Electoral control when policies are for sale

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Abstract:

This article analyses the dynamics of electoral promises, building on an electoral competition model with endogenous policies. It extends the Grossman-Helpman (1994) model [*Grossman G., Helpman E. [1994], "Protection for sale", American Economic Review, 84, 4, 833-850*] to include sanctions from the electorate and lobbies when the incumbent does not satisfy the expected performance she promised to deliver. This framework allows to deal with the intertemporal dimension needed to understand the prevalent cycle of promises, disappointment, new promises, new disappointment …

Key-words: Lobbies, Promises, Elections, Electoral competition, Lies

JEL Classification: D72, P16

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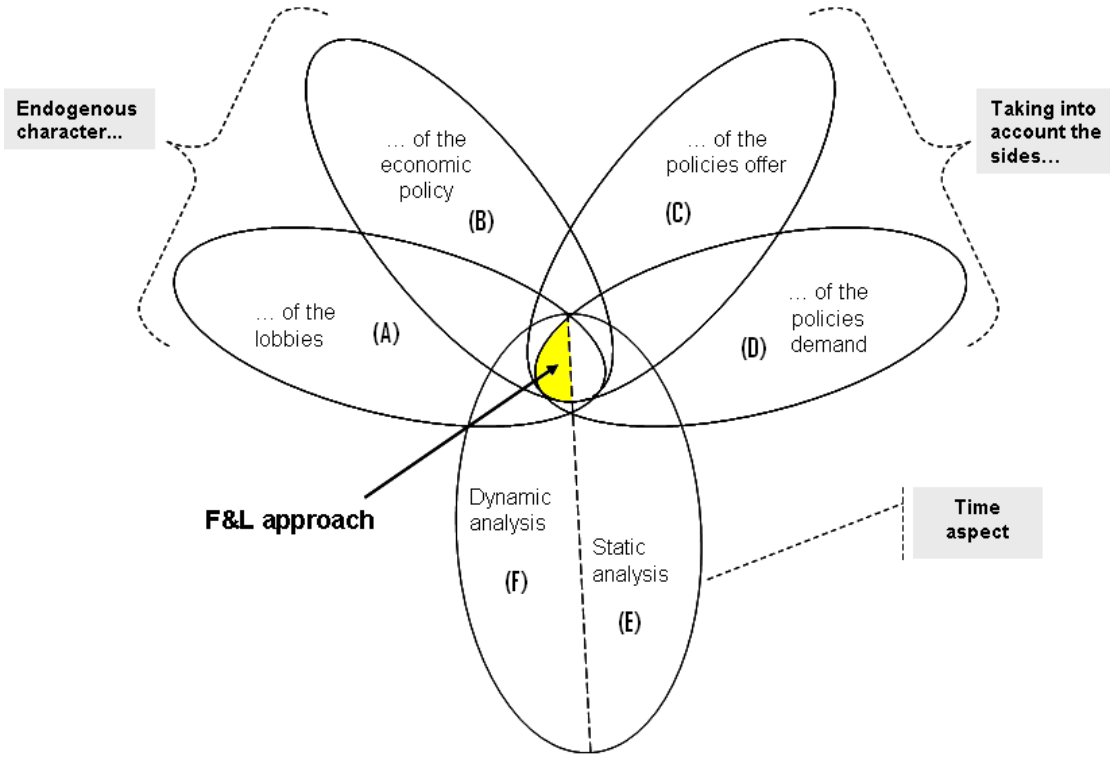
1. Introduction and overview

Is an electoral campaign a tool to pledge economic policies to come or to flatter voters by promising economic policies that may not be implemented? Another way to ask the question would be: does politics have to be disappointing? It is crystal clear that the answer to that is essential to maintaining legitimate democracies. Indeed, should politics be necessary and systematically disappointing then the tendency not to vote that exists in some democracies could develop to the point that politics would be determined by a small number of voters whose characteristics would be either altruism or instead belonging to lobbies that would be likely to influence really the economic policies implemented (in their best interest).

In this article, we are studying, within the framework of electoral competition in the presence on endogenous lobbies, the dynamics of election promises. If the measures of economic policies can be influenced by lobbies, then we must analyse the dynamics of the elected representatives' promises and achievements. In return, the presence of the lobbies will be affected by the dynamics of promises and we integrate this endogenous constitution of lobbies in the analysis. Thus our study stands at the confluence of several literatures.

A major criterion of the caracterization of the endogenous economic policies approaches is whether the election is taken into account (or not).
In many reseach works (following Peltzman 1976 and Hillman and Ursprung 1988) election isn't explicitly taken into consideration in the political game. Other works (following Brock and Magee 1978) put electoral competition at the core of the political game.
Other criteria intervene to differentiate the main approaches (see synthesis by zones in chart infra).

Figure 1. Positioning in relation to existing literature



Since its publication, the Grossman and Helpman (1994) model has become the workhorse of models studying, either theoretically or empirically, the political economy of trade. Its attraction comes notably from the fact that the model has clear-cut predictions on the relation between protection and the import penetration. This facilitates the empirical strategy, and has permitted to verify the empirical relevance of the approach, as was for example demonstrated by Goldberg and Maggi (1999), Gawande and Bandyopadhyay (2000)[1], Mitra *et al*. (2002), Eicher and Osang (2002), McCalman (2004), Lopez and Matschke (2006).

However, both the theory and its empirical validation have recently come under attack. The link between contributions received from lobbies and policies implemented by politicians has been questioned by, notably, Ansolobehere *et al*. (2003), while the empirical strategies have been criticized by Mitra *et al*. (2006) and Kee *et al*. (2007). [The approach through contributions, which doesn't take the election into consideration, is at the intersection of zones B, C, D & E of graph 1.]
The main criticism to Grossman and Helpman's approach (1994) is of ignoring the election process despite the lobbies'role in the process[2].
Ansolabehere, de Figueiredo and Snyder Jr (2003) answer an old question by Tullock (1972): why is there so little money in US politics?
They first consider that given the value of policies at stake, interest groups should give more.
Second, focusing on PAC contributions they show relatively few effects on voting behaviour. This could suggest that policies are not for sale. But two other explanations are useful. Contributions especially target very specific policies (e.g. commercial protection for one industry), that is the ratio global value of policies / contributions is not relevant ; lobbies want to affect election outcomes rather than changing position of politicians[3] which mean that the best analyzing tool is electoral competition.
Another limit is the strictly exogenous character of the lobbies.

