

“Plata o Plomo?”:
Bribe and Punishment in a Theory of Bad Politicians*

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Abstract

We present a model where, in addition to bribes, a pressure group uses punishments to influence policy-making. There is a pressure stage where the group tries to influence public officials, and a previous entry stage where individuals choose between the public and the private sector. Equilibrium punishment makes rewards to public life lower, so society can be supply-constrained of good quality policymakers. Thus, capture can be associated not only to static problems (distorted decisions and dead weight losses from lobbying efforts) but also to a dynamic problem: worse politicians. In contrast to previous literature, returns to working in the public sector fall as pressure groups become more active and gain influence. An empirical prediction is that higher violence is associated with less able politicians, and both can be correlated with more frequent corruption.

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1 Introduction

During their first couple of weeks in office, Colombian judges and other public servants involved in the anti-drugs war often receive a message asking,

“Plata o plomo?”

The message originates in the drugs cartels and is Spanish for *“Silver or lead?”*. It reminds policy makers that there is an alternative to fighting drugs and receiving plomo (Spanish for lead, as in bullets) which is to not fight drugs and receive plata (Spanish for silver or money, as in a bribe). Bowden (2001) writes about the ways of the former head of the Medellin Cartel, Pablo Escobar Gaviria: *“Pablo was establishing a pattern of dealing with the authorities...It soon became known simply as plata o plomo. One either accepted Pablo’s plata (silver) or his plomo (lead)...Death was his strategy against extradition, that and money. His policy of plata o plomo became so notoriously effective that it would ultimately threaten to undermine Colombia’s democracy...Pablo’s primary target...was the country’s judicial system, to which he offered plata o plomo....Plata o plomo had every official in Bogotá living in fear or under suspicion...”* The phenomenon is well documented and exceeds the case of the Medellin Cartel. Typing the words *“Plata o plomo”* in an internet search engine yields dozens of references.¹

The *plomo* aspect of the threat may lead us into thinking that we are referring to a (big) problem in a small number of countries.² But what about the applicability to other, less violent countries? If nature does not make jumps, one could imagine that there are other “technologies” that allow groups to exert pressure reducing the utility of policymakers, without necessarily taking them to (presumably) minus infinity through death. Indeed, politicians in less violent countries often make a point related to *Plata o plomo* when they claim that their actions are constrained by the influence of pressure groups.³ From the point of view of the existing literature, such claims are strange as most models of endogenous policy formation only allow for interest groups that offer bribes or information.⁴ Thus, politicians

¹Yet doing the same thing in Econlit yields zero hits. The *Plata o Plomo* phenomenon has also been observed in Mexico: *“Plata o plomo. Silver or lead. That is the choice drug traffickers in Mexico have given their allies and enemies for years: the bribe or the bullet”* (*Los Angeles Times*, December 12 1999). US Ambassador to Colombia Robert White explained the relevance of the issue as follows: *“In Colombia, they have a saying: “Plata o Plomo”. Silver or lead. Take the bribe, or we’ll shoot you. And I have to tell you that in a violent, war-torn society that doesn’t know from one year to the next whether it’s going to be in existence, there are very few people, high or low, that can resist that choice.”* (Interview by J. Lottman on September 20, 1999, in the *American Defense Monitor*).

²Note violence is often the norm rather than the exception. There are 30 OECD countries with relatively secure environments (but see Mexico, Turkey and Italy’s south) and 189 member states in the United Nations.

³Examples are provided in Section 2.

⁴See Stigler (1971), Peltzman (1976), Becker (1983), Baron (1989), *inter alia*.

should be in the business of thanking such groups for their favors, not denouncing their existence. If we are to listen to what politicians complain about, punishment may also include smear campaigns in the press and legal harassment, besides threats of physical violence. But in order to understand the politician's complaint one must extend the canonical model of endogenous policy formation to include pressure groups that can offer bribes (carrots) to policy makers that produce good policies for the groups and punish those who do not (sticks). In other words, we need a theory where pressure groups exert pressure.

We will show that such a model of "nasty" pressure groups can be helpful in building a model of the quality of policy makers. This is important because one way to explaining the large differences in income that exist across countries is to simply show that poor countries end up poor because their political elites choose bad policies. There is a literature on the issue of how bad policies can come about (see, for instance, Weingast, Shepsle and Johnsen, 1981, and Coate and Morris, 1995) and on how good policies may not be introduced as soon as they should (see, for instance, Alesina and Drazen, 1991). The explanations in this literature hold for societies where the quality of politicians is taken as given. We would like to take the road of linking the quality of policies to the quality of politicians. As emphasized by Caselli and Morelli (1999), the quality of political elites varies greatly across countries, and this has a large influence on economic performance because bad politicians may do a poor job at identifying economic policy priorities and achieving them at minimum cost. In particular we would like to explain how a bad equilibrium could emerge, where the officials in charge of making policy in a country are of low quality. A key challenge for such a model of bad politicians is to show that when pressure groups exert more influence, the quality of policy makers falls. Although there does not seem to be a large literature on the topic, such a correlation is not natural in a model where pressure groups only offer bribes. Indeed, in such a case, a more active pressure group would imply more bribes, which in turn implies higher expected income for prospective officials. This would mean that the public sector would prove to be attractive to more able officials. Given a reasonable selection procedure, more active pressure groups in the traditional approach would imply more able officials in government. In contrast, we show that a model where pressure groups have access to both bribes and punishment has the potential to yield an equilibrium with the opposite covariation, namely with low quality officials and very active pressure groups.

To our knowledge, there does not seem to exist a literature explaining cross-country differences in the quality of public officials. Two exceptions are Besley and McLaren (1993) and Caselli and Morelli (1999). The former extends the Becker and Stigler (1974) model to show that when the underlying honesty parameter in the population is below a certain threshold, constructing incentive schemes to reduce corruption may be too expensive and the

principal may be better off using dishonest bureaucrats.⁵ Caselli and Morelli (1999) build a model of bad politicians for the more difficult case of elected (rather than appointed) officials using the citizen candidate model (see Osborne and Slivinski (1996) and Besley and Coate (1997)). They show that society can be supply-constrained in the quality of public officials when the rewards from holding office are low.⁶ They also show how multiple equilibria could arise and that when incumbent policymakers set the rewards for future office holders there is the possibility of path dependence.

Also related to our analysis is work on the use of pain in a principal agent model, (e.g. Chwe (1990)) and recent work by Baron (2001) on private politics and corporate social responsibility where an activist has access to a class of threats (including boycotts and filing lawsuits) in attempting to influence the firm's strategy.

Our model has two stages: an entry stage and a pressure stage. In the pressure stage, we study how a pressure group tries to influence the decisions of a public official. We show that both "bribes and threats" are used by interest groups in equilibrium, explaining the non-rethorical nature of the "*Plata o plomo?*" question. This result is unfortunate because threats and violence introduce an element of inefficiency into our model (bribes are mere transfers). The reason inefficient actions are used is because they allow the group to save on bribes and/or get more official favors. In the entry stage individuals decide if they want to take up jobs in the public or in the private sector. In the main result of the paper, we show that rewards to public life fall as pressure groups gain influence due to threats being easier to use. This means that in these circumstances individuals with high alternative income are reluctant to take up work in the public sector so that countries can be supply-constrained of high-quality officials. In other words, and in contrast to the previous literature, rewards to public office (and the quality of politicians) fall when the environment allows the pressure group to exert more influence.

