Capture by Threat

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Abstract

We analyze a simple stochastic environment where policymakers can be threatened by "nasty" interest groups. In the absence of these groups, the policymaker's desire for reelection guarantees that good policies are implemented for every realization of the shock. When pressure groups can harass the policymaker, good policies will be chosen for only a subset of states of nature. In order to enlarge this subset, the public will often …nd it convenient to elect "strong" political leaders, increase the cost of exerting pressure and provide rents to those in power. The last result could be used as an explanation for the existence of political parties. They play a role resembling that of the supervisor in the literature on collusion in hierarchical agency. The paper also helps explain why honest politicians may choose bad policies.

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1 Introduction

A fundamental insight of the literature on capture is that policies which do not make much sense in economic terms may be playing a political role. Thus, bad economic policies are sometimes "politically-e¢cient". The root assumption in this literature is that policymakers are dishonest.[1] In every model that we know of, politicians voluntarily trade policies for money, either for themselves (bribes) or for the party (campaign contributions). There are three potential problems with this approach. The …rst is that it suggests that the election of a perfectly honest politician, however unlikely that may be, would lead to the selection of welfare maximizing policies. Yet, there are plenty of examples of reform processes where seemingly honest and competent policymakers fail to implement good policies for prolonged periods of time (Alesina and Drazen (1991) provide one explanation). The second problem with this approach is that it often assumes that voters are very naive. They fail to vote out dishonest politicians or they are in‡uenced by candidates that spend a lot of money in their political campaigns. In many models (e.g. Grossman and Helpman (1996)) favouring interest groups provides more votes (via campaign contributions) than good policies. Since these same individuals are assumed to be rational when they interact in product markets, this feature is unattractive.[2] Lastly, the assumption that interest groups in‡uence policy only by o¤ering money to politicians seems too restrictive. For a start, politicians are (very) occasionally assassinated. In some cases politicians are subject to costly legal harassment. This suggests that pressure groups have a whole range of actions available to them, that lie between giving money to a politician and killing him. This paper addresses these issues.

We present a model where good policies (not money) win votes and where policymakers are completely honest. Our politician would never adopt a particular policy because bribes have been o¤ered or campaign contributions have been pledged. He does, however, have a weakness. He cares about his family's and his own well being. The root assumption of the paper is

[1] See Stigler (1971), Peltzman (1976), Becker (1983), Baron (1989), Grossman and Helpman (1994), and Besley and Coate (1999), inter alia.

[2] Wittman (1989) discusses this and other arguments on why democracies are e¢cient. Coate and Morris (1995) provide a model where politicians accept bribes and voters are fully rational, while Grossman and Helpman (1996) present a model where politicians accept campaign contributions and part of the public is fully rational (or "informed").

that there are instances where pressure groups can capture policymakers by threat. This is possible when these "nasty" groups develop ways to a¤ect the utility of the policymaker even when he has no interest in entering into a transaction with them.[3] The precise way will depend on the environment. Physical violence is just one of many possibilities. More often pressure groups will be able to a¤ect the good name of a politician by smear campaigns, starting negative rumors in in‡uential groups through word of mouth. Sometimes pressure groups can attack the policymaker in the media. This can be done directly, by sponsoring advertisements personally attacking the politician, or indirectly supporting "independent" TV and radio programs. Certainly part of the concern with concentration of ownership in the media industry is related to its considerable power to in‡uence public opinion.[4] Sometimes pressure groups can use the legal system to harass the politician. They can initiate litigation aimed at showing the illegality or administrative incompetence of the policies proposed by the policymaker.[5] Or they can bring up accusations related to some real or …ctitious crime. The reason why the pressure group may raise false accusations is because, even if justice ultimately prevails, a number of government actions can be delayed or blocked in the meantime by damaging a reputation and questioning an individual's moral authority. Equally important, the accused politician may have to face lengthy and costly trials. In this case the instrument of punishment is the Law. In Latin America this practice has become so common that it already has a name: the "judicialization of politics".[6] In countries where the judicial system can be in‡uenced, pressure groups can a¤ect the outcome of such

[3] The word "pressure" certainly has some non-voluntary connotations. Thus we distinguish "interest groups" from "pressure groups".

[4] A recent article reveals that, of Russia's eight largest …nancial-industrial groups, the top seven have signi…cant 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".

[5] A small literature in political science documents the activities of lobbysts. Schlozman and Tierney (1983) …nd that the main activities are classic forms of lobbying, such as testifying at legislative hearings. They also …nd that a growing proportion of lobbyists (over 70%) report to seek in‡uence through "unconventional activities such as protest and litigation". Later studies present similar …ndings (e.g. Heinz et al (1993)).

[6] See, for example, La Nación, (Buenos Aires, Argentina) November 11, 1998.

trials and even innocent politicians could be condemned. In other countries, where the cost of violence is low enough, pressure groups can use the threat of physical violence against the politician or his family in order to a¤ect policy making.

In our simple model, a perfectly honest political leader (call him president) must make a policy decision. His chances of re-election depend on this decision and an adverse shock. In the absence of nasty pressure groups, the president's desire to stay in power always leads him to choose the right policies for the country. When the pressure group is active however, he only chooses the good policy for a subset of the realizations of the shock. In order to induce its preferred outcomes, the public can introduce a political party to accompany the president. As party members enjoy being in o¢ce and observe the choice of policy, they provide some protection to the president if he chooses good policies. The equilibrium of this game has the size of the set of states of nature for which good policies are chosen depending on the vulnerability of the leader, on the cost of in‡icting punishment on him, and on the amount of rents available to politicians while in o¢ce. The latter increases the desire of party members to retain o¢ce. People may also prefer a strong leader, not because they have an intrinsic preference for such individuals, but because strong leaders may be more costly to attack for pressure groups.[7]

Our paper has a number of di¤erences with the previous literature. First, we try to deal with the three problems mentioned above: we allow for honest policymakers, only good policies provide votes, and we allow for nasty interest groups. Another simple di¤erence is that bribes are mainly transfers whereas the kind of punishment activities analyzed here always involve deadweight losses.[8] Furthermore, our paper provides an explanation for the existence of political parties. The previous literature on capture does not reserve a distinct role for political parties, as they are assumed mainly to transmit the pressure of active groups (see Becker (1983) and the common agency model of Grossman and Helpman (1994)). In our model the party is not just like any other pressure group, as it is subject to electoral discipline and its members are given rents by the public while they hold o¢ce. Since

[7] As an example, we can expect that a politician that enjoys extra-marital sex be regarded by the public as a less convenient candidate.

