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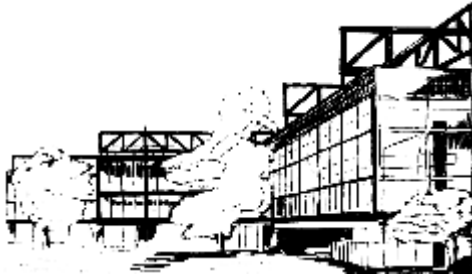
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Making sense of corruption

Klaus Beckmann & Carsten Gerrits

Making sense of corruption: Hobbesian jungle, bribery as an auction, and DUP activities

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November 27, 2007

Economists dislike corruption. A recent compilation of “global crises” includes a chapter on corruption [17], and the fight against corruption “in all its forms” has been included on the UN agenda for a Global Compact.¹ There is now also a vast economics literature on corruption,² albeit mostly of an empirical or an applied nature, and a negative correlation between both the level of per capita incomes and economic growth and corruption indices has been documented [14].³

All the same, the *prima facie* dislike for corruption may appear odd. For economists generally prefer fines over imprisonment, other things being equal, as the former are essentially a transfer (to the public purse), while the latter constitutes a waste of resources [16]. But a case can be made that corruption is also essentially a transfer [5, 61-64], and that at the very least the benefits accruing to the recipients of bribes cannot be ignored – as the literature on corruption generally, and quite conveniently, does.⁴

We propose to take the above analogy even further. Bribery is one way for private citizens, groups or firms to influence politicians and bureaucrats, lobbying is another. The literature on rent seeking has argued that legal forms of influence are generally directly unproductive (DUP) activities, in short, a deadweight loss [18]. Legal lobbying, such as campaign contributions, by diverse interests also tend to cancel out in their effect on decisions, as do resources spent on litigation, while the loser does not pay in a bribing game. So why not pay the gal in charge a kickback, and let her drive a Porsche? Expenditure by donors may be the same, the effect on decisions

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¹As its 10th principle, see <http://www.unglobalcompact.org/>.

²Part of this has been surveyed by Pranab Bardhan [2] and Toke S. Aidt [1].

³For a first impression based on recent data, see also fig. 2 below.

⁴Timothy Besley [5, 111] notes that this is also true of the rents accruing to politicians in Leviathan models of the state, and even in many more evolved politico-economic models.

may be the same, but at least the corrupt official is better off under a régime of bribes. In a less flippant vein, if lobbying and corruption are substitutes, combating corruption can *reduce* welfare because it crowds in relatively more wasteful lobbying activities.

The purpose of this article is not just to play the devil’s advocate, nor to make sure that “the other side” gets heard.⁵ Rather, we suggest to take a fresh start and explore one often ignored theoretical perspective on corruption, making precise why it is detrimental (and under what circumstances).

Our main contention has been lying around unexplored for some time: Besley [5], for one, juxtaposes corruption – which he identifies as a transfer – and costly lobbying, but does not treat the two explicitly as substitutes, nor does he show that combating corruption can crowd in lobbying. Besley also does not make the main *economic* distortion of “influence” very precise (on this, see section 2). Coate [9] 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.

Grossman and Helpman’s important piece [11] (G-H) develops 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 corruption. To fix ideas, think about lobbying as spending resources on electoral campaigns *ex ante*, while corruption basically involves waiting until a winner emerges and then paying for favours *ex post*.⁶

We propose to revisit this issue in a *very* stark setting where the *corrupt official* is the auctioneer (auctioning off favours for bribes), while we still use an exogenous contest success function to model lobbying. This means we short-circuit Coate’s [9] problem of how such functions arise and take his results as a point of departure, combining them with an auction model of corruption that is as simple as possible. In this framework, corruption and lobbying are conceptually distinct, but substitute ways of influencing politics. This corresponds to empirical evidence recently presented by Campos and Giovannoni [8].⁷

⁵We do admit to a penchant for this, though, and also insist that doing so serves a useful social purpose, in particular in our age of “consensus science”.

⁶This is an oversimplification, but a helpful one.

⁷But see sub-section 2.2 for one critical remark on this.

Our story begins with a very simple Hobbesian model, akin to the one found in Usher [19, 73-75], and extend this to work out the basic argument formally in section 1. In so doing, we also revisit the useful analogy between corruption and auctions (sub-section 1.2). The theoretical argument then serves as a basis for an extended discussion in section 2, in which we work out the pitfalls of corruption from a theoretical perspective. The real problem turns out to be *privatisation without full control* over the relevant policy parameters – in maximising their rents using the remaining parameters, corrupt officials drive up the marginal deadweight loss with respect to the other parameters (outside their control) to infinity. When this problem does not occur, however, corruption is not so big a problem. And its costs must always be compared with the welfare losses due to the legal lobbying that replaces it. Section 3 draws some preliminary conclusions.