[1] Gawande and Bandyopadhyay use econometric tests to demonstrate that following the Grossman and Helpman model predictions, the US protection is sold to lobbies. They show that the lobbies spending compensates the government from deadweight loss from protection and explain the low level of US protection as resulting from preferences of the government, placing similar weight on total net welfare relative to lobbying spending. They also show that in the case of rival lobbies, the competition increases the contributions and that lobbies spending clearly depends on the strength to their rivals.
[2] Grossman and Helpman themselves consider (1994, p. 834) that the electoral competition model is better suited to the analysis of the trade policy major shaping whereas their model is more suitable for a detailed analysis (by sectors) of this policy.
[3] Ansolabehere, de Figueiredo and Snyder Jr (2003, p. 126).

As, in many recent papers, lobbying is modelled as a "menu-auction" where lobbies offer contribution schedules to politicians, that are binding promises of payments, conditional on the chosen policy (i.e. firm promises of payment, bound to the policy chosen. *cf.* Bernhein and Winston 1986, Grossman and Helpman 1994), other, less numerous works, integrate endogenous lobbies and implemented sectorial policies are then considered as a simple growing function of the contributions received. Findlay et Wellisz 1982 notably[4]) For an alternative framework with endogenous lobbying, see Felli and Merlo (2002)[5]. [Those works are at the intersection of zones A, C, and E of graph 1.]

Beyond the limits seen in Grossman and Helpman's classical framework, a shortcoming largely present in literature now seems fundamental: the static framework of the political economic analysis.

Thus relatively few works situated in the field of endogenous protection integrate the notion of time or the dynamics of election promises.
Cairns (1989), who takes up Becker's analysis (1983), studies the compared welfare effects of rent seeking in static and dynamic frameworks.

Yet the analysis deals only with the lobby's side. The side of the economic policies demand (voters) isn't taken into consideration and the offer side (politicians) is considered as given. Moreover the election isn't explicitly taken into consideration (in this case, the electorate is not a variable which justifies, within this analysis framework, focusing the reflexion on the role of lobbies).
[Cairns's analysis is at the intersection of zones B, C, and F of graph1.]
In Banks (1990), time consideration doesn't translate into an intertemporal analysis since the model is a one-period one. The time aspect is only present as a background, justifying the cost of the lie: the author considers that the voters can sanction the candidates for their past lies (Banks 1990, p. 310). [Banks' analysis is at the intersection of zones B, C, D & E of graph 1.]
Ward (1993) integrates time in his analysis but in the background only: time is introduced only to link the finite aspect of politicians'careers to the difficulty to cooperate at the international level (Ward 1993, p. 230). [Ward analysis is at the intersection of zones C & E of graph 1.[6].]

[4] Findlay and Wellisz (1982) consider two opposed lobbies : one protectionist and the other free trade. The two lobbies, which have an active role here (as opposed to Peltzman pionneer approach, 1976), exert contradictory pressures. The tariff is determined as a stable function of the effort balance (ressources invested in the political process) of the competing groups. Findlay and Wellisz' approach stumbles on a mathematical impossibility which seems redhibitory: the shape of reaction curves of each group is not determined. It's thus impossible to know whether the balance is stable or even if it does exist.

[5] These authors consider that the incumbent chooses the lobbies participating in the political game. So the coalition of lobbies depends on the preferences of the incumbent (supposed to choose lobbies with different preferences to its own in order to maximise contributions).

[6] Economic policy can't be taken as endogenous in so far as Ward's analysis focuses on the environmental sides only (weighed against the economy growth rate; Ward 1993, p. 207).

Wirl (1994) points out the weaknesses of the static analysis by asserting that the dynamic aspect of lobbying is its most basic characteristics (Wirl 1994, p. 320). The author, attempting to answer the same question as Ansolabehere *et al.* (2003), modelizes lobbying as competition between two groups (farmers and consumers) in relation to the same criterion (political favour). The main conclusion of the analysis is that, in a dynamic framework, a lobby restricts its effort out of fear of reprisals from the other lobby.Yet the election is not taken into account (we are in effect in an analysis framework where lobbying is continuous, so the model can be static, and is *de facto* close to the one shown by Peltzan, 1976, in terms of regulation or of Grossman and Helpman's, 1994)[7]. [Wirl analysis is at the intersection of zones B & E of graph 1[8].]

The corollary of the static analysis is that the phases of the political game are actually simultaneous. Conversely, in an intertemporal framework, nothing prevents a separation between these phases. Thus the payment by the lobby of a contribution and the announcement then the implementation of the policy by the political party don't occur at the same time.

So it seems necessary to introduce the fact that the game phases are linked by the players' commitments, relying particularly on trust or credibility. At that point an analysis of the lie in politics is becoming essential.

Aragones, Palfrey and Postlewaite (2007) briefly demonstrate that the most accurate perspective to analyze political games is the dynamic one[9]. They make the hypothesis that when a candidate lies the electors punish her by never believing her future promises.

This punishment for reneging is rather extreme (as the authors recognize) which can bias the results of the model. Such a bias is indeed recurrent in taking the political lie into account.

Two possibilities are competing here. According to the one, the promises are binding and the policy is determined at the time of the campaign (the lie is nil); according to the other, the promises are worthless and the policy is actually determined after election (the lie is gratuitous). According to Persson and Tabellini (2000), " It is somewhat schizophrenic to study either extremes: where promises have no meaning or where they are all that matter. To bridge the two models is an important challenge".

