

Lobbying and corruption as substitute forms of rent-seeking

Klaus Beckmann and Carsten Gerrits, Hamburg ¹

November 4, 2008

¹Professor of public economics and research fellow, respectively, at Helmut Schmidt Universität (UniBw) Hamburg. <mailto:klaus.beckmann@hsu-hh.de>.
Web: <http://beckmann.hsu-hh.de/>. We are indebted to Susan Gattke, Andrea Schneider and participants of the EPCS and IIPF conferences for helpful comments on an earlier draft. The responsibility for all remaining errors and omissions remains our own.

Abstract

Economists dislike corruption. On the other hand, they prefer fines over imprisonment, other things being equal, as the former are essentially a transfer, while the latter constitutes a waste of resources. We apply the same distinction to corruption (modelled as a transfer) and lobbying (a DUP activity) as two substitute ways to influence public decision-makers. Legal lobbying, such as campaign contributions, by diverse interests also tend to cancel out in their effect on decisions, while corruption can usefully be seen as an auction. We discuss various forms corruption and modelling strategies, working the above argument out formally. In so doing, we also revisit the useful analogy between corruption and auctions. It turns out that the standard approach to modelling corruption can be inappropriate in a number of cases.

JEL codes: D72, D73, H83.

1 Introduction

Assume for the nonce that you were forced to play the devil’s advocate with respect to corruption, viz. that you must present an argument showing that corruption is not as bad a thing as commonly thought. There are essentially two ways to go about this task. The first way is to take recourse to what is commonly known as the “greasing the wheels” [24] or “efficient corruption” [1] type of argument. Here, the main idea is that in the presence of really bad institutions, corruption may actually foster efficiency by allowing firms and individuals to bypass red tape that is detrimental from a social point of view. This argument had its heyday in the 1960s and 1970s and appears to be almost discredited by now, although there is some fresh evidence in favour of it [25].

We intend to explore the second way, which is to maintain that although corruption may be bad,¹ the alternative can be worse. Specifically, this argument revolves around corruption and lobbying being substitute ways for private individuals to curry favours from public officials. But while bribery basically involves a transfer from the private citizen seeking favouritism (called the “client”) to her sponsor (“agent”), lobbying is essentially a wasteful directly unproductive (DUP) activity, as amply demonstrated in the rent-seeking literature [32, 6]. For example, Coate [10] shows that it may be pareto-superior for all interest groups to cut back on lobbying effort, essentially because such efforts cancel out in a rent-seeking model, but does not contrast this with pure transfers (bribes) as a way to influence officeholders. Consequently, whether politically correct or not, it is theoretically possible that fighting corruption may crowd in lobbying, reducing social welfare relative to the corrupt status quo.

This is not a new idea either. A fair number of papers have considered corruption and lobbying as alternative modes of rent-seeking behaviour [19],² and have generally been quite critical of the comparatively benign view on corruption expounded above and found, for example, in Besley [6, 111]. This literature uses either one of two basic modelling approaches: some papers

¹Note that there appears to have been a gradual but substantial change in both formal and informal institutions as well as in the public conception (in Western countries) regarding corruption in the early years of the present decade. This development has cast a shade on a fair number of formerly innocuous customs such as inviting business contacts to lunch, and accepting like invitations. For example, professors in Germany are now formally in violation of the penal code if they accept “favours” on behalf of third parties, although this activity (bringing in research grants) forms part of their official duties. (In no way are they allowed to accept hospitalities of any kind while wooing private donors, whilst on the other hand lacking the funds, either private or official, to extend similar courtesies to their partners.)

²For general surveys of the economic literature on corruption, see Pranab Bardhan [2] and Toke S. Aidt [1]. Early evidence on the detrimental effects of corruption on growth is provided in Mauro [23], while Lambsdorff [20] provides a recent overview of the empirical side. But see Méon and Weill [25], cited above.

– e.g. Lambsdorff [19] – employ the standard rent-seeking model, where a contest success function [17] relates the probability of an agent’s receiving a prize (or, alternatively, the share of the prize received) to everybody’s rent-seeking efforts. Beginning with the seminal paper by Grossman and Helpman [13], another way of modelling lobbying and corruption has been to use *auction* theory.³

But both strands of the literature resemble each other in that the *same model is used* to depict *both rent-seeking and lobbying activities*. To see how pervasively this is taken for granted in scholarly discourse, consider the following two quotations, the first taken from a recent empirical contribution to the corruption literature, the second culled from a new monograph on auction theory as applied to eBay:

“In many models, e.g. [14], lobbying is modeled as monetary transfers from lobbyists to politicians and these transfers could equally be interpreted as campaign contributions or bribes.” [9]

“Candidates running for political office must decide how much to spend on their campaigns. We can consider this an auction, the single item being the political office, and with one winner. However, the winner [sic!] does not get a refund after the election; everyone who bids must pay. This kind of auction is called an all-pay auction. The same kind of auction models lobbying activity [18], and also bribery, for that matter.” [31]

We do not believe this *legerdemain* to be warranted. By underspecifying the theoretical model, economic theory is in danger of glossing over systematic differences between lobbying and corruption, and may therefore fail to appraise the benign view of corruption adequately. (In fact, we will go on to argue in section 2 that it is a mistake not to distinguish formally between different forms of *corruption*.) The present paper, therefore, explores alternative formal models of corruption and demonstrates that, in a combination model with both lobbying and corruption, making corruption more difficult can lower welfare. This result should not be taken to imply more

³See also [30] and [3]. Grossman and Helpman [13] first developed the idea that contributions to political causes can be conceptualised as *menu auctions*, in which interest groups (as auctioneers) specify a mapping of policies into campaign contributions, from which politicians pick their favoured solution while taking into account electoral restrictions. As contributions enter politicians’ utilities directly, however, we can read G-H’s model as a general account of political influence that includes bribes. On the other hand, in G-H lobbies are unrestricted in their specification of contribution schedules (including zero payments) and do in fact reduce their spending at the margin if a less agreeable policy is chosen (p. 840). The model therefore lacks the “loser has to pay” feature that, in our view, sets apart lobbying from some forms of corruption. Note that in our models, as in more recent studies, the politicians will serve as auctioneers.

than a theoretical possibility at this point, however. Our main argument is a methodological one, and we therefore provide an extended critique of the limits of this result.

