

Lobbying with conflicting interests: Norwegian local-central relations

LEIF HELLAND

Department of Public Governance, Norwegian School of Management (BI), Sandvika, Norway

Abstract. The costly lobbying model of Potters and van Winden is confronted with data on lobbying interactions between local assemblies and the national assembly in Norway. A total of 239 interactions are studied. Survey responses by a large number of voters and politicians, as well as registry data on fiscal standing, demographics and elections are utilised. Two of the main predictions of the costly lobbying model gain support in the data. The probability of obtaining substantial discretionary funding from the central level increases: with decreasing conflict of interest between local and central politicians; and with the lobbying cost incurred by local politicians. For a given conflict and cost, however, the rate of lobbying success depends crucially on structural characteristics of the municipality. In particular, the success rate is significantly higher for poor municipalities located in national electoral districts with many seats per voter than for rich municipalities located in districts with few seats per voter.

Introduction

The democratic ideal is ‘one man, one vote’. In the not so ideal real world, participation by special interests in democratic policy making is pervasive.¹ Special interests participate in a multitude of ways, although most commonly they do so by signalling that their favoured policy positions also benefit decision makers, or in short by ‘lobbying’ (see Grossman & Helpman 2001: 4). A thorough understanding of lobbying – how it is organised, when it is employed, by whom and with what success – is needed to understand decision making in real democracies. Game theory provides a coherent conceptual framework of lobbying. State-of-the-art models, however, make strong assumptions about players’ rationality. Disagreement prevails within the research community about what constitutes reasonable (and unreasonable) actions and beliefs.² These disagreements are unlikely to be resolved from within the theory itself. Confrontation of model predictions and data on lobbying behaviour seems necessary in order to make further progress. The model of Potters and van Winden (1992) has a prominent standing in the formal literature on lobbying.

A number of carefully designed experiments have been carried out in order to evaluate it, but no evaluation based on field data exists. This article starts filling this gap by utilising data on lobbying interactions between local politicians and Members of Parliament (MPs) in Norway.³

The article is organised as follows. In the next section, the Potters and van Winden model of lobbying is applied to the problem of bailout by discretionary funding in central-local interactions. A set of distinct hypotheses about observables follows from the model. In the third section, some extensions of the basic model are discussed briefly. It is argued that these extensions are unlikely to add empirical cutting power in the data at hand. The fourth section contains a survey of previous empirical research, while the fifth section presents the research design and describes the data. In the sixth section, hypotheses are confronted with data. The final section concludes the article.

Model

Consider a central authority that demands a certain quantity of services of a given quality from a municipality in exchange for a general grant. Participation by the municipality is non-voluntary. Any grant in excess of overall production costs is kept by the municipality. The central authority is uncertain about the municipality's true production costs. If the general grant does not cover overall production costs, the central authority may bail out the municipality by providing discretionary funding, or it may accept a local deficit.⁴ Local taxes are assumed to be fixed. To capture the strategic tensions, we apply the standard model of costly lobbying. The sender is a municipality while the receiver is the central authority. The game starts with nature drawing the type of municipality. The type is either t_1 that is able to satisfy demand for the given grant (ability to act), or t_2 that is unable to satisfy demand for the given grant (inability to act). The probability of t_1 is $(1-p)$ while the probability of t_2 is p . Thus, p represents the players' common prior belief that the municipality's production costs are not fully covered by the grant. Nature's draw is observed by the municipality, but not by the central authority. Thus the game is one of incomplete information. The municipality moves after nature, and may send a costly message ($m = c$) or no message at all ($m = 0$). In what follows, we understand lobbying as $m = c$. The central authority moves last. It can add discretionary funding to the municipality's budget (x_2), or not (x_1). The state-payoff space of the game is given in Table 1.

Assume that $p < (1-p)$, $0 < c < a_1 < a_2$ and $b_1 > b_2 > 0$. The inequality $p < (1-p)$ implies that the central authority believes it is more likely that grants will cover production costs than not. Since realistic matching of expenditure

Table 1. State-payoff space in the canonical lobbying game

Lobbying $m \in \{0, c\}$	x_1	x_2
	No discretionary funding	Discretionary funding
Ability to act: t_1 (1-p)	‘Local balance’ 0-m, b_1	‘False bailout’ a_1 -m, 0
Inability to act: t_2 p	‘Local deficit’ 0-m, 0	‘True bailout’ a_2 -m, b_2

and revenue is a fundamental principle in budgeting, and since the central authority (through legislation and resource allocations) determines grants, this seems to be a reasonable assumption. Positive lobby costs implies as a minimum that the local politicians’ time has an option cost. The relationship between local and central authority is hierarchical, and formal channels of communication exist. Access to central decision makers is therefore guaranteed. The hierarchical relationship presumably reduces lobby costs, making the assumption that $a_i > c$, ($i = 1, 2$) more plausible.

By a ‘true bailout’ we understand that the additional funding is required to provide a given production level. By a ‘false bailout’ we understand that the additional funding is not required to provide the given production level. It is assumed that a true bailout is worth more than a false one to the municipality. This seems reasonable in light of the principle of realistic budgeting applied at the local level.⁵ Some measure of common interest between the municipality and the central authority is therefore implied. Note that the conflict of interest between the players increases with increasing a_1 within the payoff bounds.

