INFORMATIVE SIGNALS AND ACCOUNTABILITY OF RENT-SEEKING POLITICIANS

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Abstract

The increased possibility to gather information and distribute them — due to the information technology revolution — represents at the same time a possible way to increase the information about the political process, and a way for politician to influence voters' beliefs. We develop a model of political agency in which the informed party (the rent-seeking incumbent politician) can bias the information which flows to the uninformed party (citizens). We show that an institutional reform which improves the quality of the information does not necessarily lead to higher accountability, as the incumbent politician might react by increasing the effort to bias the signal that arrives to citizens. We define conditions under which an institutional reform leads to more accountability.

Key words: political economy, information
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1 Introduction

Incumbent politicians are usually judged according to policies implemented during their electoral mandate. In a model of retrospecting voting where campaign promises are not credible, the behaviour of incumbent politicians is the fundamental evidence upon which citizens base their vote. For instance, citizens may observe the policy implemented (the public good) and the level of

taxation, but not the actual cost of such policy, as it is a private information of the incumbent politician.

In this setting a rent-seeking politician can exploit the information advantage to win elections despite extracting some rent. The incumbent politician can pretend costs are much higher than their actual level, in order to pocket the difference between tax revenue and actual costs. We assume that citizens are heterogenous in terms of their *ability* to get information about the true cost of the public good. In other words citizens receive a more or less biased signal according to their ability to process the information; people that have a high level of education and easy access to information would receive a less biased signal than people that do not have easy access to information.

In our setting the "quality" of the information is a combination of three factors: the distribution of the ability on the population; the institutional setting; the biasing action of the incumbent politician. Institutional features, such as the presence of free press, the possibility of citizens to have access to several media, the level of culture of citizens, the presence of think tanks, the structure of the government (centralised vs decentralised), etc., are all factors that influence the possibility of voters to make politicians really accountable of their actions. It is crucial, however, to consider the bias that can be introduced by the rent-seeking politician, which wants to get away with some rent. This is action is costly and represents a waste of resources, which is added to the usual allocation inefficiency due to asymmetric information.

The incumbent politician, given the institutional setting (and the distribution of ability), may adopt an action to bias the perception of citizens about the actual cost of the public good. The heterogeneity of voters concerns precisely the effect of the bias on their signal, that is, for some people the action of the politician has no particular effect while for others the effect is higher. Basically, we assume that the incumbent can change the distribution of signals across people. For instance, the politician can buy same space in newspapers or television in order to send a political message, which produces a different bias on voters' beliefs.

In our view a politician is accountable if citizens can perceive and punish a rent-seeking behaviour. The level of accountability, therefore, is inversely related to the possibility of the politicians to be re-elected and get away with some rent. This possibility depends on the "quality" of the signal that arrives to citizens. In this setting, we show that the level of accountability depends on the reaction of the incumbent politician to an increase of the information available to citizens, triggered by a improvement in the institutional setting. If the effect is strong then the improved institutional setting, actually produces a lower quality of the information and politicians are less accountable.

The economic literature on accountability is quite large, but few contributions address the possibility that the incumbent politician influences the information available to citizens. For instance Besley (2006) provides a good reference for models of political agency and accountability, where the analytical approach is based on the homogeneity of the population of voters and the impossibility of the incumbent politician to influence the information available to citizens.

A notable exception is Besley and Prat (2006) which consider a retrospecting voting model where the government (the incumbent politician) can capture the media in order to prevent the diffusion of information about wrong practices. Basically this means that the incumbent politician can bias the available information, and, hence, influence the level of political accountability. They show that media capture has two negative effects on voters' utility: politicians are more likely to engage in rent extraction; and, bad politicians are less likely to be identified and replaced. Our approach is a generalization of their model, where the incumbent politician can take a "general" costly action which bias the distribution of the information across voters. Indeed, the same action affects voters in a different way, according to their "ability" in grasping the truth.

The possibility that institutional factors can influence the transparency of the political process is exploited in Bordignon and Minelli (2001). They consider a model of political accountability where the information that can be inferred about politicians' type depends on the presence of either a complex fiscal rule or a simple fiscal rule. They show that less contingent rules allow citizens to get more information about politicians, therefore improving selection. The incumbent politician, however, cannot choose the fiscal rule, and citizens are homogenous in their ability to grasp the information.