The analysis begins with a distinction between various forms of corruption and a discussion why they require different formal models, and are likely to differ in the harm caused (section 1). To drive home our main point, we then focus on the easiest case – relieving corruption and lobbying for a fixed resource –, which also happens to be most agreeable to our argument, and compare the two modelling approaches (section 3). Section 4 then combines elements of the two to derive our main result. Section 5 concludes.

2 Forms and objects of corruption

Corruption is often seen as illicit privatisation of public functions [19], although clients can also bribe private sector agents to avail themselves of favourable decisions (such as being awarded a contract). In all cases, however there is a transfer of resources from an outsider, whom we shall call the client, to an agent involved in a principal-agent relationship, and the agent changes his behaviour with a view to obtaining the transfer in such a way that the principal’s interests are adversely affected. The existence of the transfer is sometimes used as the dividing line between corruption and lobbying – both being forms of rent-seeking –, such that if economic resources change hands, we have corruption, whilst if no such transfer takes place, we have a case of lobbying.

We think that this definition is deficient mainly for two reasons: First, it leaves a broad “grey” area of vagueness, such as cases where a transfer is made to third parties⁴ or where resources are expended to provide valuable information – a textbook example of interest group activity. Second, it is not based on the *incentives* that the parties involved face. We therefore propose to adapt Cowell’s [11] definition of tax evasion (as opposed to tax avoidance) for our definition of corruption (as opposed to lobbying):⁵ The transfer of resources, broadly construed, constitutes an act of corruption *if and only if at least one of the individuals concerned expects to be criminally prosecuted and punished for it with a positive probability*. As in Cowell [11], this definition is not legalistic at all: The wording of the criminal code does not matter, only the individuals’ constraints do.

But even with the players and defining characteristics in place, there still remain a large number of diverse phenomena that together make up corrup-

⁴Article 331 of the German penal code explicitly prohibits this as an instance of corruption.

⁵Generally speaking, the theory of tax evasion is much better developed than the economics of corruption, and we feel that a fair number of formal analogies are still left to be fruitfully exploited. A second example will follow in a few paragraphs, when we discuss extortionary and relieving types of corruption.

Table 1: Forms and objects of corruption

	Time	Rationing	Regulation	Crime
Investive c.	building-up of (social) relationships without a direct <i>quid pro quo</i>			
Relieving c.	“Speed money”	Castles in Spain	Earthquakes in Turkey	
Extortionary c.	Intentional tardiness			Hindriks and Keen (1999)

tion. In table 1 below, we try to impose some structure by distinguishing *forms* (in rows) and *objects* (in columns) of corruption.

Investive corruption occurs when the client desires no specific *quid pro quo* at the time of making the present to the agent, but rather wants to ingratiate herself with her and establish general good relations.⁶ This build-up of social capital may be mutual, be poised near or on a thin dividing line between the legal and the illegal, and even be mandated by customs and informal norms. It is probably better modelled as an investment rather than as a rent-seeking activity.

We define corruption to be of the “relieving” kind if the client’s utility is increased relative to the situation where the agent applies the law (or her contract with the principal) correctly, while “extortionary” corruption obtains if the relationship with the agent is to the client’s disadvantage [26]. The classical example for the latter is a tax bureaucrat who demands his cut, threatening to classify the client’s tax return as fraudulent and prosecute unless a bribe is paid [16]. The important modelling difference between the two is that in the case of extortionary corruption, the client has at least a constitutional interest in fighting and exposing the agent’s action. (She may, however, lack an action interest in doing so because of a public goods problem, as the costs of facing the agent are likely to be private, while the benefits accrue to similarly situated third parties (other clients) as well.) For this reason, the rule-maker, finding a natural ally in the client, faces a much easier job in the case of extortionary corruption.⁷ As a further

⁶We are indebted to Tim Barmby and Frans van Winden for independently bringing this category to our attention at the annual meetings of the Scottish Economic Society and the European Public Choice Society, respectively.

⁷A similar argument arises in the theory of tax evasion: it is noted that the evasion of indirect taxes is, other things being equal, easier to police than evasion of direct taxes as it presupposes the collaboration of *two* agents. See [4].

corollary, extortionary corruption is more likely to be associated with corrupt hierarchies, i.e. games in which agents conspire with their superiors to elicit bribes. In the case of relieving corruption, on the other hand, we would expect to see conspiracies between the agent and the client exploiting their joint informational advantage over the principal, or the agent's superiors. For policy, this may be a much harder nut to crack.

The columns in table 1 contain a classification of favours to be obtained by bribery, i.e. the *objects* of corruption, and have been arranged (from left to right) in order of increasing severity. The first column refers to the typical "speed money" case, where clients bribe agents to obtain faster service. The agent's decision itself, however, remains the same as under lawful (correct) administration. If no one's waiting time were lengthened on account of the bribe, because the agent just works harder (than specified in his contract with the principal), it is hard to argue that this does *not* constitute a Pareto improvement. The deal amounts to a private arrangement to pay for overtime, which improves the agent's incentives, expands the client's opportunity set, and leaves the principal as well off as before. The snag is that speed money can induce agents to work slower in the status quo in order to increase people's willingness to pay for speedy treatment, moving us down a row into extortionary corruption. Or agents re-allocate their time budgets to the detriment of non-payers, moving us right to the case of corruption aimed at rationing decisions.