1 DUP activities and corruption in a Hobbesian 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.

1.1 Attack and defense in the state of nature

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

$$p = \frac{a}{a + b} \tag{1}$$

while predator B succeeds with probability $(1 - p)$. Equation (1) is a very simple *contest success function* [13] derived from the basic rent-seeking approach, for which we additionally assume constant returns to scale of attack/defence activity. All actors are risk neutral.

Writing the Lagrangian for A's problem⁸

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

we use the first-order conditions⁹

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

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

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

$$\lambda = 1$$

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

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

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’’;¹⁰ straightforward computations yield

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

⁸Superscripted indices denote individuals throughout.

⁹Strictly 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.

¹⁰Note 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.

1.2 Bribing the bureaucrat

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.¹¹ 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., [5]).

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 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 $\rho^i > \rho^j$,

¹¹If 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.

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 [6, 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 \bar{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

$$R^A \frac{d\rho^A}{dR^A} = R^A - \rho^A \tag{5}$$

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).¹²

¹²We 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.

We will try to exploit the similarity between bribery and auctions some more in sub-section 2.1. For present purposes, let us address another social problem commonly associated with corruption: viz. the shiftiness of the corruptible bureaucrat.

1.3 C for commitment

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,¹³ 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 1.2, where we assume reservation prices to be common knowledge. Otherwise the Hobbesian jungle from sub-section 1.1 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

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

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 $\phi R^i - \rho^i > 0$.

¹³In 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.

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.¹⁴ Formally, we have

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

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 modelet would suggest the opposite course of action: in a very Hobbesian vein, it would argue for a complete

¹⁴This 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 welfare 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).

escape from the Hobbesian jungle of private predation and defence, even to the point of letting Leviathan pocket the proceeds.

1.4 Summing up: a Hobbesian model of corruption vs. lobbying

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.¹⁵ 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.
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.

¹⁵By 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.

2 Discussion: corruption vs. DUP activities

“We pay you \$ 50.000 and all you can steal.”
– Donald Trump¹⁶

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?¹⁷ 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.¹⁸

To be sure, the practice of *tax farming*¹⁹ 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.

2.1 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,²⁰ 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.)

¹⁶Trump, Donald (1987): *The Art of the Deal*, London: Arrow Books, p. 59

¹⁷See Beckmann [3, chapters 4 and 5] for a *distinctio completa* and in-depth discussion of the costs.

¹⁸A related counter-argument can be devised against the popular argument [5, 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.

¹⁹Butcher and Dick [7] an overview of the history of this practice.

²⁰Beckmann and Lackner-Frey [4] provide an extended discussion of taxation by Leviathan governments.

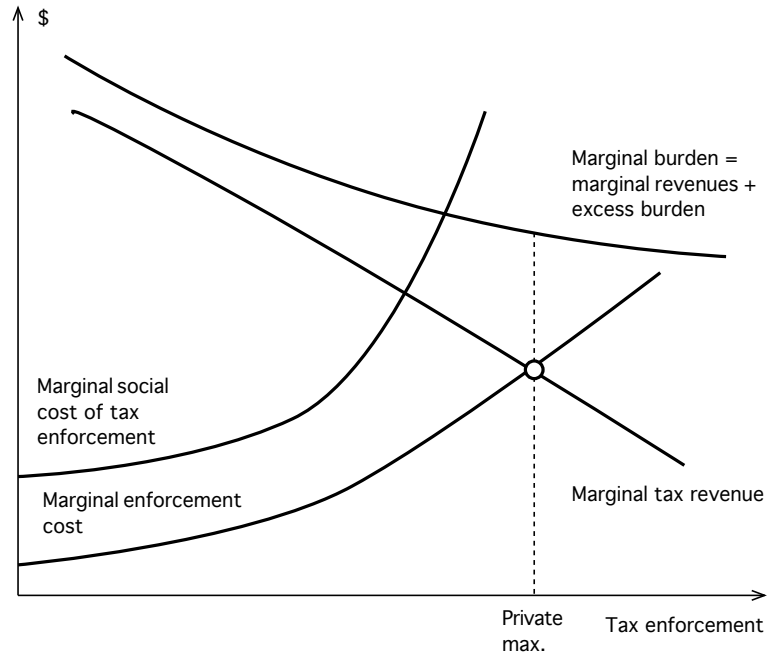


Figure 1: Revenue maximum in tax farming

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 1 is in fact a critical one. To be more precise, we take corruption to be a fundamental²¹ 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.

