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On corruption, bribes and the exchange of favors ☆

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ABSTRACT

This paper investigates how the availability of alternative forms of bribe payments, on top of money, may facilitate corruption. There are two bribe payment technologies and a Corruptor and a Receiver must agree on the value and on the technology of the bribe. The paper infers which form of payment can be used by analyzing probabilities of punishment, bargaining powers of agents, and relative efficiency of the two different technologies. By assumption, monetary payments have distinct efficiency than do non-monetary favors. If the Receiver has a sufficiently high utility for payments using a particular technology, then only bribes paid via this technology are feasible. There is also a range of intermediate cases where monetary bribery is used if and only if the relative bargaining power of the Receiver is sufficiently large compared to that of the Corruptor.

1. Introduction

Corruption has been the object of study of many social scientists for some time now.[1] In many countries, monitoring of the properties and assets of politicians and public sector employees has become a standard weapon in the fight against corruption.[2] Sudden displays of wealth among public administrators often trigger investigations. So, bribers try to avoid detection by offering indirect and non-monetary payments or favors; for example, expensive restaurant meals, holidays and travel, health and beauty treatments, jobs for family and friends, tickets for sporting events and concerts, and even sexual favors. The idea behind alternative forms of payment is that it may be considerably challenging to detect and prosecute individuals exchanging favors. It is relatively hard to detect and punish corruption paid with favors because: (i) corrupt agents can claim friendship as the main reason for helping each other; and (ii) the wealth of the receiving agent may not change much afterwards; so wealth monitoring may not help in the detection of corruption paid with favors.

This paper proposes and analyzes a stylized model of corruption in which bribe payments can be made via two different technologies (i.e., forms of payment). To facilitate notation and terminology, the two technologies are labeled as "money" and "sex", but it should be clear that the results apply when we are comparing any two forms of bribe payments. In the model, a Corruptor bribes a Receiver. These two agents must agree on the value of the bribe and on one of the two available forms of payment. The two bribe technologies differ from each other in two respects: in their probabilities of apprehension and in their intrinsic efficiency. Sex payments do not visibly increase consumption. Hence, they are more difficult to detect. On the other hand, a sex bribe generates an inefficiency in the payment process when its value to the Receiver is smaller than its cost to the Corruptor; that is, some value is lost during the transfer.[3]

This paper proves that if the Receiver values sex sufficiently highly, then only these bribes are feasible; that is, individually rational for both agents and Pareto efficient. If there is a sufficiently large inefficiency in sex payments, only bribes paid with money are feasible. There is also a range for the parameters under which both kinds of payment are feasible. Within this range, we relate the payment technology to the bargaining power of the agents. The main result states that the relative bargaining power of the Corruptor is sufficiently small if and only if bribe payments are made via money.[4]

The current framework suggests that policymakers should be aware that bribes can be paid in a number of different and creative ways. More

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[1] Becker and Stigler (1974) and Rose-Ackerman (1975) were the firsts to study corruption with formal theory.

[2] See Colombo (1997) or Fabrizi and Lippert (2012) and the references there.

[3] Waldfogel (1993) discusses the inefficiency of giving gifts.

[4] Sex payments may occur in practice if the Corruptor does not have money at all. This case is beyond the scope of the model.

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importantly, policymakers should be especially attentive to all forms of non-monetary payment in situations where the Corruptor has most of the bargaining power. These cases include situations in which a single person may bribe several public officials. In these cases, monitoring the wealth of public officials is unlikely to deter bribes (it may also be very costly, if there are many officials). This should not be the only anti-corruption strategy.[5]

Cadot (1987) relates the power of corrupt officials to their wages. As documented by McMillan and Zoido (2004), relative bargaining powers are related to the value of the bribe. Colombo 10 and Polinsky (2005) suggest that the main way to detect and punish corruption activities is to monitor the wealth of potential receivers. According to this view, relatively rich politicians or very well-paid public officials would have lower than average propensity to accept bribes because of decreasing marginal utilities. Di Tella and Weinschelbaum (2008) noticed, however, that an agent's income or initial wealth can work as camouflage.[6] It may be very hard to detect a significant change in the wealth of rich agents. Thus, monitoring their wealth may not be very informative. We argue that if society puts all its efforts for fighting corruption into monitoring the wealth of agents, it is possible that there will be only a small decrease in corruption because agents may simply change their payment technologies.

Becker (1968) was the first to use economic analysis to study crime and optimal punishment.[7] There are several papers investigating the link between wages or the wealth of agents and corruption, including Besley and McLaren (1993), Mookherjee and Png (1995), and Van Rijckeghem and Weder (2001).[8] Hunt (2006) investigates why some officials may be more corrupt than others, while Hunt and Laszlo (2005) study theoretically and empirically when and how much money agents pay in bribes. Using data on bribe payments to public officials in Peru and Uganda, Hunt and Laszlo (2005) find that poor individuals pay a greater share of their income in bribes than do the rich, but rich individuals pay bribes more often. Svensson (2003) analyzes the result of bargaining between bribe receivers and payers. Ryvkin and Serra (2010) study corruption in a bargaining context, finding that corruption is lowest when agents are uncertain about each other's moral cost.