Our analysis is also linked to the literature on fiscal federalism because decentralisation is seen as a way to increase the accountability of politicians by either requiring to please voters in each district[1] (Seabright, 1996; Persson and Tabellini, 2000) or by exploiting the possibility of comparisons between jurisdictions (Besley and Case, 1995). This literature, however, does not consider the possibility that the incumbent politician can manipulate the information available to citizens. For instance, Hindriks and Lockwood (2009) address the issue of fiscal decentralisation and political accountability in a simplified setting in

[1]For instance, Seabright (1996) consider decentralisation as a way to induce the incumbent to take into consideration the instances of local communities; it is essentially a model of moral hazard, where the politician incurs a cost (in terms of effort) in order to provide the public good; they show that centralisation while allowing a better policy coordination (internalising spillovers), reduces accountability because the government does not need to satisfy the preferences of each district (each district preferences are diluted when polling all districts together). In the centalised scenario, the policy is district specific, i.e., a local public good.

which there are no inter-regional spillover and voters' preferences are homogeneous across regions. Exploiting the fact that in the centralised setting politicians need only a majority of districts in order to be re-elected, they show that the centralised setting provides more discipline (the incumbent politician wants to be re-elected) but this discipline is limited to a number of districts sufficient to win the election.

Also in this literature the quality of the information depends *only* on the institutional scenario. By contrast we introduce the possibility that the incumbent politician directly bias the information available to citizens, and that this bias depends on underlining "ability" in the population. In our view this is important because it allows to asses the reaction of the incumbent politician to changes in the institutional setting and, as a consequence, it allows a better understanding of the consequences of institutional changes on the level of accountability.

2 The model

2.1 Set up of the model

There are two periods $t = 1, 2$, with an election at the end of period 1. In each period, the incumbent politician collects tax revenue T and provides a public good G, at the unit cost θ. The actual cost is private information of the incumbent politician, each citizen observes (receives) a signal which reflects his/her ability of getting information about the true costs of the policy

$$\theta_i = \theta + \epsilon_i \tag{1}$$

where ϵ is Uniformly distributed in $[0, e]$, with $e > 0$ which represents the maximum bias in the population. This means that voters' information is biased towards a larger cost; this bias is not the same for every voter, it depends on the distribution of the ability to grasp the true value of the cost.

There are two types of politicians: good (g) and bad (b). The bad type is rent-seeking, while the good type is benevolent (i.e., maximises voters' welfare). The information about the type is also private, voters believe a politician is good with probability λ. Citizens can update their beliefs observing the policy implemented and the signal received. In the first part of the paper (the one that is currently available), however, we focus on the "moral hazard" incentive of bad politicians by assuming $\lambda = 0$, i.e., politicians are all rent-seeking.[2] This as-

[2]This is in line with the literature on political agency started by Barro (1973) and Ferejohn (1986), and the more recent contributions of Seabright (1996) and Persson and Tabellini (2000).

sumption allows us to focus on the role of elections as discipline devices, which is our measure of accountability.

In our setting the *first best* level of public good, G^*, is

$$G^* = \frac{T}{\theta} \tag{2}$$

that is, the whole tax revenue is used to pay for the public good. Citizens observe only G and T, and receive a signal on the actual value of θ. Therefore, a rent-seeking politician could try to persuade citizens that the cost of G is very high, while pocketing the difference between the portrayed cost and the actual one.

Citizens' welfare only depends on the level of public good provided, since taxation is exogenously given, their payoff increases with G.

We assume that voter i would vote for the incumbent if

$$G \geq G(\theta_i) = \frac{T}{\theta_i}$$

where G is the policy implemented, and $G(\theta_i)$ is the cut off level of voter i that has received a signal θ_i. We can rewrite this condition as

$$G \geq \frac{T}{\theta_i} \qquad \Longrightarrow \qquad \theta_i \geq \frac{T}{G} \tag{3}$$

Since each citizen receives a different signal, the incumbent politician is re-elected only if the policy satisfies condition (3) for more than half of the population. Given the Uniform distribution of the population, the mean value identifies also the median voter, which receives the signal $\theta_m = \theta + \frac{e}{2}$. The following lemma describes the re-election condition.

Lemma 1 *In a setting characterised by majority voting rule and signals uniformly distributed on* $[0, e]$*, the incumbent politician is re-elected if the policy* G *satisfies*

$$G \geq \hat{G}(\theta) \equiv \frac{2T}{2\theta + e} \tag{4}$$

If the policy G is larger than $\hat{G}$, there would be more than half of the population with a cut-off level lower than the policy, hence, the incumbent is re-elected. For instance, if the distribution of the population types degenerates to zero, that is $e = 0$, then the condition to be re-elected is $G \geq \frac{T}{\theta}$, meaning that the bad politician cannot extract any rent if he/she wants to be re-elected; therefore by distorting the distribution of the information towards a higher perceived cost

(larger e), the incumbent politician decreases the amount of rent he/she has to foregone in order to be re-elected.