In the next section we discuss some examples. We then present the model in Section 3. Section 4 characterizes equilibrium for the particular case where threats are not available to the group. Section 5 shows that in such a world more room for influence by the pressure group will increase the degree of state capture. However, at the same time it can only improve the prospects of potential officials and therefore the quality of appointed public servants. Section 6 briefly presents the equilibrium with both bribes and threats. Section 7 contains our central results. We show that more room for pressure through bribes will again increase the degree of state capture, although, in the presence of threats, it might now have a negative effect

⁵This is the so-called "capitulation regime".

⁶The term "*bad politicians*" is borrowed from their paper. Using the representative democracy setup of Caselli and Morelli (1999), it can be shown that our model can be applied to both elected officials and to bureaucrats. Thus, except when otherwise noted, we use the two categories interchangeably.

over the expected payoff of politicians. Thus, their quality in equilibrium might be lower. In addition, we show that more room for influence through cheaper punishment will definitely have a negative impact on the expected payoff of politicians. Thus, it will always lead to worse politicians. Section 8 analyzes the possibility of multiple equilibria. Section 9 shows how to extend the model to consider repeated interactions that render threats endogenously credible. Section 10 concludes. The Appendix contains all the proofs.

2 Some Examples

The root assumption of the paper is that a pressure group has access to both side payments and a “punishment” technology. This means that interest groups have access both to carrots (bribes, campaign contributions, displays of public support in the media) and to a set of actions that cause disutility to the policy makers (smear campaigns in the press, legal harassment, violence). In this section we discuss briefly some evidence related to our root assumption (for more detail see Dal Bó and Di Tella (1999)).

Physical Violence

With respect to access to violence it seems obvious that it is not a phenomenon restricted to drugs. The Italian mafia was influencing policymakers through violence long before they got involved in drugs (see Gambetta (1993)). The Russian mafia is another example (see Varese (1993)). Indeed each year, a number of policymakers are assassinated around the world. In some cases the deaths have been directly linked to the actions of pressure groups. A recent example is that of Galina Starovoitova, an ally to Russia’s former president Boris Yeltsin, who was shot dead in St. Petersburg in November 1998. In her obituary commentators speculated on the reasons. *“Now, Miss Starovoitova, perhaps the most ardent of reformers, is dead, murdered, apparently by political opponents, and Mr. Yeltsin looks non too well.[...] At the end of her lecture or radio interview, you were a little more aware of the reformers’ struggle as they faced the attacks by powerful groups “striving to restore the old economic and political system” and which sought to exploit the “ordinary Russians’ nostalgia for communist times”.[...] A problem for her enemies was that she could not be bought. She lived simply and seems to have had no business interests.”*⁷

⁷See the article *“Obituary: Galina Starovoitova”*, in *The Economist*, November 28th 1998. Dal Bó and Di Tella (1999) report other assassinations in Eastern Europe, Africa, Asia and Latin America, where it has been alleged that pressure groups have been involved. One of the most interesting is the unsuccessful assassination attempt of Georgia’s President, Eduard Shevardnadze, in February 1998. *“Shevardnadze also expressed his belief that the attack might have been an attempt to destabilise the country at a time when consortia extracting oil from the Caspian Sea were debating whether to export the oil through a pipeline across Georgian territory or via an alternative route.”* Keesing’s Record of World Events: News Digest for

Legal Harassment

In many cases public officials have been subject to lengthy judicial processes. Often these have been described as an instance of pressure group activities. In Latin America the practice is so frequent that it has been given a name: the “*judicialization of politics*”.⁸ Perhaps the most extreme case is that of the former Malaysian deputy prime minister Anwar Ibrahim, who was arrested on 20 September 1998 and initially held without charge under the Internal Security Act. Amnesty International describes the events as follows: “*Subsequently, politically motivated charges of abuse of power (allegedly using his office to interfere with police investigations into alleged sexual offences and sodomy) were filed against him. After a trial which Amnesty International considered to be unfair.*” In other excerpts it writes “*Anwar was sentenced in April 1999 to six years in prison. His appeals were rejected. In September 1999 Sukma Darmawan and academic Dr Munawar Anees were arrested and, after pleading guilty of “having been sodomised” by Anwar Ibrahim, were sentenced to six months in prison. They later retracted their confessions stating they were severely ill-treated to coerce them.*” And “*In order to remove Anwar Ibrahim from political life and to discredit him publicly, those in power in Malaysia resorted to measures including the misuse of law, state institutions and the courts, the ill-treatment of detainees to coerce confessions, and the erosion of the right to a fair trial.*”⁹

Another famous example of the use of legal harassment took place in Argentina in 1995, where the then finance minister, Domingo Cavallo, denounced the existence of a pressure group entrenched in the mail industry. After revising the contracts of state owned enterprises with one of the mail companies, he was accused of wrongdoing and, initially, successfully prosecuted for corruption. Cavallo was found guilty of the charge of “failure to comply with the duties of a public servant” for *lowering* the price paid by the Banco Hipotecario (publicly owned) to the private mail companies by almost one dollar per letter (from \$1.4 to \$0.45 for each letter). Although he was later cleared of any wrongdoing by the court of appeals, his reputation was damaged with the least informed members of the public and ultimately faced very large legal bills. That this was part of a campaign and not a spontaneous, freak event is perhaps suggested by a famous threat, made years earlier by one of Cavallo’s political adversaries, that he “*would get tired of visiting Tribunales (the building that houses the*

February 1998, p. 42084.

⁸See *La Nación* (Buenos Aires, Argentina), November 8, 1998. A similar process is described in the editorial “Leave the Judiciary out of it”, *The Taipei Times*, March 3, 2000. This is an extreme version of a problem analysed by political scientists involving the process by which courts and judges come to make public policies that had previously been made by other governmental agencies, especially legislatures and executives (see, for example, Tate and Vallinder (1995)).

⁹See <http://www.amnesty.it/news/2000/32800900.htm>

central legal offices in Argentina)".¹⁰

Biased Media Coverage

A third type of action that reduces the utility of the policymaker is if pressure groups can generate biased coverage in the press. This depends on the particular organization of the media industry in each country. Again an extreme example is Russia, where seven of the top eight largest financial-industrial groups have significant media interests (see *The Economist*, April 4th, 1998). It also suggests that the main reason for the appointment of Chernomyrdin's successor as prime minister (Kiriyenko) in March 1998, was his ties to the country's business community. "*His industry pedigree may have recommended him to the leaders of Russian big business, [...]. The approval of these tycoons is well worth having. They own most of the national mass media and much of the banking industry too. They can twist the arm or stain the reputation of any minister they choose*".

