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Lobbying and Elections

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Abstract

I analyze the interaction between post-election lobbying and the voting decisions of forward-looking voters. The existing literature has shown that in models with citizen candidates from a dispersed distribution of preferences, lobbying has no influence on implemented policy. In my model with ideological parties, lobbying is shown to have an effect on policy. In terms of welfare, I show that the median voter and the majority of voters are often better off with lobbying.

1 Introduction

The influence of interest groups on decision making within a democratic society is one of the most vibrant fields in political economics. However, most of the existing literature neglects the feedback effects of post-election lobbying on voter behavior. In this paper, I analyze interest group influence on policy in a model with ideological parties and voters who correctly foresee the post-election bargaining outcome.

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Specifically, I consider a polity with two ideological parties that cannot commit to policy positions before elections take place and an interest group that can make financial contributions to the party in office. If the party accepts the contribution, it agrees to implement a specific policy in return. In equilibrium, the implemented policy is a weighted average of the bliss points of the party in power and the interest group. A voter's utility depends on how close this policy is to her bliss point. Therefore, she does not vote for the party that is ideologically closest to her, but for the party that she predicts will implement the policy closest to her bliss point when in office. Thus, when voting, she must take the post-election influence of the interest group into account.

I show that in many cases, the existence of interest group influence makes the median voter and the majority of voters better off. Even in cases where the median voter is worse off, the negative effects on her welfare are limited as long as the effects of lobbying on party positions are not too large. The reason is that because the median voter's bliss point is located between the parties, at least the policy of one of the parties moves in the direction of the her bliss point in case lobbying takes place. As long as this party's policy does not move too far and ends up on the other side of the median voter's bliss point, it offers the median voter a more attractive position when lobbying takes place compared to the case without interest group influence.

Since voters predict equilibrium policies, the winning party in the case of lobbying is different from the winning party without lobbying if the median voter's bliss point is closer to the implemented policy of the party whose bliss point is further away from her own. The welfare of the interest group will increase with lobbying as compared to the case without lobbying, as long as the winning party of the elections does not change. However, the effects of lobbying can easily make the position of the party closer to the interest group less attractive and lead to the victory of the other party. In this case, the interest group will be worse off if its influence is not very large.

My results are in contrast to the findings of Besley and Coate (2001), which was the first paper in the literature that considers feedback effects of post-election lobbying on voter behavior and election outcomes. They show that as long as sufficiently extreme candidates are available, lobbying has no influence on policy at all. Consequently, it also has no influence on the welfare of voters who neither run as candidates nor contribute to lobbying efforts. The interest group is always worse off in the case of lobbying as compared to the case without lobbying if the implemented policy is the

same, because it must make positive contributions to the winning candidate. The question why an interest group would ever be formed in such a setup is not asked, its existence is taken as given.[1]

The reasons for the differences between my findings and those of Besley and Coate are straightforward. My setup is very similar to theirs with respect to the post-election bargaining between interest groups and parties and with respect to rational expectations of voters. However, they use their own citizen-candidate framework (introduced in Besley and Coate (1997)), while I use a model with ideological parties. Political parties that seem to care at least to some degree about policies are a widely observed phenomenon, while true citizen candidates seem to be the exception rather than the rule. In a citizen-candidate framework with a continuum of candidates, the choice set of voters is a continuum of possible policies (given that a citizen candidate with the policy is willing to run), whereas in my model with political parties, the voters have to decide between two policies only. The influence of post-election lobbying by the interest group alters the implemented policies of each potential citizen candidate as well as those of both political parties. However, if the choice set only contains two policies from the beginning, lobbying changes the policy choice of voters in a significant way. With a continuum of citizen candidates, on the other hand, only relatively extreme policies become unavailable in the case of lobbying. If candidates with sufficiently extreme preferences are available, voters can completely offset the influence of the interest group and equilibrium policy does not change.

As a robustness check, I allow the parties to run with candidates who differ from their own party in their preferences. Not surprisingly, this can lead to outcomes in the spirit of Besley and Coate (2001) as long as both parties have sufficiently extreme candidates available. In this case, electoral competition forces both parties to choose candidates who implement the median voter's bliss point after being lobbied by the interest group.

1.1 Related literature

There is a vast body of empirical as well as theoretical research on the influence of interest groups on decision making within a democratic society. An excellent overview of the theoretical research can be found in Grossman and Helpman (2001). The

[1] For a useful discussion of the Besley and Coate (2001) paper and its contribution to the literature, see also Dewan and Shepsle (2008).

literature can be divided into two major strands. On the one hand, there are models in which lobbies influence policy by providing information to politicians. Examples are Austen-Smith (1993), Bennedsen and Feldmann (2002) and several models discussed in Grossman and Helpman (2001). On the other hand, there are models in which interest groups influence decision makers with the help of monetary contributions. My paper belongs into this category. Two important papers in this strand of the literature are Grossman and Helpman (1994, 1996).

In most models with monetary contributions in return for policy, elections are disregarded and only the post-election bargaining of interest groups with individual politicians (see, for example, Grossman and Helpman (1994)) or several members of a legislature (see, for example, Groseclose and Snyder (1996)) is considered. The models that incorporate interaction of lobbying and elections usually deal with the interaction of campaign contributions and elections (Grossman and Helpman 1996). In these models, politicians accept contributions not as an end in themselves, as in my model, but for the financing of electoral campaigns. The feedback effects of post-election lobbying on elections outcomes have received less attention so far. This is somewhat surprising, given that they can be dealt with in a purely rational choice framework. In contrast, the campaign contribution literature needs to rely on a somewhat uneasy mix of a framework that combines standard rational choice elements with an ad hoc assumption of the existence of a group of voters that is not only uninformed about policy but, moreover, impressionable by campaign contributions as in Baron (1994) and Grossman and Helpman (1996). Moreover, Baron (2006) provides evidence from the Center for Responsive Politics that expenditures on lobbying after elections are at least as large as spending on campaign contributions.[2]

The few papers which actually deal with the feedback effect on elections include the already mentioned Besley and Coate (2001) paper and two papers that build further on its citizen-candidate-cum-lobbying framework by Felli and Merlo (2006, 2007). Snyder and Ting (2008) develop a dynamic model where voters can hold parties accountable.

[2] www.opensecrets.org.

1.2 General interest versus special interest lobbying

A possible explanation for the neglect of post-election lobbying compared to campaign contributions constitutes the focus of most of the literature on special interest politics. It is not obvious how voters should adjust their voting behavior even if they can predict the influence of post-election special interest lobbying. They can avoid voting for a farmer to reduce farm subsidies, but they may not have a candidate available with a specific interest in low subsidies. Therefore, candidates who would completely offset the lobbying of a farming interest group are unlikely to be available. The paper by Besley and Coate, on the other hand, deals with general interest lobbying. In their case, it is the provision of a public good that benefits everybody that is influenced by interest groups. The conflict arises because citizens disagree on the exact amount of the public good that should be provided.

That their model is de facto a model of general interest lobbying rather than special interest lobbying is never stated by Besley and Coate. Nonetheless, this difference is of essential importance in explaining why they find that lobbying has no influence on policy what is in sharp contrast with the results in other papers.