Attempts to get these two approaches closer have already been made.For example, in Bennedsen and Feldmann (2006), lobbying is a continuous action, implemented without any regard for electoral deadlines. The model proposed in this paper should help to make the original Grossman-Helpman model and reality closer, as it embeds the re-election constraint in the policymaker's reaction function, so as to take into account the fact that contributions may evolve in response to unsatisfied expectations from the incumbent.

[7] Besides the hypothesis according to which consumers organise in lobbies (and express themselves independently from the electoral framework) is contradictory with what we've learnt, since Olson (1966) notably, about the difficulty of collective action for the big groups (as a matter of fact, this point is in recognised by the author: Wirl 1994, p. 308).

[8] The political offer hasn't been actually studied, due to the approach being rather more in terms of regulation.

[9] "If voters have rational expectations, no campaign promise can alter voters' beliefs about what action will be taken by a candidate if he is elected. If there were any statement that did alter beliefs in a way that increased the probability of election, the candidate would make such a statement (…) Hence no campaign statement can convey information that alters the chance of election. When we move from the case of a single election to multiple elections, campaign promises may be costly (…) in a repeated game" (Aragones *et al.* 2007).

Austen-Smith and Banks (1989) build a different model in which the incumbent's performance depends on her effort, a feature that is also in our model. They then show that, as voters exert a pressure on the incumbent to fulfil her promises, the incumbent has strong incentives to comply. Banks (1990) also considers electoral promises in a dynamic framework, but without linking the policies to the vested interests they may satisfy. The same limit applies to the models based, e.g., on the frameworks developed by Ferejohn (1986)[10] or Rogoff (1990), where electoral support is not taken into consideration.
Aragones *et al*. (2007) show, in an infinite-horizon model, that politicians have an interest to keep their promises, so as to create a reputation towards voters playing trigger strategies. Harrington (1993) also studies political promises, but in a model where politicians pander promises to electoral beliefs, hence leading to the conclusion that candidates will have an interest in being truthful if they want to have a chance to be re-elected in the second electoral period of the model.
In a recent article, Callander and Wilkie (2007) develop Banks' model (1990) by putting political lies at the core of the analysis.
At that point, they notably modelize gratuitous lies as specific cases of usually costly lies.
Though a one-period model, this analysis is not far from ours. Yet, whereas we integrate lies and their consequences into the endogenous economic policy, Callander and Wilkie's problematics is more typical of sheer electoral competition: to which extent does politicians ability to lie affect the likeliness of their being elected?

In view of these fields of literature, what are the main characteristics of our approach? We do not consider a homogenous electorate, and we integrate lobbies'actions aiming at getting specific policies favouring their own interest. Secondly, we focus our analysis on the conditions in which politicians can disown their commitments, thus revealing, in our framework[11], the basic reasons for political lies as well as their consequences (re-election, time account).
Thirdly, we are using a model close to the models presenting lobbying as an auction process, yet in our model the formation of lobbies is, at least to some extent, endogenous…

Finally, our model is an intertemporal model of endogenous economic policies taking into consideration both the side of the offer and of the demand. Though relying on analysis through contributions, the paper is also related to the part of the literature that deals with electoral competition and campaign promises.
Uncertainty is introduced as a central element of the process. Deception and its cost (neither nil nor infinite) will be determined endogenously by the model. Diagram 1 shows where such an approach stands in relation to literature.
The article is structured as follows. The following section details the hypotheses and microfoundations of the model. Section 3 exposes the intertemporal program, while section 4 derives the solution and provides discussion of the results. The last section concludes and provides hints for further research.

[10] Ferejohn's analysis relies notably on the hypothesis of divergence between politicians'annoncements and actions (Ferejohn 1986, p. 29, p. 30).
[11] Note that our approach, although focusing on time constraint and modifications of political behaviours is not an informational theory. That is we do not accept political contribution to be welfare improving. First, Browning (1974) considered the beneficial impact of lobbying through the transmission of information. Others, such as Baldwin 1982, Laband and Sophocleus (1988), Austen-Smith and Wright (1992), who construct a model of informational lobbying accept that lobbies spending also has a positive impact on social welfare. See in the same stream Lagerlöf (2006).

2. The model

2.1. Foundations

We are reformulating here the Grossman and Helpman's model (typical of the Ricardo-Viner framework) while simplifying it and also generalizing it to tax policies as a whole. Individuals have identical additive utility functions in the shape:

$$U = C_Z + \sum U_i(C_{Xi})$$

C_Z is consumption of good Z, which serves as standard with a domestic and international price normalized to 1. C_{xi} is the consumption of good X_i ($i = 1,2,\ldots,n$).

The utility functions are differentiable, rising and strictly concave. The standard good is produced from labour only (a work unit produces a good unit). The other goods are produced each by labour and a specific factor. All prices are measured in accordance with the standard.The wage rate is then equal to 1.

In the way of Ederington and Minier (2008) we are extending Grossman and Helpman's standard model so as to consider that the government exerts both trade policies (creating a gap between domestic and international prices) and production policies (creating a gap between production and consumption domestic prices.

$P_i = (P_1, P_2, \ldots, P_n)$ is the vector of domestic prices of non standard goods

$\pi_i = (\pi_1, \pi_2, ..., \pi_n)$ is the vector of international prices of non standard goods.

$\hat{r}_i = (\hat{r}_1, \hat{r}_2, ..., \hat{r}_n)$ is the vector of trade taxes (a tariff on imports or a subsidy for exports if superior to 1).

$\tilde{r}_i = (\tilde{r}_1, \tilde{r}_2, ..., \tilde{r}_n)$ is the vector of taxes / subsidies for production (subsidies if superior to 1).

r_i is the vector of tax policy, with $r_i = \hat{r}_i \cdot \tilde{r}_i$.

So we have: $P_i = \pi_i \cdot \hat{r}_i \cdot \tilde{r}_i$

We consider two elections, the first one occurring in period *t*. Each period covers the campaign before election, the election proper and the ensuing mandate[12]. The election is run notably around real or anticipated economic competence[13]. The competence is normed and comprised between 0 and 1, it corresponds to the quality of the answer to a group's expectations. Thus if none of a group's expectations is satisfied, the elected representative's competence will be perceived by the group members as equal to nought.