With the resulting bounds on payoffs and priors, the game has two equilibria. In the first equilibrium, the central authority ignores lobbying from the municipality. Since lobbying is ignored, a best reply from the municipality is to save the cost of lobbying. The resulting equilibrium is pooling, and since the relative expected payoff of choosing x_2 to x_1 is $\beta \equiv p \cdot b_2 / [(1-p)b_1] < 1$ the central authority chooses x_1 . The second equilibrium is semi-separating. Municipalities of type t_2 definitely lobby (i.e., with probability $P(\text{cl}_2) = 1$) while municipalities of type t_1 lobby with probability $0 < P(\text{cl}_1) \equiv \alpha < 1$. To cut down on false bailouts, the central authority randomises over its actions to make type t_1 municipalities indifferent between lobbying and not lobbying. This is achieved by choosing action x_2 with probability $r(x_2) = c/a_1$. A best response for municipalities of type t_1 is then to lobby with probability $\alpha = p \cdot b_2 / [(1-p)b_1]$. This produces an updated belief that makes the receiver indifferent between his or her actions.⁶ The total probability of lobbying in this equilibrium is

$P(c) = p \cdot [1 + (b_2/b_1)]$. Thus, the probability of x_2 following a lobby message is $P(x_2|c) = (p(c/a_1) \cdot [1 + (b_2/b_1)])$.

In the semi-separating equilibrium – as opposed to the pooling equilibrium – there is no need to specify out-of-equilibrium beliefs. Since out-of-equilibrium beliefs are controversial, this arguably makes the semi-separating equilibrium a stronger candidate for a behavioural prediction than the pooling equilibrium.⁷ For this reason, we focus on the semi-separating equilibrium in what follows. Five hypotheses suggest themselves:

H1: The probability of discretionary funding [$r(x_2)$] increases with increasing lobby cost (c).

H2: The probability of discretionary funding [$r(x_2)$] increases with decreasing utility of a false bailout (a_1).

H3: The probability of discretionary funding [$r(x_2)$] increases with increasing probability of lobbying ($P(c)$).

H4: The probability of lobbying [$P(c)$] increases with increasing prior probability of facing a municipality that is unable to act (p).

H5: The probability of lobbying [$P(c)$] increases with increasing utility of realistic budgeting (b_1).

Model extensions

The basic model can be extended in various directions.⁸ Allowing for endogenous lobby costs does not alter the semi-separating equilibrium qualitatively as long as costs remain between 0 and c . However, if no upper bound on lobbying costs is imposed, the result is a fully separating equilibrium where $a_1 + \varepsilon = c$, and ε is arbitrarily larger than zero (Potters & van Winden 1992). Rasmusen (1993) shows that including verification in the choice set of the receiver does not alter the conclusions of the model qualitatively.⁹ Sloof (1998) demonstrates that in repeated play where groups may influence the decision maker either by deeds (enforcing threats) or words (sending costly messages), deeds only occur in equilibrium if the group's reputation is low, although words may be necessary to maintain a reputation built up during past play. Sloof (1998) also demonstrates (somewhat unsurprisingly) that delegation in the presence of lobbying groups only occurs when the conflict of interest between politicians and bureaucrats is modest. In a slightly different set up, Austen-Smith and Wright (1992) show that a group disadvantaged by the policy the decision maker is predisposed to select has an incentive to lobby,

and for some parameters will lobby. In equilibrium, lobbying by a potentially disadvantaged group will for some parameters provoke counter lobbying by a potentially advantaged group as well.¹⁰

Is it necessary to control for these extensions in the confrontations with data? In the dataset to be analysed, the institutions of verification by the central authorities are constant over municipalities, and roughly unchanged over time.¹¹ For that reason, and since equilibria remain qualitatively unchanged by verification, measures of verification need not be included in the empirical analysis.

Without an upper bound on lobby costs, a municipality of type t_2 finds it worthwhile to separate by incurring lobbying costs arbitrarily above a_1 . Nonetheless, *H1* should hold weakly in a fully separating equilibrium in the sense that we would not expect increasing costs to *reduce* the frequency of bailouts. *H2* is also likely to hold, as for a given a_2 , reducing a_1 necessitates a smaller c to achieve separation, and thereby makes separation more attractive for a municipality of type t_2 . Accepting that separation is more likely to occur the more attractive it is leads to the conjecture that decreasing a_1 – all else constant – increases the probability of a bailout, which is the statement of *H2*. On the other hand, a fully separating equilibrium requires out-of-equilibrium beliefs. As noted above, such restrictions are controversial, and this favours the behaviour conjectured in the semi-separating equilibrium.

In the dataset, maximal discretionary funding amounts to a significant fraction of local revenues, and is also sizeable in absolute terms.¹² As a fraction of the total budget, however, discretionary funding is miniscule.¹³ The incentive to counter lobby from the perspective of social costs at large is therefore negligible. Furthermore, discretionary funding is provided as general fund financing and is therefore unlikely to generate action from specific policy opponents. On these grounds, it seems justifiable to rule out competitive lobbying. The formal delegation regime between elected politicians and bureaucracy at the central level has not undergone substantial changes over the time period in question. Furthermore, the relation between the legislative and executive branches of central government is regulated by parliamentarism, which arguably induces consistently low levels of conflict. For such reasons, no attempt is made to control for variation in the chains of delegation at the central level. Finally, one cannot rule out that some of the lobbying observed in the data is due to conservation of reputation for a willingness to enforce costly threats (deeds). Nevertheless, the scope for deeds is likely to be limited. Municipalities are subordinated hierarchically to the central government in a chain of command, and deeds may be blocked by decree from the central authorities. In sum, good reasons exist for focusing on the basic model in the empirical analysis.