Section 2 describes the model. Section 3 investigates which form of payment each agent prefers. Section 4 identifies the feasible bribes. Section 5 links the relative bargaining power of the agents to the payment technology. Section 6 discusses possible policy implications of the model. Appendix A has all proofs and two technical lemmas.

2. The model

This paper models corruption as a static game with two risk neutral, expected utility maximizers. Agent 1 is the Receiver and agent 2 is the Corruptor. In order to have a project approved, the Corruptor wants to bribe agent 1 either with a money transfer or via some kind of non-monetary favor. To simplify the terminology, we will always refer to non-monetary favors as "sex". However, it should be clear that the results apply when we are comparing any two forms of bribe payments. The payment technology is denoted $t \in \{M,S\}$, where M stands for money and S refers to sex.

The game has complete information. Agents can talk to each other freely to determine whether the bribe will be offered and accepted and they may bargain over the technology and amount of payment. We abstract from the bargaining process and concentrate on the outcomes that may emerge in the unrestricted environment. Section 3 defines the criterion for selecting bribes, feasibility.

2.1. Monetary bribes

The outcome of a corruption attempt is a move of Nature; i.e., a random variable over the set {*success*, *failure*}. Let $0 < p_M < 1$ be the probability of apprehending and convicting (*failure*) agent $j \in \{1,2\}$ who accepts or offers a monetary bribe. The success probability is $\overline{p}_M = 1 - p_M$. Let $B^M > 0$ represent the cost of the monetary bribe to agent 2. If the payment is via money, agent 1 receives exactly B^M. For both agents, we normalize the utility of rejecting the bribe to zero. For each agent j, let $P_j > 0$ represent her punishment magnitude; that is, the net decrease in her utility if she is caught accepting or offering a bribe. Assume that there are no moral costs associated with monetary payments. Let $Q > 0$ be the net increment in the utility of the Corruptor when her project is approved. The Corruptor incurs the payment B^M regardless of the outcome of the process. The expected utilities of the agents when a monetary bribe is accepted are denoted U_j^M, $j \in \{1,2\}$. Let $0 \le \psi_M \le 1$ be the proportion of the bribe that the Receiver enjoys when she is caught. Then:[9]

$$U_1^M = -p_M P_1 + \overline{p}_M B^M + \psi_M p_M B^M.$$

when $\psi_M = 0$, then $U_1^M = -p_M P_1 + \overline{p}_M B^M$ and the Receiver does not enjoy any part of the bribe in case of failure. On the other extreme, when $\psi_M = 1$, then $U_1^M = -p_M P_1 + B^M$ and the Receiver obtains the full benefit of the bribe even when she is caught. It turns out that all qualitative results in this paper do not depend on ψ_M. For simplicity, from now on we assume that $\psi_M = 0$. Remark 2 at the end of the Appendix A brings all equations in the other extreme case ($\psi_M = 1$). From now on, we always assume that the expected utilities of the agents when a monetary bribe is accepted are:

$$U_1^M = -p_M P_1 + \overline{p}_M B^M,$$
$$U_2^M = -p_M P_2 + \overline{p}_M Q - B^M.$$

The Receiver accepts a monetary bribe if and only if $U_1^M \ge 0$; which means that:

$$B^M \ge \frac{p_M P_1}{\overline{p}_M}. \qquad (\mathrm{IR}_1^M)$$

[5] If agents can use other relatively efficient and safe non-monetary forms of payment, then wealth monitoring policies alone may end up making society worse-off because they are costly to implement and they make those who are directly responsible for monitoring others vulnerable to corruption. See Di Tella and Weinschelbaum (2008). In addition, Polinsky (2006) and Polinsky and Shavell (2001) point out the difficulty of observing the wealth of potential offenders.

[6] The effect of agents' income on corruption is discussed in Becker and Stigler (1974), Besley and McLaren (1993), and Mookherjee and Png (1995).

[7] Shleifer and Vishny (1993) argue that corruption potential is influenced by political and institutional design and that corruption is more distorting and more costly than taxation, its "sister activity". Barreto (2000), Barreto and Alm (2003), Ehrlich and Lui (1999), and Mauro (1995) study the link between growth and corruption. Wei (2000) investigates the role of local corruption on international capital flows, particularly in China. Hauk and Saez-Marti (2002) suggest that countries implement educational programs to fight corruption. Bardhan (1997) surveys corruption and development. Vaidya (2005) investigates government's incentives to engage in corruption in the presence of independent and strategic media agents. Ahlin and Bose (2007) and the references there focus on corruption and bureaucratic delay. Menezes and Monteiro (2006) analyze corruption in auctions. The classic work of Di Tella and Ades (1999) and Rose-Ackerman (1978) investigates the links between corruption and competition. Becker and Stigler (1974), Mookherjee and Png (1995) and Polinsky and Shavell (2001) study corruption in law enforcement activities. Andvig and Moene (1990) relate the frequency of corruption activities and their pro.tability. In a dynamic model, Lui (1986) explains that it may be harder to detect corruption if it becomes more frequent.

[8] Becker and Stigler (1974) and Di Tella and Weinschelbaum (2008) are also relevant in this regard.

[9] The qualitative conclusions of the model are identical if the corruptor benefits in part from the corruption even when the bribe is detected. In such case, $U_2^M = -p_M P_2 + \overline{p}_M Q + \eta p_M Q - B^M$, for some constant $0 \le \eta \le 1$.