The likeliness of an election depends, *a priori*, on promises made by the candidates and the contributions they received.

[12] Period *t*+1 starts at the end of the mandate of period *t*, at the beginning of the election campaign in which the government will seek re-election.

[13] For all that the model isn't one of electoral prediction. Even if the probability of re-election is a growing function of the contributions received, we consider that the election proper depends on other parameters (some non random) that are not formalised here.

At period *t*, we suppose that the probability to be elected in *t*, P_t, depends on contributions only[14]. Indeed, the announcement the candidate made doesn't match her programme exactly, it matches what the opinion knows of this programme. In this way a candidate who received no contribution will be unable to publicize her programme whereas for a candidate who received an almost infinite amount of contributions the likeliness to be elected will get closer to the unit.

So we have:

(1) $$P_t = \frac{C_t}{1+C_t}$$

Taking the contributions into account will lead us to distinguish two cases.
First case: the policy announced to the lobbies is determined *ex-ante* according to the demands of industrial lobbies (typically: in competition with importations). Then the micro foundations are characteristic of the Grossman and Helpman's framework.

The consumer's surplus is the variable chosen to appreciate the voters'welfare:

$$S(P_i) = \sum_i U_i(d_i(P_i)) - \sum_i P_i d_i(P_i)$$

$$S(r_i\pi_i) = \sum_i U_i(d_i(r_i\pi_i)) - \sum_i r_i\pi_i d_i(r_i\pi_i)$$

with d_i the individual demand in good *i.*

The tax policy also determines the tax revenue (*R*).
We write that X_i represents the produced domestic quantity of good X, and N represents the whole population. We have the tax revenue per capita:

$$R(r,\pi) = \sum_{ii}\left[(\hat{r}_i - 1)\pi_i\left(d_i(r_i\pi_i) - \frac{1}{N}X_i(r_i\pi_i)\right) + (\tilde{r}_i - 1)\frac{X_i}{N}\right]$$

where $d_i(r_i\pi_i) - \frac{1}{N}X_i(r_i\pi_i)$ represents the demand minus the production, i.e.the imports.
A customs tariff exists when at least one factor of production specific in the industry is present. The tariff (subsidy) also determines the rent got from this factor of production.
Given $\Pi_i(P_i)$ the rent agreggate entailed by tariff (subsidy).
The general welfare (ω) is the summation of these three elements to which we add the dotation in labour (*l*):

$$\omega(r,\pi) = l + \sum_i \prod_i (r_i\pi_i) + R(r,\pi) + S(r\pi)$$

The lobbies'welfare is expressed:

$$\omega_{i=i_L}(r,\pi) = l_{i=i_L} + \prod_{i=i_L}(r_{i=i_L}\pi_{i=i_L}) + \chi_{i=i_L}[R(r,\pi) + S(r\pi)]$$

with i_L the sector politically organized in the way of Grossman and Helpman.
l represents the offer of work, Π represents the productivity of the specific factor, χ represents the part in the population of the lobby's members, R represents the tax revenue, and *S* represents the consumer's surplus.

[14] Nevertheless this does not strictly mean that the election at period *t* doesn't depend on the population, but the part of the likeliness of an election linked to the population at the first period corresponds to exogenous parameters (population's prefereence, the candidate's relative charactéristics, hazard).

The lobby want to maximize their welfare, net of the contributions given to the government, i.e. :

$$V_i = \omega_i(r,\pi) - C_i(r,.)$$

The contributions plan links an announced policy and contributions for each sector is:

$$C_i = \phi_i \cdot \omega_i \text{ , with } \phi_i \in [0,1].$$

Remark : globally speaking the lobby offers two plans of contributions, one to the government and one to the opposition. Yet, if the two candidates belong to different parties clearly situated on either side of the political stage, at least in terms of the distribution criterion, then we can expect one of these contribution plans to be empty[15], which corresponds to $\phi_i = 0$.

Then we can write the utility function of the lobby, $V_i = W_i - C_i$:

$$V_i = (1-\phi_i)\cdot l_i + (1-\phi_i)\cdot \Pi_i(r_i,\pi_i) + (1-\phi_i)\cdot \chi_i \left(R(r,\pi) + S(r,\pi)\right)$$

In the typical case of a sector politically organised since it is in competition with imports, the function is rewritten[16]:

$$V_i = (1-\phi_i)\cdot l_i + (1-\phi_i)\cdot \Pi_i(r_i,\pi_i) + (1-\phi_i)\cdot \chi_i ((r_i - 1)\cdot M_i(r_i) + S(r_i^l,\pi_i))$$

with M_i the quantity of imported good *i* .

The maximisation of the lobby's objective function is:

$$\frac{\partial V_i}{\partial r_i} = (1-\phi_i)\cdot \Pi_i'(r_i,\pi_i) + (1-\phi_i)\cdot \chi_i ((r_i - 1)M_i'(r_i) + M_i(r_i) + S_i'(r_i,\pi_i)) = 0$$

(by Hotelling Lemma)[17] :

$$(1-\phi_i)\cdot X_i + (1-\phi_i)\cdot \chi_i (r_i - 1)M_i'(r_i) = -(1-\phi_i)\cdot \chi_i (M_i(r_i) + S_i'(r_i,\pi_i))$$

entailing:

$$(r_i^l - 1) = \frac{-X_i - \chi_i (M_i + S_i')}{\chi_i M_i'}$$

This expression can simplify. For one sector, the consumer's surplus is:

$$S_i(P_i) = U_i\left[d_i(P_i)\right] - P_i\, d_i(P_i)$$

The surplus is derived in relation to the price:

$$\frac{dS_i}{dP_i} = U'_i\left[d_i(P_i)\right]\cdot d'_i(P_i) - P_i d'_i - d_i(P_i)$$

$$\frac{dS_i}{dP_i} = d'_i(P_i)\left[U'_i\left[d_i(P_i)\right] - P_i\right] - d_i(P_i)$$

A unit of standard good (price equal to 1) is produced with a labour unit, we have :

$$\left[U'_i\left[d_i(P_i)\right] - P_i\right] = 0,$$

entailing :

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[15] On this point see Coughlin (1986, p. 28), and the "redistributive reputations" each candidate is supposed to have. Some analyses are even based on this criterion: Magee, Brock and Young's hypothesis (1989), by example, is that there exist two lobbies, one allied to capital, one to labour.