[8] Also note that pressure is not voluntary on one side of the transaction. This means that when nasty pressure groups are active, the policymaker's individual rationality constraint is looser.

we consider only one active interest group, the issue of competition among groups is not analysed. In any case, the main points raised here can certainly be cast in terms of a common agency framework, with many political parties and pressure groups.[9]

One of the few papers that we found containing an explanation for the existence of political parties is Weingast and Marshall (1988), who provide a theory of political institutions as a way to reduce the transaction costs of electoral participation. In their model, parties can build reputations that differ from the individuals that are affiliated with them.[10] Wittman (1989) mentions another potential rationale for political parties. When political candidates represent districts there may be a tendency toward too many pork barrel projects being implemented (as in Fiorina and Noll (1978) and Weingast, Shepsle and Johnsen (1981)). The existence of a national political party could be a way to internalize the negative externalities that might arise when districts try to shift the cost of projects to other districts. Though certainly appealing, these models do not explain why would a voter choose a national party over a party that only belongs to the district.[11] Our explanation is different. In our model political parties are there to monitor and protect the president. They have an incentive to do so because the public gives them rents when they are in office, and the chance that they remain in office depends on the president's policies. There are formal similarities between the role played by the political party in our setup and the role of the external (costly but non-collusive) supervisor in the hierarchical model of Kofman and Lawarree (1993) (see also Tirole (1992)). Since party members observe everything the president does, they can make support contingent on the president playing the good policy. These papers, however, analyze explicit contracts, allow for collusion between supervisor and agent and derive the normative implications of the optimal contract.

[9] A natural extension of our model is to analyse the effect of nasty interest groups on entry into the political activity. The latter has been integrated to the literature on lobbying using a citizen-candidate model in Besley and Coate (1999). See also Caselli and Morelli (1999).

[10] In Jones and Hudson (1998) party affiliation is a cheap way for a candidate to signal policies and abilities to the voter.

[11] A recent paper by Besley and Coate (1998) provides a model where national parties could have an advantage over local parties at the time of setting the legislative agenda. Thus, one could imagine that voters trade off the benefits from pork barrel projects that the local district party will probably bring, with the likelihood that the party is the "agenda setter" and the policies it supports are implemented.

The next section discusses some examples. Section 3 presents a simple model of policymaking under nasty pressure groups. Section 4 characterizes the policymaking equilibrium. Comparative statics results are shown in Section 5. Section 6 presents some welfare considerations related to the desirability of political rents, while section 7 concludes.

2 Four Examples

The following are four incidents where, at one point or another, it has been suggested that pressure groups were trying to a¤ect policy decisions. Two preliminary comments are worth making. First, it is not always the case that pressure groups where proved to be behind the incidents. For the purposes of our paper it is su¢cient that somebody …nds it plausible enough to argue in public that the attacks were organized by pressure groups. Second, in the case of accusations of corruption, the fact that the policymaker is guilty or not of the charges levied against him is not really relevant in determining whether the incident was used by the pressure group to a¤ect policy. In terms of our model, the possibility that some accusations are true would simply reduce the cost of exerting in‡uence for the pressure group.

Each year, a number of policymakers are assassinated around the globe. In some cases the deaths have been linked to pressure groups. A recent example is that of Galina Starovoitova, 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."[12]

[12] See the article "Obituary: Galina Starovoitova", in The Economist, November 28th 1998. Keesing's Record of World Events documents other assasinations in Eastern Europe, Africa, Asia and Latin America, where it has been alleged that pressure groups have been involved. It also records unsuccessful assassination attempts, like that 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

The second example takes us to Argentina in 1995, where the then …nance minister, Domingo Cavallo, denounced the existence of a Ma…a 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 central legal o¢ces in Argentina)".[13]

The third example involves the case of military coups. In some regions, notably Latin America, the armed forces have traditionally been a very active pressure group. One of the most interesting cases is that of Chile in 1973, where President Allende was deposed in a military coup by General Pinochet. Allende's explicit socialist ideology and policies, like land reform and nationalizations in the banking and mining industries, triggered the uprising of the Chilean armed forces with the explicit support of a part of Chilean society. The case of Chile is perhaps interesting for another reason. It points out that other countries may choose to support local pressure groups. According to recently declassi…ed CIA documents, the US supported Pinochet's coup. Apparently the motivation for these actions was to limit Allende's "ability to implement policies contrary to US and hemisphere interests".[14]

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oil through a pipeline across Georgian territory or via an alternative route." Keesing's Record of World Events: News Digest for February 1998, p. 42084.

[13] Other incidents where policy makers have been accused of corruption and who have claimed to be under attack by anti-reform pressure groups include Pakistan's former Prime Minister Benazir Bhutto and Mexico's former President Carlos Salinas de Gortari. Their innocence in these events is less clear cut.

[14] These documents are now public. CNN Interactive reports that "One of the CIA documents states that the US had a '…rm and continuing policy that Allende be overthrown by a coup' and speaks of the need for 'the American hand to be well-hidden' in such an act" ("Why is the US mum about Pinochet?" 25/11/98). In NSAEBB8 (1998) there are handwritten notes of the CIA director at the time registering Nixon's orders to "make the economy scream". For a highly conspiratorial account of the US involvement in the

Our fourth example concerns the recent impeachment of President Clinton. A number of observers have seen in the behavior of the media the in‡uence of pressure groups. With some variations, the basic story argues that pressure groups that su¤er under Clinton's policies have actively sought to increase the cost of the Lewinsky a¤air for him, not because they think it has any bearing on social welfare, but because it would help them …ght his positions on other issues. For example, conservative religious groups that form the Christian Coalition have distributed pamphlets that criticize both the bad example that President Clinton sets for the rest of society, and his position on abortion and gay rights. Others have seen the in‡uence of corporate America. Gore Vidal provides a colorful (and extreme) account of one such theory in his article: "Big Business doesn't care for Bill Clinton or the People. So it pays its lawyers to get rid of him".[15] Although his presidency survived the impeachement, he faced very large legal bills. It was recently revealed that Bill and Hillary Clinton had di¢culties in buying a house as they are "indebted by $5 million in legal bills, and have slightly more than $1 million in assets".[16]

3 The Model

A certain society is subject to adverse shocks, denoted μ. We assume the distribution of μ over $[0;1]$ is described by the function $¤(\mu)$, with associated density $¸(\mu)$, and that we have $d¸=d\mu \acute{} ¸^{0} < 0$ for all values of μ (i.e. small shocks are more likely than large ones).

coup against president Arbens of Guatemala in 1953 and the role of the United Fruit Corporation, see Schlesinger (1982).

[15] See his article in The Guardian, August 9, 1998. He states: "Mrs Clinton is correct when she says that there is a right wing conspiracy against them. Unfortunately for her, Americans have been trained by the media to go into Pavlovian giggles at the mention of the word "conspiracy". [...] Mrs Clinton, perhaps, emphasizes too heavily the "right wing" aspect of her enemies. It is corporate America, quite wingless in political as opposed to money matters, 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."

[16] See The New York Times, Saturday September 25, page B1.

This society must make a policy decision denoted by P, delegated to an elected official (called president). This decision can be "good", in which case we have $P = P^G \equiv 1$; or it can be "bad" in which case we have $P = P^B \equiv 0$: "Good" policies will be taken to mean that they are preferred by the vast majority of the population, while "bad" will mean the opposite, as in redistributive policies that take money from, say, 90% of the population and give it to a pressure group. Thus, a policy distortion is defined as not adopting the good policy.[17]

Both the shock and the policy decision are not observable by the public. For concreteness we can think of a country where the standard of living is subject to a productivity shock and where the president must privatize a state-owned steel company. The price obtained for the company is uninformative about the value of P, as there are unobservable aspects of the transaction. For example, the president can leave a high or a low level of inventories. Observing a low price, we could be in the presence of a president that has left few inventories or a president who has been captured by the threats made by some potential buyer and is leaving a high level of inventories inside the company.[18] All that citizens observe is their standard of living.