Given the degree of development of OECD countries it seems unlikely that pressure groups can affect policymakers through threats of violence. This would sit well with our impression (there is no readily available data) that policymakers in the region are of better quality than elsewhere. Still, observers have made the case for there being both judicial harassment and biased media coverage. An example of this in the UK is the problems faced by Michael Portillo, a candidate to lead the Conservative Party who admitted to a homosexual past, who in 2001 was undecided to run because he feared that right-wing critics will mount an anti-gay smear campaign.¹¹ But perhaps the most eloquent (and extreme) account is provided by writer Gore Vidal. In a vivid defence of Bill Clinton he writes: "*It is corporate America...that declared war on the Clintons in 1993, when the innocent couple tried to give the American people a national health service [...]. In order to destroy the health service plan, insurance and pharmaceutical companies, in tandem with lively elements of the American Medical Association, conspired to raise half a billion dollars to create and then air a barrage of TV advertisements to convince the electorate that such a service was communist, [...]. Then, not content with the political destruction of the Clintons' health plan, corporate America decided to destroy their reputations. Nothing personal in this, by the way. But how else can the ownership of the country send a warning to other feckless politicians that the country and its people exist only to make money for corporations...?*"¹² This possibility that

¹⁰Virtually every senior official that has been accused of corruption (such as Pakistan's former Prime Minister Benazir Bhutto and Mexico's former President Carlos Salinas de Gortari) have claimed to be under attack by anti-reform pressure groups. Our interest in these events does not depend on the accuracy on the accusations, but on the fact that the idea that pressure groups would use such tactics is considered plausible.

¹¹See "Portillo Fears Smear Campaign", page 1, *The Independent*, Sunday June 10, 2001.

¹²See his article "*Big Business doesn't care for Bill Clinton or the People. So it pays its lawyers to get rid of him*" in *The Guardian* (London, UK), August 9, 1998.

an action against a politician today may entail a message to other officials in the future will be dealt with by our reputational model. One does not need to adhere to every aspect of Vidal’s discourse to admit that the significance of the sexual scandals of Clinton was exaggerated by people who were not particularly upset by his actions but that were trying to stop his political agenda. A very clear cut by-product of the scandals is the fact that Clinton faced very large legal bills. In 1999 it was revealed that Bill and Hillary Clinton had financial difficulties as they are “*indebted by \$5 million in legal bills, and have slightly more than \$1 million in assets*”.¹³ This is a message that might well get through to other politicians in a position to make decisions in the future.

3 The Model

The Economy and Public Wage Determination

Assume the economy is populated by agents indexed with an ability parameter $a \in [0, \infty)$ and an “honesty” parameter $h \in [0, \infty)$. The latter can be seen as moral or any other type of cost incurred when accepting a bribe. It can encompass risks of detection and the value of efforts to be made to ensure secrecy. Ability is distributed according to the function $F(a)$, with associated density $f(a)$, while honesty is independently distributed according to the function $Z(h)$, with associated density $z(h)$. We assume that if individuals enter the private sector they earn a sum equal to their ability level. We assume that the honesty parameter is only known once a bribe offer is received.¹⁴

An official must be hired to govern the organization of economic activities. For concreteness, we can think of these activities as setting up the laws that protect property rights and the enforcement of these laws. In other words, the official in our model is a legislator, a judge or a policeman. His output is a public good, g , that depends on his ability level a^* , where the asterisk indicates the ability level of the official appointed in equilibrium. This official has some degree of discretion, so he can redirect an amount π of natural resources from society to a pressure group. This action is modeled as a lump sum, but other assumptions reinforce the main results of the paper.

¹³See *The New York Times*, Saturday September 25, page B1.

¹⁴This allows us to ignore honesty differences when individuals apply for work in the public sector and makes the analysis simpler. It is true that intrinsic costs of a moral nature might be known by prospective officials in advance. A great share of the costs to be borne when accepting a bribe, however, depend on prevailing conditions that can only be known after taking up office. For example, how much effort one might have to exert to make sure one’s bribe-taking goes unnoticed. See also Acemoglu and Verdier (1998) who rely on a similar ex-post revelation of type. For more on adverse selection over honesty types, see Besley and McLaren (1993).

The total amount of income available to society is given by,

$$I = \pi + y + g(a^*),$$

where y is the produce of the private sector. For notational simplicity we ignore the dependence of y on ability.¹⁵

Our official will have to do three things once in office. One is to deal with the pressure group, who can ask the official to transfer an amount π of the resources belonging to society. If the official yields π to the group, he gets a bribe. Otherwise, he might be punished by the group. The second function of the official is producing the public good. For simplicity, the amount g of public good produced is taken to reflect directly the ability of the official producing it. Thus, we have

$$g = a^*,$$

In the last stage of the game, the official gets to perform his third activity, namely setting his own wages w to maximize his utility. In order to raise money to pay himself, the official taxes the private sector's production y at a rate s . The private sector's production is supposed to be responsive to the prevailing tax rate, because of incentive considerations.¹⁶ All tax revenues $sy(s)$ are spent in the wage of the official. Thus, the wage that will be paid to the official is $w^* = s^*y(s^*)$, where

$$s^* = \arg \max sy(s)$$

Most variations on our wage setting assumptions leave the main results unchanged, including the standard assumption of exogenous public sector wages or determination following standard efficiency considerations as in Besley and McLaren (1993).

Interaction between the Pressure Group and the appointed official

In the last stage of the game, the official receives pressure. He is asked by the pressure group to redirect an amount π of resources towards it. The pressure group has two instruments, bribes, b , and a punishment of variable size r . Delivering a bribe b costs $\Phi(b)$ while delivering a punishment r costs $\Psi(r)$. Suppose $\Phi(0) = \Psi(0) = 0$, $\Phi' > 0$, $\Phi'' > 0$, $\Psi' > 0$, and $\Psi'' > 0$. The official receives the bribe offer and the threat of punishment. He believes that both the bribe and the punishment will be delivered in case he respectively accepts or rejects the group's proposal. We impose very simple preferences on the official: he cares

¹⁵This is innocuous under a set of plausible assumptions, including one of a relatively small public sector. The function I is modeled as additively separable, but this is also inessential.

¹⁶Assuming that $y(s)$ is concave in s guarantees the satisfaction of the necessary and sufficient conditions for a maximum. We assume that the nature-originated wealth π is not taxed, but this is of no consequence.

linearly about money, punishment, and the costs of getting involved in a corrupt deal. Once he knows his own type h , the official will accept the bribe as long as his payoff from accepting it is above the payoff from rejecting it,

$$w + b - h > w - r, \quad (1)$$

This condition implies that every official whose type satisfies $h < b + r$ will accept. Since once the official makes an irreversible decision, punishment is a dominated strategy for the group, the assumption that the threat of punishment is taken at face value is not necessarily granted. Section 9, however, shows that under certain circumstances, in a world where the pressure group interacts with an infinite sequence of officials threats become endogenously credible. The reason being that the group will punish for sure any rejections of his proposal, making the threat credible on reputation grounds.