Previous empirical research

The literature on lobbying contains numerous empirical contributions.¹⁴ Most studies relating lobby activity to policy outcomes find significant effects. Segal et al. (1992) relate senators' voting behaviour to the number of interest groups presenting testimony for and against in 16 different nominations to the United States Supreme Court. These numbers have significant effects. Caldeira and Wright (1998) relate the number of interest groups in direct contact with senators (or senators' staff), and find significant effects on senators' voting behaviour in three nominations. Wright (1990) relates committee voting behaviour to the number of opposing and supporting interest groups in direct contact with congressional committee members. Significant effects are demonstrated. Sørensen (2003) relates the provision of block grants and general grants to the number of direct contacts local politicians have with MPs and the central bureaucracy in Norway. Significant effects are documented. Schneider and Naumann (1982) relate public spending to the number of motions to the government and parliament from business, farmers and trade unions in Switzerland. The number of motions is significantly related to spending (negatively for business, and positively for farmers and trade unions). Balla and Wright (2001) relate the number of opposing and supporting interest group endorsements and congressional appointments to the National Drinking Water Advisory Council, and find significant effects. Carpenter (2002) relates the number of national and regional groups representing sufferers or advocates for specific diseases, and the budget of the largest group, to the approval time of the Food and Drug Administration for drugs relevant to the disease, and finds significant effects.

On the flip side, Quinn and Shapiro (1991) relate registered business lobbyists as a fraction of all registered lobbyists to tax policy in a time series design, but find no significant relationship. Fowler and Shakio (1987) relate the fraction of environmental group members in each state that contacts senators to the senators' voting behaviour on environmental bills, and find no significant relationship.

Few empirical contributions depart from explicit game models. A notable exception is Austen-Smith and Wright (1994) who test their model of counteractive lobbying on congressional roll call data, and find support for the equilibrium predictions.¹⁵ As mentioned, the standard lobbying model presented above has not yet been tested on field data, though a fair amount of experimental evaluation of the model has been carried out (Potters and van Winden 1996, 2000; cf. Camerer 2003: 427–430). Observed behaviour in the laboratory lends considerable support to the directional hypotheses for subjects in the role of sender type t_1 , and for subjects in the role of receivers

(though changes in behaviour are not as sharp as the model predicts). However, experiments also show that increases in a_2 increase the frequency of costly lobbying from subjects in the role of sender type t_2 . This is at odds with the model's predictions. In addition, subjects respond to history in a way indicative of learning in fictitious play (which is far from compatible with the sophisticated Bayesian learning that is the bed rock of the model). By and large, however, the standard costly lobbying model gains enough experimental support for it to remain an interesting candidate for empirical tests on field data.¹⁶

Research design and descriptive statistics

To test the model, we use a combination of hard data and survey data collected from Norwegian voters, municipalities and central authorities. The number of interactions analysed is 239: 119 interactions covering the local election period 1995–1998 and 120 interactions covering the local election period 1999–2003. The municipalities in the sample constitute a random, stratified, draw. Some 80 per cent of the municipalities in the sample have more than 5,000 inhabitants, compared to 59 per cent in the universe of Norwegian municipalities. Excluding Oslo, half of the Norwegian population lives in the 46 largest municipalities, all of which have more than 18,900 inhabitants. In the sample, roughly 49 per cent of the population lives outside of Oslo. The sample in this way reflects the kind of municipality in which *most people* live. In spite of small municipalities being under-represented, the sample deviates little from the universe with respect to political, economic and demographic variables.¹⁷

Variables describing the lobby cost incurred by the municipalities in these interactions were aggregated from a survey eliciting responses from a total of 5,115 representatives in 239 different local councils: 2,706 representatives from 119 councils in 1999 and 2,409 representatives from 120 councils in 2002–2003. Variables describing the conflict between local and central politicians were aggregated from national election surveys covering a total of 3,959 respondents: 1,949 in the national election survey of 1997 and 2,010 in the national election survey of 2001. Data on discretionary funding were provided by the Ministry of Local Government and Regional Development, while election data, data on local taxes, population demographics and a measure of the centrality of municipalities were provided by Statistics Norway.

Norwegian municipalities (numbering 433 altogether) are responsible for a number of public services.¹⁸ Tax revenues account for 45 per cent of municipal revenues. Most of the tax revenues are collected as a proportional payroll tax (i.e., as income taxes). The central government stipulates the minimum and

maximum tax rates. Currently all municipalities use the maximum level. Block grants and earmarked grants account for most of the other revenues, although a modest amount of discretionary funding is also available. The municipalities collect fee revenues, particularly in the infrastructure sector. Since municipalities are required to balance their budgets, the long-term impact of higher spending levels is higher taxes. Income tax rates are constrained, and infrastructure fees must be used to counterbalance spending increases. A block grant system has been designed to compensate small municipalities and counties for diseconomies of scale, and the grant system is also used as part of regional policy making.

Local elections to municipal and county councils are held every four years in between national elections. Local elections are based on proportional representation. Seats in local councils are distributed among political parties according to the relative numbers of votes obtained in multi-member constituencies. Local councils elect an executive board, which comprises senior members in proportion to the party seats in the council (the alderman principle).¹⁹ The executive board is, among other things, responsible for the preparation of budget proposals. Elections take place in a single constituency in every municipality. National representatives are elected from 19 constituencies. The national electoral system is geographically disproportional since the number of seats in the national assembly is not proportional to the number of voters in each constituency.

