

Economic Policy and Special Interest Politics*

Torsten Persson[†]

First draft: March 31, 1997

This version: May 15, 1997.

1. Introduction

A great deal of research has been done on the boundary between economics and political science in the last five to ten years. This research in "political economics" spans many subfields, such as macroeconomics, trade, public finance, regulation, rational choice politics, and game theory. A common denominator has been to study *structural* models of the political process: agents behave rationally within well-specified economic and political institutions, where the policymaking process is formulated as an extensive form game. Methodologically, much progress has been made relative to traditional approaches, which were often based on inconsistent or irrational political and economic behavior, relying on non-derived influence functions, political support functions, or vote functions. Yet, the modern work has largely developed separately in each subfield, without much contact with other subfields. And each of the resulting literatures tends to focus on a distinct, but partial, aspect of the political process. In this lecture, I shall argue that even though the progress to date has been substantial, we can gain a better under-

*Frank Paish Lecture delivered at the Royal Economic Society conference, March 26, 1997, and Seymour E. and Ruth B. Harris Lecture, delivered at Harvard University, April 8, 1997. Part of the lecture draws at joint work with Elhanan Helpman, Gerard Roland and Guido Tabellini, who also gave me useful comments on an earlier draft, as did Ken Shepsle and seminar participants at Chicago, Penn, and Boston College. Harvard University generously supported my research in the year when this lecture was prepared, as did the Bank of Sweden Tercentenary Foundation. Christina Lönnblad provided editorial assistance.

[†]Institute for International Economic Studies, Stockholm University; NBER; CEPR.

standing of policymaking in democracies by combining the insights from different strands of thinking.

On some economic policy issues the conflicting views, both among citizens and politicians, basically reduce to a single left-to-right dimension. Examples may include the politics of inflation vs. unemployment, capital taxation, or the size of government. We can think about policy issues, within this domain of "general interest politics," as being resolved via traditional Downsian electoral competition, at least to a first approximation. But the economic policy process also allows narrow interest groups ample opportunities to concentrate benefits to their own group at the expense of the population as a whole. The resulting policy conflict is generically multi-dimensional; resolving it by voting alone would thus result in Condorcet cycles. We therefore need to go beyond the simplest electoral models to understand policy determination within this domain of "special interest politics".

This lecture deals with special interest politics. To make my point about fruitful analytical arbitrage, I will stick to the same underlying policy example throughout: this will be a simple model of a society where the government uses a common pool of tax revenues to provide an array of public goods, the benefits of which are completely concentrated to well defined groups. An overriding theme will be to identify the forces that make some groups politically more powerful than others. Since the underlying economic model is completely symmetric, asymmetric allocations require some asymmetries in the political process.

In Section 2, I formulate the basic model and derive two benchmark allocations. I then start off by studying the equilibrium allocation of public goods from the vantage point of two different state-of-the-art models. In Section 3, I use a model of lobbying as common agency, recently developed by researchers in trade policy, to study the influence activities by interest groups. In Section 4, I use a legislative bargaining model, recently developed by researchers in American congressional politics, to study the rulemaking process in the legislature.

I then try to show how merging such "partial" models of the policymaking process into more complete equilibrium models that allow for interactions between electoral, influence, and legislative behavior alters the conclusions about equilibrium policy.¹ In that vein, Section 5 illustrates the interaction between

¹Recent examples of precisely this kind of research are the papers by Grossman and Helpman (1996) and by Besley and Coate (1996), both dealing with the interaction between lobbying and elections—a topic that I will not address in the lecture. Other references are given below.

An important omission is that I entirely disregard bureaucratic behavior and its interaction

legislation and elections with prospective voters and outcome-motivated politicians. Section 6 illustrates the interaction between legislation and lobbying with finance-motivated politicians. Section 7 again illustrates the interaction between legislation and elections, but now with retrospective voters and office-motivated politicians. Section 8, finally, illustrates how a separately elected executive may introduce checks and balances in the legislative process that significantly modify equilibrium policy. Section 9 concludes.

2. A simple model

Consider a society with $I \geq 3$ distinct but symmetric groups, each having a continuum of members with a mass of unity. Individual j in group i has preferences:

$$u^{ji} = c^{ji} + \alpha^j H(g^i), \quad (2.1)$$

where c^{ji} denotes private consumption and α^j is an idiosyncratic weight. The increasing and concave function H , with $H(0) = 0$, is defined over a public good consumed only by group i . We assume that (in each i) α^j is distributed on $[\alpha^L, \alpha^U]$ according to the symmetric distribution $F(\alpha^j)$ with $E(\alpha^j) = 1$. Each individual has the same exogenous income: $y^{ji} = y$.

To drive an efficiency benchmark for future reference, suppose that the vector $g \equiv (g^i)$ of group-specific public goods were financed by group-specific, lump-sum taxes (t^i), so that:

$$c^{ji} = c^i = y - t^i = y - g^i. \quad (2.2)$$

The utilitarian optimum in this setting would be equal provision to each group, such that the average marginal benefit in the group equals the marginal social cost of unity, namely

$$g = (g^*) : g^* = H_g^{-1}(1). \quad (2.3)$$

Since g^* is the unique Condorcet winner (it would beat any alternative in a pair-wise vote), this allocation could be implemented by direct voting in each group.