²¹In the sense that no simple change of institutions such as allowing it outright can do away with it.

2.2 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),²² which implies that the two activities are complements [10] and that our theoretical model falls through.

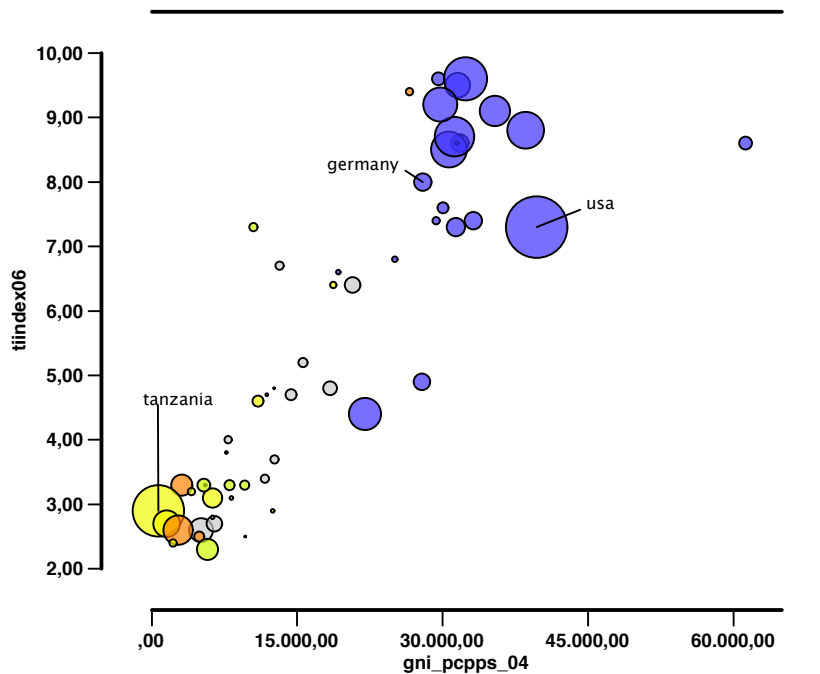


Figure 2: TI index for corruption and lobbying versus per capita income

Campos and Giovannoni [8] 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.

²²Cf. Hellman et al. [12] 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 [8].

The sample used by Campos and Giovannoni [8] 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.²³

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 [8] analysis as empirical confirmation of one basic assumption in our argument, though.

3 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 [15] 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

²³We 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] Beckmann, Klaus B. (2003): *Steuerhinterziehung*, Tübingen: Mohr.
- [4] Beckmann, Klaus B. and Elisabeth Lackner-Frey (2001): “How Leviathan taxes”, *Constitutional Political Economy*
- [5] Besley, Timothy (2006): *Principled Agents?*, Oxford.
- [6] Binmore, Ken (2007): *Playing for Real*, Oxford.
- [7] 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.
- [8] Campos, Nauro F. and Francesco Giovannoni (2007): “Lobbying, corruption and political influence”, *Public Choice* 131, pp. 1-21.
- [9] Coate, Steven (2004): “Pareto improving campaign finance policy”, *American Economic Review* 94, pp. 628-55.
- [10] 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.
- [11] Grossman, Gene M. and Elhanan Helpman (1994): “Protection for sale”, *American Economic Review* 84, pp. 833-50.
- [12] Hellman, Joel S., Geraint Jones and Daniel Kaufmann (2000): “Seize the state, seize the day”, *World Bank Discussion Paper No. 2444*.
- [13] Hirshleifer, (2001): *The Dark Side of the Force*, Cambridge UP: Cambridge.

- [14] Mauro, Paolo (1995): “Corruption and growth”, *Quarterly Journal of Economics* 110, pp. 681-712.
- [15] Pies, Ingo (2003): “Korruption – Diagnose und Therapie aus wirtschaftsethoischer Sicht”, *WCGE Diskussionspapiere* 7.
- [16] Polinsky, A. Mitchell and Steven Shavell (1984): “The optimal use of fines and imprisonment”, *Journal of Public Economics* 24, pp. 89-99.
- [17] Rose-Ackerman, Susan (2004): “Governance and corruption”, in Lomborg, Bjørn (ed.), *Global Crises, Global Solutions*, Cambridge: Cambridge UP, pp. 301-344.
- [18] Tullock, Gordon (2005): *The Rent-Seeking Society. Selected Works of Gordon Tullock Vol. V*, Liberty Fund.
- [19] Usher, Dan (1992): *The Welfare Economics of Markets, Voting and Predation*, Manchester: Manchester UP.