Since honesty is unobservable, there is no room for haggling. The pressure group sets bribes b and punishment r to maximize its expected profits Π given by,

$$\Pi = [\pi - \Phi(b)]Z(b + r) - [1 - Z(b + r)]\Psi(r) \quad (2)$$

The equilibrium level of bribes and punishment, b^* and r^* , must then satisfy the following first order conditions,

$$\Pi_b = -\Phi'(b)Z(b + r) + [\pi - \Phi(b)]z(b + r) + \Psi(r)z(b + r) = 0 \quad (3)$$

$$\Pi_r = -\Psi'(r)[1 - Z(b + r)] + [\pi - \Phi(b)]z(b + r) + \Psi(r)z(b + r) = 0. \quad (4)$$

At the optimal b , the group balances the cost of a marginal increase in bribes, the fact that this dollar is “wasted” on all types that would have accepted the offer anyway, with the benefit of a higher chance of obtaining $\pi - \Phi(b)$ and avoiding paying $\Psi(r)$. The optimal r must balance the marginal increase in the costs of applying harsher punishment on types that would take it anyway, with the benefit of an increased chance of getting $\pi - \Phi(b)$ and avoiding incurring the cost $\Psi(r)$.

The second order conditions are shown in the Appendix. There we call for attention towards one characteristic of punishment that we will not focus on, although it is important when arguing a case on why threats are different from bribes. A bribe is an instrument that, the more generously one promises to use it, the more likely it is that one will actually have to deliver it—i.e. the higher the bribe one offers, the more likely it is that it will be accepted. This obviously sets some ‘decreasing returns’ to the use of bribes. A threat, on the

contrary, is an instrument that, the more “generously” one promises to use it, the less likely it is that one will have to deliver it. This clearly opens room for increasing returns to the use of punishments, and the optimal r might well be infinite, or reach a technological finite upper bound. All our results go through under these circumstances. We choose, however, to suppose that the cost for punishment rises fast enough so that this does not happen and we have an interior solution for r^* . The reason is to make it transparent that the results do not follow from any modeling asymmetry between bribes and threats, but rather from another essential difference between them. This is that, while higher bribes increase the expected payoff of politicians, higher threats diminish it.

A key indicator of this economy is the amount of influence that is exerted by the pressure group.

Definition 1 *The extent of state capture is characterized by the proportion of types of official whose decisions are changed by the influence of the pressure group. A measure of state capture is then given by,*

$$Z(b^* + r^*).$$

Entry calculus by prospective officials

In the first stage of the game, individuals decide whether to apply for public office or to enter the private sector. Those whose private earnings a are lower or equal than what they expect to get in public office, apply. Then the recruitment office chooses an individual from the pool of applicants to occupy the available position. We assume that the recruitment office can observe the ability of applicants.¹⁷ The recruiter then chooses (through random draw) one individual among those submitting applications that have the highest type. Therefore, if individuals expect public office to yield a payoff of w , all types $a \leq w$ will apply, and the public sector position will be filled with a w type. Hence, the quality of public officials is directly determined by the payoff individuals expect to get by working in the public sector.

In the absence of a pressure group, the expected payoff of a public official is simply the wage, w^* . Thus, every individual with type less or equal to the public wage would apply to public office, and w^* would be the skill level in public office. If a pressure group is active, the official’s payoff also depends on the produce of his dealings with the group. Then the expected payoff of a public official can be written as

$$EP(b^*, r^*) = \int_0^{b^*+r^*} (w^* + b^* - h)z(h)dh + (w^* - r^*)[1 - Z(b^* + r^*)]. \quad (5)$$

¹⁷Like Caselli and Morelli (1999), we want to emphasize that even with perfect observability of ability, we could still observe an equilibrium with bad quality officials.

4 The equilibrium in a world without threats

To clarify how the introduction of threats might alter usual predictions on the relationship between the extent of political pressure and the quality of politicians, we start our analysis by setting $r = 0$ exogenously. So we have a normal corruption model where only bribes can be used as an instrument of political influence. The Pressure Group will decide on an optimal bribe level b° , as characterized by the expression in (3) evaluated at $r = 0$, which reduces to $-\Phi'(b^\circ)Z(b^\circ) + [\pi - \Phi(b^\circ)]z(b^\circ) = 0$.¹⁸ The bribe level thus determines an expected payoff for prospective applicants to public office as expressed in (??). This implies that individuals whose ability type a satisfies,

$$a \leq EP(b^\circ, r = 0)$$

will apply, and the recruiter will appoint an official of type $a^\circ = EP(b^\circ, r = 0)$. It follows that the ability level of the official in public service will be directly determined by the expected payoff facing a prospective official. This expected payoff is rationally perceived by prospective officials, who foresee the interaction with the Pressure Group that follows appointment. Because they also know their earning potential in the private sector, applicants self select along their ability dimension. Because applicants do not know their h type, they do not self select along this dimension, and the distribution over h types considered by the Pressure Group during the pressure stage is indeed $Z(h)$. This proves correct the applicants' calculations on future bribe levels and payoffs.

5 Political influence, state capture and the quality of politicians in a world without threats

Let us redefine the cost function for bribes to be $\beta\Phi(b)$, $\beta > 0$. Lower levels of the parameter β make it cheaper for the group to exert influence through bribes. Thus the first order condition for the pressure group becomes $-\beta\Phi'(b^\circ)Z(b^\circ) + [\pi - \beta\Phi(b^\circ)]z(b^\circ) = 0$. The LHS of this last expression is a function of b° and β that is continuously differentiable. Thus, by the implicit function theorem we know we can define the (continuously differentiable) function $b^\circ(\beta)$ satisfying the FOC above. Studying this function we can then establish that, in a world without threats,

Proposition 2 *More room for influence through bribes in the form of a lower β increases, in equilibrium, the level of state capture and the quality of the appointed politician.*

¹⁸Note this determination is independent from whether high or low ability types found it optimal to apply for public office.

The proof of this proposition starts by establishing a simple comparative statics result: the function $b^\circ(\beta)$ is decreasing. This means that the cheaper it is to use bribes, the higher their level will be in equilibrium. Since state capture in a context of no threats is simply given by $Z[b^\circ(\beta)]$, and the function $Z(\cdot)$ is increasing, it follows directly that a lower β must imply a higher degree of state capture. Lastly, the proof looks at the expected payoff of politicians. It is easy to see that a lower β , by triggering higher bribes, will increase the expected payoff from entering the public sector, thus improving the type profile of applicants. Since the recruiter can pick the very best from this pool, the quality of the appointed official is guaranteed to go up.

This result might be suggestive regarding why the issue of the quality of politicians has taken so long to arise in the political economy literature. In this literature the prevailing instrument of influence is bribes. And this simple result suggests that indeed, in a world where only bribes are available to pressure groups, the existence of too much scope for influence paired with the observation of high degrees of state capture should not worry us: they can only improve the quality of our public servants.