To illustrate the political process of special-interest politics, we will, however, study the case when these public goods are financed by an economy-wide pool of

with other parts of the political process. Economists have recently built structural models of the interaction between interest groups and the bureaucracy to study regulatory capture (Laffont and Tirole (1993)) and political scientists have built structural models to study the legislature's control of the bureaucracy (Mc Cubbins, Noll, and Weingast (1987)).

tax revenue, with equal contributions from each group. With a common lump-sum tax, denoted by t , the government budget constraint is $It = \sum_i g^i$. Thus, individual j in group l consumes:

$$c^{jl} = c^l = y - t = y - (\sum_i g^i)/I. \quad (2.4)$$

If group l were able to generate a unilateral expansion of g^l , the marginal cost would thus be $1/I$, far below the marginal social cost if I is large. Early theoretical analyses in political science of distributive—or pork-barrel—politics (see e.g. Weingast, Shepsle, and Johnsen (1981)), basically argued that we should expect an outcome with generalized overspending, approaching the "universalist" solution:

$$g = (\tilde{g}) : \tilde{g} = H_g^{-1}(1/I). \quad (2.5)$$

This literature showed that a norm for legislative behavior could support this allocation, but did not derive it as the solution to an explicit extensive-form game, modeling the decision-making process in the legislature.

Clearly, we can interpret the model, as it stands, in a number of ways: the groups could be defined by their preferences, their occupation, their age or other personal attributes. To fix ideas, we shall mostly think of the groups as distinguished by their geographical location, so that the model becomes one of local public goods, like local infrastructure projects or localized public consumption. The electoral models, below, apply best to first-past-the-post elections in single-representative districts. Together with the specific models of the legislature we will deal with, this certainly biases the analysis towards American political institutions. This bias reflects the state of existing (formalized) research. I shall, however, make a few brief comments on differences we would expect in a European-style parliamentary political system.

3. Lobby groups

Our first model of policymaking focuses on the influence or lobbying activities of interest groups. In a series of papers, Grossman and Helpman (1994, 1995), and several others, have adapted the common-agency model of Bernheim and Winston (1986) to study trade policy, commodity taxation and other policies. As far as I know, the common agency model has yet not been used to analyze the provision of local public goods.² But in the simple model at hand this is an easy task.

²Persson and Tabellini (1994) briefly discuss local public goods provision in a common agency model, but impose unappealing restrictions on the strategies used by interest groups.

Suppose then that a subset L of the regions has organized interest groups lobbying for a public-goods allocation in their favor. For simplicity, suppose the organized groups are all encompassing and simply strive to the sum of their members welfare. Thus, the *gross* objective function of lobby group l is given by:

$$U^l(g) = \int_j w^{jl} dF(\alpha^j) = y - (\sum_i g^i)/I + H(g^l). \quad (3.1)$$

At the first stage of the policy-formation game, each lobby group, non-cooperatively and simultaneously, presents their common agent, "the government", with a contribution schedule $C^l(g)$ giving a binding promise of payment conditional on the chosen policy. Following the literature, we shall confine ourselves to (globally) truthful contribution schedules that satisfy:

$$C^l(g) = U^l(g) - b^l, \quad (3.2)$$

where b^l is a constant set optimally by the lobby group. The objective of group l is to maximize the *net* welfare of its members, namely $U^l(g) - C^l(g)$.

At the second stage, the government sets g so as to maximize a weighted sum of social welfare and contributions:

$$\beta \sum_i \int_j w^{ji}(g) dF(\alpha^j) + (1 - \beta) \sum_{i \in L} C^i(g), \quad (3.3)$$

where β , such that $0 \leq \beta \leq 1$, is a measure of the government's benevolence. An equilibrium of the game is a Subgame perfect Nash equilibrium in the contribution schedules and the chosen policy vector.

To derive an equilibrium in truthful strategies, one can exploit the fact that equilibrium policy is Pareto optimal in the bilateral relation between the government and each lobby group. The equilibrium g will therefore maximize the sum of the organized lobbies' net welfare $\sum_{i \in L} (U^i(g) - C^i(g))$ and the government objective (3.3).³ Using the definitions above, we thus know that an optimal policy maximizes the weighted sum:

$$\sum_{i \in L} U^i(g) + \beta \sum_{i \notin L} U^i(g), \quad (3.4)$$

where aggregate welfare for the non-organized groups is defined in the same way as in (3.1). In other words, the equilibrium can be thought about as solving a

³See Grossman and Helpman (1994) for details and for a discussion of the restriction to truthful strategies in such policy games.

planning problem, where the non-organized groups are underweighted relative to the organized groups. And the extent of the underweight depends on the government's benevolence. The first-order conditions to (3.4), defining the equilibrium allocation, can be re-written as:

$$\begin{aligned} H_g(g^i) &= \frac{|L|}{I} + \beta\left(1 - \frac{|L|}{I}\right) & i \in L \\ H_g(g^i) &= \frac{|L|}{\beta I} + \left(1 - \frac{|L|}{I}\right) & i \notin L. \end{aligned} \tag{3.5}$$

As is evident from (3.5), the equilibrium can be efficient: $g = (g^*)$. Unsurprisingly, this happens when $\beta = 1$, so the government is completely benevolent and does not value contributions at all, or when $L = \emptyset$, with no contributing groups to worry about. But it also happens when $|L| = I$. The reason is that each group not only has a strong incentive to lobby for large g^i for itself, but also to lobby for low provision to other groups (to pay lower taxes). When all groups are organized, and reveal their marginal preferences to the government by their truthful contributions, the true marginal social cost gets internalized in the policy decision. Indeed, in this case, the assumed lobbying game works like a Groves-Clark mechanism.

Generally, however, the local public goods get misallocated: the organized groups getting more than the social optimum, and the unorganized groups getting less. Intuitively, the overprovision to the organized lobbying groups is larger if the government values contributions more (β is smaller) and hence pays more attention to the preferences expressed by the lobbies. The overprovision is also larger the lower the fraction of organized groups ($|L|/I$ is lower), as the lobbying groups—and indirectly the government—then internalize a smaller share of the social marginal costs. If $\beta \rightarrow 0$, so the government only cares about contributions, the unorganized groups get no public goods at all.