As dependent variable we construct a success variable related to the amount of discretionary funding obtained by the municipalities. Discretionary funding is measured in the final year of the local election period.²⁰ Lobbying success – the success in obtaining discretionary funding – is explained by the conflict of interest between the lobbyist (the municipality) and the political decision maker (the national assembly), and by the lobby cost incurred by the municipality. In other words, *H1* and *H2* in the lobby model are tested. Data allowing tests of *H3*, *H4* and *H5* is unavailable.²¹

Discretionary funding is formally obtained from the county governor. The county governor, however, is hierarchically subordinate to the Ministry of Modernisation, which in turn is a part of the executive controlled by the pivotal party in parliament. Lupia and Strøm (1995) argue that in a parliamentary system operating by the principle of no-confidence votes, such as the central level in Norway, the pivotal party may or may not be included in the governing coalition.²² The alderman principle practiced at the local level makes it difficult to identify a governing coalition at all.²³ To overcome these problems we define the pivotal party in both the local and central majority assembly as the median party of that assembly. In order to identify the median party, we need a common ordering dimension, the mean score of the party on

that dimension and the seat shares of parties represented in the different assemblies. An ordering dimension can be found in the national election surveys. Data from the national election survey of 1997 was used for the local election period 1995–1998, and data from the national election survey of 2001 for the local election period 1999–2003.²⁴ In this way we cover the last two years in each election period. In the national election surveys respondents are asked to indicate their political position on a left-right scale, as well as their party vote.²⁵ Using these responses and electoral data allow us to compute the positions of the party medians in the national and local assemblies on the left-right scale over the two periods.

Constructing a conflict measure on the median positions is *a priori* appealing; there is a strong theoretical argument favouring the median of an assembly as the appropriate expression of the aggregated preference of that assembly. It then follows naturally that the conflict measure should focus on the distance between medians. The absolute distance between the median party in a local assembly and the median party of the national assembly in a given period provides us with a measure of political conflict between the relevant pivotal parties on the dominant dimension of politics. To make the measure comparable over electoral periods, the left-right dimension was rescaled to a 10-point scale, from 0 far left to 9 far right.

A crucial question is whether this conflict measure corresponds to the kind of conflict relevant to the lobbying model? We think the answer is ‘yes’, for the following reason. In the lobby model the conflict of interest increases with a_1 (the value to the municipality of a false bailout). Provision of funding and allocation of responsibilities to the local authorities is the prerogative of the central authorities, and ultimately hinges on the preferences of the pivotal party in the national assembly. If a municipality requests discretionary funding, this testifies to a lack of realistic budgeting by the central authorities. Ultimately, seeking additional funding entails criticising the national pivotal party for unrealistic budgeting (claiming under funding or overburdening of local majorities). Seeking additional funding on false premises is presumably less costly the less in agreement with the national pivotal party is the local pivotal party.

The lobby costs incurred by the municipalities are calculated from the survey of local representatives, where the question of relevance was:

Many representatives to the council are of the opinion that their own municipality does not obtain the required amount of resources from the central authorities. Have you personally, in the present legislative term, made contact with representatives to the national assembly in order to influence the resource situation of your own municipality, and if so how often have you made such contacts?²⁶

For the municipalities included in the survey, a variable of incurred lobby costs was constructed by dividing the average response of members in a given council by the number of members belonging to that council. Thus the measure of lobby costs is the average number of lobby contacts per council member.

One may object that the kinds of costs incurred by making contact are bound to be low, maybe too low to matter. This, however, misses the point. Contacting parliament with the intent of obtaining funding takes time, and as long as time is a scarce resource, contacts carry a cost (given by the optional value of time). It may be that such costs are moderate in absolute terms. In the model, however, the significance of costs is measured relative to the benefits of funding and the conflict of interest. Since political conflicts are moderate and discretionary funding small, moderate costs may be enough. Whether they are high enough is something we will let the data decide.

One may also object that costs of contacting parliament are not the only relevant lobby costs. This is certainly a valid objection, but the only costs the surveys provide information about are costs of contacting parliament. Using register data to construct other kinds of cost measures could provide an avenue for an extended cost concept. The problem, of course, is that such costs would not be explicitly linked to the lobby decision in question, in the way that our contact costs are. For this reason, we have decided to focus on contact costs exclusively.

As mentioned, elections to the Norwegian national assembly are geographically disproportional. This creates incentives for tactical redistribution towards districts with many seats per voter.²⁷ To control for such effects, the number of seats per 1,000 voters of the national constituency where the municipality belongs is included. We also expect redistribution in the direction of poorer municipalities due to social preferences.²⁸ To control for this, a variable measuring the sum of local income taxes and local property taxes per capita is included.

Finally, we control for differences in the local demand structure facing the different municipalities by including a centrality index, population size and the population fractions below 5 years of age, 5–15 years of age and over 80 years of age. The centrality index varies between 0 for periphery and 7 for big city. The use of centrality, population and demographics as controls for demand characteristics is common in studies of Norwegian local public finance (e.g., Rattsø 2004; Sørensen 2003). As pointed out above, the control for population has an additional rationale given by the stratified random draw of the sample of municipalities in the dataset.