6 The equilibrium in a world with bribes and threats

The equilibrium levels of bribe and punishment are given by the FOCs in (3) and (4). Given the optimal levels b^* and r^* , the expected payoff of an applicant to the public sector is given by $EP(b^*, r^*)$ as in expression (5). Thus, the equilibrium ability of the official will be $a^* = EP(b^*, r^*)$.

In principle it is hard to say what happens to the optimal bribe level when r can be chosen freely. One of the requirements for the FOCs on b and r to identify a maximum is that the cross effects between b and r (captured in Π_{br}) should not be too strong. Under these circumstances, raising r will not induce substantial changes on the optimal b . In such situation the degree of state capture increases, and because the main effect on the the expected payoff of politicians is that of higher threats, this expected payoff decreases. A direct implication is that the quality of the appointed politician will be lower when threats are allowed—i.e., we will have $a^* = EP(b^*, r^*) < a^\circ = EP(b^\circ, r = 0)$. This negative impact is even larger if there is a substitution effect between bribes and threats: i.e. when choosing freely an optimal r greater than zero decreases the optimal bribe level.

Our aim, however, is not so much to compare *levels* of state capture and quality of politicians in situations with and without threats. Our main goal is to show how the inclusion of threats might change our predictions following *parameter changes* that affect the scope for political influence. In addition, we will show that it is not the same to look at variations in the scope for influence through cheaper bribes than doing it through cheaper punishments.

7 Political influence, state capture and the quality of politicians in a world with threats

With the aid of a couple of comparative statics exercises, we establish our main results in this section. As before, redefine the cost function for bribes to be $\beta\Phi(b)$, $\beta > 0$. Analogously, redefine the cost function of punishment to be $\rho\Psi(r)$, $\rho > 0$. Lower levels of β and ρ cause the costs of paying bribes and delivering punishment to decrease.

Effects of more room for influence through bribes

A world in which the bribing technology is a better one can be captured by a lower value of the parameter β . This could reflect a more lax environment regarding the payment of bribes, as when financial movements are not well monitored and balance sheets not heavily scrutinized. We then have,

Proposition 3 *More room for influence through bribes (a lower β) will increase the degree of state capture, and it might decrease the expected payoff of politicians, lowering the quality of the appointed official.*

The proof starts by studying the implicit functions $b^*(\beta)$ and $r^*(\beta)$. These are decreasing if the cross effects between b and r are not too strong relative to the direct effect that a change in β has on the marginal costs and benefits of enlarging b and r . An analogous requirement needed to be made to ensure that the FOCs are indeed selecting a maximum. For $b^*(\beta)$ and $r^*(\beta)$ decreasing, the degree of state capture, given by $Z[b^*(\beta) + r^*(\beta)]$, must also be decreasing in β , implying that a lower β will increase state capture. To finish with, the proof shows that the impact of changes of β on the expected payoff of prospective officials is ambiguous. Because a lower β might trigger higher bribes but also higher threats, it is possible that the expected payoff of politicians might go down. Given the features of the entry process, this would imply that the ability of the appointed official would go down.

The interest of this result is that the inclusion of threats can alter our predictions on what the consequences might be of groups being able to exert more influence. And this is so even when we are still looking at the traditional instrument of influence: bribes. The result in Proposition 1 suggested that the observation of higher degrees of state capture need not worry us beyond our concerns for the decisions made by officials. If a higher degree of capture follows from groups being able to pay bribes more easily, then the quality of our political class must be improving. Proposition 2 says that, because threats coexist with bribes, this need not be the case. Higher capture following from groups finding it easier to pay bribes may be a damaging force over the quality of public service. The reason is that it might involve the simultaneous use of higher threats.

The effects of more room for influence through threats

Consider now changes in ρ . A lower ρ would reflect a world where the probability of being detected and punished by justice after engaging in any form of harassment is lower, and/or where the penalties associated to such actions are lower. In any such world it would be cheaper to hire thugs, influence the media, or manipulate justice.

We can then establish,

Proposition 4 *More room for influence through threats (a lower ρ) might increase the degree of state capture, while it will definitely decrease the expected payoff of politicians, lowering the quality of the appointed official.*

The proof starts by studying the implicit functions $b^*(\rho)$ and $r^*(\rho)$. We show that under conditions analogous to those imposed in the proof of our previous proposition, $b^*(\rho)$ is increasing, while $r^*(\rho)$ is decreasing. This means that lower costs of delivering punishments will increase the use of threats, while it will decrease the use of bribes. This makes the impact of a lower ρ over the degree of state capture $Z[b^*(\rho) + r^*(\rho)]$ essentially ambiguous, depending on whether the effect over bribes is stronger or weaker than that over threats. The effect over the expected payoff of politicians is not ambiguous, however. The proof shows that, provided $b^*(\rho)$ is increasing and $r^*(\rho)$ is decreasing, lower values of ρ will imply lower expected payoffs for politicians, i.e. that $\frac{dEP[b^*(\rho), r^*(\rho)]}{d\rho} > 0$. It is then immediate that lower costs of exerting pressure through threats cause the ability of the appointed official (given by $a^*(\rho) = EP[b^*(\rho), r^*(\rho)]$) to fall in equilibrium.

One asymmetry in the comparative static effects of β and ρ is worth mentioning. While the functions $b^*(\beta)$ and $r^*(\beta)$ are both decreasing, the functions $b^*(\rho)$ and $r^*(\rho)$ are, respectively, increasing and decreasing. That both $b^*(\beta)$ and $r^*(\rho)$ are decreasing is to be expected: when a higher β (ρ) makes the marginal cost for paying bribes (delivering punishment) higher, the optimal bribe (punishment) becomes lower. What requires explanation is why $r^*(\beta)$ is decreasing while $b^*(\rho)$ is increasing. First, $r^*(\beta)$ is decreasing in β because a higher cost of paying bribes decreases the marginal benefit of enlarging r and inducing acceptance of the bribe. This is due to the net payoff $\pi - \beta\Phi(b)$ following the acceptance of a bribe being smaller when β is larger. Second, $b^*(\rho)$ is increasing because a larger cost of delivering punishment increases the marginal benefit of slightly increasing bribes to induce their acceptance. This is because the acceptance of the bribe implies that the group avoids having to pay the cost $\rho\Psi(r)$ associated to delivering punishment.

8 Multiple Equilibria

Our results in the previous section mean that we can explain cross-country variations in the quality of politicians by considering a single equilibrium and showing that higher values of the parameter capturing the scope for nasty pressure imply lower quality of politicians. Another way is by having multiple equilibria. An economy like the one we present can generate multiple equilibria if we take into account a link that we find reasonable: the quality of politicians should affect the scope for threats being used. Worse politicians will provide less public goods of which law enforcement may be one example. This may enhance the ability of the group to threaten the officials, thus lowering their expected payoffs, and therefore their equilibrium quality. On the contrary, high quality politicians will provide tight law enforcement, thus reducing the chances for punishments being used. This should raise the expected payoff of officials and, consequently, their quality in equilibrium.