The level of public good which assures re-election, $\hat{G}$, depends on the tax revenue, T, on the actual cost, θ, and the support of the distribution e, in the following way:

- it is increasing in the tax revenue, T, as this value is observable and voters would expect a larger G when the incumbent is collecting more taxes;
- it is decreasing in θ, as

$$\frac{\partial \hat{G}}{\partial \theta} = -\frac{4T}{(2\theta + e)^2} < 0 \tag{5}$$

  a large θ means that, on average, citizens would expect that providing G is quite costly, and hence, a lower level of G would assure re-election;

- it is decreasing in e,

$$\frac{\partial \hat{G}}{\partial e} = -\frac{2T}{(2\theta + e)^2} < 0 \tag{6}$$

  This means that the more information is biased (towards a higher level of θ) the lower is the level of public good which assures re-election.

In this setting, the incumbent politician has an incentive to play strategically, that is, to maximise his/her own payoff, which we will formally defined below. A rent-seeking politician has basically two possible "equilibrium" strategies:

(H) "hit&run", that is, grabbing the maximum rent in the first period, setting $G = 0$;

(E) "election", that is, providing the level of public good which assures re-election, $G = \hat{G}$, in the first period and, then, grabbing the full rent in the second period.

Any other strategy is strictly dominated by those two, for the politician can either win or lose the electoral competition: in the former case, any strategy that gives citizens a level of $G > \hat{G}$ is dominated by $G = \hat{G}$; in the latter case, any strategy that provides $0 < G < \hat{G}$ is dominated by the "hit&run" strategy. The "election" strategy involves a cost in terms of foregone rent, which depends on the amount of public good necessary to be re-elected, $\hat{G}$, but it assures the possibility to get a positive rent in the second period. Payoffs in period 2 are discounted by $\delta > 0$.

Let T_1 and T_2 be the tax revenue in period 1 and period 2, respectively, and $\delta > 0$ the discount factor for payoffs in period 2, we have the following discounted payoffs:

- the "hit&run" strategy produces a payoff T_1, the whole tax revenue in period one is pocketed by the politician, and given that is not re-elected it does not get anything in period 2;
- the "election" strategy produces a payoff $(T_1 - \theta\hat{G}) + \delta T_2$, that is, in the first period the politician gets the maximum rent compatible with being re-elected, while in the second period the politician reaps the whole tax revenue T_2.

The optimal strategy, from the point of the rent-seeking politician, depends on the level of $\hat{G}$, that is, the amount of rent which is foregone in order to be re-elected. In particular, the incumbent politician will implement the election strategy if

$$\theta \underbrace{\left[\frac{2T_1}{(2\theta + e)}\right]}_{\hat{G}(\theta)} < \delta T_2$$

If we assume that the tax revenue is the same in both periods, $T_1 = T_2 = T$, then the condition for implementing the "election" strategy becomes

$$e \geq 2\theta \left(\frac{1-\delta}{\delta}\right) \tag{7}$$

The profitability of the "election" strategy depends on the distribution of the information across citizens, which is captured by the parameter e. The larger e the more profitable is the election strategy, as many people receive a biased information, and the lower is the amount of public good that assures re-election. When the distribution of the information is such that the density of people with a good information is high, that is, e is very low, any rent-seeking politician is likely to pocket the first period tax revenue and run. The choice depends also on the discount factor δ, the more patient the politician the more profitable is the "election" strategy.

We use this setting to investigate the effects of changes in the value of e on the strategy of the politician and the welfare of voters. In the next section we make specific assumption on the determinants of e.

2.2 Information

Our starting point is that the bias in the information available to citizens depends on both institutional factors and politicians' action. The assumption of uniform distribution implies that the span of the support $[0, e]$ determines the density of each group of informed voters. An increase in e determines a lower density in each group, and, hence, a lower density of people with a low bias. In this sense, the politician can exert effort in order to increase e, introducing more bias in the whole distribution of the information.

We model e as a function of an institutional parameter, a, and the action of the incumbent politician, x,

$$e = e(x, a) \qquad e_x > 0,\ e_{xx} < 0 \text{ and } e_a > 0 \tag{8}$$

We assume that the e is increasing and concave in x and increasing in a (subscripts denote derivatives). This means that an institutional setting that guarantees more information about the political process induces a distribution of the information more concentrated towards the true value of θ. For instance, if politicians are required to publish online the budget of their offices, then it is "easier" for voters to have an idea about the true cost of policies implemented; this would be translated in our model by a lower e, i.e. a higher density of people with a signal close to θ.