The lobby model contains statements about the *probability* of success in lobbying. To account for this, the dependent variable was categorised as a dummy, assigning value 1 to discretionary funding of 100 NOK per capita or more (a success), and value 0 otherwise (a failure). The cut point is set well

above the mean of the sample, giving force to the prefix ‘substantial’ used before discretionary funding. The analysis is not sensitive to moderate variations in this cut point.

We note (Table 2) that the conflict measure has low variance and mean. Utilising this measure therefore amounts to lining up a ‘least likely test’ of the relationship between political conflict and lobby success. The low mean and variance indicate that political conflicts are moderate in our data. A question is, of course, how moderate? The average distance between the medians of the conservative party and the labour party – a substantial conflict in political terms – is 1.6 points on the left-right scale. The mean deviation is 0.55 (Table 2). Thus, the mean deviation is a third of the conflict between the labour and conservatives. It is largely a matter of taste whether we call this a small or moderate conflict.

Theory informs us that the magnitude of conflict must not pass a threshold value determined relative to the lobby costs, if lobbying is going to succeed. How do we identify this threshold value? We propose to let data solve the problem. Based on a sensitivity analysis, the dummy for heterogeneity was given the value 1 (for significant conflict) if the absolute value of the deviation was more than one point on the left-right scale (heterogeneity), and 0 other-

Table 2. Descriptive statistics, periods 1999–2003 and 2004–2007

	Minimum	Maximum	Mean	Standard deviation
N	239	239	239	239
Discretionary funding (1,000 NOK per capita)	0.00	6.27	0.67	0.81
Dummy discretionary funding (≥ 100 NOK per capita)	0.00	1.00	0.87	0.34
National representatives (per 1,000 voters)	0.05	0.11	0.07	0.01
Local tax (1,000 NOK per capita)	7.40	23.66	11.94	2.33
Continuous conflict measure	0.00	5.32	0.55	0.87
Dummy: High conflict level (heterogeneity)	0.00	1.00	0.23	0.42
Number of local representatives	13.00	85.00	34.77	13.11
Contacts per local representative	0.00	0.20	0.05	0.03
Centrality index	1.0	7.0	4.4	2.4
Population in 1,000s	1.2	231.0	15.9	15.9
Fraction ≤ 5	0.05	0.11	0.08	0.08
Fraction 6–15	0.10	0.17	0.13	0.13
Fraction ≥ 80	0.01	0.08	0.07	0.07

wise (homogeneity). A conflict of one point is roughly twice the size of the mean conflict in the dataset. It also turns out that the coefficient of this dummy is rather insensitive to the exact placement of the cut point in the neighbourhood of a deviation equalling unity.²⁹

The underlying self-placement on the left-right scale, and therefore also the conflict measure, is bound to exhibit some amount of measurement error. Furthermore, the expectation is that in a system with overlapping dimensions of political conflict, such as the Norwegian system, conflict on a single dimension has to be *pronounced* in order to produce lack of trust on a more general basis.³⁰ The dummy for substantial conflict may help mitigate these problems somewhat. In the regressions, a continuous conflict variable (absolute deviations of medians) is reported alongside the dummy for heterogeneity (based on a cut point of one point deviation between medians).

Table 2 provides the relevant descriptive statistics. The Potters and van Winden model predicts a higher frequency of lobbying, and a higher probability of success, from homogeneous groups than from heterogeneous groups. Merely correlating a measure of lobby investments (such as number of contacts, level of lobby expenditures and the like) with policy outcomes is then likely to overstate the effect of lobbying, making an instrumental-variable approach necessary (Sloof 1998: 19; Potters & van Winden 1996; cf. Sørensen 2003). However, in the analysis that follows, a representative sample of local politicians report their number of lobby contacts, whether these are zero, low or high. Thus, the data is not contaminated by self-selection due to expected lobby success (in opposition to most of the studies listed earlier). In addition, conflicts of interest between lobbyist and decision maker is explicitly controlled. Due to this, negative bias stemming from problems of endogeneity should not be expected, and a single equation design seems appropriate.

Confrontation of model and data

Table 3 present the results in the form of logistical regressions. As can be seen, the political variables have signs as expected, and are significantly different from zero at conventional levels. In accordance with the lobby model, the probability of successful lobbying increases with increasing lobby costs, and decreases with increasing conflict of interest between sender and receiver. We observe that the continuous measure of political conflict (Model 5) has the right sign in controlled regression, but is far from significant at conventional levels. Focusing on the dummy formulation of *significant* political conflict instead (Models 3 and 4), obtains the right sign and statistical significance at conventional levels.

Table 3. Lobbying the central authorities for discretionary funding: logistical regression, logit coefficients (p-values)

	Model 1	Model 2	Model 3	Model 4	Model 5
LN[Pr(DF \geq 100 NOK per capita)/ Pr(DF < 100 NOK per capita)]					
Constant	16.07 (0.00)	10.78 (0.02)	10.12 (0.03)	9.56 (0.04)	10.12 (0.03)
Centrality	-0.12 (0.34)	0.09 (0.58)	0.13 (0.45)	0.20 (0.26)	0.16 (0.36)
Population	0.00 (0.65)	0.00 (0.89)	0.00 (0.86)	0.00 (0.84)	0.00 (0.91)
Fraction \leq 5	-177.53 (0.00)	-182.14 (0.00)	-194.15 (0.00)	-183.15 (0.00)	-174.95 (0.00)
Fraction 6-15	62.16 (0.00)	66.16 (0.00)	66.97 (0.00)	54.40 (0.02)	54.84 (0.02)
Fraction \geq 80	-79.49 (0.00)	-72.58 (0.00)	-78.08 (0.00)	-85.97 (0.00)	-81.38 (0.00)
Local tax per capita	-0.30 (0.00)	-0.26 (0.01)	-0.18 (0.09)	-0.21 (0.07)	-0.27 (0.02)
National representatives per 1,000 voters	-	50.75 (0.07)	64.73 (0.03)	70.55 (0.02)	59.28 (0.06)
Dummy: Conflict level	-	-	-1.00 (0.08)	-1.10 (0.06)	-
Continuous conflict measure	-	-	-	-	-0.20 (0.67)
Contacts per local representative	-	-	-	31.11 (0.02)	7.92 (0.01)
χ^2	44.76 (0.00)	48.30 (0.00)	51.32 (0.00)	59.34 (0.00)	56.14 (0.00)
Percentage correctly predicted	89.90	89.90	89.90	90.30	90.3
N	239	239	239	239	239