The public has the possibility of voting on the government's performance. Individual voters have limited incentives to gather information as they have a negligible impact on the outcome of the elections. We assume, however, that the government's performance (in terms of good or bad policies) has some impact on the government's probability of reelection.[19] Since very adverse

[17] We use the word good instead of popular as we can also include efficiency issues in this formulation (as in Coate and Morris (1995)). For example, if there are only two policies available to redistribute money from the majority of the public to the pressure group, the good policy will be the one which implies lower dead-weight losses. Clearly the pressure group could be more than compensated by society when the good policy is chosen. However, the group may still oppose the good policy if it implies more public exposure.

[18] A low price and a high level of inventories is a bad policy because it is a give-away, as is a high price and a low level of inventories because it will fail to attract bidders. Obviously, this setup can be extended to deal with cases where policy actions are fully observable and the public remains uncertain about the consequences of policies.

[19] Coate and Morris (1995) present a model where citizens have a more active role in monitoring policymakers that can be bribed by pressure groups. They show that when there is uncertainty about policies and politicians' types, policymakers may use an inefficient form of transfers.

shocks and inadequate policy reduce voters' welfare, we assume that both increase the probability that the government fails to get reelected, which is denoted $F(\mu; P)$. The function $F(\mu; P)$ is continuously differentiable and increasing in μ.[20] We assume $F(0; P) = 0$, and $\frac{\partial F(\mu; P^B)}{\partial \mu} \equiv F'(\mu; P^B) > \frac{\partial F(\mu; P^G)}{\partial \mu} \equiv F'(\mu; P^G) > 0$. (Primes will denote partial derivatives throughout. To abreviate notation, we define $\Delta F(\mu; P) \equiv F(\mu; P^B) - F(\mu; P^G)$ and $\Delta F'(\mu; P) \equiv F'(\mu; P^B) - F'(\mu; P^G)$). The last assumption means that the effect of policy is monotonic, in the sense that $\Delta F(\mu; P)$ is monotonically increasing in μ. Thus, in terms of votes for the government, it really pays to deliver good policies in bad times.

The president is accompanied by a group of persons that will perform auxiliary (ministerial) tasks. They are in office whenever the president is voted in and they keep their positions in government as long as the president does. Henceforth, these people are called "the political party" and we assume they observe whether the president chooses the good policy. All we require is that there be two actors in office, the president and the party, so we can think of the party as being formed by one person. The extension to a party with N members is straightforward.

There is one pressure group in our society. We will focus on situations of conflict between the interests of this group and those of society at large. Thus, bad policies (P^B) yield revenue $\pi > 0$ to the pressure group while the adoption of good policies (P^G) yields zero. In order to exert influence over policy, the pressure group punishes with intensity j all presidents that choose P^G. This level j is an intensity of punishment focused exclusively on the president and exercised through legal, media or violent means. The punishment is activated only if the president chooses the good policy, and it never affects the party directly. The public does not observe punishment. When it does, it is unable to relate it to the activities of the group. This punishment costs the pressure group an amount $C(j)$, with $C'(0) = 0$; while $C'(j) > 0$ and $C''(j) > 0$ for all $j > 0$. Pressure groups invest in punishment technology in advance by developing contacts with the media, buying judges or hiring thugs. This order of play is necessary to avoid credibility problems: if the policy has already been chosen, investing in punishment is a dominated

[20] This way of introducing electoral competition is standard in the literature. Ledyard (1984) shows how to derive probabilistic voting when individual costs of voting generate uncertain turnout.

strategy for the pressure group.[21]

The president and members of the political party derive utility from holding o¢ce. The president derives m, a number that includes his wage and the moral satisfaction of serving the community. Members of the political party receive w while in o¢ce. We normalize to zero the president's and the party members' reservation utility, which implies that there are rents to the political class in o¢ce when m and w are positive. When $w > 0$ members of the party would like to stay in power, so they o¤er an amount of protection s to the president in order to induce him to adopt P^G and increase the chances of re-election. Protection is given in order to mitigate the e¤ects of the pressure group's attacks, is conditional on the good policy being chosen and on the attacks of the pressure group taking place. It costs K(s), with $K'(0) = 0$; while $K'(s) > 0$ and $K''(s) > 0$ for all $s > 0$. Protection can be pecuniary; the party can give money to a president who has to pay legal fees arising from judicial harassment. Or it could be non-pecuniary; think of public support in the case of smear campaigns or personal attacks in the media. Again, to circumvent credibility issues, protection is committed in advance.

Timing of the Game

The order of play is as follows,

Stage 1

a) The pressure group chooses an amount of punishment j for a president that plays P^G and zero otherwise.

b) Simultaneously, the party chooses protection payment s for a president that plays P^G and zero otherwise.

c) Simultaneously, nature draws μ from distribution $\alpha(\mu)$.

Stage 2

a) The president learns μ and chooses policy P. Punishment and protection are activated if $P = P^G$.[22]

[21] The literature on interest groups ignores credibility problems altogether. Helpman and Grossman (1994), for example, analyse a two period model where lobbies choose political contributions in the …rst period and the government sets policy in the second. Lobbies pay if the government delivers, although after it delivers there are no incentives for the lobbies to pay. See also Baron (1989).

[22] Some policies have a preventive rationale and must be implemented by the president before the shock is realized. Think of decisions concerning sanitary plans or the extent to which anti-earthquake building codes are enforced. These decisions must be made before

b) Elections are held. The president and the incumbent party are re-elected with probability $1 - F(\mu; P)$.

The Problem of the President

The president's expected utility is given by

$$EU = [1 - F(\mu; P)]m - (j - s)P$$

Thus, we restrict attention to politicians who are completely honest and will not accept bribes or campaign contributions. The president still cares about re-election because he receives a higher payoff in this job than in any other. If he wins, something which will happen with probability $1 - F(\mu; P)$, he stays in office as president, and gets m.[23] He also cares about the amount of punishment the pressure group inflicts on him, net of the protection received from the party. We will denote net punishment $h = j - s$. The president cares about net punishment in an additive fashion. It follows from the assumptions that expected utility is monotonically decreasing in μ, and that $0 > \frac{\partial EU(P^G)}{\partial \mu} > \frac{\partial EU(P^B)}{\partial \mu}$: Note that, if $h = 0$ there's no shock realization that makes the president choose P^B and that, since P is a choice, the president will always receive positive rents. Proposition 1 summarizes an important property of the solution to the president's problem.

Proposition 1: a) Any positive level of net punishment h has an associated cutoff value $\hat{\mu}$; such that the president chooses $P = 1$ if $\mu \geq \hat{\mu}$ and $P = 0$ if $\mu < \hat{\mu}$:

b) $\hat{\mu} = \hat{\mu}(h)$ is a continuously differentiable, monotonically increasing function.[24]

Proof: See Appendix 1.

The president's strategies can be fully characterized by $\hat{\mu}$, the value of the adverse shock for which he chooses to switch policy. This determines the size of the set of states of nature where the president will choose the good

epidemics or earthquakes strike. Our model can accommodate these cases if there is a signal which is informative about the density from which the shock will be drawn. The main results in our paper also survive making protection contingent on the shock. They are also robust to making punishment contingent on the shock.