A further distinction between models of post-election lobbying and models of campaign contributions is the ability of politicians to commit to policies before elections take place. If they want to attract campaign contributions in return for their policy announcements, politicians must be able to commit to policies in advance. If, on the other hand, politicians are free to choose policies after the elections, there is no reason why an existing interest group would not want to influence them at this point rather than, or in addition to, the campaign stage of the game.

However, the different assumptions on the ability of politicians to commit to policies seem adequate once the differences between general interest and special interest lobbying are taken into account. Parties can more easily commit on special interest issues because they are unlikely to have a strong ideological bias against or in favor of them. On a general interest policy dimension, on the other hand, it seems plausible that commitment is impossible or at least more difficult because political parties are usually defined by their ideologies. It seems unlikely that, for example, a socially conservative party could make a credible commitment to implement socially progressive policies before an election takes place.

Therefore, my model does not provide an alternative theory of special interests with elections and their feedback effects taken into account. Instead, it provides a

new contribution to the small literature on general interest lobbying. For real-world examples of general interest lobbying, the reader might want to consider large trade unions and large employer organizations. Such organizations often have interests on rather broad policy dimensions, in many cases in addition to special interests.

The analysis also provides a further rationale as to why general interests are not often organized in interest groups. As discussed in Section 3.2, committing to refrain from any lobbying can actually make the potential members of an interest group better off, even if they could overcome the collective action problems described in the classic treatise of Olson (1971).

1.3 Structure of the paper

The paper proceeds as follows. In Section 2, the main model is introduced and discussed. A numerical example is given for the model and its implications. That section also discusses the welfare implication of lobbying for voters as well as the interest group. Section 3 allows for some extensions and generalizations of the model and Section 4 discusses the implications of parties running with ideological candidates. Finally, the paper ends with a concluding section.

2 The Model

There is one policy dimension and policy p is given by a point in the interval $[0,1]$. There are two parties, L and R and one interest group. Both parties are policy motivated and have a given ideal policy $i_J \in [0,1]$ that could, for example, reflect the average preferences of their members. By assumption, $i_L < i_R$ and therefore, L is the "left" and R the "right" party. The utility of a party $J = L, R$ is given by:

$$U_J(p, f) = -(p - i_J)^2 + f_J, \tag{1}$$

where $J = L, R$ and $f \geq 0$ are the monetary funds received from the interest group. The utility of the interest group is given by:

$$U_I(p, f) = -\alpha(p - i_I)^2 - f_{J^*}, \tag{2}$$

where $\alpha > 0$ gives the weight that the interest group attaches to policy relative to monetary contributions and i_I is its bliss point. Since the relative weight of policy relative to monetary contributions is normalized to 1 for both parties, α also measures how much lobbies care about policy relative to monetary payments relative to how much the parties care about policy relative to monetary funds. The monetary transfers f_{J^*} to the party in power J^* are costly for the interest group. Therefore, they negatively enter its utility function. The variable i_I denotes the policy bliss point of the interest group.

No commitment is possible in advance of the elections. Thus, after the elections, the winning party is not bound by any previous announcements. Let the number of voters be an odd number N. Voter n's utility function is:

$$U_n(p) = -(p - \theta_n)^2, \tag{3}$$

where θ_n is the bliss point of voter n. I order the voters by their preferences from left to right such that θ_1 is the bliss point of the voter with the ideal point closest to 0 and θ_m, with $m = \frac{N+1}{2}$, is the bliss point of the median voter. After the elections, the interest group makes an offer to the party that won. The party accepts or rejects this offer. If it accepts the offer, it implements the agreed policy. If not, it is free to choose any policy and therefore implements its own bliss point. By assumption, the party accepts the offer if indifferent.

To summarize, the order of moves is as follows: First, elections take place and the party which achieves the majority of votes wins. Second, at the lobbying stage, the interest group makes a take-it or leave-it offer to the party that has won the elections, specifying a policy p and a payment f in case this policy is accepted. Third, if the party accepts the payment, it must implement the policy proposed by the interest group. If the party does not accept the payment, it is free to choose any policy. The interest group has no possibility to commit to abstain from lobbying after the elections.

2.1 Solving the model

The interest group maximizes its utility subject to making the party in power indifferent between accepting the offer and implementing its favorite policy. A party J in power that does not accept monetary contributions would implement its favorite

policy and achieve a utility of 0. The equilibrium policy given that party $J^* = L, R$ is in power is given by:

$$\begin{aligned}(p_J^*, f_J^*) &= \arg\max_{p,f} \; U_I(p, f_J) \; s.t. \;\; U_J \geq 0 \\ &\Rightarrow \;\; p_J^* = \arg\max_{p} -\alpha(p - i_I)^2 - (p - i_J)^2 = \frac{\alpha i_I + i_J}{1 + \alpha}. \end{aligned} \tag{4}$$

In the equilibrium with lobbying, policy is a weighted average of the ideal point of the party in power and the interest group. The larger the relative weight of policy α in the utility function of the interest group, the closer is the equilibrium policy to the bliss point of the interest group. Since by assumption, $i_L < i_R$, it directly follows that $p_L^* = \frac{\alpha i_I + i_L}{1+\alpha} < \frac{\alpha i_I + i_R}{1+\alpha} = p_R^*$. If there is no interest group, party J maximizes its utility by implementing its bliss point i_J when in power. Therefore, if party J_I^* is in power, the interest group offers the payment:

$$f_J^* = (p_J^* - i_J)^2 = \left(\frac{\alpha(i_I - i_J)}{1 + \alpha} \right)^2 \tag{5}$$

for implementing policy p_J^*. Moreover, the utility of the parties and the interest group are:

$$\begin{aligned} U_{J^*} &= 0, \\ U_{-J^*} &= -\left(\frac{(i_{J^*} - i_{-J^*}) + \alpha(i_I - i_{-J^*})}{1 + \alpha} \right)^2, \\ U_I &= -\frac{\alpha}{1 + \alpha}(i_I - i_{J^*})^2, \end{aligned}$$

where $-J^*$ denotes the party out of power. Party J^* is indifferent between accepting and rejecting the offer and therefore accepts it by assumption. This is a jointly efficient outcome for the interest group and the party, as could be expected in a perfect-information set-up without frictions in the negotiations over the policy. However, the joint efficiency between the party in power and the interest group does not imply Pareto efficiency, because it fails to account for the utility of the voters not organized in the interest group or the party in power and the utility of the party out of office. Voters are assumed to be able to predict the post-election outcome before they cast their ballots. In contrast to most models of interest group influence on policy-making, the effects of lobbying are predicted by the voters who adjust their voting decisions

accordingly.

Let

$$d(\alpha) = p_R^* - p_L^* = \frac{i_R - i_L}{1+\alpha} \tag{6}$$

measure the distance in the policies implemented by the two parties in case they win the elections. The difference goes towards 0 when α goes to infinity, because in this case, p_J^* goes to i_I for both parties. The interest group is willing to pay any price for having its own policy bliss point implemented since the relative weight of monetary contributions as compared to policy in its utility function goes towards zero. On the other hand, when $\alpha = 0$, no lobbying takes place because the interest group attaches no weight to policy at all.