This model, admittedly, aggregate the influence activities of many interest groups into a policy decision in an elegant way. It also sheds light on how the pattern of organization across groups shapes the policy outcome. A less stylized model would, of course, incorporate other asymmetries: for instance, some of the localities may have higher benefits of public goods, as captured by a higher average α^i . Such groups will have more intense preferences, make more generous contributions (if organized), and receive higher equilibrium support.

But the model also leaves some crucial issues aside. At one end of the analysis, one wonders why some regions would have organized interest groups and others

not. This is a difficult question, to which there is still no satisfactory answer, even though Olson (1965) identified the important aspects of the problem. In the symmetric model considered here, supposedly either all or none of the I regional groups manage to overcome the free-rider problems in group formation. In either case, the model predicts the socially optimal allocation. The asymmetries that drive the misallocation of public goods would have to be assumed, or defended on empirical grounds, rather than explained.

At the other end of the analysis, the "government" and the process of policy choice is still a black box. What exactly does the objective function in (3.3) capture? It is really impossible to answer this question without a structural model of policy choice.⁴ We now turn to such models. In Section 6, below, we return to lobbying and its interaction with legislation.

4. The legislature

Our next model instead focuses on the legislative process. Since the seminal work by Baron and Ferejohn (1989), their legislative bargaining framework has become somewhat of a work-horse model in rational-choice oriented analyses of the institutions in the American Congress and in other legislatures. Here, we adapt the simplest possible legislative bargaining model to our local public-goods problem.

Consider then a legislature where each locality l in our model is represented by exactly one representative, to whom we refer as representative l . She is "outcome motivated" and has preferences, given by (2.1) and (2.4), but with an exogenous and specific weight $\alpha^l \in [\alpha^L, \alpha^U]$ on the utility of local public goods consumed in her district:

$$R^l(g) = y - \left(\sum_i g^i\right)/I + \alpha^l H(g^l). \quad (4.1)$$

The composition of the legislature is thus completely described by the vector $\alpha \equiv (\alpha^l)$. We now explicitly assume that I is odd.

The "budget process" in a legislative session is modeled as the following sequence of events: (1) One of the representatives is chosen to be an agenda setter

⁴Grossman and Helpman (1996) embed a lobbying model of this type into an electoral framework, where two political parties each endogenously choose policy platforms and use the contributions they receive from (informed) interest groups in an election campaign to influence an uninformed part of the electorate to vote in their favor. They show that parameters of the present model, such as β , can then be derived from more structural assumptions.

$l = a$. (2) Representative a makes a policy proposal g . (3) The legislature votes on the proposal. If it gets simple majority—that is, it collects at least $I/2$ votes from the other legislators (a will always vote for her own proposal)— g gets implemented. If not, a default outcome, with $g^S = (g^i) = t = 0$, gets implemented.

Consider the problem facing the chosen agenda setter a . She knows that every legislator not getting at least as high a payoff from her proposal g as from the default policy g^S will vote no (we assume throughout that a legislator always votes yes to a proposal, when indifferent between it and the alternative). From (4.1), the assumption that $H(0) = 0$, and the definition of g^S , this requires

$$R^l(g) - R^l(g^S) = \alpha^l H(g^l) - \left(\sum_i g^i \right) / I \geq 0. \quad (4.2)$$

The agenda setter thus maximizes (4.1) subject to the "incentive compatibility constraints" (4.2) holding for a majority coalition M , including at least $I/2$ other legislators, and subject to the non-negativity constraints that $g^i \geq 0$ for all i . We can eliminate the multipliers from the Kuhn-Tucker conditions to this problem and express the equilibrium proposal as:

$$\begin{aligned} \alpha^a H_g(g^a) &= \frac{1}{I - \sum_{i \in M} \frac{1}{\alpha^i H_g(g^i)}} \\ \alpha^i H(g^i) &= [g^a + \sum_{i \in M} g^i] / I = t, \quad i \in M \\ &| \quad |M| = I/2 \\ g^i &= 0, \quad i \notin M. \end{aligned} \quad (4.3)$$

To understand the implied equilibrium, consider the incentives of a . To get support from other legislators, a has to spend tax revenue in their districts, resources that could otherwise have been spent in her own district. This opportunity cost means that a will not spend more than necessary. First, she will choose a minimum winning coalition, composed of $I/2$ other legislators; and the districts whose legislators are outside of the winning coalition get no public goods at all, even though they bear the cost of taxes. Second, for the members of the winning coalition, a spends only as much as is necessary to satisfy (4.2) with equality, so that the members are barely as well off as with the default policy. Third, she will pick the legislators with the $I/2$ highest values of α^i to be included in the majority, as these are the cheapest to buy off.

This allocation is clearly inefficient. The agenda setter's district gets more public goods than in the benchmark social optimum (the RHS of the first expression is always smaller than unity), and the districts outside of the majority

certainly get less. Whether the members of the majority get more or less depends on the distribution of α in the legislature and on the shape of H . The model thus emphatically points to another asymmetry that may lead to misallocation: the asymmetric bargaining powers of different representatives in the legislative process.

How should we think of these agenda setting powers? All legislatures necessarily display some division of labor across issues, due to the need to split the work load, as well as the varying background of legislators. Vesting control over certain issues with certain members may also be necessary to provide incentives to invest in issue-specific competence and information gathering. In the US congress, for instance, this specialization and control is manifested in powerful standing committees with considerable agenda-setting powers over the issues under their jurisdiction. Standing committees are also found in parliamentary systems, although the ministries have many of the corresponding agenda setting tasks. The model thus captures something important: real-world legislatures are organized in a way that makes some representatives more powerful than others over certain issues.