[23] All we require is that the President strictly prefers his party to win the election.

[24] Linearity of $F(\mu; P)$ in μ and $F(0; P) = 0$ allow us to write $\hat{\mu} = \frac{h}{\Delta F^0(\mu; P)m}$ where $\Delta F^0(\mu; P)$ is now the difference between two scalars.

policy. Part b) suggests that the size of the set of states of nature where the president chooses the good policy will be diminishing in net punishment.

The Problem of the Pressure Group

The pressure group's expected payo¤ is given by,

$$¤[\hat{\mu}(h)]¦ ¡ C(j)$$

where $\hat{\mu} = \hat{\mu}(h)$ is known to the pressure group and positive revenues occur only when the bad policy is adopted, something that Proposition 1 suggests will happen with probability $¤[\hat{\mu}(h)]$. For simplicity, revenues ¦ are assumed to be independent of the realization of the shock. The cost of punishment function, C(j); has $C^0 ´ \frac{dC}{dj} ¸ 0$ and $C^0(0) = 0$. Thus, taking protection as given, the …rst order condition (FOC) is,

$$¸[\hat{\mu}(h)]\frac{d\hat{\mu}}{dh}¦ ¡ C^0(j) = 0 \qquad (1)$$

The pressure group will increase the punishment intensity as long as the expected marginal return of such an action is greater than its marginal cost. The expected marginal return is the product of three terms: i) $\frac{d\hat{\mu}}{dh}$ -positive from Proposition 1- is the marginal increase in the set of states of nature in which the policy most preferred by the group is implemented, as a result of a marginal increase in punishment; ii) $¸(\hat{\mu})$ is the change in the probability that this policy is implemented iii) ¦ is the revenue gain in such case. The second order condition (SOC) is shown in Appendix 2.[25]

The preferred level of punishment will not be independent from the amount of protection the party is willing to provide.

Proposition 2: a) There exists a continuously di¤erentiable function $\wedge = \wedge(s)\ 8s \in [0; \$); \$ > 0$: It can also be veri…ed that $\frac{d\wedge}{ds} \in (0; 1); j^{\pm} ´ \wedge(0) > 0$, and $\wedge(s) > s$:[26]

[25] Assuming that the function $F(\mu; P)$ is linear in μ ensures that the FOC selects a maximum, and $¸(\mu)$ decreasing in μ rules out the possibility of multiple solutions to (1). Most of the analysis can be carried out without these assumptions. One di¤erence is that with nonlinear functions F(:) the SOC is not always satis…ed unless one assumes C^{00} to be high enough. Moreover, when $F(\mu; P)$ is nonlinear in μ, $\hat{\mu}(h)$ is nonlinear in h, and the comparative statics become quite cumbersome.

[26] Furthermore, for any positive $¢F^0(\mu; P)m$, assuming $¸(1)$ to be low enough guarantees that $\wedge$ is such that $\hat{\mu}$ is lower than one.

b) The best response of the pressure group is given by

$$\rho = \begin{cases} 0 \text{ for } s \geq \hat{s} \\ \rho(s) \text{ for } s < \hat{s} \end{cases}$$

Proof: See Appendix 1.

The intuition for this proposition is as follows. When the party is not insuring the president, the pressure group's best response is to choose a positive level of punishment, $\rho > 0$. For higher protection levels provided by the party, the pressure group increases punishment, but not one for one. The reason is that higher levels of punishment are assumed to be increasingly costly. The proposition also shows that it could never be a best response for the pressure group to have a punishment level which equals the protection committed by the party. The induced distortion would be zero, which is what the group can attain by not incurring any punishment costs. That means that whatever the level $\hat{s}$ is, $\rho(\hat{s})$ has to be strictly larger than $\hat{s}$. Finally, we establish that there must exist such a level $\hat{s}$ above which the best response of the pressure group is zero punishment.

The Problem of the Political Party

Once in office, the party has to decide the amount of protection it will give a president that chooses the good policy and is punished by the group. Hence, taking ρ as given, the party chooses s to maximize,

$$\int_0^{\hat{\mu}(h)} [1 - F(\mu; P^B)]\, w\, \phi(\mu)\, d\mu + \int_{\hat{\mu}(h)}^1 [1 - F(\mu; P^G)]\, w\, \phi(\mu)\, d\mu - K(s) \quad (2)$$

The first two terms capture the expected return when policy P is played, taken across all states where it will be observed if protection is s. Re-election is desirable to the party in direct proportion to the rents it enjoys in power. In other words, for $\mu < \hat{\mu}$ the party takes part in one lottery with prizes 0 and w and probabilities $F(\mu; P^B)$ and $1 - F(\mu; P^B)$. For $\mu > \hat{\mu}$, the lottery has the same prizes but a higher probability of yielding the higher prize. The FOC can be written as,

$$\alpha F(\hat{\mu}; P)\, \phi(\hat{\mu}) \frac{d\hat{\mu}}{dh} w - K'(s) = 0 \quad (3)$$

The party trades-o¤ the expected value of enlarging the set of states in which it takes part in its most preferred lottery against the cost of an extra unit of protection. The …rst term says that the marginal rise in protection will enlarge the interval $[\hat{\mu}; 1]$ -the set of shocks where good policy is applied- by an amount $\frac{d\hat{\mu}}{dh}$ (equal to $¡\frac{d\hat{\mu}}{ds}$). This will improve the prospects of electoral competition facing the party with probability $¸(\hat{\mu})$. This improvement has value $¢F(\hat{\mu}; P)w$. On the cost side, the second term shows the marginal cost of raising protection. The SOC for this problem appears in Appendix 2.

Proposition 3: There exists a continuously di¤erentiable function $ŝ(j)$: If marginal returns to protection are decreasing in equilibrium, it can be veri…ed that $\frac{dŝ}{dj} > 0$ and $\frac{dŝ}{dj} < 1$:

Proof: See Appendix 1.

The intuition for the best protection response growing less quickly than punishment can be understood by noting that j a¤ects the marginal returns to protection (the …rst term in the LHS of (2)) only through h. This implies that, in terms of returns to protection, any increase in the punishment produced by the pressure group can be neutralized by an equal rise in protection. However, since the marginal costs of protection are increasing in s, it will not be convenient for the party to seek to totally undo the e¤ects of the extra punishment.

4 The equilibrium

The First Stage "Pressure" Game

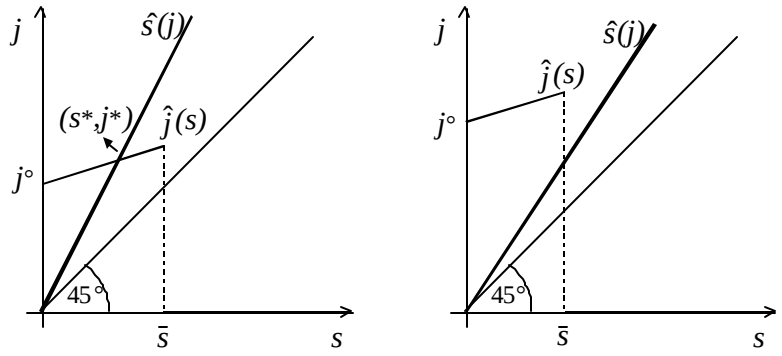
The pressure group and the political party compete to in‡uence the president by using punishment and protection. The following summarizes the outcome from such competition.