I assume that all voters cast their ballots in favor of the party which they forecast to implement the policy closest to their respective bliss point. This is the only plausible strategy for a voter because it is weakly dominant. If the median voter weakly prefers a policy position, this is also preferred by either all voters with $\theta_n \leq \theta_m$ or all voters with $\theta_n \geq \theta_m$. Thus, the party which implements the policy preferred by the median voter achieves the majority of votes. The winning party in case of lobbying is thus given by:

$$J_I^* = \arg \min_{J \in \{L,R\}} \left| p_J^* - \theta_m \right|, \tag{7}$$

i.e., the party which implements the policy that is most attractive to the median voter. I denote the implemented policy in case lobbying is taking place by $p_I^* = p_{J_I^*}$. If the median voter is indifferent, she is assumed to vote for the left party L.[3] In contrast, if there is no lobbying, a party in power implements its bliss point. Thus, the party with the bliss point closest to the median voter wins:

$$J_{-I}^* = \arg \min_{J \in \{L,R\}} \left| I_J - \theta_m \right|. \tag{8}$$

I denote the equilibrium policy without lobbying by $p_{-I}^* = i_{J_{-I}^*}$. Once more, if the median voter is indifferent, she is assumed to vote for the left party L. Thus, J_I^* and J_{-I}^* are different parties if and only if $\left| i_{J_{-I}^*} - \theta_m \right| \leq \left| i_{J_I^*} - \theta_m \right|$ and $\left| \frac{i_{J_{-I}^*} + \alpha i_I}{1+\alpha} - \theta_m \right| \geq \left| \frac{i_{J_I^*} + \alpha i_I}{1+\alpha} - \theta_m \right|$, with at least one of the inequalities holding strictly.

[3] Assuming that the median voter supports one of the parties in the case of being indifferent avoids stochastic elements in the model that would lead to some complications without giving any additional insights.

Proposition 1 *Interest group influence either does not change the winner of the election or leads to the defeat of the party with preferences closer to the preferences of the interest group.*

Proof. If interest group influence changes the winner of the elections we know that $\left|i_{J^*_{-I}} - \theta_m\right| \leq \left|i_{J^*_I} - \theta_m\right|$ and $\left|i_{J^*_{-I}} + \alpha i_I - (1+\alpha)\theta_m\right| \geq \left|i_{J^*_I} + \alpha i_I - (1+\alpha)\theta_m\right|$, with at least one of the inequalities holding strictly. Taking squares on both sides of both inequalities and then subtracting the second inequality from the first inequality shows that $-2\alpha\left(i_{J^*_I} - i_{J^*_{-I}}\right)(\theta_m - i_I) < 0$. Suppose the right party wins in the case of interest group influence and the left party in the case without ($i_{J^*_I} = i_R$, $i_{J^*_{-I}} = i_L$). In this case, the inequality implies $(\theta_m - i_I) > 0$. Moreover, from the fact that without lobbying the left party wins, we know that the bliss point of the right party is located right of the median voter's bliss point (Otherwise $\theta \geq i_R \geq i_L$ and right wins what is a contradiction). From this together with $|i_L - \theta_m| \leq |i_R - \theta_m|$ follows that the left party's bliss point is closer to the interest group's bliss point. A symmetric argument applies to the case of the right party winning when lobbying is taking place. ■

In the next subsection, I provide a numerical example, while Subsections 2.3-2.5 provide some formal analysis of the welfare implications of lobbying for the median voter, the average voter and the interest group.

2.2 An example

Interestingly, the possibility of lobbying does not necessarily make the interest group better off. Consider the case of an interest group promoting the rightmost possible policy with bliss point $i_I = 1$ and relative weight of policy in the utility function $\alpha = 1$. Let the left party have bliss point $i_L = 0.25$ and the right party have bliss point $i_R = 0.75$:

$$\begin{aligned} U_L &= -(0.25 - p)^2 + f_L, \\ U_R &= -(0.75 - p)^2 + f_R, \\ U_I &= -(1 - p)^2 - f_{J^*}. \end{aligned} \tag{9}$$

It is straightforward to calculate the implemented policy conditioning on either party winning. In case of a party L victory, it is:

$$p_L^* = \arg\max_p -(0.25 - p)^2 - (1 - p)^2 = 0.625. \tag{10}$$

And in case of a party R victory, it is:

$$p_R^* = \arg\max_p -(0.75 - p)^2 - (1 - p)^2 = 0.875. \tag{11}$$

As long as the existence of the interest group does not influence the election result, the interest group is better off with respect to the policy and increases its utility by lobbying even after subtracting the cost f of lobbying. This is the case if the median voter has preferences with the bliss point either in the interval $[0, 0.5]$ or the interval $(0.75, 1]$. However, if the median voter's bliss lies is in the interval $(0.5, 0.75]$, she votes for the left party rather than the right party due to the presence of the interest group and the implemented policy changes from 0.75 to 0.625. This makes the interest group worse off, even disregarding the cost of lobbying.[4] In addition, the interest group has to pay $f_L^* = (0.625 - 0.25)^2 = 0.375^2$ to make the left party implement 0.625 instead of 0.25. If the right party wins, the payment is only $f_R^* = (0.875 - 0.75)^2 = 0.125^2$.

Whether the average and the median voter are better or worse off due to the existence of the interest group is dependent upon their preferences, but both cases are plausible, especially considering the fact that even an interest group with extreme preferences can lead to a more centrist implemented policy if it changes the election outcome.

In the example, there are three different cases where the median voter is better off with the interest group compared to without: (1) She supports the left party in both cases and her bliss point is closer to p_L^* than to i_L, that is, when her bliss point $\theta_m \in (0.437\,5, 0.5]$. (2) She supports the right party in both cases and she is better off with p_R^* than with i_R, that is when her bliss point $\theta_m > 0.812\,5$. (3) She is better off if she has a bliss point $\theta_m \in (0.5, 0.687\,5)$. In this case, the median voter votes left instead of right if there is an interest group and she is made better off with the moderate right policy of the left party that is made available by the existence of the interest group.

If $\theta_m < 0.437\,5$ or $\theta_m \in (0.687\,5, 0.812\,5)$, the median voter is worse off with

[4] However, this is specific to the example. A lobby can be better off even if it causes its favorite party to lose the elections if its influence on the elections is sufficiently large as shown in Subsection 2.5.

than without the interest group. In the first case, the reason is that a far to the left policy is no longer available, in the second case the reason is that the policy that will be implemented by the left party after being lobbied is too much to the left and the policy of the right party after being lobbied is too much to the right to be preferable to i_R. For voters in general, everything is possible because the outcome of the elections depends on the location of the median voter. Due to the fact that an interest group with a position far to the right can lead to a more leftist equilibrium policy, a voter with any bliss point θ can be made worse off or better off as long as she is not at the median position and does not determine policy.

For a possible interpretation, imagine a two-party system with an economically liberal party and a socialist party. If the socialist party leadership is known to accept monetary contributions from a business interest group for implementing more centrist policies than its leadership would otherwise prefer, this does not necessarily hurt its election prospects. On the contrary, it makes the party more attractive for centrist voters. It seems plausible that the existence of strong business interest group organizations in the US makes the Democrats more and the Republicans less attractive for centrist voters.[5]

The mechanism at work here is somewhat related to that described by Ellman and Wantchekon (2000). In their model, it is not an interest group that influences policies, but the threat of violence. They show that in a two-party setup that is quite close to the one described in my model, the threat of violence by either party or some exogenous group can serve as a de facto commitment device to implement more centrist policies after the elections to avoid such violence. Just like in my model, it is the post-election influence on the implemented policy that stops candidates from implementing their ideal policy and might therefore help them be more attractive to centrist voters before the elections.