Assume the public good level g_t represents the quality of law enforcement, or the amount of regulation in the media industry, prevailing at period t . Assume also that g_t depends simply on the quality of officials during period $t - 1$: $g_t = a_{t-1}$. A higher level of g will typically imply a higher value of ρ : the total and marginal costs of exerting pressure through threats go up with tighter law enforcement or stricter anti-libel regulations. So we will write $\rho(g)$, where $\rho' > 0$. To keep things simple, suppose that g does not affect β . We showed in the previous section that the expected payoff of politicians was increasing in ρ . Therefore, it must also be increasing in g .¹⁹

We do not want to make precise statements about existence nor stability of any particular equilibria. This is, we do not claim that multiple equilibria *will* definitely exist, nor that they must look precisely like those shown below. Rather, we want to show that multiple equilibria *can* arise, and that some of them could be “bad”, in the sense that appointing bad politicians reinforces the conditions that make bad politicians the only ones to be available. Then, for the sake of the argument, let us make a reasonable assumption: that higher levels of the public good have diminishing marginal returns in terms of the improvements they produce on the expected payoff of politicians. Hence, $\frac{d^2 EP\{\cdot\}}{dg^2} < 0$. Moreover, if the prevailing level of g is zero, we can assume that ρ attains some lower bound, and hence the expected payoff of politicians is very low. Note nothing prevents it from being negative for some very low ρ .²⁰ To keep the determination of public wages just as before we assume that the level of the public good does not affect private production.²¹

¹⁹Since $\frac{dEP\{b^*[\rho(g)],r^*[\rho(g)]\}}{dg} = \frac{dEP\{b^*(\rho),r^*(\rho)\}}{d\rho} \frac{d\rho}{dg} > 0$.

²⁰Indeed if the expected payoff of politicians is negative, nobody applies to the public sector. One can think that the pressure group itself makes decisions, keeping g at a minimum.

²¹Note that assuming independence of private production from g isolates one mechanism generating multiple equilibria: the impact of g on the payoff of officials through the expected disutility of receiving punishment.

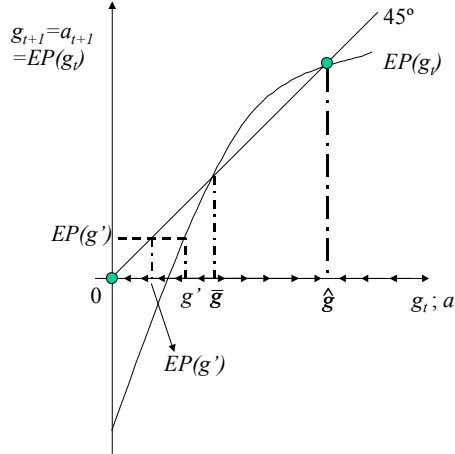


Figure 1:

The horizontal axis in this picture measures two variables. On the one hand it measures g_t , the prevailing level of the public good in the economy at period t . On the other, it measures a , the ability of an individual considering applying for public office. The vertical axis measures expected payoffs from being in the private and public sector in period t . The former are given by the ability of each individual (through the 45 degree line), while the latter are given by $EP(g_t)$. Note that, in any period t , $EP_t = EP(g_t) = EP(a_{t-1}) = EP[EP(g_{t-1})] = EP(EP_{t-1})$, and equilibrium is characterized by $EP_t = EP_{t-1}$, or $g_t = g_{t-1}$. To see how we can get multiple equilibria, suppose that, being concave, $EP(g_t)$ cuts the 45 degree line twice: first at a level \bar{g} and then at a higher level \hat{g} . Start with a public good level $g' < \bar{g}$. This generates an expected reward from entering public service of $EP(g')$. Now finding the reflection of $EP(g')$ in the horizontal axis we see that an individual with type $a' = g'$ would earn precisely $a' = g' > EP(g')$ in the private sector. Thus, no individual with a type higher than or equal to $EP(g')$ would enter the public sector. So if the officials that were producing the public good in $t - 1$ were of type $a' = g'$ (they must have been if the public good level was g') they would quit and leave their posts to people with lower types. This process would go on for any public good level $g < \bar{g}$. So if a society starts anywhere below \bar{g} , it would converge to a bad equilibrium in which $g = 0$. This is a situation in which there is no law enforcement and groups can reduce the utility of officials with great ease. Thus, any individual with the ability to earn positive amounts in the private sector will stay

The assumption is likely to be realistic when g is, say, the quality of regulation in the media industry. The alternative assumption that g can affect private production is perhaps more realistic when g is overall law enforcement. Note that assuming this would only reinforce the potential for multiple equilibria. We would have a direct effect of g on the payoff of officials through higher wages, on top of its effect on expected punishments.

out of public life. In this situation, one would presume that it is the pressure group itself who provides the public servants, keeps g at a minimum, and then proceeds to steal the country's natural resources. For $g = \bar{g}$, we have an unstable equilibrium. And for $g > \bar{g}$, a similar argument to that one just made for $g < \bar{g}$ ensures society will tend to enjoy a public good of size \hat{g} . This will allow higher rewards from public life and attract people of type $\hat{a} = \hat{g}$ to the public sector. This is a stable equilibrium with high quality politicians and little room for the pressure group to threaten them.²²

This is not the only way to generate multiple equilibria. Another possible one is by considering that the state appoints many officials at a time. Then the level of g (and hence, protection from pressure) they will enjoy can depend on their own current average quality—as opposed to that of previous officials. In such a situation, we can have a bad equilibrium where all appointed officials are of low quality and generate a low g . This in turn justifies high ability types not having applied, as the payoff from holding office is indeed low given the prevailing high threats.

9 The credibility of threats in a repeated game

It is customary in the political economy literature to assume away the credibility problem emerging when “contracts” corresponding to illegal transactions are signed. How can the offer of bribes (or the promise to make a policy favor after a bribe is paid) be made credible? One usual answer is that presumably, in a repeated interaction, reputational concerns force players to keep their word. The fact that a pressure group has access to threats might help it to enforce the delivery of official favors after a bribe has been paid. An official that takes the money and runs will be punished harshly. But then the same question can be made regarding the credibility of threats. Why should the group incur the cost of delivering the punishment once the official has rejected a bribe or, worse even, has accepted it and then decided not to deliver the corresponding favor? This section describes a simple repeated interaction set up with infinite horizon. We then identify the conditions that are required for reputational concerns to sustain threats that are endogenously credible.

²²Caselli and Morelli (1999) show that there can be multiple equilibria when the rewards from office are increasing in the average quality of office holders. The bad equilibrium requires that a good quality candidate prefers to be surrounded by good quality candidates rather than with bad quality ones, an assumption that gives low weight to the possibility that such an exceptional candidate would be held in high esteem by the public. The assumption that quality of law enforcement is increasing in the quality of previous officials is perhaps more plausible. Another issue is robustness. In their model the bad equilibrium can be avoided if a candidate stands for election offering to raise wages or if it coordinates to run for office with other high quality types. In our model generating a high g that improves the environment for future officials is not directly rewarding for any one individual.