Naturally, the stylized model in this section exaggerates these agenda setting powers; legislatures, in fact, impose a number of checks and controls on proposal makers. The legislative bargaining literature has certainly relied on less extreme assumptions, allowing for new proposals by different legislators in the same legislative session, if proposals are voted down (multiple rounds of bargaining), and for the possibility to amend proposals before they are voted upon (open rule instead of closed rule). Such modifications dilute, but do not remove, the political power of the initial agenda setter. We have also looked at a single legislative session. A more realistic model would have consecutive sessions where different legislators (approximating different committees) got to make proposals on different dimensions of policy and where the proposal power was systematically related to the seniority and party affiliation of legislators.

Most of the work in the legislative bargaining literature is, however, quite partial in that it takes the preferences of the legislature as given. Within the logic of the model in this section, we may wonder from where the outcome-oriented preferences of legislators ($R^l(g)$) derive. More precisely, exactly how are they related to the preferences of the agents in the congressional districts these legislators represent? Legislators' behavior may also be influenced by other motives, such as a desire to raise funds and to get re-elected. If lobby groups and voters understand these motives and how the legislative process works, they will adapt

their behavior to influence the policy outcome. In the following, we shall study different examples that incorporate richer interactions of this kind.

5. Electing the legislature

To introduce an interaction between elections and legislation, let us add an election stage to the legislative bargaining game above. In district-wide elections, forward-looking voters appoint a representative for the legislative session to follow. As we shall see, this gives rise to strategic delegation, well-known both from the industrial organization literature and the earlier political economics literature.⁵ The modeling here follows the recent work by Chari, Jones and Marimon (1996) quite closely.

Thus we study a four stage game, where the last three stages are identical to those in Section 4. Assume that every representative has the same probability $1/I$ to be picked as the agenda setter. In the first stage, there are simultaneous elections of representatives in all I districts. We assume that there is free entry in these elections, and require that the elected candidate can beat any other candidate (a Condorcet winner). The candidates are characterized by their utility functions in (4.1), or more compactly by their preference parameters for public goods: $\alpha^i \in [\alpha^L, \alpha^U]$. Again we look for a Subgame perfect Nash equilibrium.

To study the voters' incentives in these elections, let us use the solution in (4.3) to define the expected utility of voter j in district i as a function of the candidate's identity, given the identity of legislators from other districts. Straightforward manipulations give:

$$E[U^{ji}(\alpha^i)] = [y - E[(\sum_{i \in M} g^i) + (g^a)]]/I \quad (5.1)$$

$$+ \frac{1}{I}[(\alpha^j H(g^a(\alpha^i))] + \Pr[i \in M][(\alpha^j H(g^i(\alpha^i)))]$$

The expression has a straightforward interpretation. The first term is expected private consumption, the second term is the probability that candidate i is drawn as an agenda setter times the utility of public goods for voter j in this event, and the third term is the probability that she is included in the majority times the utility of public goods for voter j in this event. Two things are noteworthy

⁵References in the IO-literature include Vickers (1985), Fershtman and Judd (1987). In the literature on political economics, endogenous strategic delegation in fiscal policy through the political process can be found in Persson and Tabellini (1992, 1996).

about the expression in (5.1). First, it is linear in α^j , which is the only parameter that distinguishes voters in district i . This means that there indeed exists a unique Condorcet winner, namely the candidate preferred by the (median) voter in the district with $\alpha^j = 1$. Second, the expression in (5.1) is discontinuously increasing in α^i . As the agenda-setter always includes only the $I/2$ highest α^i in M , an increase in α^i will at some point make the candidate graduate into the winning coalition, $\Pr[i \in M]$ jumps from 0 to 1 and expected utility takes a large jump upward. Recall that voters in district i get compensated by some public goods for the taxes they pay, only if their candidate is inside, whereas they get no compensation if their candidate is outside the winning coalition. Expected utility also varies continuously with α^i ; the second term is increasing and the third decreasing, but this will not affect the equilibrium.

In the unique equilibrium of this game, the pivotal voter in each district goes to a corner and elects the most spendthrift candidate, namely $\alpha^i = \alpha^U$. With this constellation of representatives, the voters in each district have a fifty-fifty chance of getting included in the winning coalition. If any district appointed a “smaller spender” —a candidate with a lower α^i —the chance would drop to zero, thus bringing about a discontinuous expected welfare loss. In fact, all voters in each district are likely to be unanimous regarding their preferred candidate.⁶

What we have here is thus an instance of strategic delegation: voters in each district elect a big spender. The motive is not so much to get more public goods if their representative gets recognized as the agenda setter (although that could well happen if agenda setting powers were more asymmetrically distributed), but rather to have a better chance to get included in the majority chosen by any other agenda setter. From the solution in Section 4, it is immediately clear that this voting equilibrium makes the allocation more biased towards overspending for the agenda setter and diminishes the differences between districts inside and outside the majority.

Notice that this equilibrium is broadly consistent with opinions often expressed by American voters. They are typically quite disconcerted with the composition and actions of Congress as a whole, but at the same time quite pleased with their own representative. In the equilibrium we have studied, voters in any district

⁶Applying Proposition 2 (and Corollary 1) in Besley and Coate (1997), we could in fact sustain this equilibrium in an extended “citizen-candidate” model with an initial entry stage where any person in each district could enter as a candidate at a cost. The candidate with α^U optimally running and winning as an (unopposed) candidate in each district, would be an equilibrium, if the entry cost was low enough and the default outcome bad enough (g^i valuable enough).

would indeed have a higher expected utility, if all other districts had representatives with $\alpha^i < \alpha^U$, but they could maintain the identity of their own representative.