In what follows we discuss the dummy formulation explicitly since the theory predicts that the effect of conflict level on lobbying success should be a step-function, not a continuous function. Since we have let the data determine the cut point of interest on the conflict variable, and since this procedure might be questionable, we also bear in mind that the continuous version of the conflict measure does *not* have a significant effect on lobbying success, and that our results for this reason should be interpreted with some care.

As can be seen, tactical redistribution is at work by channelling discretionary funding towards municipalities belonging to counties with large expected payoffs in terms of voter support (counties with many parliamentary seats per voter). On the other hand, a social preference motive for distributive outcomes is also at work, channelling funds towards poorer municipalities. The p-values of the variables for distributive motives are largely unaltered by inclusion of the lobby variables, and the model fit is acceptable judged by the Chi-square statistics of the model and the percentage of correctly predicted observations.

Figures 1, 2 and 3 illustrate the interactions between the variables of the lobby model, and the motives for distribution. The probability curves in these figures are based on the estimates in Model 4 (Table 3), and are comparable.³¹

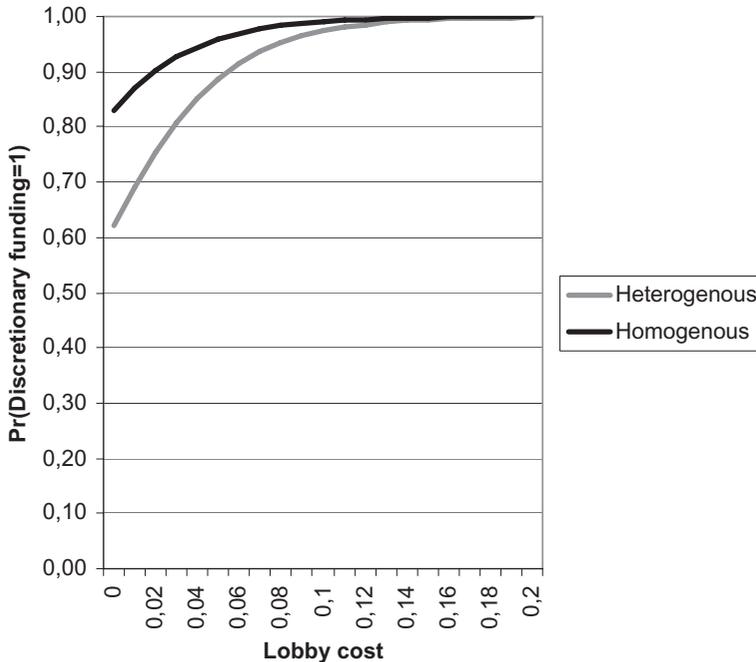


Figure 1. Talk, average tax income per capita (11 940 NOK) and average number of representatives per 1,000 voters (0.07).

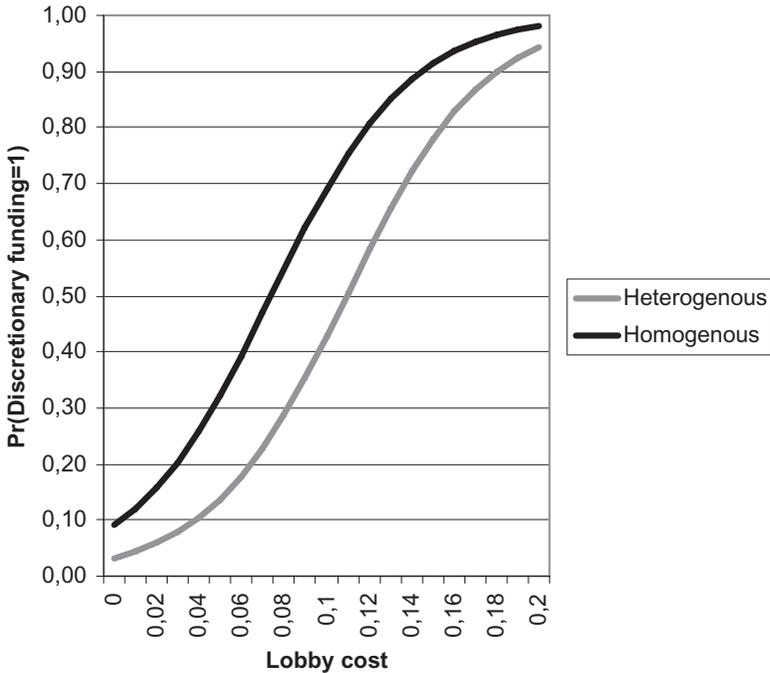


Figure 2. Scream, maximum tax income per capita (23 660 NOK) and minimum number of representatives per 1,000 voters (0.05).