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- Haucap, Justus & Jörn Kruse, Predatory Pricing in Liberalised Telecommunications Markets, Nr. 118 (2002), erschienen in: Christian von Hirschhausen, Thorsten Beckers & Kay Mitusch (Hrsg.), *Trends in Infrastructure Regulation and Financing*, Edward Elgar: Cheltenham 2004, S. 43-68.
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- Kruse, Jörn, Regulierung der Verbindungsnetzbetreiberauswahl im Mobilfunk, Nr. 116 (2002), als Kurzform erschienen in: *Multimedia und Recht*, Januar 2003, S. 29-35.
- Haucap, Justus & Jörn Kruse, Verdrängungspreise auf liberalisierten Telekommunikationsmärkten, Nr. 115 (2002), erschienen in: *Perspektiven der Wirtschaftspolitik* 5, 2004, 337-361.
- Haucap, Justus & Helmmar Schmidt, Kennzeichnungspflicht für genetisch veränderte Lebensmittel: Eine ökonomische Analyse, Nr. 114 (2002), erschienen in: *Zeitschrift für Wirtschaftspolitik* 53, 2002, S. 287-316.
- Kruse, Jörn & Jörn Quitzau, Zentralvermarktung der Fernsehrechte an der Fußball-Bundesliga, Nr. 113 (2002), erschienen in: *Zeitschrift für Betriebswirtschaft, Ergänzungsheft zur Sportökonomie*, 2002, S. 63-82.
- Kruse, Jörn & Justus Haucap, Zuviel Wettbewerb in der Telekommunikation? Anmerkungen zum zweiten Sondergutachten der Monopolkommission, Nr. 112 (2002), erschienen in: *Wirtschaftsdienst* 82, 2002, S. 92-98.
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- Holm-Müller, Karin & Klaus W. Zimmermann, Einige Anmerkungen zur Internalisierungsstrategie mit dem produktorientierten Konzept der Pigousteuer, 2002, erschienen in: *Zeitschrift für Umweltpolitik und Umweltrecht* 25, 2002, S. 415-420.
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- Hackmann, Johannes, Vom Ehegattensplitting zum Partnerschaftssplitting?, 2001, erschienen in: Volker Arnold (Hg.), *Wirtschaftsethische Perspektiven VI*, Schriften des Vereins für Socialpolitik 228/VI, Ducker & Humblot: Berlin 2002, S. 189-222.
- Zimmermann, Klaus W. & Tobias Just, Politische Glaubwürdigkeit und der Euro: Eine verfassungsökonomische Perspektive, 2000, erschienen in: Fritz Söllner & Arno Wilfert (Hg.), *Die Zukunft des Steuer- und Sozialstaates*, Physica Verlag 2001, S. 373-397.
- Josten, Stefan, National Debt, Borrowing Constraints, and Human Capital Accumulation in an Endogenous Growth Model, 2000, erschienen in: *FinanzArchiv* 58, 2001, S. 317-338.
- Zimmermann, Klaus W. & Tobias Just, The Euro and Political Credibility in Germany, 2000, erschienen in: *Challenge* 44, 2001, S. 102-120

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- Zimmermann, Klaus W., Internalisierung als Nirwana-Kriterium der Umweltpolitik, 1999, erschienen in: Kilian Bizer, Bodo Linscheidt & Achim Truger (Hg.), *Staatshandeln im Umweltschutz. Perspektiven einer institutionellen Umweltökonomik*, Duncker & Humblot: Berlin 2000.
- Hackmann, Johannes, Die unterlassene Besteuerung der Nutzungswerte selbstgenutzten Wohnungseigentums: Vergebene Reformpotentiale, 1999, erschienen in: R. Lüdeke, W. Scherf & W. Steden (Hg.), *Wirtschaftswissenschaft im Dienste der Verteilungs-, Geld- und Finanzpolitik*, Festschrift für A. Oberhauser, Berlin 2000, S. 387-412.
- Zimmermann, Klaus W. & Tobias Just, Interest Groups, Referenda, and the Political Process: On the Efficiency of Direct Democracy, 1999, erschienen in: *Constitutional Political Economy* 11, 2000, S. 147-163.
- Josten, Stefan, Staatsverschuldung und Wirtschaftswachstum in einem Diamond-OLG-Modell mit AK-Technologie, 1999, erschienen in: *Jahrbuch für Wirtschaftswissenschaften* 51, 2000, S. 237-254.