Although the model is very stylized, it still teaches us a lesson: it is not enough to look at the apparent bargaining powers that different legislators derive from a particular set of rules for rulemaking in the legislature, as these powers can get modified by the endogenous response by private agents. This point will reappear, even more forcefully, in the coming sections.

6. Lobbying the legislature

Let us set voters aside (until the next section) and instead consider how the influence activities—between elections—by interest groups interact with legislation.⁷ Although it appears quite natural, no theoretical studies yet exist that marry together lobbying and legislative bargaining, to the best of my knowledge.⁸ The empirical literature on campaign contributions in the US does, however, shed some light on these interactions.

Legislators still will play the legislative bargaining game of Section 4. As we have already studied the case of outcome-motivated legislators, we will now focus on the money-raising motive, by assuming that legislators only care about the contributions they get; we set $\beta = 0$ in the notation of Section 3. We also abstract from asymmetries in the organization across groups, assuming that all groups have organized lobbies ($|L| = I$). But with a structural model of decision-making, in place of a black-box government, we now have to take a stance on who lobbies whom. I shall restrict each interest group to make contributions only to their own congressman. This is arbitrary but simple and has empirical support: the bulk of campaign contributions in the US goes to representatives from the same district as the donor, or to a member of the committee holding jurisdiction of regulation or grants that apply to the donor group.

The contributions of interest group l are made before the legislative bargaining starts, but after the identification of the agenda setter.⁹ Contributions will

⁷This section draws on ongoing research with Elhanan Helpman.

⁸One antecedent is Groseclose and Snyder (1996) who study a game where two lobbies buy votes from legislators, about to decide on a public project. They show, interestingly, that when votes are bought sequentially, the prediction of a minimum winning coalition may fail.

⁹With the opposite timing (contributions made first), it would be natural to assume that contributions were made contingent on the status of the legislator (agenda setter, or not). The

therefore depend on whether the representative has been selected as an agenda setter, or not. All contribution schedules are observable by all legislators. Group l presents its congressional representative with the truthful contribution schedule:

$$\begin{aligned} C^a(g) &= U^a(g) - b^a \quad \text{if } l = a \\ C^l(g) &= U^l(g) - b^l \quad \text{if } l \neq a, \end{aligned} \quad (6.1)$$

where we can think of b^a and b^l as reservation utilities of group l . Representative l will be interested in maximizing the value of her contribution and hence wants these reservation values to be as low as possible. As in section 3, interest groups seek to maximize their utility net of the contributions they make. They thus simply want the reservation utilities in (6.1) to be as high as possible.

Consider first the problem of the chosen agenda setter, a for given contribution schedules. She wants to maximize:

$$C^a(g) = U^a(g) - b^a = H(g^a) + y - \left(\sum_i g^i\right)/I - b^a \quad (6.2)$$

subject to the incentive compatibility constraints that legislators in M are better off than with the default outcome:

$$U^l(g) - b^l = H(g^l) + y - \left(\sum_i g^i\right)/I - b^l \geq 0 \quad \text{for } l \in M. \quad (6.3)$$

Again a finds it optimal to collect a minimum winning coalition, i.e. to include only $I/2$ additional members in M . It is easy to show that $\text{Max}[U^a(g)]$ is decreasing in all b^l , $l \in M$. The agenda setter will want to satisfy the constraint (6.3) with equality for all members of the majority, as this will maximize her own district's utility and, hence, the contribution to herself. Thus, she will pick the representatives with the lowest values of b^l as her coalition partners and, as in Section 4, set $g^l = 0$ for everyone else.

Now let us go back to the contribution stage, and consider the optimal contributions for group l , in the event that their representative is not an agenda setter. If the representative does not get included in the majority, the utility of group i is given by $U^l(g \mid l \notin M) = y - (\sum_{i \in M} g^i)/I$, whereas the utility when she is included is $U^l(g \mid l \in M) = H(g^l) + y - (\sum_{i \in M} g^i)/I$. Clearly, it is better for group l that its representative is included in the majority, as long as that gives at least a tiny piece of public goods. This sets up a fierce "Bertrand competition" among

results would be identical to the case considered in the text.

the interest groups. As only the 50 % of the legislators with the lowest reservation utilities get included in M , the only equilibrium has every group l setting its reservation utility at $b^l = \bar{b} = y - (\sum_{i \in M} g^i)/I$.¹⁰ Going back to the agenda setter's problem in (6.2)-(6.3), we then find that the optimal solution satisfies:

$$\begin{aligned} H_g(g^a) &= 1/I \\ g^l &= 0, \quad \text{all } l \neq a. \end{aligned} \tag{6.4}$$

Group a implements this choice, at lowest cost, by setting their reservation utility $b^a = H(g^a) + y - g^a/I$.

A useful way to think about this equilibrium is to rely on the same intuition as in Section 5. Each interest group badly wants to avoid an outcome when their representative is excluded from the majority, so that they only pay taxes but receive no public goods. What each group can do to attempt avoiding this outcome is to lower its reservation utility so as to make the vote of their representative cheaper to buy for the agenda setter. As all interest groups have the same objective, and as there is no exogenous limit where the process must stop—as α^U in Section 5—this competition drives down the equilibrium supply of public goods to zero for every majority member. Obviously the district of the agenda setter gains from this competition about the spoils of her power. The logic is similar to that in Dixit, Grossman and Helpman (1996), who study a general common agency model like that in Section 3, and show how competition between the interest groups will allow the single government to implement its own preferred solution.

Notice also that politicians collect very small contributions (strictly zero) in the equilibrium. Clearly, the lack of sizeable observed equilibrium contributions does not provide a safe ground for concluding that influence activities are unimportant.