Suppose that the game described in Section 3 takes place between an infinitely lived pressure group and a different official each period. The pressure group discounts the future according to the factor $\delta < 1$. Suppose that when offering a bribe to an official, the pressure group deposits it into an account that the official can access. If the official accepts the bribe, he cashes it in and delivers the country's natural resources to the group. If he rejects, the group recovers the money. Suppose that the official faces a cost h when accepting a bribe, just like before, and that his cost of delivering the natural resource to the group is zero. This allows us to concentrate on the issue of the credibility of threats rather than on that of the credibility of the official's promise to deliver π after cashing in the bribe. Just like before, then, a bribe is accepted and π is given to the group whenever $h < b + r$. When the group announces a bribe-threat pair (b^*, r^*) , the group's expected payoff is $\Pi(b^*, r^*)$, as long as the threat is believed. If threats are not credible, the pressure group will choose the bribe optimally subject to $r = 0$. The payoff of the pressure group will then be the lower amount $\Pi(b^\circ, r = 0)$. We can then establish,

Proposition 5 *If $\rho\Psi(r) < \frac{\delta}{1-\delta}\{\Pi(b^*, r^*) - \Pi(b^\circ, r = 0)\}$, the following profile of strategies constitutes a subgame perfect Nash equilibrium in the infinite horizon game sustaining credible threats:*

- a) For the pressure group: Offer (b^*, r^*) in every period and punish officials who reject bribes if every official who rejected bribes so far has been punished. Otherwise offer $(b^\circ, r = 0)$.*
- b) For the officials: (i) If all officials that rejected bribes so far have been punished, accept the bribe if $h < b^* + r^*$. (ii) If at least one official who rejected bribes previously was not punished, accept the bribe only if $h < b^\circ$.*

The proof is very simple: it shows that threats can be used permanently by the group, since paying the cost of punishing allows it to derive higher payoffs in the future. These higher payoffs are due to the fact that threats can still be used in the future and the group saves on bribes and/or gets official favors more often.

Note that a country where ρ is sufficiently high might have a "discontinuously" better political class. Our results in Section 7 showed that higher costs of influence through threats were to be associated with higher payoffs for politicians and higher qualities of the appointed officials. The inequality in our last proposition suggests that, if a country has a ρ which is sufficiently high, pressure groups might not be able to use threats at all, since their credibility cannot be endogenously sustained by repeated interaction. Conversely, when the environment in a country becomes more violent or when law enforcement becomes more lax (i.e. anything associated to a lower ρ) society might see a jump down in the quality of its public men.

10 Conclusion

Economists have shown how cross-country differences in income can be explained by a variety of economic factors such as different saving rates. An alternative explanation that has received relatively little scrutiny is that these differences originate in the incompetence of those in charge of selecting policies. In this paper we develop a model where pressure groups use carrots and sticks in their attempt to influence policy and this affects the quality of policy makers. Our approach has some interest because there is overwhelming evidence of the existence of pressure groups that use both bribes and threats (of legal harassment, smear campaigns in the media, violence) in many developing countries and transition economies and even in some of the industrial democracies. It also has some theoretical relevance because it seems ad hoc to restrict a pressure group's action space to include only one type of instrument (carrots). Considering the use of both types of instruments is not just a matter of algebraic signs in the incentive scheme. This is made clear by the empirical predictions of our model, which could never be generated by a model that considers bribes (or threats) alone.

Our model has two stages. In the first one, citizens decide to enter public life computing the expected payoff to being a policymaker under the influence of a pressure group. In the second stage the appointed official is influenced by a pressure group that has access to both bribes and threats. A simple result of the paper is that both bribes and threats are used by interest groups. Thus, questions such as “*Plata o Plomo?*” are observed in the equilibrium of our game. Also, officials are punished with positive probability in equilibrium. This is unfortunate because threats—when carried out—introduce an element of inefficiency into our model (while bribes are mere transfers). The reason inefficient actions are used is because they allow the group to save on bribes and/or to get official favors more often.

It is traditional in the literature on corruption and capture to worry about these phenomena either because they should be associated with distorted official decisions, or because they should be associated with wasteful activities. It is less common to worry about their possible impact over the quality of the public service. This is not illogical in a literature dominated by the exclusive consideration of bribes as the sole instrument of influence. We show that, in a world without threats, more scope for influence through bribes increases state capture but it also improves the expected payoff of officials. Thus, more able individuals should be attracted to the public sector. Including threats in the influence process brings home the fact that high degrees of state capture might have negative effects on the quality of the political class. More scope for influence through bribes will again increase the degree of state capture, but in the presence of threats it might damage the quality of the appointed officials. The reason is that higher bribes might be accompanied by higher equilibrium threats, even when it is only bribes that have become easier to use. We also find that in countries where

pressure groups have more room to influence policymakers through threats, the returns to entering public life will definitely fall and so will the quality of policymakers. The negative relationship between the influence of the pressure groups and the quality of public officials is a key property of our model which we believe to be new to the literature.

We also show that there can be multiple equilibria. The crucial aspect is that the emergence of unable policymakers reinforces the conditions that make nasty methods easy to use for pressure groups. It is these very methods that make public life unattractive for high ability individuals.

11 Appendix

Second order conditions for the problem of the Pressure Group

These are given by $\Pi_{bb} < 0$ and $\Pi_{bb}\Pi_{rr} - (\Pi_{br})^2 > 0$. The first condition is satisfied provided $\Phi(b)$ rises fast enough or whenever the solution (b^*, r^*) takes place where the density $z(b+r)$ is decreasing (which eventually must be). For the second condition to hold we need either the functions $\Phi(b)$ and $\Psi(r)$ to increase fast enough or the cross effect between b and r (captured in Π_{br}) to be relatively small.

Proof of Proposition 1. To show that $b^\circ(\beta)$ is decreasing, totally differentiate the FOC $-\Phi'(b^\circ(\beta))Z(b^\circ(\beta)) + [\pi - \beta\Phi(b^\circ(\beta))]z(b^\circ(\beta)) = 0$ with respect to β , and solve for $\frac{db^\circ}{d\beta} = \frac{\Phi(b^\circ(\beta))z(b^\circ(\beta))}{\Pi_{bb}}$, where Π_{bb} is of course evaluated at $b^\circ(\beta)$. Note $\Pi_{bb} < 0$ from the SOC, therefore $\frac{db^\circ}{d\beta} < 0$. The effect of a lower β on the degree of state capture is given by $\frac{dZ[b^\circ(\beta)]}{d\beta} = z[b^\circ(\beta)]\frac{db^\circ}{d\beta} < 0$, proving that more room for influence through bribes (i.e. a lower β) will increase state capture. We next show that a lower β will improve the expected payoff of politicians. In a world without threats the payoff in (5) reduces to

$$EP(b^\circ(\beta), r = 0) = \int_0^{b^\circ(\beta)} (w^* + b^\circ(\beta) - h)z(h)dh + w^*[1 - Z(b^\circ(\beta))],$$

and $\frac{dEP(b^\circ(\beta), r=0)}{d\beta} = Z[b^\circ(\beta)]\frac{db^\circ}{d\beta} < 0$. To see that the quality of the appointed official will increase when there is more room for influence through bribes (a lower β), recall that the quality of the appointed official is given by $a^\circ(\beta) = EP(b^\circ(\beta), r = 0)$. Having proved $\frac{dEP(b^\circ(\beta), r=0)}{d\beta} < 0$ proves $\frac{da^\circ(\beta)}{d\beta} < 0$. ■