Such "rationing" refers to the case where a limited number of licenses or permits are allocated by the agent, whilst "regulation" labels the case where the agent supervises the quality of some productive activity on the part of the client. The main difference here concerns the welfare losses that arise as a consequence of corruption: in the rationing case, we are essentially dealing with a typical Harberger triangle arising as a monopolistic entity (the agent) reduces quantity (the number of licenses) below the socially optimal level. There can also be technological externalities that depend on the *quantity* of the good produced – in fact, such externalities may be the reason for the existence of a licensing scheme in the first place –, in which case corruption turns out to be less bad than it would be otherwise as the reduction in quantity it brings about works "in the right direction" if one starts from the *laissez faire* solution.⁸ All the same, the efficient output (number of licenses) will be reached only by chance.

In the "regulation" case, on the other hand, negative external effects depend not on the quantity of the good in question, but on its *quality*. Here the agent's task is to supervise the client's production process, and ensure that the product meets criteria specified in the contract with the principal. It

⁸In fact, a corrupt régime can be welfare superior to prohibition. This would provide an instance of the well-known "greasing the wheels" type of argument [24, 25], according to which corruption can be welfare-enhancing (or growth-enhancing) in the presence of disfunctional institutions.

is obvious that we need asymmetric information to coincide with incomplete legal enforcement *ex post* in this case if the client finds it in her interest to bribe the agent – otherwise, the principal would just sue the client for her loss, or in the case of the third party being affected, they would reveal the issue to the principal. These conditions appear to hold in a wide variety of cases, though, the most obvious being limits to the resources that courts can recover from either the client or the agent.

To fix ideas, think about building in the Mediterranean. Spanish resorts are famous for the number of “black” buildings being erected, often in defiance of regulations seeking to cut back on development or to confine it to certain areas. This “Costa Brava” kind of problem is an instance of the rationing type of corruption (in those cases where bribes were used to obtain, or to get along without, building permits). On the other hand, earthquakes in Turkey often caused new buildings to collapse with greater probability than older ones, an observation that has been attributed to corrupt officials tolerating building projects that are in violation of mandatory safety requirements.⁹ This exemplifies the regulation type of corruption.

Based on the numerous sub-types of corruption identified above, a single modelling approach does not appear to be the appropriate way to address all of the relevant phenomena, let alone the related problem of lobbying. The crucial question in selecting the “right” model to use is whether payment by clients leads to a return favour, or *quid pro quo*. In other words: do losers pay?

It is clear that they do in the standard rent-seeking model (see also section 3 below). In the case of corruption, we again need to distinguish between various possibilities:

1. If bribes are paid as a form of *investment* in social capital, there is by definition no direct *quid pro quo*. Rather, payments buy access to the corridors of Leviathan, perhaps for later lobbying or other forms of corruption. While “losers” pay in this sort of game, note that the usual rent-seeking model relating payments to the probability of obtaining a prize also does not fit this case very well.
2. There exists an important number of cases where the agent takes the money, but does not deliver the (promised) favour in exchange [21]. As the client is worse off than he would be had the law been administered correctly, this is technically a case of *extortionary* corruption. The typical conflict between the client and the agent is also present here. In consequence, the agent needs to secure her position, for example by “teaming up” with her superior, and there is an element of instability.¹⁰

⁹We owe this example to a presentation by Ingo Pies.

¹⁰Incidentally, this instability is likely to cause an above average percentage of bribes with disappointed clients to be found out. As Lord Peter Wimsey says, the murders that

Table 2: Lobbying vs. relieving corruption

	Corruption	Lobbying
Loser pays?	no	yes
Contributions cancel out?	no	yes
Free to use?	yes (but transfer costs)	no

Successful, long-term corrupt relationships, be it in China [22] or in the Cologne building industry [33], seem to suppose that promises are not broken as a rule.

3. This leads us to consider *relieving* corruption proper – relieving *ex post* – as the case where the winning “bidder” actually receives the prize, while “losers” do not pay. This is evidently the case Besley [6] has in mind when comparing lobbying and corruption.

There are other differences as well. Other things being equal, recipients of bribes and other transfers prefer cash to transfers in kind – for example, a politician is better off receiving a cash bribe, which he can use for own consumption (while exercising some caution to avoid excessively conspicuous consumption and the suspicions that this might cause), than getting campaign contributions. Table ?? below sums up the differences between lobbying and the version of corruption that we are about to explore formally in the next two sections.

3 Modelling alternatives

3.1 The standard rent-seeking model

Consider a small economy consisting of two farmer-taxpayers A and B as well as a government official C. All three consume a good produced using a linear labour-based technology and have quasilinear utility

$$u = c + \ln(1 - l)$$

where l is labour input and the individuals’ respective time budgets are normalised to unity.

There is also a single indivisible resource – a cow, say – that can be allocated to any one farmer and yields consumption value R in terms of the numéraire good.

one knows about are the failures. Due to this sample selection problem, case studies would make such instabilities appear more prevalent than they actually are.

Suppose A has the cow in the status quo. (He does not “own” it in the usual sense as there are no formal property rights enforced by a third party.) B may now expend resources b on taking the cow away from A, while the latter may spend a on defensive activities. We assume that the probability of A’s keeping the cow is

$$p = \frac{a}{a + b} \quad (1)$$

while predator B succeeds with probability $(1 - p)$. Equation (1) is a very simple *contest success function* [17] derived from the basic rent-seeking approach, for which we additionally assume constant returns to scale of attack/defence activity. The analogy between rent-seeking or lobbying effort on the one hand and attack and defence activities in this model on the other is well understood in the literature.¹¹ All actors are risk neutral.