These results illustrate with additional force the general point made in the previous section: optimal private behavior alters the bargaining powers inherent in the rules for rulemaking in the legislature. Here, they amplify the misallocations of public goods by a legislature where agenda setting powers are conferred upon individual members or committees. In fact, if we imagine that each representative gets to take turns in a round-robin fashion of becoming the agenda setter in a sequence of I legislative sessions like the one studied in this section, the outcome after these I sessions would coincide with the "universalist" solution mentioned in Section 2: $g = (\tilde{g})$.

It might be appropriate to interject a qualifier at this point. The simple structure of the game we have studied tends to make the outcome pretty extreme—

¹⁰The argument relies on elimination of weakly dominated strategies for each lobby group.

as stressed at the end of Section 4, real world legislatures have introduced various safe-guards against such extreme outcomes. It is thus the general logic, rather than the specific results, that I wish to emphasize.

7. Re-electing the legislature

In Section 5 we studied the interaction between outcome-motivated politicians and prospective (forward-looking) voters. What if politicians are instead primarily "office motivated" and citizens vote retrospectively—i.e. they reward their representatives for good outcomes by re-electing their representative, but punish their representatives for bad outcomes by ousting them?¹¹ Specifically, how does this interaction affect the equilibrium allocation of public goods?¹²

To model retrospective voting, we clearly need a multi-period setting. Consider an infinite repetition of the legislative bargaining game of Section 4. Incumbent representative l in period t , seeks to maximize the intertemporal objective:

$$W_t^l = E_t \sum_{s=t+1}^{\infty} \delta^{(s-t)} w D_s^l, \quad (7.1)$$

where δ is a discount factor and w is an exogenous value of holding office, both of which are identical across representatives. D_s^l is a dummy variable which takes on a value of unity if the legislator remains in office in period s and zero if she does not. In every period the incumbent legislator of district l runs against a randomly drawn alternative from a homogenous pool of candidates, with identical objective functions (7.1). Thus there are no inherent differences between different candidates for office.

As in Section 5, elections are held at the beginning of each period s . A representative is re-elected at the beginning of period $t + 1$ if at least 50% of the voters in the district vote in favor of reappointment: $D_{t+1}^l = 1$ if $\int_j D_{t+1}^{jl} dF(\alpha^j) \geq 1/2$. Each voter j in each district l adopts a retrospective voting strategy, depending on the outcome in period t , and with different reservation utilities depending on

¹¹Voters rewarding incumbent officeholders for good economic outcomes seems to be a robust phenomenon; for broad empirical evidence, see, for instance, Lewis-Beck (1988). Cain, Ferejohn and Fiorina (1987) argue that American voters mainly condition their congressional votes for incumbent representatives on the benefits generated for the district.

¹²The discussion in this section and the next draws on ongoing research with Gerard Roland and Guido Tabellini (see Persson, Roland and Tabellini (1997a) and (1997b)).

whether his representative was an agenda setter or not:

$$\begin{aligned}
 D_{t+1}^{jl} &= 1 \quad \text{if} \\
 u_t^{ja} &\geq b^{ja} \quad \text{and} \quad l = a_t \\
 \text{or} \quad u_t^{jl} &\geq b^{jl} \quad \text{and} \quad l \neq a_t.
 \end{aligned} \tag{7.2}$$

Thus, we restrict ourselves to simple voting strategies depending only on recent payoff relevant information for the voters. We will consider sequentially rational equilibria, where voters in each district coordinate on a voting strategy maximizing their individual utilities. As voters are generically indifferent about the identity of their representative, we can think of this coordination as being achieved by a social norm.

Consider now the problem of the recognized agenda setter in period t , a_t (we are still assuming that every representative is recognized with probability $1/I$). She will seek re-election by trying to satisfy the constraint on the second line of (7.2), knowing that the other representatives are solely motivated by re-election in period $t + 1$, which is conditional on satisfying the re-election constraints on the third line of (7.2). As long as the re-election constraint is binding for a_t , she will maximize the utility of her constituency. If so, she will include in M only those $I/2$ representatives for which the (average) reservation utilities are lowest and minimize the spending in their districts. Formally, the incentive compatibility constraints implied by (7.2) are identical to the constraints in (6.3). Intuitively, the voters in districts $l \neq a_t$ are thus in the same clothes as the lobby groups of Section 6. That is to say, they have strong incentives to compete over being included in the majority coalition, and this competition brings their reservation utilities down to the point where $b^{jl} = \bar{b}$ for all j and l , with \bar{b} defined as in Section 6.

In this setting, it is thus optimal for the voters to set their reservation utilities, for the event that their representative is an agenda setter, equal to $b^{ja} = y - \tilde{g}/I + \alpha^j H(\tilde{g})$. The re-election constraint for a_t is then indeed binding up to this point and the equilibrium is the same as in the previous section: all tax revenue is spent on the agenda setter's district, with $g^a = \tilde{g}$, whereas no other district gets any public goods.

Ferejohn (1986) discusses how voters can control extraction of rents by a single policymaker, seeking re-election, by adopting retrospective voting strategies. Most of his paper deals with a single voting district, but Ferejohn briefly argues that in a multiple-district setting, voters in the different districts will start competing for the policymaker's favors. The equilibrium he derives is related to the equilibrium

in this section, in that the voters lose their control and the policymaker earns maximal rents. This reflects the inability of voters in different districts to commit to making their retrospective vote conditional on aggregate outcomes. The problem is even more pressing in the congressional setting we have studied, where each representative has her own natural constituency. As we shall see in the next section, a policymaker elected on a nation-wide ballot presents the voters with a natural opportunity to make someone accountable for the aggregate outcome.

8. Checks and balances

Let us thus extend the model of the past section with a "president". The focus in this section will be to illustrate the potential role of constitutional checks and balances in our simple model of special-interest politics.

