C*. ■

Proposition 2. If $pV \geq W$ and $(1 - p)R \leq pF$, then *A* will choose *H*.

Proof. We know that *B* will choose *D* only if $pV \geq W$. With complete information and *B* choosing *D*, *A* will choose *H* as $(1 - p)R \leq pF$. ■

Proposition 1 represents the present regime that governs almost all cases of corruption. There may be a few situations in which a co-worker may benefit by providing information to the authorities. For example, *B* may benefit from disclosing information if she is competing with *A* for promotion. Even in such cases, the benefits often come too early and the co-worker may not have any incentive to keep cooperating with the authorities till the end. As a result, the probability of a corrupt official getting punished is often low in such cases too.

Proposition 2 provides conditions required for a public official to choose honesty. First, the fine must be set at a level so that expected gains from corruption are less than or equal to the expected fine, that is $(1 - p)R \leq pF$. Note that an increase in p has two effects. It increases the expected fine and lowers the expected gains from corruption. Second, the co-worker who can provide information about the corruption must have large enough benefits

from proving the corruption that her expected benefits must be equal to or higher so than her cost of disclosing information.

3. Finding the right value of V

Determining the right value of V is crucial for an efficient incentive mechanism. A higher value of V means that the condition, $pV \geq W$, can be fulfilled even for a low p . It will lead to a high number of disclosures most of which may have a very low probability of successful prosecution. It may result in the authorities spending too much time on cases with a meager chance of success.

This problem can be solved by deciding the value of p that the authorities find acceptable to start an investigation. Assume that this value is p^* . Let $V = W + Z$ so that it covers the cost of disclosing information. Here, Z is the incentive over and above W for revealing information. It will change B 's payoffs from disclosing the information to $p(W + Z) - W$ or $pZ - (1 - p)W$. Thus, she will choose D if $pZ \geq (1 - p)W$. Since the authorities would want all cases with probability equal to or higher than p^* to be reported, Z can be determined by equating $pZ - (1 - p)W$ to zero at p^* , that is

$$p^*Z - (1 - p^*)W = 0.$$

Solving this problem will give us

$$Z = \frac{(1 - p^*)}{p^*}W = kW \quad (1)$$

where $k = (1 - p^*)/p^*$.

Thus, the informant can be paid $(1 + k)W$ for disclosing the information. Even though each informant will be paid using the same formula, the different probability of success in each case means that each one of them will have different expected returns from disclosing the information. The advantage of paying the informant according to her cost is that condition $pZ \geq (1 - p)W$ will always be fulfilled whenever $p \geq p^*$. To see this, replace Z in $pZ \geq (1 - p)W$ with its value in equation 1. This will give us,

$$p \frac{(1 - p^*)}{p^*}W \geq (1 - p)W \Rightarrow \frac{(1 - p^*)}{p^*}pW \geq W - pW$$

Adding pW both sides, we can write this as

$$\begin{aligned} \frac{(1 - p^*)}{p^*}pW + pW &\geq W \Rightarrow \left[\frac{1 - p^*}{p^*} + 1 \right] pW \geq W \\ \Rightarrow \frac{p}{p^*}W &\geq W \end{aligned} \quad (2)$$

Equation 2 means that the condition $pZ \geq (1 - p)W$ will be met if and only if $p \geq p^*$. Thus, all corruption cases with the probability of successful prosecution equal to or more than p^* shall be reported to the authorities, but not those where probability is less than p^* .

If we consider an informant as a monopolist who is the sole producer of information, this condition is equivalent to first-degree price discrimination.

The model presented in the paper is highly simplified and has ignored many possibilities that may exist in real life. However, it does point out that incentive structure may become an effective tool in corruption control.

4. Conclusion

The co-workers of a corrupt public servant are often in the most suitable position to provide information on corruption. Since disclosing the information is costly, they will disclose the information only if their expected benefits are higher than their cost. The paper suggests that an incentive mechanism based on the cost of disclosing the information may be the most suitable.

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