Proposition 4: a) If $ŝ^{¡1}(ŝ) ¸ ¶(ŝ)$, the …rst stage game between the pressure group and the political party has a unique Nash equilibrium in pure strategies. This equilibrium has $(s^¤ > 0; j^¤ > 0)$. Otherwise, there is no equilibrium in pure strategies.

b) The equilibrium in pure strategies, if it exists, always involves a positive level of net punishment: $h^¤ ´ j^¤ ¡ s^¤ > 0$.

Proof: See Appendix 1.

Figures 1i and 1ii illustrate.



1*i* 1*ii*

Figure 1: The "Pressure" Game

Figure 1i shows a case in which reaction functions intersect. The features of these functions imply that such an intersection can only happen above the 45± line. Therefore, equilibrium always implies a positive level of net punishment. Figure 1ii shows a case in which there is no equilibrium.

The Second Stage "Policy Implementation" Game

Given an equilibrium $(s^{¤}; j^{¤})$ in the …rst stage game, we can think of the president simply using the function $\hat{\mu}(h)$ to determine the value $\mu^{¤} = \hat{\mu}(h^{¤})$:

Proposition 5: a) Given an equilibrium $(s^{¤}; j^{¤})$ in the …rst stage game, there always exists a unique solution to the president's problem given by,

$$P^{G} \text{ if } \mu \geq \mu^{¤} = \hat{\mu}(j^{¤} ¡ s^{¤})$$
$$P^{B} \text{ if } \mu < \mu^{¤} = \hat{\mu}(j^{¤} ¡ s^{¤})$$

b) Since $\mu^{¤} = \hat{\mu}(h^{¤}) > 0$;the equilibrium exhibits a positive level of expected distortion in policy setting.

Proof: See Appendix 1.

The sense in which the equilibrium implies a distortion is that, with probability $¤[\mu^{¤}] > 0$, the shock realization will belong to the interval $[0; \mu^{¤})$ and the bad policy will be implemented. In other words, there is a positive

probability that bad policies are adopted even when politicians are honest and the democratic process ensures that politicians seek to remain in office by playing good policies. This finding is in contrast with the arguments presented in Wittman (1989) on why democracies produce efficient outcomes. The main reason for our result is that net punishment must be positive in equilibrium. This, in turn, is due to two reasons. First, punishment cannot be zero. If it were zero, the party would provide no protection and the group would want to punish. Second, we know from proposition 3 that the party is only in equilibrium if the protection it provides the president is lower than the punishment he receives.

5 Comparative Statics

Changes in the Level of Rents Given to the Political Class

We are interested in the effect of a change in the level of rents enjoyed by the president (m) and the political party (w) when they hold office. These rents are often seen in a bad light by the public. Since Becker and Stigler (1974), however, economists have argued that high wages in the bureaucracy could have positive effects, especially when bureaucratic corruption is a concern. Rents in this model can be helpful even when policymakers are honest. Rents increase the desire of politicians to remain in power. This desire translates into more resistance of the president against pressure, and into more support (protection) from the party to the president. This has consequences for the equilibrium level of policy distortion.

Proposition 6: An increase in presidential rents has an ambiguous effect on the equilibrium level of distortion μ^{α}:

Proof: See Appendix 1.

The effect of increases in m is given by $\frac{d\mu^{\alpha}}{dm} = \frac{\partial\hat{\mu}(m;h^{\alpha})}{\partial m} + \frac{\partial\hat{\mu}(m;h^{\alpha})}{\partial h^{\alpha}}\frac{dh^{\alpha}}{dm}$. The first term is a direct effect and is always negative. The sign of the second term is ambiguous. It depends on what happens to the protection-punishment pair. For low levels of m we expect the direct effect to dominate. The indirect effect will reinforce the negative, direct effect whenever an increase in m achieves a reduction in net punishment. This will happen whenever the best response of the pressure group is relatively more "elastic" than that of the party members. Conditions that contribute to this include a lower

convexity of the punishment cost curve -relative to protection- and a ‡atter density over shocks.

Proposition 7: An increase in rents given to the political party causes the equilibrium level of distortion $\mu^{¤}$ to diminish.

Proof: See Appendix 1.

The intuition for this result is related to the function $\P(s)$ having a slope less than one. Starting at a positive equilibrium level of net punishment $h^{¤}$, higher rents induce higher protection for every level of punishment. This tends to be o¤set by an expansion in punishment. The latter is not one for one because the marginal cost of punishment is increasing.

An interesting feature of these results is that, even under a rather stringent set of assumptions (additively separable preferences, linearity of $F(:)$; $¸^{0} < 0$, etc.), we cannot rule out perverse e¤ects of presidential rents. We can, however, unambiguously show that rents to the political party improve policy making under nasty pressure groups. This di¤erence in the e¤ects of rents is related to the assumption that the party and the president are called to play in di¤erent stages of the game. The choice of timing, however, re‡ects a real life asymmetry between party and president: while both enjoy o¢ce and are subject to electoral discipline, the president is the sole aim of pressures by the group. This is due to the fact that, in our model, the president concentrates all the decision powers and that party members cannot be attacked by the pressure group. The fact that the political party can be made up of a large number of individuals, all of them less prominent than the policymaker, makes this assumption plausible.[27] In other words, this section brings out an important message of the model: the political party is di¤erent from the policymaker. This stands in contrast with the previous literature, particularly the public choice approach (e.g. Mueller (1989)).

Changes in the President's Vulnerability

Rewrite the president's utility function as,

$$EU = [1 ¡ F(\mu; P)]m ¡ ºhP$$

[27] In a previous version of the paper we experimented with a political party with N members. Clearly as N increases, it becomes more costly for the pressure group to maintain a given level of harassment on each member of the party.

where the parameter º provides a measure of the president's vulnerability. Some countries provide policymakers with parliamentary immunity while they are in o¢ce. This protects them from legal harassment, at least temporarily. This institution tends to decrease º.

Proposition 8: An increase in the president's vulnerability has an ambiguous e¤ect on the equilibrium level of distortion μ^{α}:

Proof: See Appendix 1.

The e¤ect of increases in º is given by $\frac{d\mu^{\alpha}}{d\circ} = \frac{\partial\hat{\mu}(\circ;h^{\alpha})}{\partial\circ} + \frac{\partial\hat{\mu}(\circ;h^{\alpha})}{\partial h^{\alpha}}\frac{dh^{\alpha}}{d\circ}$. The …rst term is a direct e¤ect and is always positive. The sign of the second term is ambiguous. The reasoning is similar to that used in proposition 6.

The result that, under some conditions, higher presidential vulnerability leads to higher distortion lends some support to the notion that "strong" leaders may at times enjoy more freedom to choose policy. This is so when being "strong" -by reducing vulnerability to pressure- causes net punishment to diminish or to grow only moderately. The net e¤ect is then a lower policy distortion.

Changes in the Costs of Punishment

Rede…ne the pressure group's objective function as

$$\alpha[\hat{\mu}(h)] - \bar{Q}(j) \qquad (4)$$

where the costs of punishment are now given by $\bar{Q}(j)$, $Q(j)$ having all the properties so far attributed to $C(j)$, with $\bar{} > 0$: The parameter $\bar{}$ is intended to capture the cost of harassing the policymaker and can be tracked to issues such as the cost of violence in society, how independent is the judiciary system or how easy it is to in‡uence the media.