[16] In this case $r_i = \hat{r}_i$.

[17] $\Pi_i(P_i)$ is the *rent* coming from the specifis sector. With Hotelling lemma, we have : $\frac{d\Pi_i}{dP_i} = X_i$; with X_i the domestic quantity produced by sector *i*.

$$\frac{dS_i}{dP_i} = -d_i$$

We rewrite :

$$(r_i - 1) = \frac{-X_i - \chi_i (M_i - d_i)}{\chi_i M_i'}$$

The imports correspond to the demand minus the supply, we have:

$$(r_i - 1) = \frac{-X_i - \chi_i (-X_i)}{\chi_i M_i'}$$

hence:

$$(r_i - 1) = \frac{(\chi_i - 1) X_i}{\chi_i M_i'}$$

Which is the writing of the tariff announced to the lobbies and corresponds to the sectorial performance announced to them, i.e. y^a.

Second case: the policy announced to the lobbies is totally determined within the framework of the intertemporal political game, according to re-election constraints.
These two cases do not amount to antinomic approaches since the endogenous determination (second case) can include case 1 (with lesser precision) and extend to all types of lobbies – including non industrial ones.

In the first case: $C_t = \phi \cdot \omega_t$, with ω the lobby welfare (representative) and ϕ representing the lobby contribution plan.

In the second case: $C_t = \lambda \chi y^a$,where χ is the part, in the population, of the productive sectors organised in lobbies, λ a positive parameter representing the lobbies'sensitivity to promises (y^a) made by the candidate.

We consider that a lobby feels concerned only by the policiy applied to the sector where it belongs. This is a traditional hypothesis in this literature. This hypothesis may seem restrictive[18] but it is acceptable to describe the reality (Panagariya and Findlay 1996, p. 269).

2.2. The election phase

At the next period (t+1), the outgoing candidate's re-election will depend on the evolution of the contributions she will be capable to collect as support to her candidacy as well as on the evolution of social welfare.
Remark: the lobby's characteristics are seen as purely static, whereas the incumbent's is dynamic. This difference in treatment can be justified by the fact that policies being short-lived, the capital always exerts its lobbying activity according to its short-term interests (Pecorino 1997, p. 92). Conversely, a political party life span can be considered infinite.
The variation of the likeliness of the outgoing candidate (incumbent)'s election reads:

[18] Verreydt and Waelbroeck (1982) give the example of the iron industry whose protection research can be countered by the pressure or much iron -consuming industries (Verreydt and Waelbroeck 1982, p. 388). More globally speaking, see Grossman and Helpman 1994, p. 849, for a discussion of this hypothesis.

(2) $$\dot{P}_{t+1} = (1-\alpha)\dot{C}_{t+1} + \alpha \dot{W}_{t+1}$$

with $\alpha \in [0;1]$, depending on the proportion of the population working in politically organised sectors (like in Grossman and Helpman, 1994).

The lobbies modify their contributions according to the gap between the candidate's effective competence in their field (*y*, measuring the performance of sectorial policies implemented) and the previous annoncement that their interests or sectorial claims could be satisfied. (y^a):

(3) $$\dot{C}_{t+1} = \mu(y - y^a)$$

parameter μ, positive, being the lobbies's sensitivity to deception (this is how we will, from now on, call a gap between promises and achievements). We consider a lobby as representative. This hypothesis may seem strong (with as a consequence a market power of the lobby), yet it is not contradictory with the framework chosen (as it would be should the lobbying be informative)[19].

For the population, the perceived variation of welfare depends on the gap between the competence announced to the candidate (x^a) and the one effectively exerted (x):

(4) $$\dot{W}_{t+1} = \nu(x - x^a)$$

parameter ν, positive, being the voters'sensitivity to deception. Someone in power will be considered in a way all the harsher as he will have promised much. From now on, it will be supposed that x^a is fixed at the level which maximizes its effect but that it will not be equal to 1 for all that.

Indeed the credibility of a total competence announcement is weak. As an illustration, let's quote the "deal with the Italians" suggested by Silvio Berlusconi during the May 2001 campaign, in which he pledged not to run again in 2006 if he hadn't fulfilled at least four out of his five main electoral promises. As our analysis goes, that told the voters: $x^a \geq 0{,}8$.

Let's also note that from the dynamic point of view x^a will be variable depending on the candidates, the commitments and the past positions influencing the credibility of the annoncements (see on this point Aragones *et al.* 2007, or Callander and Wilkie 2007).

From now on we suppose that the lobbies'sensitivity to deception is higher than the voters'.($\mu > \nu$), lobbies being usually better informed (and having more incentive to be informed) than the population for stakes that concern them directly. Consequently they have a better memory and a higher capacity of reprisal (*cf.* Baron, 1994[20]).

[19] To make this point clearer see for example Prat 2002 (pp. 163-164), who constructs a multiple lobbies model of "nondirectly informative advertising".

[20] Baron (1994) distinguishes between informed and non informed voters. The latter, contrary to the former, can be influenced by the campaign expenses. It is coherent to consider that these two types of voters coexist in the electorate. Conversely, concerning the lobbies, their members are linked by the defence of a well-defined shared individual interest; concerning this objective, around which their relations with politicians are organized, one cannot consider that the lobby members are non informed or susceptible to the government's influence.