The interesting point is that an interest group can actually make life more difficult for the party to which it is ideologically closer, but never make it better off with respect to its electoral prospects. This is due to the forward-looking character of the model and in contrast to the effects that are commonly found in the campaign contribution literature.

In the following three subsections, some formal statements about the impact of

[5]Naturally, party positions might not be exogenous to the lobby environment of a country in the long run. This issue is beyond the scope of this paper.

lobbying on the welfare of voters and interest groups are derived.

2.3 The welfare of the voters

It seems to be widely believed that lobbying is detrimental to welfare in a democracy, because voters do not get the policies they voted for. However, in my model, it can be shown that in many cases, lobbying makes the median voter better off. Whenever it is shown that the median voter is better off this also implies that the majority of voters must be better off. This follows directly from the fact that if the median is better off, either all voters with a bliss point to the left of the median voter or all voters with a bliss point to the right of the median voter are better off. From now on, I make the assumption that the median voters' bliss point is located between the parties' bliss points ($i_L < \theta_m < i_R$). There are three cases to consider:

Case 1 (Large effects of lobbying) *Either* $i_I < \max\left(i_L - \frac{(i_R - i_L)}{\alpha}, \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_R\right)$ *or* $i_I > \min\left(i_R + \frac{(i_R - i_L)}{\alpha}, \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_L\right)$.

In this case, lobbying has large effects on the positions implemented by parties in office compared to the policy the same party would implement without lobbying. However, because the identity of the winning party can also change as a result of the interest group influence, this does not necessarily imply large effects on policy. Consider the case with $i_I < \max\left(i_L - \frac{(i_R - i_L)}{\alpha}, \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_R\right)$. The policy that the right party implements if winning office is to the left of the median voter's bliss point and further away from it than the closer of the two parties' bliss points in the case without lobbying.

Such a large effect of lobbying seems rather implausible for most countries. On the one hand, an interest group might be expected to have rather extreme policy preferences and therefore i_I might be expected to be either very small or very large because centrist special interest groups would have more problems in solving the collective action problem. On the other hand, for small α, the values of i_I that would lead to large effects of lobbying are outside the policy space $[0, 1]$, so that even an interest group with the most extreme possible bliss point $i_I = 0$ or $i_I = 1$ would not have large effects on policy for a given party in power.

It can be shown that in the case of such large effects of lobbying, the median voter is worse off:

Proposition 2 *If lobbying has large effects, as defined in Case* 1*, then it decreases the utility of the median voter as compared to the case without lobbying.*

Proof. By (4) and straightforward algebra if $i_I < \max\left(i_L - \frac{(i_R - i_L)}{\alpha}, \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_R\right)$, then either $p_R^* < i_L$ or $p_R^* < 2\theta_m - i_R$ or both. If $p_R^* = \frac{\alpha i_I + i_R}{\alpha+1} < i_L$, then because $p_L^* < p_R^* < i_L < \theta_m$ the median voter prefers the right party and policy p_R^* is implemented. Without lobbying, $(p_{-I}^* - \theta_m)^2 \leq (i_L - \theta_m)^2 < (p_R^* - \theta_m)^2$. Thus, lobbying decreases the utility of the median voter. If $p_R^* < 2\theta_m - i_R$, then $p_L^* - \theta_m < p_R^* - \theta_m < \theta_m - i_R < 0$ and therefore $|p_L^* - \theta_m| > |p_R^* - \theta_m| > |\theta_m - i_R|$. Once more, lobbying makes the median voter worse off because i_R would be more attractive for her than either p_R^* or p_L^*.

The proof of the case $i_I > \min\left(i_R + \frac{(i_R - i_L)}{\alpha}, \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_L\right)$ is analogous. ■

Case 2 (Intermediate effects of lobbying) $i_I = \max\left(i_L - \frac{(i_R - i_L)}{\alpha}, \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_R\right)$ *or* $i_I = \min\left(i_R + \frac{(i_R - i_L)}{\alpha}, \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_L\right)$.

Proposition 3 *If lobbying has intermediate effects, as defined in Case 2, then it has no influence on the welfare of the median voter.*

Proof. If $i_I = \max\left(i_L - \frac{(i_R - i_L)}{\alpha}, \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_R\right)$, then either $p_R^* = i_L \geq 2\theta_m - i_R$ or $p_R^* = 2\theta_m - i_R > i_L$. If $p_R^* = i_L \geq 2\theta_m - i_R$, the left party wins without lobbying and with lobbying the right party wins with the same position, i_L, so implemented policy and thus also the utility of the median voter is the same in both cases. If $p_R^* = 2\theta_m - i_R > i_L$, the right party wins with and without lobbying and in both cases implements policies with the same distance to the bliss point of the median voter θ_m (but on opposite sides of θ_m).

The proof of the case $i_I = \min\left(i_R + \frac{(i_R - i_L)}{\alpha}, \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_L\right)$ is analogous. ■

When lobbying has intermediate effects on policy, the position that a party implements once in office changes. However, the welfare of the median voter is not influenced since either the winning party remains the same and implements a policy with the same distance to, but on the other side off the median voter's bliss point, or the winning party changes, but policy does not.

Intermediate effects of lobbying is a borderline case between large and small effects that is unlikely to have much relevance.

Case 3 (Small effects of lobbying) $\max\left(i_L - \frac{(i_R - i_L)}{\alpha},\ \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_R\right) < i_I < \min\left(i_R + \frac{(i_R - i_L)}{\alpha}, \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_L\right)$.

In the case of small effects of lobbying, at least one of the parties offers a position that is closer to the median voter's bliss point when it is influenced by the interest group after the elections as compared to the case where no interest group exists.

Proposition 4 *If the effect of lobbying is small, as described in Case 3, and the interest group is on the same side of the median voter as the party with the larger distance to the median (that is if either* $i_I \geq \theta_m$ *and* $\frac{i_L+i_R}{2} \geq \theta_m$ *or* $i_I \leq \theta_m$ *and* $\frac{i_L+i_R}{2} \leq \theta_m$*), the median voter is better off as compared to the case without lobbying. If the interest group is on the other side (that is if either* $i_I > \theta_m > \frac{i_L+i_R}{2}$ *or* $i_I < \theta_m < \frac{i_L+i_R}{2}$*), the median voter is better off as compared to the case without lobbying if and only if either the effect of lobbying is sufficiently large (*$i_I > \frac{(1+\alpha)(2\theta_m - i_R) - i_L}{\alpha}$ *if* $i_I > \theta_m > \frac{i_L+i_R}{2}$ *and* $i_I < \frac{(1+\alpha)(2\theta_m + i_L) + i_R}{\alpha}$ *if* $i_I < \theta_m \leq \frac{i_L+i_R}{2}$*) or the interest group's policy bliss point is located between the two parties' bliss points (*$i_L < i_I < i_R$*).*

Proof. Case $i_I \geq \theta_m$ and $\frac{i_L+i_R}{2} \geq \theta_m$:
$\frac{i_L+i_R}{2} \geq \theta_m$ implies $|i_R - \theta_m| \geq |i_L - \theta_m|$. Therefore, without lobbying, the left party wins and $p^*_{-I} = i_L$ is implemented. Because we have a small effect of lobbying, it follows from (4) that $p^*_L < \min(i_R, 2\theta_m - i_L)$. Together with $|i_R - \theta_m| \geq |i_L - \theta_m|$, this implies that $p^*_L < 2\theta_m - i_L$. It follows that $p^*_L - \theta_m < \theta_m - i_L$ and the median voter is better off with p^*_L than she would be with $p^*_{-I} = i_L$.