Writing the Lagrangian for A’s problem¹²

$$\mathcal{L} = c^A + \ln(1 - l^A) - \lambda^A \left(c^A + a - wl^A - \frac{a}{a + b}R \right)$$

we use the first-order conditions¹³

$$w\lambda = \frac{1}{1 - l}$$

$$\frac{bR}{(a + b)^2} = 1$$

$$c^A + a = wl^A + \frac{a}{a + b}R$$

$$\lambda = 1$$

to obtain a closed-form solution for the optimal choices l^{A*} , c^{A*} and a^* in a simultaneous move Nash equilibrium. Likewise, assuming A’s strategy to be given, B maximises an analogous programme. With *ex ante* symmetry – $w^A = w^B = w$ and no further endowments –, we will have

$$a^* = \frac{\sqrt{b}}{\sqrt{R} - \sqrt{b}} \wedge b^* = \frac{\sqrt{a}}{\sqrt{R} - \sqrt{a}} \Rightarrow a^* = b^* = \frac{1}{4}R \quad (2)$$

¹¹Usher [34] provides an extended discussion.

¹²Superscripted indices denote individuals throughout.

¹³Strictly speaking, at this point in our discussion we do not need labour supply l as a decision variable and could make do with just one FOC. A leisure-consumption tradeoff needs to be introduced later, though, when we require some form of distortionary taxation in our model. We prefer not to use Occam’s razor just now in order to couch the presentation in terms of a single basic model.

Half the cow's value is expended in unproductive predatory and defence activities that benefit neither A, nor B, nor the bystander, C. In fact, A's and B's efforts to protect, and to obtain, the cow just cancel out, and the *ex ante* probability of any one of them obtaining it is just one half.

The simple structure of this example allows us to state what utilitarian social welfare would be in this "Hobbesian jungle";¹⁴ straightforward computations yield

$$W^1 = \sum_{i \in \{A, B, C\}} u^i = 3 \left(w - 1 + \ln\left(\frac{1}{w}\right) \right) + \frac{1}{2}R \quad (3)$$

Now suppose that A and B suddenly realise that C has a gun and can handle it quite adroitly. Although C, not being a farmer, cannot convert the cow into consumption herself, A and B may call on her to "mediate" the conflict and enforce an allocation of the cow to either A or B. (For simplicity, we assume this enforcement to be costless.)

Assume first that C collects bribes from both farmers and randomly allocates her services according to the contest success function (1). In this case, the individuals' maximisation programmes obviously are the same as in the previous sub-section, the only difference being that payments to C are no longer directly unproductive activities and social waste, but rather transfers. Utilitarian social welfare

$$W^2 = \sum_{i \in \{A, B, C\}} u^i = 3 \left(w - 1 + \ln\left(\frac{1}{w}\right) \right) + R \quad (4)$$

therefore increases on account of force being centralised in the hands of C.¹⁵ This is something economists have known since Thomas Hobbes, but that has not been linked to the theory of corruption as this phenomenon has largely been analysed separately from alternative ways of influencing politics. This is true even of contributions recognising that bribes are essentially transfers (e.g., [6]).

3.2 Bribery as an auction

While the above story brings out the gist of our argument rather nicely, it is lacking in several ways. For one thing, using a contest success function such as (1) to describe how bribes translate into support by corrupt officials feels wrong. Typically, the bureaucrat would secretly solicit offers from the

¹⁴Note that while C is out of the predator-prey game, she still supplies labour optimally. Owing to our quasilinearity assumption and the concomitant absence of income effects, she will work just the same hours as the others at the same wage rate.

¹⁵If C were to quit her previous job and specialise on enforcement activities, her lost income would have to count as an opportunity cost of the régime change. This is clearly a minor point, though.

parties concerned, with the party making the higher offer getting the cow in exchange and the loser not paying anything.

In effect, the procedure outlined above is just a very simple *first-price sealed-bid auction* with two bidders and no individual uncertainty concerning valuations. Therefore, we can immediately apply basic results from auction theory to derive equilibria for this variant of our Hobbesian model.

As long as individual valuations are common knowledge, it is trivial to show that the bureaucrat, C, will rationally appropriate the entire value of the cow R . After all, she can just extend a take-it-or-leave-it offer of her services at that price, closing the deal with whoever comes first. Alternatively, if there has to be bidding, it is obvious that

1. it is weakly dominant for any bidder i to reduce her bid ρ if $\rho^i > R$ or if $\rho^i > \rho^j$,
2. it is also weakly dominant for agent i to increase her bid if $\rho^i \leq \rho^j < R$,

which leads to a symmetric equilibrium with $\rho^A = \rho^B = R$.

If individual valuations are not common knowledge, however, C does not fare as well. This is because A and B will shade their bids. In fact, our model then becomes a textbook example of a first-price sealed-bid auction [7, p. 602], which we will reproduce here, adapting notation and argument as appropriate.

C is the auctioneer, farmers A and B are the bidders. Let A and B have valuations R^A, R^B for the cow that are independently drawn from a uniformly distributed random variable \tilde{R} with domain $(0, \bar{R})$. Denote the bids as ρ .