We thus extend our model of retrospective voting and office motivated politicians of the previous section. A president is elected in nation-wide elections, held at the same time as the district-wide elections of the legislature. The president's objective function is defined as in (7.1), but with a fixed value of holding office of w^p and a corresponding dummy variable D_s^p . As the president is elected nationally, we have $D_s^p = 1$, if $\sum_i (f_j D_s^{jp} dF(\alpha^j)) \geq I/2$, that is, if more than 50% of the voters support re-election in period $s - 1$. The opponent to an incumbent president is drawn at random from a pool of identical candidates, as in the congressional elections. For any checks and balances to operate, the president must not only be elected nationally, but must also have some decision making authority over aggregate outcomes. Here we shall assume that the president has agenda setting authority over aggregate spending (or, alternatively, total tax revenue).¹³ We define aggregate spending as $G = It$.

The game in period t now has six stages: (1) District-wide representative elections and nation-wide presidential elections are held. (2) Nature chooses $l = a_t$, an agenda setter among the elected representatives. (3) The elected president makes a proposal: G_t^p . (4) The legislature votes on G_t^p : if more than $I/2$ representatives vote yes $G_t = G_t^p$, otherwise $G_t = G^S \geq 0$. (5) Representative a_t proposes an allocation (g_t^l) such that $\sum_l g_t^l \leq G_t$. (6) The legislature votes on this proposal. If it passes $g_t = (g_t^l)$, if not $g_t^l = G_t/I$, for all l .

Given a G_t , the strategic incentives of the agenda setter and of the voters in stages (5) and (6) are completely analogous to those in the previous section. That

¹³We could also simply assume—more realistically, in the US context—a presidential veto over allocations proposed and accepted by the legislature.

is to say, the equilibrium outcome will be

$$\begin{aligned} g_t^l &= G_t \quad l = a_t \\ g_t^l &= 0, \quad l \neq a_t; \end{aligned} \tag{8.1}$$

the agenda-setters district gets everything. As taxes are fixed it is better for a_t (given the equilibrium reservation utility of her voters) to exploit the competition between other districts and spend everything on her own district. Given (8.1), we can compute the perfectly foreseen date t utility at stages (3) and (4) of the voters in districts a and l , respectively as a function of G :

$$\begin{aligned} U^{ja}(G_t) &= \alpha^j H(G_t) + y - G_t/I \\ U^{jl}(G_t) &= y - G_t/I. \end{aligned} \tag{8.2}$$

Note that $U^{ja}(G_t)$ is increasing in G_t for the pivotal voter in district a_t up to the point where $G = \tilde{g}$. But $U^{jl}(G_t)$ is strictly decreasing in G_t , for every voter in districts $l \neq a_t$.

When giving politicians incentives to act on their behalf, through their re-election strategies, at stages (2) and (3), a strict majority of the voters thus want them to act so as to minimize G_t . This means that at stage (3), they want their representatives to vote no to any presidential proposal $G_t^p \geq G^S$, and to vote yes to every proposal with $G_t^p < G^S$. Furthermore, at stage (2), the majority wants the president to make the minimal proposal $G_t^p = 0$. The voters in district a_t obviously have opposite interests. But as the voters in the other $I - 1$ constitute a national majority, their desired solution will be implemented in equilibrium if they adopt the following voting strategy:

$$\begin{aligned} D_{t+1}^{jlp} &= 1 \quad \text{if} \quad u_t^{jl} \geq y \\ D_{t+1}^{jl} &= 1 \quad \text{if} \\ l \text{ voted yes to } G_t^p &\leq G^S, \text{ or voted no to } G_t^p > G^S, \quad \text{and} \\ U^{jl}(G_t) &\geq b(G_t) = y - G_t/I, \end{aligned} \tag{8.3}$$

The equilibrium will thus have a complete breakdown of public goods provision: $G_t = g_t^l = 0$. It is optimal for the majority of voters to use the checks and balances of the president to discipline the wasteful spending of the agenda setter and thus hold back their own taxes.¹⁴ Clearly, the agenda setter's power

¹⁴A similar checks and balances effect could have been derived by extending the model with

is severely cut back because of the interaction between the president's proposal power and the voters' equilibrium behavior.

Notice that these checks and balances do not resolve the misallocation problem, however. The breakdown of public goods provision can actually hurt the voters in an ex ante sense. Expected utility, in the equilibrium of this section, of the average voter in district i in period t is

$$U^i(g_t) = y,$$

whereas the corresponding expression in the equilibrium of Section 7 is

$$U^j(g_t) = y + \frac{1}{I}(H(\tilde{g}) - \tilde{g}).$$

The district pays \tilde{g}/I in taxes notwithstanding who is the agenda setter, but gets utility $H(\tilde{g})$ with probability $1/I$. The second term, capturing this trade-off, can well be positive if the local public goods are valuable enough.

More generally, the analysis of this section points to the importance of the budget process. The structure of the budget process has indeed been the subject of policy-oriented discussions and some theoretical and empirical research in recent years.¹⁵ Interaction between the budget process and electoral and interest group behavior has, however, been largely ignored. This topic deserves more attention.¹⁶

9. Concluding remarks

The models I have explored in this lecture are, of course, much too simple to generate empirically plausible predictions. Simplicity had the virtue, however, of allowing me to derive stark unambiguous theoretical results in a variety of settings. The general message I hope to convey is that existing partial models of special interest politics may not yield robust results regarding policy outcomes: studying the interactions between different aspects of the political process may

outcome-motivated politicians and prospective voters, in Section 5, to include a president. Chari, Marimon and Jones (1996) show that it would be optimal for the voters to elect a "fiscally conservative president" (someone with α^i at or close to α^L); they interpret this result as "split ticket voting".

¹⁵See Alesina and Perotti (1996) for an overview.