Proposition 9: An increase in the costs of punishing the president will lead to a decrease in the equilibrium level of distortion μ^{α}:

Proof: See Appendix 1.

The proof of this result uses the fact that the slope of the party's reaction function is less than one (in the $(j;s)$ space) and that a higher $\bar{}$ a¤ects only the problem of the pressure group, leading it to prefer lower punishment levels. If the cost of punishing a president is related to the expected reactions of society about some aspects of his personality (sexual habits, say), it would

be functional for society not to be too sensitive to these aspects. In our model this would raise the cost of pressure and improve policy choices. In other words, it may pay not to be puritan. Furthermore, if the costs of punishment decrease with the easiness with which groups can a¤ect public opinion, this logic could be used to justify imposing some kind of restrictions on ownership across the media industry.

6 Welfare and Political Parties

A basic result concerning political parties is the following,

Proposition 10: The equilibrium level of distortion with a political party enjoying positive rents is always lower than the equilibrium distortion when there is no party (or the party has no rents).

Proof: See Appendix 1.

This proposition establishes that the existence of the party has bene…ts in terms of the quality of decision making. The decision to have a party with positive rents will then depend on the social welfare implications of better expected policies and on the costs of rents.

Assume the citizens can adjust the level of rents accruing to the political party in a stage previous to that in which the pressure group and the party play j^{α} and s^{α}. Citizens take into account the whole development of the game posterior to their choice of rents. In other words, they construct a mapping from rent levels to expected distortion and social welfare. Under a realized shock μ, citizens get a social surplus $Z(\mu;P)$ when policy P is implemented. We assume that for every level μ, $Z(\mu;P^G) > Z(\mu;P^B)$, that $Z'(\mu;P^G) > Z'(\mu;P^B)$, and that $Z'(\mu;P) < 0$. These conditions imply that both the absolute and the marginal damage to welfare of a given shock is lower when good policies are chosen. Besides, larger shocks create larger welfare losses. The public cost of funds is given by the function $\phi(w)$: The function ϕ satis…es $\phi(0) = 0; \phi' > 0; \phi'' \geq 0$ and $\phi'(0) = 0$: The problem for the citizens is, then, to maximize expected social welfare with respect to w, as given by the following expression,

$$Y = \int_0^{\mu^{\alpha}} Z(\mu;P^B)\psi(\mu)d\mu + \int_{\mu^{\alpha}}^1 Z(\mu;P^G)\psi(\mu)d\mu - \phi(w):$$

The FOC for this problem is,

$$[Z(\mu^{\alpha}; P^{B}) - Z(\mu^{\alpha}; P^{G})]\,\phi(\mu^{\alpha})\frac{d\mu^{\alpha}}{dw} - \varphi' = 0. \qquad (5)$$

The SOC is in Appendix 2.

Proposition 11: The public will always provide the political party with a positive level of rents.

Proof: See Appendix 1.

The proof shows that at $w = 0$ the marginal bene…t of giving rents to the political party is positive while the marginal cost is zero, so the public is always better o¤ when the political party accompanies the president and enjoys rents. Intuitively, the equilibrium level of rents trades o¤ the advantages in terms of social welfare of making P^{G} more likely with the costs of rents. A number of features of this proposition are worth noting. First, equation (5) always holds for a positive w when the …rst unit of rents is prestige (and the assumption of $\varphi'(0) = 0$ is reasonable). But if the …rst unit of rent given to the party is monetary, the assumption of $\varphi'(0) \geq 1$ seems more plausible. In this case we need to assume that having the president choose the good policy makes a large enough di¤erence on welfare so as to compensate society for the cost of the rents given to the party.

A second potential criticism to this formulation is that presidential rents are assumed to be both exogenous and free. If this is not the case, a legitimate question is whether society would still choose to give rents to the political party if it also has the choice of giving rents to the president. The problem is very similar to the one presented above. One di¤erence between party and presidential rents is that the latter have both a direct e¤ect (the president is keener to retain o¢ce) and an indirect e¤ect (the party and the pressure group will change net punishment). A second di¤erence is that party rents are, in some sense, cost e¤ective. They induce bene…ts to the president only when good policies are chosen, whereas presidential rents are paid to him contingent on the electoral result, regardless of his policy choice.

The party acts as a controller paid by the people. There are similarities between the political party in our model and the external supervisor in Kofman and Lawarree (1993). In their model the introduction of an external supervisor who, just like our political party is costly but is not capturable,

limits the possibility that the internal supervisor is captured. The possibility of capturing the president by threat in our model is reduced by the introduction of the political party.

A caveat must be made, however, when the function for the cost of rents is of the form $-(w+m)$: One cannot rule out a priori a case where presidential rents are more effective at reducing the policy distortion than party rents for an initial set of values. If marginal costs rise fast enough a solution with no party rents cannot be ruled out even when the presence of the party improves policymaking. It is worth emphasizing, however, that it is unlikely that the marginal effect of presidential rents is still larger than the effect of the first unit of party rents at the level where society has decided to stop increasing the rents given to those in power. Thus, we expect to observe party rents in equilibrium.

More generally, it should be noted that there may be legal or cultural constraints on the amount of rents that a single individual can receive, even when these have positive incentive effects. In this case giving rents to the party could be an indirect way of affecting the president's choices. On the other hand, the party can always avoid such constraints by adding new members.[28]

7 Conclusions

We extend the literature on endogenous policy formation initiated by Stigler (1971) and Peltzman (1976) to capture the possibility that interest groups use pressure. Thus, our model seeks to explain policy formation when pressure groups can initiate smear campaigns in the media, use legal harassment and even exert some form of physical violence. We also assume that it is good policies (rather than money) that produce votes for the government. Our simple model predicts that there will be distortion in policy making in equilibrium, in the sense that even a perfectly honest policymaker will deliver good policies less often than when pressure groups are inactive. The

[28] Note that our model tends to underestimate the value of the political party. To avoid standard credibility issues we adopted a peculiar timing that implies that the party always incurs the protection costs, even when the president plays the bad policy and protection is not called for (see equation (2)). In a model that can handle a different timing (e.g. a multi-period model where players want to keep their reputations), the political party could provide more insurance because it would pay for it only when it uses it.

extent of the equilibrium distortion increases when the cost of exerting pressure in the country falls. Capture by threat constitutes an explanation of why reforms are delayed that di¤ers from the one presented in Alesina and Drazen (1991), and may help explain why sometimes countries make such poor choice of policies.

The model presented suggests that a number of factors that are not usually stressed in the literature will a¤ect policy outcomes. These include society's perception of what is acceptable behavior on the part of politicians so that, as far as this is a choice, countries may rationally choose not to be very puritan. A society could decide that a candidate's record of marital in…delity, for example, is not a matter of public concern. Or it could enforce very strict rules on the behavior of the press, including a very high cost of libel. Perhaps more importantly, society could also enforce strict anti-trust laws on the media industry to ensure that pressure groups cannot reach a large section of public opinion without collusion amongst media companies. Lastly, when legal harassment is frequent, society can opt to enforce laws granting legal immunity to members of parliament and of the executive (such as those in place today in a number of countries). The state can also provide funds to cover the legal expenses of o¢cials who are absolved after costly trials. Our model shows that countries that take these actions may expect to see better policy choices from honest politicians.