What we are trying to determine is an *equilibrium bid function* $\rho(R^i)$ relating an agent's bid to her valuation in such a way that playing according to $\rho(\bullet)$ is a best reply to itself. Suppose B does indeed play $\rho(R^B)$. In that case, A's expected gain from bidding is

$$(R^A - \rho^A)p(\rho^A, R^B)$$

where $p(\rho^A, R^B) = \text{prob}(\rho^A > \rho(R^B))$. Note that in the special case of a uniform distribution of valuations, $p(\bullet)$ is just the inverse to $\rho(\bullet)$. The first-order condition for A's problem reads

$$-p + (R^A - \rho^A) \frac{\partial p}{\partial \rho^A} = 0$$

We now use the fact, already mentioned above, that in our special case $p(\rho^A, R^B) = \rho^{-1}\left(\frac{\rho^A}{R}\right)$. Also, in an equilibrium we must have $\rho^A = \rho(R^A)$, which in turn implies $R^A = \rho^{-1}\left(\frac{\rho^A}{R}\right)$. Re-writing the FOC and re-arranging, we obtain

$$R^A \frac{d\rho^A}{dR^A} = R^A - \rho^A \quad (5)$$

a first-order differential equation, whose solutions are

$$\rho(R) = \frac{R}{2} + \frac{c}{R}$$

(We have dropped the superscripts denoting individuals as we are considering symmetric equilibria exclusively.) Letting the constant of integration c be zero, we find that both agents will bid half their valuation in equilibrium. In other words, the bureaucrat will receive half the cow, and utilitarian social welfare is again given by (4).¹⁶

4 Welfare effects of increased opportunities for corruption: a combination model

One problem often associated with corruption is that corrupt politicians and bureaucrats may lack the ability credibly to commit to their promises. While we do not consider this argument to be conclusive in our context as the same problem is likely to apply to lobbying,¹⁷ it is straightforward to incorporate in our simple model.

Assume that bureaucrat C will stick to her promise with an exogenous probability ϕ and that decisions on the ρ s (“bids” or offered bribes), a and b (resources spent on attack and defence) must be taken *ex ante*. In the resulting game, Nature first selects a type of bureaucrat that cannot be observed by A and B, players A and B move next, and C moves last. If the bureaucrat is corruptible but committed, the game is played according to the rules first discussed in sub-section 3.2, where we assume reservation prices to be common knowledge. Otherwise the Hobbesian jungle from sub-section ?? obtains. All random variables are assumed to be pairwise independent, and we make use of our specification of utility in that we separate labour supply from predation and corruption (due to the absence of income effects).

Taking the expectation for individual a ’s payoff \tilde{v}^a in the various possible states, we find

¹⁶We owe this to our rather special simplifying assumption concerning the distribution of valuations, though. In no way can this be construed into an argument that the simple first-price sealed-bid auction and a rent-seeking equilibrium with contest success function (1) are equivalent.

¹⁷In fact, the very nature of the political process in democracies dilutes responsibility, and thus failure to deliver on promises is hard to attribute to the politician one dealt with in many cases.

$$E\tilde{v}^i = \begin{cases} \left(\phi + (1-\phi)\frac{a}{a+b}\right)R^A - a - \rho^A & \text{for } \rho^A > \rho^B \\ (1-\phi)\frac{a}{a+b}R^A - a & \text{for } \rho^A < \rho^B \\ \left(\frac{1}{2}\phi + (1-\phi)\frac{a}{a+b}\right)R^A - a - \frac{1}{2}\rho^A & \text{for } \rho^A = \rho^B \end{cases} \quad (6)$$

and likewise for the second farmer, B. In order to find a Nash equilibrium, observe that (calling the individuals i and j for generality)

1. As before, it is obviously never a best response for i to play $\rho^i > \rho^j$ – note that $\frac{\partial E\tilde{v}^i}{\partial \rho^i} |_{\rho^i > \rho^j} = -1$.
2. If, on the other hand, $\rho^i < \rho^j$, increasing i 's bid by a small amount will produce no effect – $\frac{\partial E\tilde{v}^i}{\partial \rho^i} |_{\rho^i < \rho^j} = 0$ –, whilst a jump in ρ^i might prove advantageous if it led to i 's winning the auction and $\phi R^i - \rho^i > 0$.
3. In a *symmetric* equilibrium where $a = b = a^*$ and $\rho^A = \rho^B = \rho^*$, the following three conditions must hold:
 - (a) $E\tilde{v} |_{a^*, \rho^*} \geq E\tilde{v} |_{a^*, \rho^* + \epsilon}$
 - (b) $E\tilde{v} |_{a^*, \rho^*} \geq E\tilde{v} |_{a^*, \rho^* - \epsilon}$
 - (c) $\frac{\partial E\tilde{v}}{\partial a^*} |_{\rho^*} = 0$

Building on these observations and using (6), we find that in a symmetric Nash equilibrium

$$\rho^* = \phi R \quad (7)$$

and

$$a^* = \frac{1-\phi}{4}R \quad (8)$$

This is an obvious extension of the modelets in the previous sub-sections, as $\phi \rightarrow 0$ moves us towards the original predation-defence (“rent-seeking”) equilibrium, while $\phi \rightarrow 1$ takes us back to pure bribery with common knowledge. Bureaucrat C cashes in a certain $\rho^* = \phi R$ net of labour income, even though she reneges on her promises a $(1-\phi)$ th of the time, while A and B net an expected $\frac{1-\phi}{4}R$ each. (They still spend half the expected value of the cow available for grabs on attack and defence.)

As a corollary, *utilitarian social welfare is strictly increasing in ϕ* as the bureaucrat gains twice what the farmers lose.¹⁸ Formally, we have

¹⁸This would hold only in money terms if we had not excluded income effects by assuming quasilinear utility. The rich C might have a much lower marginal utility of money than poor A and B, such that even the utilitarian sum need not increase in ϕ , let alone individualistic social welfare under other, inequality averse, formulations of the social wel-

$$W^3 = \sum_{i \in \{A, B, C\}} u^i = 3 \left(w - 1 + \ln\left(\frac{1}{w}\right) \right) + \frac{1 + \phi}{2} R \quad (9)$$

Although the stark framework that we have used is admittedly an extremely simple one, we believe this observation to be important. For we can conceive of the fight against corruption as an *effort to lower ϕ* by preventing access to legal commitment mechanisms and making signalling more expensive for potential recipients of bribes. Our analysis draws attention to the possibility that these policies can divert efforts to influence politics and bureaucracy into legal, but socially wasteful, channels rather than – or in addition to – leading to an overall reduction of “influence”, with possibly adverse consequences. At first blush, our model would suggest the opposite course of action: in a very Hobbesian vein, it would argue for a complete escape from the Hobbesian jungle of private predation and defence, even to the point of letting Leviathan pocket the proceeds.