The proof of the case $i_I \leq \theta_m$ and $\frac{i_L+i_R}{2} \leq \theta_m$ is analogous.

Case $i_I > \theta_m > \frac{i_L+i_R}{2}$:
$i_I > \theta_m > \frac{i_L+i_R}{2}$ implies that $|i_R - \theta_m| < |i_L - \theta_m|$ and without lobbying, the right party wins and $p^*_{-I} = i_R$ is implemented. If $i_I > \frac{(1+\alpha)(2\theta_m - i_R) - i_L}{\alpha}$, then $p^*_L = \frac{\alpha i_I + i_L}{(1+\alpha)} > 2\theta_m - i_R$ and together with $p^*_L < i_R$ (what follows from the fact that the effects of lobbying are small) it follows that $|p^*_L - \theta_m| < |\theta_m - i_R|$. This implies that the median voter is better off with p^*_L than with p^*_{-I} and therefore must be better off with lobbying. If $i_I \leq \frac{(1+\alpha)(2\theta_m - i_R) - i_L}{\alpha}$, then $p^*_L \leq 2\theta_m - i_R$ and $|p^*_L - \theta_m| \geq |\theta_m - i_R|$. There are two cases to consider: If $i_L < i_I < i_R$, then $i_I < p^*_R = \frac{\alpha i_I + i_R}{(1+\alpha)} < i_R$ and the median voter is better off because small effects of lobbying imply that $p^*_R \geq 2\theta_m - i_R$.

If, on the other hand, $i_L < i_I < i_R$ is not true, then $i_I > \theta_m > \frac{i_L+i_R}{2}$ implies that $i_I \geq i_R$ and therefore $p^*_R > i_R > \theta_m$ and lobbying must make the median voter worse off because $(p^*_I - \theta_m)^2 = \min\left((p^*_R - \theta_m)^2, (p^*_L - \theta_m)^2\right) > (i_R - \theta_m)^2$.

The proof of the case $i_I < \theta_m < \frac{i_L+i_R}{2}$ is analogous. ■

Proposition 4 implies that in most cases, small effects of lobbying make the median voter better off. Moreover, it can be shown that even if the median voter is worse off her loss of utility is limited:

Lemma 1 *If the effect of lobbying is small, for given bliss points of parties i_L and i_R, the loss of utility with lobbying as compared to the case without interest group for the median voter is at most $\left(\frac{i_R-i_L}{2(1+\alpha)}\right)^2 - \min_J(i_J-\theta_m)^2$ and lobbying must have a positive effect on his welfare as long as $\alpha \geq \frac{\max|i_J-\theta_m|-\min|i_J-\theta_m|}{2\min|i_J-\theta_m|}$.*

Proof. The utility of the median voter in the case of lobbying is:
$U_m = -\min_J \left(\frac{i_J+\alpha i_I}{1+\alpha} - \theta_m\right)^2$. For given policy positions and small effects of lobbying, the worst possible bliss point i_I^w of the interest group from the perspective of the median voter is given by:

$i_I^w = \arg\max_{i_I} \min_J \left(\frac{i_J+\alpha i_I}{1+\alpha} - \theta_m\right)^2$ *s.t.*

1. $\max\left(i_L - \frac{(i_R-i_L)}{\alpha}, \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_R\right) < i_I$
2. $\min\left(i_R + \frac{(i_R-i_L)}{\alpha}, \frac{2(\alpha+1)}{\alpha}\theta_m - \frac{(\alpha+2)}{\alpha}i_L\right) > i_I$

where the constraints come from the assumption that the effects of lobbying are small. There are two possibilities. The first is that no solution exist because the constraints are binding. In this case lobbying cannot make the median voter worse off because his utility cannot be lower than in Case 2 where she is indifferent between the outcome with lobbies and the outcome without. If a solution exists, it is given by: $i_I^w = \frac{(1+\alpha)}{\alpha}\theta_m - \frac{i_L+i_R}{2\alpha}$ which leads to $p_L^*(i_I^w) = \frac{\alpha i_I^w+i_L}{1+\alpha} = \theta_m - \frac{i_R-i_L}{2(1+\alpha)}$ and $p_R^*(i_I^w) = \frac{\alpha i_I^w+i_R}{1+\alpha} = \theta_m + \frac{i_R-i_L}{2(1+\alpha)}$ and thus

$U_m = -\left(\frac{i_R-i_L}{2(1+\alpha)}\right)^2$. Given that the disutility of the median voter without lobbying is given by $\min_J(i_J-\theta_m)^2$, the maximum welfare loss due to lobbying is given by $\left(\frac{i_R-i_L}{2(1+\alpha)}\right)^2 - \min_J(i_J-\theta_m)^2$. It is positive if and only if $\left(\frac{i_R-i_L}{2(1+\alpha)}\right)^2 \geq \min_J(i_J-\theta_m)^2 \Rightarrow$ $\max_J|i_J-\theta_m| + \min_J|i_J-\theta_m| \geq 2(1+\alpha)\min_J|i_J-\theta_m|$

$\Leftrightarrow \alpha \leq \frac{\max_J|i_J-\theta_m|-\min_J|i_J-\theta_m|}{2\min_J|i_J-\theta_m|}$. ■

The intuition is straightforward. If lobbying has small effects, it is impossible that a party's policy moves in the direction of the median voter, but nevertheless becomes less attractive for her because it moves too far on the other side. Because $i_L < \theta_m < i_R$ and lobbying moves implemented policy in the same direction for both parties, this

implies that lobbying makes the position of at least one party more attractive for the median voter. i_I^w is the position of the interest group such that the party J_{-I}^* which would win without lobbying is just as attractive as the party that would lose. If the interest group is more central ($|i_I - \theta_m| < |i_I^w - \theta_m|$), the same party is closer to the median; if the interest group is more extreme ($|i_I - \theta_m| > |i_I^w - \theta_m|$), the other party becomes more attractive for the median voter. It should also be noted that a value of α that fulfills the condition need not exist within the range of lobbying with small effects. However, it should also be clear that the condition $\alpha \geq \frac{\max|i_J - \theta_m| - \min|i_J - \theta_m|}{2\min|i_J - \theta_m|}$ is a sufficient but not necessary condition for lobbying to have positive effects on the welfare of the median voter.

Corollary 1 *If both parties have an equal distance to the median voter* ($|i_R - \theta_m| = |i_L - \theta_m|$) *and the effects of lobbying are small (Case 3), the median voter must be better off with lobbying.*

Proof. This directly follows from Lemma 1 because ($|i_R - \theta_m| = |i_L - \theta_m|$) implies that $\max_J |i_J - \theta_m| = \min_J |i_J - \theta_m|$. ■

The intuition is that lobbying moves at least one of the parties in the direction of the median voter and if both parties' bliss points have the same distance to the median voter's bliss point, one of the parties must implement a policy closer to the median voter's bliss point if lobbying is taking place as compared to the case without lobbying, as long as the influence of the interest group is small.