Our paper also provides a rationale for the existence of political parties. We show that the presence of a political party that cares for re-election has bene…cial e¤ects on the choice of policies by a president under pressure from nasty interest groups. Thus, we disagree with Alexis de Tocqueville who viewed political parties as "an evil inherent in free government". In contrast to the previous literature, our model emphasizes the di¤erences between the political party and the policymaker. The fundamental characteristics of the political party are that its members are more expensive to punish for the pressure group than the president, that they enjoy rents only if the president is re-elected, and that they can observe the policies he delivers better than the public. Thus, rents for politicians in power are valuable for reasons that di¤er from those in Becker and Stigler (1974). The role of the political party in our model is similar to that played by the external supervisor in the literature on collusion in hierarchical agency (e.g. Kofman and Lawarree (1993)).

8 Appendix

Appendix 1

Proof of Proposition 1: Part a) is direct from examination of the president's expected utility function. b) $\hat{\mu}$ satisfies $\phi F(\mu;P) = \frac{h}{m}$. As the LHS is continuously differentiable and monotonically increasing in μ, while the RHS is so in h, it follows that $\hat{\mu}(h)$ is continuously differentiable and monotonically increasing.

Proof of Proposition 2: The first sentence in part a) follows from the satisfaction of the conditions for the implicit function theorem for the range of values in $(0;\hat{s})$. We derive the existence of a value $\hat{s}$ later. The remainder of part a) follows from the characterization of the first order comparative static effects of s on Π given by, (expressing $\hat{\mu} = \hat{\mu}(h)$ and using the fact that $\frac{d^2\hat{\mu}}{dh^2} = 0$ from linearity of $F(\mu;P)$ in μ),

$$\frac{d\Pi}{ds} = \frac{\gamma'(\hat{\mu})[\frac{d\hat{\mu}}{dh}]^2 \mid}{f\gamma'(\hat{\mu})[\frac{d\hat{\mu}}{dh}]^2 \mid \; i \; C''g} > 0 \tag{6}$$

The slope of $\Pi(s)$ (for $s < \hat{s}$) adopts some value in the interval $(0;1)$ whenever $C''(j) > 0$.

To see that $\hat{s}$, if existent, must be positive, note that $C'(0) = 0$ so that for an arbitrarily small level of s the benefits of punishment as determined by the FOC in (1) are greater than the costs (even when for any $j < s$ the marginal benefit of punishment is zero). To see that $\hat{s}$ must exist and that $\Pi(\hat{s}) > \hat{s}$, imagine a point $(\bar{s};\Pi(\bar{s}))$ such that $\Pi(\bar{s}) = \bar{s}$ (i.e. $\Pi(s)$ intersects the $45^{\pm}$ line at such a point). The pressure group is then incurring costs $C(\bar{s})$ for nothing, since $\hat{\mu}(0) = 0$, and the group is getting less than what it could attain by doing nothing. This is true, by continuity of the expected profit function, for an interval $(\hat{s};\bar{s}]$ such that $\hat{s} < \bar{s}$ and $\Pi(\hat{s}) > \hat{s}$. Therefore, at $\hat{s}$ the best response jumps down to zero.

Part b) follows.

Proof of Proposition 3: Existence of a continuously differentiable function $\hat{s}(j)$ follows from the satisfaction of the conditions of the implicit function theorem. The first order comparative static effects of j on $\hat{s}$ can be characterized by rewriting (3) in terms of $\hat{s}(j)$ and differentiating w.r.t j, to obtain,

$$\frac{d\hat{s}}{dj} = \frac{A}{A + K''} > 0 \tag{7}$$

where $A = [\phi F'(\hat{\mu};P)(\frac{d\hat{\mu}}{dh})^2 \psi(\hat{\mu}) + \phi F(\hat{\mu};P)\psi'(\hat{\mu})(\frac{d\hat{\mu}}{dh})^2]w$ (we again obviate the dependency of $\hat{\mu}$ on h). The sign follows from the fact that the denominator is positive (from the SOC), and the numerator is so as well, if marginal returns to protection are decreasing when intersecting marginal costs. $\frac{ds^*}{dj} < 1$ whenever $K'' > 0$.

Proof of Proposition 4: a) $s^{i-1}(s) \geq \eta(s)$ is necessary for the response functions to intersect because it rules out the possibility of $\eta(s)$ lying entirely above $s^{i-1}(s)$ in $[0;s^*)$. Sufficiency follows from i) both functions being continuous and strictly increasing, and ii) $j^* > 0$.

b) The intersection of the functions $\eta(s)$ and $s^{i-1}(s)$ can only happen above the 45° line because $\eta(s)$ lies entirely above it.

Proof of Proposition 5: a) From the definition of the president's strategies and the fact that $\hat{\mu}(h)$ is a function mapping net punishment into $[0;1]$:

b) Follows from part a) of this proposition and part b) of Proposition 4.

Proof of Proposition 6: Changes in m have an effect on $\mu^* = \hat{\mu}[m;h^*(m)]$ given by (taking $h^* = h^*(m)$), $\frac{\partial\hat{\mu}(m;h^*)}{\partial m} + \frac{\partial\hat{\mu}(m;h^*)}{\partial h^*}\frac{dh^*}{dm} = -\frac{h^*}{\phi F'(\mu;P)m^2} + \frac{1}{\phi F'(\mu;P)m}\frac{dh^*}{dm}$: The direct effect, given by the first term, is negative. Immediate algebra shows that for the overall effect to be negative, it is required that $\frac{dh^*}{dm} < \frac{h^*}{m}$.

To understand the nature of this requirement we derive $\frac{dh^*}{dm}$ and analyze its sign. A pair of functions $j^*(m)$ and $s^*(m)$ exist and are continuously differentiable since the system formed by the equations (1) and (3) satisfies the conditions of the implicit function theorem. Writing the system for the implicit functions and differentiating with respect to m, we get a system of the form,

$$\begin{aligned} a\frac{dj^*}{dm} - b\frac{ds^*}{dm} &= e \\ c\frac{dj^*}{dm} - d\frac{ds^*}{dm} &= f \end{aligned}$$

which has solutions $\frac{dj^*}{dm} = \frac{-de+bf}{-ad+bc}$; $\frac{ds^*}{dm} = \frac{-ce+af}{-ad+bc}$: $C''0; K'' > 0; \psi'(\mu) < 0$ and assuming the marginal returns to protection are decreasing in equilibrium imply, as the reader can check, that $a < 0; b < 0; c > 0; d > 0; e = -[\psi'(\mu^*)\frac{\partial\hat{\mu}(m;h^*)}{\partial m}\frac{\partial\hat{\mu}(m;h^*)}{\partial h^*} + \psi(\mu^*)\frac{\partial^2\hat{\mu}(m;h^*)}{\partial h^*\partial m}]$ has indeterminate sign, and $f > 0$. The determinant $-ad + bc$ is positive. The fact that $\hat{\mu} = \frac{h}{\phi F'(\mu;P)m}$ and some algebra show that $e > 0$ if $\psi(\mu^*) > -\mu^*\psi'(\mu^*)$ which sets a requirement on the slope of $\psi(\mu)$ not being too steep. From the signs of elements a to f, it follows that the solutions are negative whenever e is not so. As to the behavior of the

equilibrium net punishment, we have that $\frac{dh^{\alpha}}{dm} = \frac{(-d+c)e+(b-a)f}{-ad+bc} = \frac{-K''e+fC''}{-ad+bc}$, where the denominator is positive. As $f > 0$, it follows that $\frac{dh^{\alpha}}{dm} < 0$ i¤ $e = [\gamma(\mu^{\alpha}) + \mu^{\alpha}\gamma'(\mu^{\alpha})]\frac{1}{\phi F'(\mu;P)m^2} > \frac{fC''}{K''} > 0$.