Figure 1 shows the probability curve for a municipality with average tax income per capita (11,940 NOK), belonging to a county with an average number of national seats per 1,000 voters (roughly 14,200 voters behind every representative). With no investments in lobbying, the probability of substantial discretionary funding is 83 per cent for a local median party in broad agreement with the national median party, while the corresponding probability for a local median party in significant disagreement with the national median is 62 per cent. Investing in lobbying increases the probability of substantial funding, but at a diminishing rate. The probability of substantial funding increases faster for a local median in broad agreement with the national median than it does for one in significant disagreement. For an investment equal to the maximal investment observed in the dataset,³² conflicts of interest between the local and national median do not matter and substantial discretionary funding is secured.

Figure 2 shows the probability curve for a municipality with maximal tax income per capita (23,660 NOK), belonging to a county with a minimal number of national seats per 1,000 voters (roughly 20,000 voters behind every representative). As is evident, the rich and under-represented municipality must invest much more in lobbying than the average income, averagely rep-

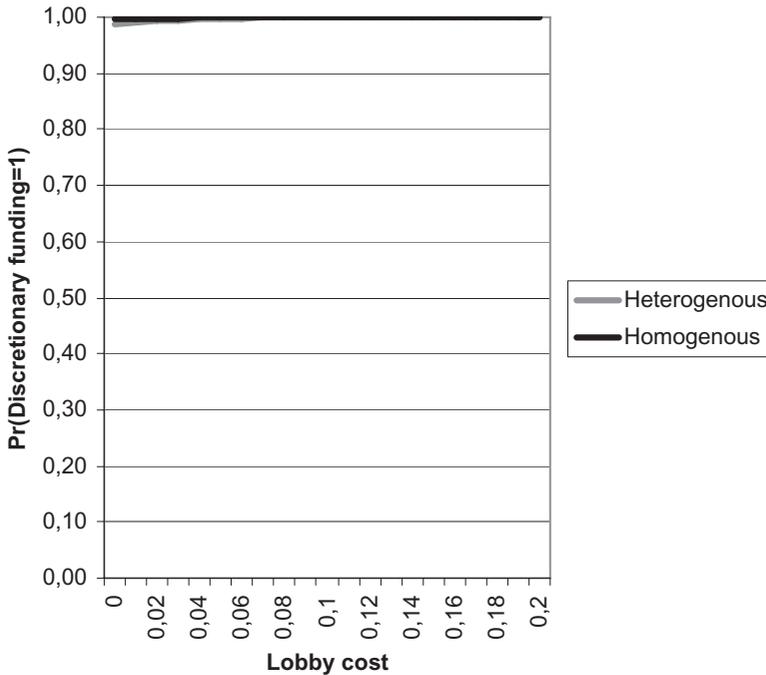


Figure 3. Whisper, minimum tax income per capita (7 400 NOK) and maximum number of representatives per 1,000 voters (0.11).

resented municipality in order to achieve the same probability of substantial discretionary funding. The median party in the rich under-represented municipality has a 29 per cent chance of obtaining substantial funding if it is in broad agreement with the national median party and invests nothing in lobbying (54 percentage points less than a comparable median party in the averagely rich, averagely represented municipality). If the median party in the rich under-represented municipality is in significant disagreement with the national median and invests nothing, its chances of substantial funding drop to a meagre 12 per cent (51 percentage points below that of a comparable median party in the averagely rich income, averagely represented municipality). Lobbying nonetheless increases the probability of obtaining additional funding for both high and low conflict types, but to offset the differences between types, investments need to be much higher than in the averagely represented, averagely rich municipality. The median of the rich under-represented municipality needs to *scream*, rather than *talk*, particularly if it is in high conflict with the national median.

Figure 3 shows the probability curve for a municipality with minimal tax income per capita (7,400 NOK), belonging to a county with a maximal number

of national seats per 1,000 voters (roughly 9,400 voters behind every representative). As is evident, the payoff from investing in lobbying is almost zero for the poor and over-represented municipality. Substantial discretionary funding is forthcoming with probability bordering on one for both high and low conflict medians in poor and over-represented municipalities, even if no contact is taken with national representatives. In the absence of lobby investments, the probability that a poor and over-represented municipality obtains substantial funding is 70 percentage points higher than that of a rich and under-represented municipality, provided both local medians are of the high conflict type. If local medians are of the low conflict type, the edge of the poor and over-represented municipality is a full 88 percentage points. The median of the poor over-represented municipality needs merely to *whisper* to obtain additional funding.

Conclusions

The standard model of costly lobbying predicts that the probability of a favourable response by political decision makers increases with the lobbyist's investment in the outcome, and with decreasing conflict of interest between lobbyist and politician. In this article these predictions are tested on a dataset containing 239 lobby interactions between local and national medians in Norway. The data are based on the aggregation of survey responses from over 9,000 voters and politicians, as well as electoral, demographic and budget data. The predictions of the standard model of lobbying fare well in these data, but the predictions are contingent on the incentive the national median has to redistribute resources. Data indicates that if a local median party does not deviate 'too much' from the national median party, it may capture substantial discretionary funding by investing in lobbying . . . , and more so the more it invests. This conclusion rests on an inductive determination of the cut point of 'too much'. Since a continuous measure of conflict is not significantly related to lobby success, the robustness of this relationship may nevertheless be questioned.