3. Resolution

3.1. The programme

The candidate will try to maximize both the probability of an election in the first period and her evolution in the second period. Her utility function reads[21] :

(5) $$U = P_t + \dot{P}_{t+1}$$

Which she will try to maximize under the following constraints:

(6a) $$P_t > \tfrac{1}{2} + k$$

(6b) $$\dot{C}_{t+1} + \dot{W}_{t+1} \leq \dot{Y}$$

(6c) $$x \leq L(1 - \chi y)$$

The first constraint comes first and foremost for the candidate: indeed, in order to be reelected one must first be elected; $k \in \left[0, 1/2\right[$ represents here the security margin desired by the candidate (who also shows a preference for the present)[22]. The second constraint is the one of the ressources available in the economy: *ceteris paribus*, the sum of the increase of contributions and of the increase of social welfare (expressed in the form of surplus) cannot be higher than the total growth of the economy ($\dot{Y}$). Indeed, the more it will be yielded to the lobbies' claims (whose counterparts are the contributions allotted to the candidates), the less (other) possibilities of redistribution granted by the economic growth will remain (*cf.* les Bhagwati's DUPs[23], 1982).[24]

The last constraint imposed to the candidate is notably the one of the time she devotes to the welfare of the voters.
The exercice of her competence, *x*, by the candidate elected depends on the time ($L \in [0;1]$) she devotes to them. However this competence exerted for the benefit of the voters is limited by the competence exterted for the benefit of lobbies (*y*). Even if we consider that the definition of sectorial policies isn't time consuming, since it only repects given commitments, there's no denying that any concession made to lobbies diverts productive ressources which could have been employed in a more effective way in relation to voters. Depending on χ, the proportion of global population that the lobby represents, the political effort will be more or less costly.
In other words, if $L \in]0,1]$ and χ and $y \in]0,1[$, the performance vis-a-vis the voters depends on the time the incumbent devotes and on the DUPs: $x \in]0,1[$. This third constraint is easily explained if the four extreme cases of behaviour are studied:

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[21] To make reading easier, we omit the candidate's actualisation rate, as taking it into account produces only intuitive extra results.
[22] Yet the introduction of parameter *k* doesn't have any effect on the model results. So, to make reading easier, we will not consider it from now on.
[23] "Directly Unproductive Profit-seeking activities".
[24] Laband and Sophocleus's analysis (1988) illustrates this constraint. The authors study the loss of welfare stemming from rent-seeking. Taking economic growth as the welfare criterion and the number of lawyers in exercise as *proxy* of lobbying, they show that rent-seeking has taken 22, 6 % off the US GNP in 1985.

(i) If $L = 0$, the incumbent doesn't care about the voters at all: $x = 0$;
(ii) If $L = 1$ and $y = 0$, the whole effort is made in direction of the voters and the DUPs are absent : $x = 1$;
(iii) If $\chi = 0$, there are no lobbies, the effort in direction of the voters results directly in performance : $x = L$;
(iv) Finally, a specific situation can be considered where a lobby represents the whole population, thus $\chi = 1$. So the politicians doesn't have to make efforts in direction of the electorate (which does not exist as such), there is no checking force and y must be equal to 1. The constraint generates $x = 0$.

3.2. Solutions and interpretations

In the first case (announces to the lobbies, y^a, determined ex-ante), the programme resolution is a classical resolution in IR^2.
In this case, the model resolution brings the following solutions:

$$x = L\frac{-\mu + \chi\mu z + \chi\nu w + \chi\dot{Y}}{\nu L\chi - \mu}$$

$$y^a = f\left(\frac{(\chi - 1)X}{\chi M'}\right)$$

$$y = L\frac{-\mu z + L\nu - \nu w - \dot{Y}}{\nu L\chi - \mu}$$

In the second case, y^a is completely endogenous. The resolution is done in IR^3. This case seems here the more interesting since it presents broader generality.
The second term of the utility function takes into account, from equations (2), (3) and (4), the cost of lying. Contrary to other (rare) works in this field, the cost of lying is expressed in relation both with the electorate and the lobbies (deception vis-a-vis the lobbies is an innovative aspect of our approach). The cost of lying results in a diminution of the likeliness of re-election, which solves the all or nothing problematics in the sanction of lying in the polls[25].

Under the hypotheses above, the model resolution entails the following solutions:

(7a) $$x = L\frac{\mu(1-\lambda) + \chi\lambda\left(\nu x^a + \dot{Y}\right)}{\lambda(L\chi\nu - \mu)}$$

(7b) $$y^a = \frac{1}{\chi\lambda}$$

(7c) $$y = \frac{\mu + \chi\lambda\left(\nu\left(x^a - L\right) + \dot{Y}\right)}{\chi\lambda(L\chi\lambda - \mu)}$$

[25] As opposed for instance to Aragones *et al*. (2007) who suppose that the sanction of political lies is never to be believed again.

Based on these expressions, three interesting results can first be declined. Thus, it must first be verified that we always have $y > x$.[26] In other words, the lobbies' interests are better served than those of the population considered as a whole. Beyond the traditional conditions of the lobbies' efficiency (small size, concentration, specificity of the factors, *etc*.), this result justifies the rationality of being organised in lobbies: what would be the interest of collective action if it did not allow for advantages compared to the rest of the population?

Besides, the model verifies the Olsonian condition relative to the organisation of pressure groups (*cf*. Olson, 1966): there is a threshold, $\tilde{\chi}$, to a lobby's size (represented by the proportion of the population belonging to the group), such that, under the threshold when the lobbies'size increases, so does the candidate's effort in their favour[27]. In this case the small size condition is fulfilled and allows the lobbies to be efficient. When their size increases the candidate pays them more attention (depending on the economic "weight" represented)[28]. This threshold, though differently expressed and emerging differently, can also be found in Magee (2002). It's how one can talk of the lobbies' partly endogenous formation.[29]
Conversely, beyond this threshold, the lobbies are too important and they lose their characteristics. In this case, political support will be expressed in the same way as for voters at large[30].

Finally, it appears, logically, that when the candidate's workload increases, the policy implemented first deals with the population's welfare, any extra work being done to the detriment of lobbies (we have, respectively : $\frac{\partial x}{\partial L} > 0 ; \frac{\partial y}{\partial L} < 0$). This point illustrates clearly the antagonism between the lobbies and the population which is also the opposition between vested interests and general interest.