2.4 The welfare of the average voter

The welfare of the median voter is interesting in its own right for the purpose of comparison with standard models of elections without lobbying. However, from a welfare economics perspective, the median voter is no more interesting than any other voter. Consider a utilitarian (Benthamite) social welfare function that gives equal weight to all voters:

$$U_B = \sum_{n=1}^{N} U_n(p) = \sum_{n=1}^{N} -(p - \theta_n)^2. \tag{12}$$

This function reaches its unique maximum with policy:

$$p_B^* = \bar{\theta} \equiv \frac{\sum_{n=1}^{N} \theta_n}{N}. \tag{13}$$

Thus, whenever the welfare of the voter with the average bliss point $\bar{\theta}$ is maximized, we are at the utilitarian maximum and the welfare of the average voter is also maximized.[6]

If $\bar{\theta} = \theta_m$, the results derived for the welfare of the median voter derived in Section 2.3 also apply to the average voter and overall welfare. There is no reason why $\bar{\theta} = \theta_m$ should hold exactly, but it can provide a reasonable approximation if the voters' bliss points are not too asymmetrically distributed around the median voter's bliss point.

In the literature on the determination of tax levels following the pioneering work of Meltzer and Richard (1981)[7], it is often assumed that $\theta_m < \bar{\theta}$ and the larger θ, the lower the implemented tax level.[8]

A modeling alternative would be to take a given distribution of voters and then make some additional assumptions about how they influence the ideologic position of the parties. In this way, the parties' policy positions could be endogenized.

2.5 The welfare of the interest group

The interest group must be better off whenever the same party wins with or without lobbying. With lobbying and party J_I^* winning the elections, the utility of the interest group is:

$$\begin{aligned} U_I^*(p_J^*, f_J^*) &= -\alpha(p_J^* - i_I)^2 - f_J^* \\ &= -\alpha\left(\frac{i_I - i_{J_I^*}}{1+\alpha}\right)^2 - \left(\frac{\alpha(i_I - i_{J_I^*})}{1+\alpha}\right)^2 \\ &= -\frac{\alpha}{1+\alpha}(i_I - i_{J_I^*})^2. \end{aligned} \tag{14}$$

[6] This is a consequence of quadratic disutility in policy and is not true for more general utility functions. However, there is always a representative voter whose welfare is maximized when the welfare of the average voter is maximized.

[7] For an overview over this literature, see Persson and Tabellini (2000).

[8] Of course, there is no specific reason why low levels of θ should represent high levels of taxation and high levels of θ low levels of taxations and not vice versa, but given that I called party L the left party and party R the right party labeling appears consistent.

Without any lobbying and party J^*_{-I} winning the elections, the utility of the interest group is:

$$U_I(i_J, 0) = -\alpha(i_I - i_{J^*_{-I}})^2. \tag{15}$$

If the same party $J^*_I = J^*_{-I}$ wins with and without lobbying, the welfare effect of lobbying on the interest group is simply the difference:

$$U^*_I(p^*_J, f^*_J) - U_I(i_{J^*_I}, 0) = \frac{\alpha^2}{1+\alpha}(i_I - i_{J^*_I})^2 > 0. \tag{16}$$

When the winner does not change as a consequence of the existence of the interest group, lobbying always makes the interest group better off. This result is not surprising given that the interest group is assumed to obtain the entire surplus from the negotiations with the party in power. If $J^*_I \neq J^*_{-I}$, the difference in utility of the interest group between the two cases is given by:

$$U_I(p^*_J, f^*_J) - U_I(i_{J^*_{-I}}, 0) = -\frac{\alpha}{1+\alpha}(i_I - i_{J^*_I})^2 + \alpha(i_I - i_{J^*_{-I}})^2. \tag{17}$$

J^*_I and J^*_{-I} are different parties, lobbying leads to a change of winner of the elections and, as was shown in Proposition 1, leads to the victory of the party with the bliss point further away from the interest group. Whether the lobby is nonetheless better off depends on α:

$$U_I(p^*_J, f^*_J) - U_I(i_{J^*_{-I}}, 0) \gtreqless 0 \iff \alpha \gtreqless \left(\frac{i_I - i_{J^*_I}}{i_I - i_{J^*_{-I}}}\right)^2 - 1. \tag{18}$$

Only when the effect of lobbying is sufficiently large because the interest group cares enough about policy as compared to monetary contributions (large α), lobbying makes the interest group better off even if it leads to the loss of the party to which it is ideologically closer.

3 Extensions of the model

To check for the robustness of the results in the main part, this section deals with several extensions of the model presented in Section 2.

3.1 Alternative surplus sharing rules

How robust are results to the sharing of the surplus between the interest group and the party in power? Due to the assumption that the interest group makes a take-it or leave-it offer to the party in power, the whole surplus is given to the interest group and the party is not better off than it would be without lobbying. An alternative assumption is that the party in power and the interest group share the surplus created by post-election bargaining and therefore:

$$f(p) = (1-\beta)[U_I(p,0) - U_I(i_J,0)] - \beta[U_J(p,0) - U_J(i_J,0)], \tag{19}$$

with $\beta \in [0,1]$ being the interest group's share of the surplus. Then, the interest group wants to maximize its utility over p:

$$p_I^* = \arg\max_p U_I(p, f(p)) = \arg\max_p \beta[U_I(p,0)+U_J(p,0)-(U_J(i_J,0)]+(1-\beta)U_I(i_J,0), \tag{20}$$

while party J wants to implement:

$$p_J^* = \arg\max_p U_J(p, f(p)) = \arg\max_p (1-\beta)[U_J(p,0)+U_I(p,0)-U_I(i_J,0)]+\beta U_J(i_J,0). \tag{21}$$

It is easily verified that the interest group as well as the party in office agree that $p_I^* = p_J^*$ should be implemented and therefore the equilibrium policy given party J in power is the same for all sharing rules. If $\beta = 1$, we have returned to the basic model in Section 2 where the interest group appropriates the entire surplus. If $\beta = 0$, we have the opposite result and the party in power gets the entire surplus from the lobbying negotiations. An alternative model with the same result would be to give the party in power the opportunity to make a take-it or leave-it offer to the interest group. As had to be expected, as long as bargaining is efficient, the sharing rule makes no difference for implemented policy. However, the welfare implications for the interest group as well as the parties are different and this would be important if there were an additional, initial stage where the interest group could commit to not getting involved in lobbying after the elections.

3.2 The case of interest groups that can commit to restrict their lobbying activity

How do the results depend on the assumptions about the ability to commit? The main reason why commitment of the interest group is not part of the main model is that it seems somewhat arbitrary to assume that an interest group can commit to abstain from interfering with policy while the politicians have no possibility to commit to a specific policy position. Parties are known to make promises, while interest groups are not known to make promises about noninterference with policies.

It is easy to show that if an interest group has the possibility of committing not to interfere with policy making, it cannot be worse off. Moreover, it must be better off in all cases that are shown in Section 2.5 to make it worse off in the case of lobbying compared to the case without lobbying. In the latter cases, it would commit before the elections not to interfere with the policies that will be implemented once a party is in office.