Proof of Proposition 2. Write down the system in (3) and (4) evaluated at $b^*(\beta)$ and $r^*(\beta)$, two implicit functions that are continuously differentiable. The effect of changes in β on b^* and r^* are then given by $\frac{db^*}{d\beta} = \frac{-\Pi_{b\beta}\Pi_{rr} + \Pi_{r\beta}\Pi_{br}}{\Pi_{bb}\Pi_{rr} - (\Pi_{br})^2}$ and $\frac{dr^*}{d\beta} = \frac{-\Pi_{r\beta}\Pi_{bb} + \Pi_{b\beta}\Pi_{br}}{\Pi_{bb}\Pi_{rr} - (\Pi_{br})^2}$, where expressions $\Pi_{b\beta}$ and $\Pi_{r\beta}$ denote the partial derivatives of Π_b and Π_r with respect to β . The denominator of both expressions is positive from the SOCs. The numerators are negative if

the cross effect captured in Π_{br} is relatively small relative to the direct effects comprised in $\Pi_{b\beta}$ and $\Pi_{r\beta}$. This follows from the fact that both Π_{bb} and Π_{rr} should be negative from the SOCs, as are the direct effects $\Pi_{b\beta}$ and $\Pi_{r\beta}$. Note the first is given by $-\Phi'(b)Z(b+r) - \Phi(b)z(b+r) < 0$, while the second is $-\Phi(b)z(b+r) < 0$. Under these conditions, then, the functions $b^*(\beta)$ and $r^*(\beta)$ are decreasing. It follows directly from $Z'(\cdot) > 0$ that the degree of state capture $Z[b^*(\beta) + r^*(\beta)]$ is decreasing in β . The variation in the expected payoff of politicians after a change in β is given by $\frac{dEP[b^*(\beta), r^*(\beta)]}{d\beta} = Z[b^*(\beta) + r^*(\beta)]\frac{db^*}{d\beta} - \{1 - Z[b^*(\beta) + r^*(\beta)]\}\frac{dr^*}{d\beta}$. Note that for both $\frac{db^*}{d\beta}$ and $\frac{dr^*}{d\beta}$ negative, this has an ambiguous sign. In particular, for $\{1 - Z[b^*(\beta) + r^*(\beta)]\}\frac{dr^*}{d\beta} < Z[b^*(\beta) + r^*(\beta)]\frac{db^*}{d\beta}$, we have $\frac{dEP[b^*(\beta), r^*(\beta)]}{d\beta} > 0$, meaning that a lower β decreases the expected payoff of politicians. The direct consequence being that the ability $a^*(\beta) = EP[b^*(\beta), r^*(\beta)]$ of the appointed official will also be lower. ■

Proof of Proposition 3. Write down the system in (3) and (4) evaluated at $b^*(\rho)$ and $r^*(\rho)$, two implicit functions that are continuously differentiable. The effect of changes in ρ on b^* and r^* are then given by $\frac{db^*}{d\rho} = \frac{-\Pi_{b\rho}\Pi_{rr} + \Pi_{r\rho}\Pi_{br}}{\Pi_{bb}\Pi_{rr} - (\Pi_{br})^2}$ and $\frac{dr^*}{d\rho} = \frac{-\Pi_{r\rho}\Pi_{bb} + \Pi_{b\rho}\Pi_{br}}{\Pi_{bb}\Pi_{rr} - (\Pi_{br})^2}$, where expressions $\Pi_{b\rho}$ and $\Pi_{r\rho}$ denote the partial derivatives of Π_b and Π_r with respect to ρ . The denominator of both expressions is positive from the SOCs. Recall that Π_{br} being relatively small is a requirement for the SOCs for a maximum being satisfied. In the context of the present proposition, an analogous requirement yields definite signs for $\frac{db^*}{d\rho}$ and $\frac{dr^*}{d\rho}$. We need the cross effect captured by Π_{br} to be small vis a vis the direct effects that ρ has on the marginal costs and benefits of enlarging b and r (in turn given by $\Pi_{b\rho}$ and $\Pi_{r\rho}$). If this is so, $\frac{db^*}{d\rho}$ has the sign of $-\Pi_{b\rho}\Pi_{rr}$, which is positive from $\Pi_{rr} < 0$ and $\Pi_{b\rho} = \Psi(r)z(b+r) > 0$, while $\frac{dr^*}{d\rho}$ has the sign of $-\Pi_{r\rho}\Pi_{bb}$, which is negative from $\Pi_{bb} < 0$ and $\Pi_{r\rho} = -\Psi'(r)[1 - Z(b+r)] + \Psi(r)z(b+r) < 0$. The last inequality follows from the satisfaction of the FOC for r . Thus, $\frac{db^*}{d\rho} > 0$ and $\frac{dr^*}{d\rho} < 0$, which implies that the effect of a change in ρ over state capture ($\frac{dZ[b^*(\rho) + r^*(\rho)]}{d\rho}$) is ambiguous. The effect on the expected payoff of politicians, however, is not: $\frac{dEP[b^*(\rho), r^*(\rho)]}{d\rho} = Z[b^*(\rho) + r^*(\rho)]\frac{db^*}{d\rho} - \{1 - Z[b^*(\rho) + r^*(\rho)]\}\frac{dr^*}{d\rho} > 0$, implying that a lower ρ will cause a lower expected payoff for politicians. Thus, the corresponding ability $a^*(\rho) = EP[b^*(\rho), r^*(\rho)]$ of the appointed politician will also be lower. ■

Proof of Proposition 4. We have to check that every player's strategy is a best response to that of the other player. Officials do well in accepting bribes only if $h < b^* + r^*$ when all those rejecting have been punished so far. This is because, given the strategy of the pressure group, officials will be punished if they reject. Clearly every official for whom $h < b^* + r^*$ is then better off accepting. It is also a best response to accept bribes only if $h < b^\circ$ when at least one official rejecting bribes has not been punished in the past. The reason is that, following its own strategy, the pressure group will not punish a rejection. On the other hand, it is a best response for the pressure group to punish an official who rejects

bribes if this has always been done before, provided $\Psi(r) < \frac{\delta}{1-\delta}\{\Pi(b^*, r^*) - \Pi(b^\circ, r = 0)\}$. Punishing costs $\Psi(r)$, but it allows the threat to sustained for future use. Every period will yield an expected payoff of $\Pi(b^*, r^*)$ if threats can be used (together with optimally chosen bribes), while the per period expected payoff will be $\Pi(b^\circ, r = 0)$ if threats cannot be used anymore. Thus it is optimal to punish if the cost of doing it is lower than the net present value of the gain of keeping threats credible, given by the RHS in the inequality above. ■

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