The above argument is certainly not sufficient to show that corruption is a “good thing”. All the same, by drawing attention to the role of *substitutes for corruption*, it brings into sharp relief a lacuna in the present theoretical treatment of corruption. Prior to discussing our argument further and considering limitations and extensions, let us sum up the gist of the “state of nature” model. We have raised essentially three points:

1. Paying the bureaucrat to assign and protect one’s property rights is a substitute to private defensive activities. As our model illustrates, these two ways of securing rents differ in that the first is a transfer payment, which does not constitute waste, while the latter basically involves wasting resources on DUP activities. A second, minor difference is that rent-seeking efforts typically cancel out, while the loser normally does not pay in a bribing game. As a result, bribery can be welfare superior to private predatory and defence activities (an extension of Hobbes’ classical argument).
2. Lobbying by special interests is a DUP activity that is essentially analogous to predation and defence in a Hobbesian state of nature.¹⁹ As a consequence, there may exist a hidden cost of combating corruption that consists of the additional welfare loss associated with lobbying activities that replace corruption.

fare function. Note, though, that the opposite effect may also exist – if public servants were poorer on average than those who bribe them (or, to be more precise, those who would enjoy the rents in question were it not for lobbying and corruption).

¹⁹By which we mean that the two are *formally* equivalent. Constitutional and other limits on rent-seeking may well prevent life in modern democracies from being “nasty, brutish, and short”. Yet we would insist that the glass is half empty – significant welfare losses of rent-seeking remain. In failing states, on the other hand, the alternatives may literally be corrupt order or a predatory equilibrium.

3. The act of soliciting bribes can be fruitfully analysed as an auction.

We will now explore all of these a little further. Questions that need to be addressed include whether lobbying and corruption are in fact substitutes (or complements), whether there is a social cost associated with corruption that our simple model does not capture, and how far the bribery as an auction analogy may take us. All of these questions will be taken up in the next section.

5 Discussion: corruption vs. DUP activities

“We pay you \$ 50.000 and all you can steal.”
– Donald Trump²⁰

Many readers will quickly take issue with the analysis in the preceding section on the grounds that it is “wrong” to model corruption as having no deadweight loss. How about the costs of keeping the deals secret, the disutility of being subject to the risk of being caught, and a host of other costs – costs that are largely analogous to the private and enforcement costs of tax evasion?²¹ The problem with this critique is that those costs would wither away if bribes were allowed – in the same manner that a lot of secondary and implicit costs associated with drug use (such as addicts’ offences committed to procure drugs) would simply melt away if we were to legalise it. A crucial difference from tax enforcement, though, is that no community in need of revenues for common purposes could ever abandon tax enforcement, while it could conceivably countenance bribes.²²

To be sure, the practice of *tax farming*²³ provides an example where the privatisation of tax enforcement has in fact been attempted. Its analysis will provide a clue to why corruption may turn out to be problematic after all.

5.1 Tax farming and its lessons for corruption

Tax farming basically involves the government’s defining tax bases, setting tax rates, and then auctioning off enforcement to a private entity. The winning bidder provides the government with revenue while keeping the surplus of tax receipts over the revenue bid for herself. The obvious condition for an optimum in her calculus is that marginal tax revenue equal marginal collection cost. Fig. 1 below illustrates this solution.

But note that in the private optimum of the tax farmer, the ratio of marginal excess burden to marginal revenue is infinite. This solution would never have been chosen by any optimising planner except Leviathan,²⁴ and it is not in keeping with any tax rate set except the revenue-maximising one. (It goes without saying that changing tax rates would shift curves in fig. 1.)

²⁰Trump, Donald (1987): *The Art of the Deal*, London: Arrow Books, p. 59

²¹See Beckmann [4, chapters 4 and 5] for a *distinctio completa* and in-depth discussion of the costs.

²²A related counter-argument can be devised against the popular argument [6, 64] that the results of corruption are unattractive from a distributional point of view: given sufficient leeway in the design of institutions, “society” could always sell appointments to political office in a meta-auction, and appropriate the surplus.

²³Butcher and Dick [8] an overview of the history of this practice.

²⁴Beckmann and Lackner-Frey [5] provide an extended discussion of taxation by Leviathan governments.

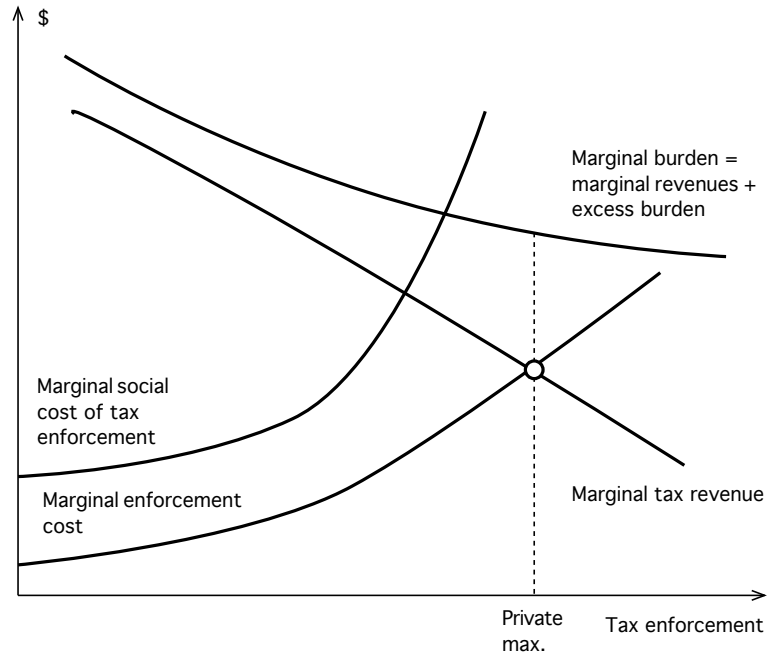


Figure 1: Revenue maximum in tax farming

This example exhibits the same characteristics as the implicit privatisation of policy application and enforcement that corruption entails. We can therefore apply its main lesson immediately and surmise that the assumption of a *given value R* throughout section 3.1 is in fact a critical one. To be more precise, we take corruption to be a fundamental²⁵ problem if and only if