3.3 Several interest groups

How robust are the results to the introduction of more interest groups? Let there be Z interest groups. Allowing only a take-it or leave-it offer by the interest groups would now severely reduce the possibilities of strategical interaction. Therefore, I now follow Grossman and Helpman (1994) who use the common agency approach of Bernheim and Whinston (1986). The ruling party is the common agent and the lobbies are the principals. I assume that interest groups offer contribution schedules that specify a weakly positive contribution for any policy p. Interest group z maximizes:

$$U_z^I(p, f) = -\alpha_z(p - i_z)^2 - f_z(p, J), \tag{22}$$

where i_z is the policy bliss point of interest group z and $f_z(p, J)$ is its monetary contribution to the ruling party given that it implements policy p and the party in power is J. Parameter α_z measures how much lobby z cares about policy relative to monetary payments. The utility functions of the parties and the voters are still given by equations (1) and (3) in Section 2 with $f = \sum_{z=1}^{Z} f_z$ now being the aggregate monetary payment to the party.

All truthful contribution schedules have the following form:

$$f_z(p, J) = \max(U_z^I(p) - B_z(J), 0) \text{ for some } B_z. \tag{23}$$

Let:

$$p_J^* = \frac{i_J + \sum_{z=1}^{Z} \alpha_z i_z}{1 + \sum_{z=1}^{Z} \alpha_z},$$

be the policy that maximizes the joint utility of the party in power and all the interest groups. Following Grossman and Helpman (1994), it is possible to show that there are truthful contribution schedules with:

$$\begin{aligned} B_z(J) &= U_z^I(p_J^*, 0) + U_J\left(p_J^*, 0\right) - U_J\left(p_{J,-z}^*, 0\right) \\ &\quad + \sum_{\substack{y \in Z \\ y \neq z}} \left(f_y\left(p_J^*, J\right) - f_y\left(p_{J,-z}^*, J\right)\right), \end{aligned} \tag{24}$$

$$\text{where } p_{J,-z}^* = \arg\max_p U_J\left(p, 0\right) + \sum_{\substack{y \in Z \\ y \neq z}} \left(f_y\left(p, J\right)\right), \tag{25}$$

that together with policy p^* constitute an equilibrium. In this equilibrium, the monetary transfers of the lobbies are not uniquely determined because a group of lobbies that tries to pull equilibrium policies in the same direction has to solve a free rider problem. This multiplicity of equilibrium payment schedules in common agency seems so far have been mostly ignored in the literature with the exception of Laussel and Breton (2001).[9]

As in the main model in Section 2, the policy is efficient in the sense that to make any of the lobbies or the ruling party better off, some of the other players would have to be made worse off. Moreover, because of the quasilinear utility functions, the efficient policy is unique.

The case $Z = 1$ essentially reduces to the 1 interest group case dealt with in Section 2 because, in equilibrium, the monetary transfer is equal to the take-it or leave-it model:

$$f_z^*(p^*, J) = U_J\left(i_J, 0\right) - U_J\left(p_J^*, 0\right).$$

[9] Of course, the restriction to truthful contribution schedules already restricts the number of equilibria considerably. For other forms of equilibria that lead to different policy outcomes, see Besley and Coate (2001) and especially Kirchsteiger and Prat (2001).

The interest group does not make a take-it or leave-it offer, but the implemented policy as well as monetary transfer are exactly the same.

Moreover, a representative interest group can be used to capture all the interest group activity in the model as follows directly from the fact that $p_J^* = \frac{i_J + \sum_{z=1}^{Z} \alpha_z i_z}{1 + \sum_{z=1}^{Z} \alpha_z}$. This is exactly the same policy that would be implement if there were only one interest group with bliss point $i_I = \bar{\imath}_z \equiv \frac{\sum_{z=1}^{Z} \alpha_z i_z}{\sum_{z=1}^{Z} \alpha_z}$ and a weight of $\alpha = \sum_{z=1}^{Z} \alpha_z$ on policy relative to monetary contributions. The model with only one interest group given in Section 2 can therefore be reinterpreted as a model with a representative interest group which captures the total lobbying effort in the polity. This shows that the limitation of the basic model to one interest group only has consequences for the analysis of the welfare of the interest group and the parties, not for the more important analysis of the welfare of the voters.

4 The case of parties running with candidates

An important assumption that has been made so far is that parties implement policies. An alternative and equally plausible assumption is that the candidates who run for office decide about policy and the parties only decide who is their candidate in the elections. In this section, the situation is closer to the citizen candidate approach to lobbying by Besley and Coate (2001) than to the model in Section 2. In case the candidate accepts a monetary offer from the interest group, he must share the contribution with his party according to a predetermined sharing rule.

A party's utility function is now given by:

$$U_J(p, f) = -(p - i_J)^2 + (1 - \gamma)f, \tag{1'}$$

with $J = L, R$. $\gamma \in [0, 1]$ is the share of monetary transfers that goes to the candidate while $(1 - \gamma)$ is the share that goes to the party. Potential candidates have a utility function that is similar to the utility function of the parties. Just as parties do, they care about policy as well as monetary transfers. It is given by:

$$U_J^k = -(p - \lambda_J^k)^2 + \gamma f, \tag{26}$$

where $J = L, R$ denotes the party the candidate is running for, λ_J^k is the bliss point of

candidate k and γ the candidate's share of the monetary contribution if he is elected.[10] The interest group and the voters are assumed to have the same utility function as in Section 2, given by (2) and (3). Moreover, the assumption that $i_L < \theta_m < i_R$ is retained.

The order of moves is now the following. First, each party decides simultaneously over a candidate who will run for the party in the elections. Then, elections take place and the candidate with the majority of votes wins. If there is an interest group, it can make a take-it or leave-it offer to the winning candidate, offering her an amount of monetary contributions for implementing a certain policy. The candidate can either accept the offer, take the payment and implement the agreed policy, or choose any alternative policy.

Once more, the interest group makes an offer that just leaves the winning candidate indifferent between accepting and rejecting. Therefore, the implemented policy of a candidate with bliss point λ_J^k is given by:

$$\begin{aligned}
(p^*(\lambda_J^k), f^*(\lambda_J^k)) &= \arg\max_{p,f} \; U_I(p,f) \; s.t. \; U_J^k \geq 0 \\
&\Rightarrow \; p^*(\lambda_J^k) = \arg\max_{p} -\alpha(p-i_I)^2 - \frac{1}{\gamma}(p-\lambda_J^k)^2 \\
&= \frac{\alpha i_I + \frac{1}{\gamma}\lambda_J^k}{\alpha + \frac{1}{\gamma}}, \qquad (27) \\
&\qquad f^*(\lambda_J^k) = \frac{1}{\gamma}\left(\lambda_J^k - \frac{\alpha i_I + \frac{1}{\gamma}\lambda_J^k}{\alpha + \frac{1}{\gamma}}\right)^2 = \frac{1}{\gamma}\left(\frac{\alpha(\lambda_J^k - i_I)}{\alpha + \frac{1}{\gamma}}\right)^2. \qquad (28)
\end{aligned}$$

As in the main model, implemented policy is a weighted average of the bliss points of the interest group and the policy maker. The larger the candidate's share γ of the monetary contribution, the less influence does his bliss point have on implemented policy. Define $\lambda_J^k(p)$ such that $p^*(\lambda_J^k(p)) = p$:

$$\lambda_J^k(p) = (\gamma\alpha + 1)p - \gamma\alpha i_I. \qquad (29)$$

In this notation, $\lambda_J^k(p)$ gives the preferences of a candidate who would implement policy p if he is lobbied. This value is potentially not available for all p, but it is

[10] Naturally, only the candidate who is in office actually profits from the monetary contribution m. But since only the candidates in office can actually influence their own utility, I ignore this fact for notational convenience.

unique if it exists. Moreover, $\lambda_J^{k\prime}(p) = \gamma\alpha + 1 > 0$.