¹⁶Persson, Roland and Tabellini (1997a) stress how appropriate checks and balances in the legislative process allow the voters to hold their elected officials better accountable and therefore help limit diversion of rents in the political process.

alter the conclusions in a non-trivial way. The message does not only concern public finance, but extends to trade policy, regulation, and other fields.

My discussion has been biased in the direction of US institutions. While some results will undoubtedly generalize to parliamentary systems, others will not. In particular, the analysis in Persson, Roland, and Tabellini (1997b) suggests that parliamentary systems may have a bias towards larger total spending than a presidential-congressional system, due to their lack of checks and balances and their fundamental property that the executive's rights of agenda setting lies with a relatively stable parliamentary majority that supports the existing government. That paper indicates that we may find many interesting comparative politics implications sharp enough to provide testable hypotheses for empirical work.

The discussion, obviously, also suggests a mapping between institutions and policy outcomes within the general political regime. What is the next step in analyzing these institutions? A likely answer from most economists—trained in welfare economics—is that we should go to a normative study of institutional reform. In the context of the models in Sections 5 and 6, for example, one could think about diluting the power of specific interest groups by redrawing the voting districts, or by broadening the jurisdiction of congressional committees.¹⁷ A likely answer from most political scientists, would instead be to pose the positive question: why do we observe these particular institutions? After all, it is the political system itself that decides on its own institutions.¹⁸

Whatever perspective one chooses in approaching them, the interactions between electoral, legislative and influence activities constitute an exciting and unexplored research agenda. I believe this agenda will indeed be intensively explored over the next few years. And I hope this exploration will bring researchers from different traditional subfields together in a concerted effort to better understand special interest politics.

¹⁷See Boldrin and Conde Ruiz (1995), for a preliminary analysis of the effect of redistricting in a model of the same type as that in Section 5.

¹⁸There is in fact a whole literature in rational-choice American politics that tries to explain the "industrial organization of congress" from the prevailing interests of the legislators. See, for instance, Weingast and Marshall (1988).

References

- [1] Alesina, A. and R. Perotti (1996), Budget deficits and budget processes, NBER working paper, No. 5556.
- [2] Baron, D. and J. Ferejohn (1989), Bargaining in legislatures, *American Political Science Review* 83: 1181-1206.
- [3] Bernheim, D. and M. Whinston (1986), Menu auctions, resource allocation, and economic influence, *Quarterly Journal of Economics* 101: 1-31.
- [4] Besley, T. and S. Coate (1996), Lobbying and welfare in a representative democracy, Mimeo, London School of Economics.
- [5] Besley, T. and S. Coate (1997), An economic model of representative democracy, *Quarterly Journal of Economics*, forthcoming.
- [6] Boldrin, M. and J. I. Conde Ruiz (1995), Impact of procedural and electoral rules on pork-barrel expenditure, Mimeo, Universidad Carlos III.
- [7] Cain, B., J. Ferejohn, and M. Fiorina (1987), *The Personal Vote*, Harvard University Press, Cambridge.
- [8] Chari, V., L. Jones, and R. Marimon (1997), The economics of split voting in representative democracies, *American Economic Review*, forthcoming.
- [9] Dixit, A., G. Grossman, and E. Helpman (1996), Common agency and coordination, *Journal of Political Economy*, forthcoming.
- [10] Ferejohn, J. (1986), Incumbent performance and electoral control, *Public Choice* 50: 5-26.
- [11] Fershtman, C. and K. Judd (1987), Equilibrium incentives in oligopoly, *American Economic Review* 77: 927-940.
- [12] Groseclose, T. and J. Snyder (1996), Buying supermajorities, *American Political Science Review* 90, 303-315.
- [13] Grossman, G. and E. Helpman (1994), Protection for sale, *American Economic Review* 84: 833-50.

- [14] Grossman, G. and E. Helpman (1995), The politics of free-trade agreements, *American Economic Review* 85: 667-690.
- [15] Grossman, G. and E. Helpman (1996), Electoral competition and special interest politics, *Review of Economic Studies* 63: 265-86.
- [16] Laffont, J.-J. and J. Tirole (1993), *A Theory of Incentives in Procurement and Regulation*, MIT Press, Cambridge.
- [17] Lewis-Beck, M. (1988), *Economics and Elections: The Major Western Democracies*, University of Michigan Press, Ann Arbor.
- [18] McCubbins, M, R. Noll, and B. Weingast (1987), Administrative procedures as instruments of political control, *Journal of Law, Economics and Organization* 3: 243-279.
- [19] Olson, M. (1965), *The Logic of Collective Action*, Harvard University Press, Cambridge.
- [20] Persson, T., G. Roland, and G. Tabellini (1997a), Separation of powers and political accountability, *Quarterly Journal of Economics*, forthcoming.
- [21] Persson, T., G. Roland, and G. Tabellini (1997b), Public finance and comparative politics, in progress.
- [22] Persson, T. and G. Tabellini (1992), The politics of 1992: Fiscal policy and european integration, *Review of Economic Studies* 59: 689-701.
- [23] Persson, T. and G. Tabellini (1994), Does centralization increase the size of government? *European Economic Review* 38, 765-773.
- [24] Persson, T. and G. Tabellini (1996), Federal fiscal constitutions: Risk sharing and moral hazard, *Econometrica* 64: 623-646.
- [25] Vickers, J. (1985), Delegation and the theory of the firm, *Economic Journal* 95: 138-147.
- [26] Weingast, B. and W. Marshall (1988), The Industrial Organization of Congress, *Journal of Political Economy* 96: 132-63.

- [27] Weingast, B., K. Shepsle, and C. Johnsen (1981), The political economy of benefits and costs: A neoclassical approach to distributive politics, *Journal of Political Economy* 89: 642-664.