For $\frac{d\mu^{\alpha}}{dm} < 0$ to hold, however, it is only needed that $e > \frac{1}{K''}[fC'' - \frac{h^{\alpha}}{m}(-ad + bc)]$, which, is always lower than $\frac{fC''}{K''}$.

Proof of Proposition 7: A pair of functions $j^{\alpha}(w)$ and $s^{\alpha}(w)$ exist and are continuously di¤erentiable since the system formed by the equations (1) and (3) satis…es the conditions of the implicit function theorem. Using the implicit functions and di¤erentiating equations (1) and (3) w.r.t. w, we get a system analogous to that in the proof of Proposition 6, now with unknowns $\frac{dj^{\alpha}}{dw}$ and $\frac{ds^{\alpha}}{dw}$. The reader can check that $a < 0; b < 0; c > 0; d > 0; e = 0; f < 0$ and that the determinant $-ad + bc$ is positive. Hence, the solutions are $\frac{dj^{\alpha}}{dw} = \frac{bf}{-ad+bc} > 0$ and $\frac{ds^{\alpha}}{dw} = \frac{af}{-ad+bc} > 0$: Moreover, $\frac{dh^{\alpha}}{dw} = \frac{C''f}{-ad+bc} < 0$ whenever $C'' > 0$. The proof is completed recalling part b) of Proposition 1.

Proof of Proposition 8: Analogous to that of Proposition 6. Now $\hat{\mu} = \frac{\circ h}{\phi F'(\mu;P)m}$: Changes in $\circ$ have an e¤ect on $\mu^{\alpha} = \hat{\mu}[\circ; h^{\alpha}(\circ)]$ given by (taking $h^{\alpha} = h^{\alpha}(\circ)$); $\frac{\partial\hat{\mu}(\circ;h^{\alpha})}{\partial\circ} + \frac{\partial\hat{\mu}(\circ;h^{\alpha})}{\partial h^{\alpha}}\frac{dh^{\alpha}}{d\circ} = \frac{h^{\alpha}}{\phi F'(\mu;P)m} + \frac{\circ}{\phi F'(\mu;P)m}\frac{dh^{\alpha}}{d\circ}$: The direct e¤ect, given by the …rst term, is positive. Immediate algebra shows that for the overall e¤ect to be positive, it is required that $\frac{dh^{\alpha}}{d\circ} > -\frac{h^{\alpha}}{\circ}$. The ambiguity in the sign of the comparative static e¤ect $\frac{dh^{\alpha}}{d\circ}$ can be studied along similar lines to those of $\frac{dh^{\alpha}}{dm}$ in Proposition 6. It can be shown that $\frac{\partial h^{\alpha}}{\partial\circ}$ can be negative for some parameter values.

Proof of Proposition 9: Also analogous to that of Proposition 6. The di¤erentiation -w.r.t. $\bar{}$- of the system given by (1) and (3) –written for functions $j^{\alpha}(\bar{})$ and $s^{\alpha}(\bar{})$– yields a system of two equations in two unknowns: $\frac{dj^{\alpha}}{d\bar{}}$ and $\frac{ds^{\alpha}}{d\bar{}}$: The determinant of the system is strictly positive because the SOC for the party and the pressure group hold with strict inequalities. We get solutions $\frac{dj^{\alpha}}{d\bar{}} = \frac{-de+bf}{-ad+bc} < 0$; $\frac{ds^{\alpha}}{d\bar{}} = \frac{-ce+af}{-ad+bc} < 0$. The reader can check that $a < 0; b < 0; c > 0; d > 0; e > 0; f = 0$. Then, $\frac{dh^{\alpha}}{d\bar{}} = \frac{(c-d)e}{-ad+bc} = \frac{-K''£Q'}{-ad+bc} < 0$, i.e. higher punishment costs imply lower net punishment, and hence, lower distortions in policy.

Proof of Proposition 10: In the absence of political party, or when $w = 0$, the equilibrium level of distortion is $\mu^{\alpha} = \frac{\pm}{\phi F'(\mu;P)m}$. When the party is present and enjoys rents $w > 0$, that level is $\frac{\pm^{\alpha}-s^{\alpha}}{\phi F'(\mu;P)m} < \frac{\pm}{\phi F'(\mu;P)m}$, from the fact that $\frac{d\hat{\mu}}{ds} < 1$.

Proof of Proposition 11: Proposition 7 implies $\frac{d\mu^{\alpha}}{dw} < 0$, and therefore

the …rst term in equation (5) is positive at $w = 0$, while the second is zero. Any intersection of marginal costs with marginal returns will then happen at $w > 0$.

Appendix 2

Second order condition for the pressure group's problem: Under linearity of $F(\mu; P)$ in μ, the SOC is,

$$\lambda'[(\hat{\mu}(h)] \left(\frac{d\hat{\mu}}{dh}\right)^2 - C'' < 0$$

Second order condition for the party's problem: Under linearity of $F(\mu; P)$ in μ, di¤erentiating (3) with respect to s yields (writing $\hat{\mu} = \hat{\mu}(h)$),

$$-\left[\phi F'(\hat{\mu}; P)\lambda(\hat{\mu}) + \phi F(\hat{\mu}; P)\lambda'(\hat{\mu})\right]\left(\frac{d\hat{\mu}}{dh}\right)^2 w - K'' < 0$$

where the sign of the inequality is guaranteed by a high enough K'', or by assuming that marginal revenues are decreasing in equilibrium.

Second order condition for the citizens' problem: Under linearity of $F(\mu; P)$ in μ, the SOC is,

$$[\phi Z'(\mu^{\alpha}; P)\lambda(\mu^{\alpha}) + \phi Z(\mu^{\alpha}; P)\lambda'(\mu^{\alpha})]\left(\frac{d\mu^{\alpha}}{dw}\right)^2 - \Omega'' < 0$$

where $\phi Z'(\mu^{\alpha}; P) = Z'(\mu^{\alpha}; P^B) - Z'(\mu^{\alpha}; P^G)$ and $\phi Z(\mu^{\alpha}; P) = Z(\mu^{\alpha}; P^B) - Z(\mu^{\alpha}; P^G)$. A large enough Ω'' or $[\phi Z'(\mu^{\alpha}; P)\lambda(\mu^{\alpha}) + \phi Z(\mu^{\alpha}; P)\lambda'(\mu^{\alpha})] < 0$ guarantee the satisfaction of this condition.

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