[26] For reasons of space, detailed results are not provided here but an annex where they are demonstrated is accessible on request to the authors.
[27] This means that the Olsonian condition, rather than a traditional postulate, is endogenous to the model.
[28] The small size is the main microeconomic condition for the constitution of a lobby. In all the literature relative to lobbying, a near consensus has been agreed around this point. Which is what allows Wellisz and Wilson (1986, p. 367, p. 372) to write that a group can meet its objectives even though it doesn't have any other advantage than its small size ; for a similar reasoning see also Becker (1983, p. 385 and p. 395). From a rather macroeconomic point of view Olson (1982) considers that stable societies with unchanged boundaries tend to generate more organizations for collective actions. A recent study by Coates, Heckleman and Wilson (2007) confirms Olson's view : socioeconomic development and nations' stability (captured through proxies as time since initial take off date, since last institutional upheaval and last violent turmoil) are key factors to explain group formation.
[29] Magee presents a model on endogenous trade policy and lobby formation focusing on the interactions between an incumbent and a single lobby. The cost for a member of the lobby to free ride is supposed to be an infinite reversion to the noncooperative solution. In this framework it is shown that increasing the number of the member of the group generates a free-rider problem only when the number of firms (endogenously determined) is sufficiently large (Magee 2002, p. 457 and p. 467).
[30] The lobby not being efficient any more in its *rent seeking* activity, the political support of its members is expressed through the vote (like big size groups such as trade-unions or consumers'unions).

4. The dynamics of electoral promises

As defined above, the word deception expresses the gap between the candidate's promises and her achievements, whether to the population as a whole or to the lobbies. In this part we show on which conditions the electoral candidates can make promises without fulfilling, once they have been elected, the contract made with the voters and political supporters during the campaign. First we analyse the impact of promises on the policies implemented, then the impact of the agents'reactions to deception, finally the very dynamics of deception.

In the first place, let's observe the sensitivity of the policies implemented in relation to the promises made to the voters.

From (7a), we get: $\frac{\partial x}{\partial x^a} < 0$. So the policies led vis-a-vis the population are all the weaker as the promises were important. This *a priori* paradoxical result is important. The explanation stems from the time separation between promises and achievements that our model allows to highlight.

In effect, the higher the promises, the less accessible. Rather than trying to reduce the gap later, it gets less costly for the political decision-maker to seek political support from the lobbies (besides we verify $\frac{\partial y}{\partial x^a} > 0$). This situation is notably linked to the (realistic) hypothesis of the voters'lesser sensitivity to deception ($\mu > \nu$, *cf.* Baron, 1994). This result is confirmed by the lobbies tending to benefit from an increase of the ressources available, compared to voters ($\frac{\partial y}{\partial \overset{\bullet}{Y}} > 0$ and $\frac{\partial x}{\partial \overset{\bullet}{Y}} < 0$).

The commitments to lobbies are endogenous, so one can't apply the same analysis as for promises made to voters. Yet it's possible to study the impact on the policies implemented of the lobbies'sensitivity to announcements.

We show that: $\frac{\partial y}{\partial \lambda} < 0$, which can be interpreted as follows: when the lobbies'sensitivity to announcements increases, all contributions unchanged, the announcements can decrease; from then on, deception being constant, the sectorial policies implemented decrease. $\frac{\partial x}{\partial \lambda} > 0$ testifies to the antagonism between the lobbies and the population.

In a second place, we must analyse the impact of sensitivity to deception on the policies led in the direction of the two types of agents the candidates are related to (i.e. the lobbies and the population). From the previous results we can deduce that, on the condition that $\chi < \tilde{\chi}$, we have $\frac{\partial y}{\partial \mu} > 0$. In other words, if the lobbies verify the Olsonian condition of political efficiency (*cf. supra*), then the candidates will tend to try to satisfy them all the more so as the lobbies will be sensitive to the gap between the announcements and the efforts really made. So, relatively small lobbies will tend all the more to contribute to the candidates'campaign efforts (which is a further form of the condition of efficiency linked to a small size).

On the other hand, except if the work done by the candidates is close to nought, the competence exerted by the candidates, once elected, will react positively to the electorate's sensitivity to non kept promises (we have : $\frac{\partial x}{\partial \nu} > 0$ for L different from nought[31]).

But we have: $\frac{\partial x}{\partial \nu} \leq 0$ when L tends to nought. This result can be understood intuitively if we reason *a contrario*: let's imagine that the government works very little for the population even though the population's characteristics do not interfere with the decisions they make (in the model terms: with the competence they exert) once in power. As a corollary, given the constraint (6c), we can remark that if the government strongly favours the lobbies as compared to the population, then it is likely that the competence exerted will have no regard whatever for the population.

Last, let's consider the model results concerning the deception undergone by the agents. The deception vis-a-vis the agents reads like the gap between what was promised and what is implemented, for the voters $T \equiv x^a - x$, and for the lobbies $\tilde{T} \equiv y^a - y$. The analysis will be based on the elasticities, which allows a comparison of the variations and makes the results more directly interpretable.

We first remark that $\frac{\partial T}{\partial L} \cdot \frac{L}{T} < 0$ only if $L > \bar{L}$, which means, in the manner of $\frac{\partial x}{\partial \nu} > 0$ that the relation between work increase and deception decrease is only valid if the government really cares about the population.

We remark next that $\frac{\partial \tilde{T}}{\partial \chi} \cdot \frac{\chi}{\tilde{T}} > 0$. So deception vis-a-vis the lobbies tends to increase when their political efficiency decreases (see the threshold relative to the Olsonian condition above). The larger part of the economy they represent, the less efficient they are.
Besides, it can be noticed that the more sensitive to the announcements the lobbies are, the greater tendency to deceive them the decision-makers will have ($\frac{\partial \tilde{T}}{\partial \lambda} > 0$), so as to take in a maximum contributions from relatively little reluctant political support.