The action x modifies the bias in the signal received by voters. Therefore, the actual quality of the information (i.e., the transparency of the political process) depends on the combination of the institutional factors and the bias introduces by the incumbent politician. The implementation of action x, costs the politician $C(x) = x$. This cost introduces a basic trade-off in our model: the incumbent politician can trade some rent for a higher bias in order to reduce the amount of public good to provide (to be re-elected).

3 Equilibrium with information bias

The rent-seeking politician can follow two strategies: "hit& run" and "election". In the latter case, he/she can implement some action, x, in order to bias voters' beliefs about the true cost of the policy. In this case, he/she would choose the level of x which solves the following problem (where $T_1 = T_2 = T$),

$$\max_x\ T(1+\delta) - \theta\left(\frac{2T}{2\theta + e}\right) - x \tag{9}$$

The optimal action is the value of x^* which satisfies the FOC[3]

$$\frac{2\theta T}{[2\theta + e(x^*, a)]^2} = \frac{1}{e_x} \tag{10}$$

This results shows that the optimal action of the politician is inversely related to a.[4] An improvement of the institutional setting (a reduction in a) provides an incentive for politicians to increase the "bias" in the information.

The optimal level of x in case of "hit & run" strategy is clearly $x = 0$, because the rent-seeking politician does not care about the electoral contest.

Now we can discuss the optimal choice of the incumbent politician with respect to the electoral strategy. The incumbent politician will choose the "election" strategy if,

$$T(1+\delta) - \theta\left(\frac{2T}{2\theta + e(x^*, a)}\right) - x^* \geq T$$

where the left hand side (LHS) represents the payoff in case of "election" strategy and optimal action x^*. This condition can be expressed as

$$\delta T \geq \theta\left[\frac{2T}{2\theta + e(x^*, a)}\right] + x^* \tag{11}$$

The LHS represents the "prize" of being elected, while the RHS represents the cost of winning the electoral competition, that is the amount of rent to forgone in the present period (which is the inverse of the value of the public good) and the cost of the bias activity. Therefore, an incumbent politician would implement the "election" strategy only if the net benefit of being re-elected is greater than the cost of providing the level of public good which assures re-election.

At this point it interesting to see how the optimal choice changes with a variation in the institutional factors that affect the distribution of the information. A reduction of a (more transparent political setting), produces the following change in the distribution of the information

$$\frac{de(x^*, a)}{da} = \frac{\partial e}{\partial a} + \frac{\partial e}{\partial x^*}\frac{dx^*}{da} \equiv e_a + e_x\frac{dx^*}{da}$$

[3]Since $e(x, a)$ is concave with respect to x, the FOC is a sufficient condition for a maximum.

[4]Using the implicit function theorem and the assumptions on the partial derivatives of the function $e(x, a)$, we get

$$\frac{dx^*}{da} = -\frac{-4\theta T[2\theta + e(x^*, a)]^{-3}e_a}{-4\theta T[2\theta + e(x^*, a)]^{-3}e_x + (e_{xx})^{-2}} < 0.$$

which has an ambiguous sign, therefore we distinguish two cases:

1. $|\frac{dx^*}{da}| > \frac{e_a}{e_x}$ a large impact of the change in the institutional setting on the optimal "bias" strategy, implies $\frac{de(x^*,a)}{da} < 0$: in this case an improvement of the institutional setting (lower a), actually deteriorates the quality of the information available to citizens, because it is counterbalanced by the strong reaction of the incumbent in terms of x; moreover, the amount of public good provided in the "election" strategy is smaller;

2. $|\frac{dx^*}{da}| < \frac{e_a}{e_x}$ a small reaction of the incumbent to changes in the institutional setting, implies $\frac{de(x^*,a)}{da} > 0$: in this case an improvement of the institutional setting (lower a), triggers a reaction of the incumbent in terms of x which is not enough to counterbalance the positive effect of the new institutional setting, therefore e decreases, the distribution of the information is less biased; this means that is more costly to implement the election strategy, and, hence, it is more likely that an incumbent politician would choose the "hit&run" strategy.

In the first case, the effect of a reduction in a (more information about the political process) produces an opposite effect on the two terms in the RHS of equation (11): it increases the "bias" activity, and reduces the amount of public good necessary to be re-elected. This is because the incumbent politician reaction to the increased availability of information is to strongly increase the bias activity, so much that the reduction in a is counterbalanced by the increase in x. The choice between strategies might be unaffected, and the improvement in a actually reduces the voters' payoff, by reducing the amount of public good provided.

In the second case, the effect of a reduction of a increases both the blurring strategy and the amount of public good necessary to be re-elected. This increases the discipline in case of the election strategy, but it provides a strong incentive for rent-seeking politician to choose the "hit&run" strategy.

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