Let Λ_J be the set containing all available candidates' bliss points for party J and let P_J^* be the set of all post-lobbying policies available from party J, that is, $p \in P_J^*$ if and only if $\lambda_J^k(p) \in \Lambda_J$.

If there is a continuum of candidates with bliss points everywhere in the policy space $[0, 1]$ available and there is no interest group, the model is essentially identical with the classical Downsian model of two competing parties. A party can commit to any policy by just choosing a candidate who has the policy it wants to commit to as his bliss point. Consequently, both parties will choose a candidate with the same bliss point as the median voter.

That both parties have to choose such a candidate in equilibrium follows from the same logic as the standard Downsian result.[11] First, it is clear that both parties running with such a candidate constitutes an equilibrium, because a deviation by one of the parties would not change the policy outcome. If one party deviates, the other party wins and the bliss point of the median voter is nonetheless implemented. That there cannot be any other equilibrium follows from the fact that at least one of the candidates could always win with a position closer to her own bliss point than the winning position by deviating. That parties are ideological rather than office seeking does not change the Downsian logic that leads to full policy convergence and therefore the preferences of the median voter prevail.

If there is an interest group that tries to influence the policy after the elections, there are no fundamental differences. The only adjustment is that the parties choose the candidate who will implement the median voter's favorite policy after being lobbied instead of a candidate with the bliss point of the median voter. They choose a candidate with bliss point $\lambda_J^k(\theta_m) = (\gamma\alpha + 1)\theta_m - \gamma\alpha i_I$ who will implement the median voter's bliss point θ_m if elected. If both parties have such a candidate available, lobbying will not change the implemented policy, just as if citizen candidates were running for office as in Besley and Coate (2001). Lobbying turns out to be irrelevant for the implemented policy.

A somewhat different situation only occurs when $p^*(0) > \theta_m$ or $p^*(1) < \theta_m$. In the first case, an interest group with bliss point $i_I > \theta_m$ leads to a policy to the right of the median voter's bliss point policy even with the leftmost candidate possible.

[11] The standard Downsian logic applies although parties in my model are not vote maximizers as in Downs (1957) but utility maximizers as in Wittman (1973).

In the second case, an interest group with bliss point $i_I < \theta_m$ leads to a left of the median voter's bliss point policy even with the rightmost candidate possible. In this case, we have an equilibrium where both parties run with an extremist candidate (with bliss point 0 in the first and bliss point 1 in the second case). The interest group influences policy and the interest group irrelevance result no longer holds.

If parties are restricted in their choice of candidates, implemented policy can differ from the median voter's bliss point, even if the interest group influence on candidates is limited. This seems to be a relevant restriction, given that the members of a party usually show a certain ideological uniformity and that, for example, a far left candidate is unlikely to run for a right-of-center party.

More specifically, let $\Lambda_L = [0, \lambda_{_L}^{\max}]$ and $\Lambda_R = [\lambda_{_R}^{\min}, 1]$, that is, the left party L cannot run with a candidate with a bliss point to the right of $\lambda_{_L}^{\max}$ and the right party R cannot run with a candidate with a bliss point to the left of $\lambda_{_R}^{\min}$, but there are no further restrictions on the choice of candidates. As long as $\lambda_{_R}^{\min} \leq \theta_m \leq \lambda_{_L}^{\max}$, the results without lobbying are not affected. However, if in addition $p^*(\lambda_{_R}^{\min}) > \theta_m$ or $p^*(\lambda_{_L}^{\max}) < \theta_m$, lobbying changes the equilibrium policy outcome. The reason is simply that one of the parties is no longer able to choose a candidate who is going to implement the median voter's preferred policy.

As an example, let us assume that once more there is an interest group with $i_I > i_R$ and $p^*(\lambda_{_R}^{\min}) > \theta_m$. In this case, the left party can win with certainty by letting any candidate k_L with bliss point $\lambda_{_L}^k$ such that $\left|p^*(\lambda_{_L}^k) - \theta_m\right| < \left|p^*(\lambda_{_R}^{\min}) - \theta_m\right|$ run in the elections. To ensure the existence of an equilibrium, I assume that the median voter votes in favor of the candidate of party L if $\min_k \left|p^*(\lambda_{_L}^k) - \theta_m\right| < \min_k \left|p^*(\lambda_{_R}^k) - \theta_m\right|$ and in favor of the candidate of party R if $\min_k \left|p^*(\lambda_{_L}^k) - \theta_m\right| > \min_k \left|p^*(\lambda_{_R}^k) - \theta_m\right|$ whenever she is indifferent between the two candidates who are running for office. This is a purely technical assumption without economic interpretation to ensure the existence of an equilibrium. Then, in equilibrium, the left party needs to maximize its utility by solving the following problem:

$$\begin{aligned}
\lambda_{_L}^* &= \arg\max_{\lambda_{_L}^k \in \Lambda_L} -(p^*(\lambda_{_L}^k) - i_L)^2 + (1-\gamma) f^*(\lambda_{_J}^k) && (30)\\
s.t.\ \left|p^*(\lambda_{_L}^k) - \theta_m\right| &\leq \left|p^*(\lambda_{_R}^{\min}) - \theta_m\right|, && (31)\\
\lambda_{_R}^* &= \lambda_{_R}^{\min},\\
p^* &= p(\lambda_{_L}^*).
\end{aligned}$$

The left party chooses a candidate such that the implemented policy cannot be beaten by the right party. Because monetary transfers are increasing in the distance between candidate and interest group, the left party chooses not necessarily the candidate who implements the policy closest to its bliss point that can win the elections. The reason is that a candidate with preferences further left receives a larger monetary payment f^* from the interest group and therefore a trade-off between policy and monetary contributions exists when the candidate is chosen.

In the case of candidates running for parties the interest group is never better off with lobbying. It not only has to pay monetary to just achieve the same policy that would be implemented without lobbying, in some cases implemented policy even becomes less favorable for the interest group.

5 Conclusion

This paper argues that the interaction of post-election lobbying and elections deserves more consideration. The possibility of voters taking later attempts at lobbying into account already when they vote can at least partly offset the effects of lobbying on policy. However, in my framework, with parties instead of citizen candidates as in Besley and Coate (2001), lobbying can still influence policy. In the basic model, where parties directly decide on policy, this is the case because lobbies de facto change the choice set of voters. In the alternative model of Section 4, where parties only choose candidates, and candidates with different preferences implement policy, lobbying is irrelevant for policy as long as the lobbies are not too influential and parties can choose freely among candidates. If, on the other hand, there are restrictions on the candidate pool of the parties, lobbying has an influence on equilibrium policy. However, when parties cannot choose freely, lobbying influence on equilibrium policy is not in the direction the interest group would like it to be, but instead makes the interest group worse off.

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