1. bribes influence a marginal policy decision where the recipient takes some relevant other policy parameters as given *and*
2. “society” does not seek to maximise revenues from public policy.

In all other cases, corruption is *not* a fundamental problem in the sense outlined above. And note that even if it constituted such a problem, it might still be the case that the marginal social costs of corruption fell short of the marginal social costs of the additional lobbying caused by reduced corruption less the marginal costs of enforcing the ban on corruption. Our formal analysis can still call for less zeal in the fight against corruption even if it is costly.

²⁵In the sense that no simple change of institutions such as allowing it outright can do away with it.

5.2 Corruption and lobbying – complements after all?

The above evidently presupposes that our initial presumption of lobbying and corruption being *substitutes* is correct. While this may be a natural assumption to make, the literature remains ambiguous. One strand argues that lobbying may be employed to help cover up corruption (or reduce the resources spent towards fighting it),²⁶ which implies that the two activities are complements [12] and that our theoretical model falls through.

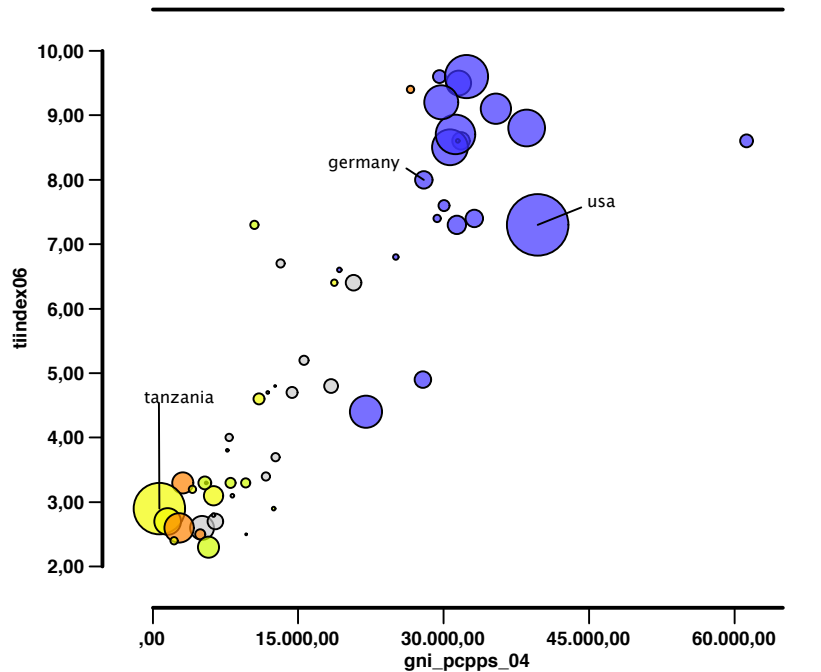


Figure 2: TI index for corruption and lobbying versus per capita income

Campos and Giovannoni [9] provide an extended discussion of this very question and use an econometric estimation to show that the two ways of obtaining influence are indeed substitutes. While this would be amenable to our analysis, we still need to point out one potential flaw.

²⁶Cf. Hellman et al. [15] for a related distinction between corruption targeted at *law-making* and corruption targeted at the *application of law*. See also the discussion in Campos and Giovannoni [9].

The sample used by Campos and Giovannoni [9] is strongly biased towards OECD and developed countries. If one includes developing countries, though, one might obtain a slightly different picture. In figure 2 above we present a three-dimensional plot of Transparency International's corruption index (y-axis) and a lobbying variable (size of bubbles) versus real per capita income (in PPP-adjusted US-\$) for a larger sample of countries. Our measure of lobbying in this case is taken from the *World Values Survey* (WVS) and reflects the share of respondents who declare themselves member of a professional organization.²⁷

What fig. 2 suggests is that lobbying and corruption are indeed substitutes for developed countries (the OECD is basically coloured dark blue in fig. 2), while they may be complements for lower levels of economic development. (The picture also corroborates the well-known negative relationship between economic development and corruption.) It does not come within the purview of the present paper to investigate this ambiguity more thoroughly. We do take Campos and Giovannoni's [9] analysis as empirical confirmation of one basic assumption in our argument, though.

6 Conclusion

This paper has not shown that corruption is a good thing. What it has demonstrated, though, is that lobbying may be a worse thing. Our very simple model also serves to illustrate once more that it is useful to think of corruption as *implicit privatisation cum auction*, i.e. of the state relegating decision-making authority to a private person, who then auctions the rents off.

What we are trying achieve is to shift the emphasis in the literature on corruption a bit. Most of the existing literature is empirical or applied in nature, with the undesirability of corruption being taken for granted. One upshot is that theoretical effort is mainly devoted to finding out how to combat corruption without any regard to potential substitutes. In this vein, Pies [26] has drawn attention to an important distinction between *enabling corruption*, where private citizens or firms bribe officials to award beneficial treatment to them, and *extortion*, where officials threaten to harm citizens/firms unless they are bribed. From a game theory perspective, with one's attention focussed on how to get rid of corruption, this distinction is very important because it allows one to exploit a conflict of interest between the parties to the bribe in the one case (while in the other there is just a conflict between the potential donors, i.e. the As and Bs of our model). But this still does not get one closer to a notion of why corruption is undesirable in the first place, when it is undesirable, and where the limits of the fight

²⁷We have explored several alternative variables from the WVS, with no marked change in results.

against corruption lie.