A second interesting result concerning that point is that, when the lobbies'sensitivity to deception increases, they tend to be less deceived ($\frac{\partial \tilde{T}}{\partial \mu} \cdot \frac{\mu}{\tilde{T}} < 0$)[32]. Let's note that these two results are complementary rather than contradictory, as the lobbies'sensitivity to deception can counterbalance their sensitivity to announcements.

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[31] More precisely (*cf.* annex) for $L > \bar{L}$, with $\bar{L} = \frac{w}{1 - \chi w \frac{y}{x}}$.

[32] Let's note that the lobbies'sensitivity to deception has no impact on deception vis-a-vis the voters ($\frac{\partial T}{\partial \mu} \cdot \frac{\mu}{T} = 0$), which maintains margins to manœuvre fot the decision-maker. It's actually the contrary for the population, in relation to which deception decreases when its sensitivity to deception increases. Here's the explanation: when the candidate is under constraint from a population more sensitive to deception, which

Concerning the sensitivity of voters to deception, $\frac{\partial T}{\partial \nu} \cdot \frac{\nu}{T} < 0$ for $L > \overline{L}$, which means that when the government works at least a minimum for the population, it deceives them less when they become more sensitive to deception (the **checking force** is valid only if the incumbent does not rely entirely on the lobbies). For the lobbies, the condition of sign of $\frac{\partial \tilde{T}}{\partial \nu} \cdot \frac{\nu}{\tilde{T}}$ is the exact opposite of the previous one (thus, when you must deceive the population less, the lobbies are mechanically penalised for it : deception against them increases).

Logically, we also find that the higher the announcements (*w*) the more deceived the population (the more you promise the less you keep).

A final result concerns the resources constraint. We demontrate that $\frac{\partial T}{\partial \dot{Y}} \cdot \frac{\dot{Y}}{T} > 0$ and $\frac{\partial \tilde{T}}{\partial \dot{Y}} \cdot \frac{\dot{Y}}{\tilde{T}} < 0$, which can be interpreted as : when growth improves you deceive the population more and the lobbies less. Consequently the lobbies are the winners of growth; vis-a-vis the ressource, the antagonism between vested and general interest appears clearly again.

5. Conclusion

This article offers an analysis framework of the dynamics of election promises, focusing on deception vis-a-vis voters and lobbies. This dual deception is an innovative aspect in the literature on lobbying. Global and sectorial policies (for the population and for the lobby) maximize the politician's objective function at different levels. At equilibrium, the policy directed to the lobby will always be more favourable than the policy directed to the population. Thus the lobby appears the winner of the political game.

This global result must not hide the nuances that the two-period model adds to the more traditional vision of the political- economic interactions characteristic of the endogenousness of economic policies.

The model presented offers a complementary vision of the Olsonian condition. According to that condition, a lobby's political efficiency is inversely proportional to its size. This condition, almost unanimously accepted in the literature, makes of a small size the main condition for a lobby's constitution.
In the model, the lobby is characterised by the proportion of global population that it represents. In consequence, when this proportion increases the lobby becomes less efficient. But this applies as far as the lobby carries the basic characteristics of a lobby, i.e. as long as this proportion is small. Thus, from a certain level, the group considered does not act as a lobby any longer; its political strength appears in a different way (votes, opinion polls, i.e. like the rest of the population[33]).

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restricts the most "unachievable" promises, margins to manœuvre appear on the lobbies' side, which allows her to receive extra contributions.

[33] By example if we consider that the lobby represents almost all the population, its influence will be only considered in a uniquely electoral perspective.

Consequently, the incumbent will only take the lobby's characteristics into account if the condition of political efficiency is fulfilled. Thus a policy in favour of the lobby will depend positively on its sensitivity to deception only if the group is under a given size (the difference between potential and active lobby on which the endogenous nature of lobbying is founded in the model can be found here again).

At the level of the electorate the characteristics are stable. But for the incumbent to take these characteristics into account, she needs first to have a minimum interest in the electorate (which translates into a level of minimum effort in favour of the population). It's from this threshold of effort that the sensitivity of the electorate to deception will be taken into consideration. So beyond this threshold, an increase of the sensitivity to deception improves the policy implemented for the population, and in the same condition this policy depends positively on the time devoted by the incumbent to the population.

The sensitivity to announcements clearly highlights the antagonistic interest of lobbies and population. The more sensitive to announcements the lobby's contributions are, the more deceived it is (and the less deceived the population is) whereas the more announcements of a favourable policy are made to the population, the more it is deceived (and the less the lobby): the more you promise the less you keep.

But the analysis also highlights the conditions on which deception can be exerted. From then, it can be shown that really utopian promises don't pay. Indeed, in the model framework, the lobbies'sensitivity to deception counterbalances their sensitivity to announcements, creating a checking force for the decision-maker.

The antagonism shows particularly clearly concerning the ressource. When the growth of global wealth increases, the policy in favour of the population deteriorates whereas the action in favour of the lobbies improves. The more resources you have, the more beneficial to the lobbies the redistribution.
It's the same for deception: when the global wealth increases, deception vis-a-vis the voters grows and deception vis-a-vis the lobby decreases. This result can be linked to the fact that the economic growth (assessed in different forms) is one of the main variables of political support. Thus, the better the growth gets, the more likely to be re-elected the incumbent will be; this re-election going along with a growing closeness, as the election cycles go by, to the lobbies (more favours, less deception). It is then logical for the lobbies to prefer that the incumbent keep her position. A lobby's influence on the likeliness of election can notably explain why incumbents get as an average more contributions than their contenders.
This difference in contributions is demonstrated by tests done on the US Congress elections (Stratmann 1995, p. 132). This demonstration is questionable as it is contradictory with the approach of electoral competition since it implies that the incumbents can change their stances to get them closer to their contributors (Mueller and Stratmann 1994, p. 65). Our analysis shows how this "rapprochement" is actually endogenous itself.

For future research it seems to be promising to distinguish between two voters' groups (informed and non informed) and make their respective parts endogenous according to deception (a deceived voter tending to be more informed) for elections to come and to analyse the consequences on the model equilibrium values.

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