We think that the book has not yet been closed on these fundamental questions. The possibility that the crackdown on corruption happening across the board – to the point of outlawing some staples of civil intercourse such as discussing business over dinner – does not only come at an enforcement cost, but may also entail a waste of resources in substitute activities, appears worthy of further analysis. It is in this direction that we call for, and hope to, advance.

References

- [1] Aidt, Toke S. (2003): “Economic analysis of corruption: a survey”, *Economic Journal* 113, pp. F632-52.
- [2] Bardhan, Pranab (1997): “Corruption and development: a survey of the issues”, *Journal of Economic Literature* 35, pp. 1320-46.
- [3] Beck, Paul J. and Michael W. Maher (1986): “A comparison of bidding and bribery in thin markets”, *Economics Letters* 20.
- [4] Beckmann, Klaus B. (2003): *Steuerhinterziehung*, Tübingen: Mohr.
- [5] Beckmann, Klaus B. and Elisabeth Lackner-Frey (2001): “How Leviathan taxes”, *Constitutional Political Economy* 13, pp. 265-273.
- [6] Besley, Timothy (2006): *Principled Agents?*, Oxford.
- [7] Binmore, Ken (2007): *Playing for Real*, Oxford.
- [8] Butcher, John and Howard Dick (1993): *The Rise and Fall of Revenue Farming: Business Elites and the Emergence of the Modern State*. St. Martin’s Press.
- [9] Campos, Nauro F. and Francesco Giovannoni (2007): “Lobbying, corruption and political influence”, *Public Choice* 131, pp. 1-21.
- [10] Coate, Steven (2004): “Pareto improving campaign finance policy”, *American Economic Review* 94, pp. 628-55.
- [11] Cowell, Frank (1990): *Cheating the Government*, Cambridge: Harvard UP.
- [12] Damania, R., Fredricksson, P. G., and Mani, M. (2004): “The persistence of corruption and regulatory compliance failures: Theory and evidence”, *Public Choice* 121, pp. 363–390.
- [13] Grossman, Gene M. and Elhanan Helpman (1994): “Protection for sale”, *American Economic Review* 84, pp. 833-50.

- [14] Grossman, Gene M. and Elhanan Helpman (2001): *Special Interest Politics*, Cambridge MA and London UK: The MIT Press.
- [15] Hellman, Joel S., Geraint Jones and Daniel Kaufmann (2000): “Seize the state, seize the day”, World Bank Discussion Paper No. 2444.
- [16] Hindriks, Jean, Michael Keen and Abhinay Muthoo (1999): ‘Corruption, extortion and evasion’, *Journal of Public Economics* 74, pp. 395-430.
- [17] Hirshleifer, Jack (2001): *The Dark Side of the Force*, Cambridge UP: Cambridge.
- [18] Krishna, Vijay (2002): *Auction Theory*, San Diego: Academic Press.
- [19] Lambsdorff, Johann Graf von (2002): “Corruption and rent-seeking”, *Public Choice* 113, pp. 97-125.
- [20] Lambsdorff, Johann Graf von (2006),: “Causes and consequences of corruption: What do we know from a cross-section of countries?”, in Rose-Ackerman (2006, 3-52).
- [21] Lambsdorff, Johann Graf von (2007), *The Institutional Economics of Corruption and Reform: Theory, Evidence and Policy*. Cambridge: Cambridge UP.
- [22] Luo, Yadong (2002), “Corruption and organization in Asian management systems”, *Asia Pacific Journal of Management* 19, 405-422.
- [23] Mauro, Paolo (1995): “Corruption and growth”, *Quarterly Journal of Economics* 110, pp. 681-712.
- [24] Méon, Pierre-Guillaume and Sekkat, Khalid (2005): “Does corruption grease or sand the wheels of growth?”, *Public Choice* 122, pp. 69-97.
- [25] Méon, Pierre-Guillaume and Laurent Weill (2008): “Is corruption an efficient grease?”, *LARGE Papier* no. 2008-06.
- [26] Pies, Ingo (2003): “Korruption – Diagnose und Therapie aus wirtschaftsethoischer Sicht”, *WCGE Diskussionspapiere* 7.
- [27] Polinsky, A. Mitchell and Steven Shavell (1984): “The optimal use of fines and imprisonment”, *Journal of Public Economics* 24, pp. 89-99.
- [28] Rose-Ackerman, Susan (2004): “Governance and corruption”, in Lomberg, Bjørn (ed.), *Global Crises, Global Solutions*, Cambridge: Cambridge UP, pp. 301-344.
- [29] Rose-Ackermann, Susan (ed.) (2006): *International Handbook of the Economics of Corruption*, Cheltenham: Edward Elgar.

- [30] Saha, Bibhas (2001): “Red tape, incentive bribe and the provision of subsidy”, *Journal of Development Economics* 65, pp. 113-33.
- [31] Steiglitz, Ken (2007): *Snipers, Shills, & Sharks. eBay and Human Behavior*, Princeton: Princeton UP.
- [32] Tullock, Gordon (2005): *The Rent-Seeking Society. Selected Works of Gordon Tullock Vol. V*, Liberty Fund.
- [33] Überall, Frank (2007): *Der Klüngel in der politischen Kultur Kölns*, Bonn: Bouvier Verlag.
- [34] Usher, Dan (1992): *The Welfare Economics of Markets, Voting and Predation*, Manchester: Manchester UP.