A qualifying condition is that the national median party's tactical and social incentives to redistribute must not work too aggressively against the local median party. In Norway, the richer municipalities are on average located in under-represented counties, while the poorer municipalities on average are located in over-represented counties. On average, therefore, tactical and social incentives for redistribution interact. For over-represented and poor municipalities this makes lobbying almost superfluous. For under-represented and rich municipalities it makes lobby investments a low-yield activity, particularly so if the local party median deviates significantly from the party

median in the national assembly. The lesson seems to be that lobbying is embedded in a larger political game that needs to be taken into account when assessing the effects of lobbying.

Acknowledgements

Valuable comments from Rune J. Sørensen, Lars C. Monkerud and the participants in the panel on 'Small N Problems' at the ECPR General Conference in Budapest, September 2005, are gratefully acknowledged. Funding by the Research Council of Norway project on trust between local and central levels of administration is appreciated.

Notes

1. See, e.g., the survey of work on interest group activity in the United States by Grossman and Helpman (2001: 1–13) and Mahoney (2004) with references for the study of interest group activity in the EU.
2. Equilibrium play often needs to be supported by sophisticated and controversial out-of-equilibrium beliefs. More generally, modern microeconomic theory questions the Bayesian-Nash approach to decision making and learning as well as the use of utility functions that are not other-regarding in some sense.
3. The notion of strategic interactions between different levels of government is widely used in political economy models. In such models, elected representatives at the various levels are commonly the decision makers (e.g., Persson & Tabellini 2000: Chapter 7). Such is the case in models of bailout, where it is assumed that local assemblies lobby central powers for various benefits, including additional funding (see, e.g., the contributions in Rodden et al. 2003). A sharp distinction between party-internal and party-external communication is not made. It is the communication between levels of governments that are highlighted.
4. The term 'bailout' is used in the conventional way.
5. This, in its turn, may be seen as an underlying aversion to uncertainty.
6. The updated belief is given by Bayes rule: $P(t_2|c) = P(c|t_2) \cdot P(t_2) / [P(c|t_2) \cdot P(t_2) + P(c|t_1) \cdot P(t_1)] = p / [p + \alpha \cdot (1-p)]$. Randomising in order to produce indifference in the receiver, senders of type t_1 sets α so that $P(t_1|c) \cdot b_1 = P(t_2|c) \cdot b_2$. Simple substitution shows that this requires $\alpha = p \cdot b_2 / [(1-p) \cdot b_1]$. As noted, a best response by the receiver is to set $r(x_2) = c/a_1$.
7. There is no room for the totally unexpected to happen in the semi-separating equilibrium (both lobbying and no lobbying happens with positive probabilities). In the pooling equilibrium no lobbying should occur, thus beliefs in the event of observed lobbying must be specified. It has been shown that the pooling equilibrium can be supported by some, but not all, 'reasonable' restrictions on out-of-equilibrium beliefs. (E.g., behaviour in the pooling equilibrium is supported by 'intuitive' and 'divine' out-of-equilibrium beliefs, but not by, say, 'universally divine' or 'consistent forward induction' beliefs. For

- more detail, consult Potters and van Winden (1992) and Sloof (1998: 53). For experimental studies of refinements on out-of-equilibrium beliefs, see the survey in Camerer (2003: 411–427)).
8. For additional extensions of costly signalling games, see, e.g., Banks (1991) with references, and the discussion in Camerer (2003: 408–464).
 9. In general, the presence of a verification possibility induces more truth telling in equilibrium, and allows the receiver to shift a larger fraction of the information cost to the sender.
 10. The model necessitates a verification option for the receiver.
 11. The single major change over the time period in question is the establishment of a register in 2001. Municipalities with specific fiscal problems are registered here. The consequence of being registered is that fiscal dispositions have to be approved by the county governor before the municipality can execute them. The municipality drops out of the register after the fiscal problems are solved. Data from the register for the years 2001–2004 were collected, and various variables utilising the register data were controlled for in the empirical analysis of the article. No pattern was revealed, and variables based on the register are not reported.
 12. Discretionary funding as percentage of total revenues (general grants + earmarked grants + income tax + property tax) has a maximum of 15 per cent and a mean of 2 per cent in the set. Some 94 per cent of the municipalities have discretionary funding at 5 per cent or less of total revenues. The maximum amount of discretionary funding in the set is 6.270 NOK per capita, and the mean in the set is 670 NOK per capita.
 13. In 2003, discretionary funding amounted to 1.2 per cent of total block transfers to the municipalities.
 14. Parts of this section draw on Sloof (1998: 18–20).
 15. The econometric design and the results were heavily criticised by Baumgartner and Leech (1996a, 1996b). Austen-Smith and Wright (1996) respond to the critique and provide additional data in support of the counteractive lobby model.
 16. This can be seen as an instance of Gary Bolton's hothouse proposition, where models are shaped in interaction with laboratory testing: 'The models that survive this process are then ready to be tested outside the hothouse, in the field, the ultimate arbiter of validity' (Bolton 1998: 258).
 17. For further documentation, see Monkerud (2003). A weighting scheme that reflects the stratification of the sample was tried out. Unsurprisingly, this did not change the conclusions of the article. Results from un-weighted analysis are therefore reported.
 18. The most important ones include the establishment and operation of kindergartens, primary schools, health centres/primary health services, social welfare, culture (cinema, sports, music schools, etc.), some clerical functions, communication (municipal roads), infrastructure services (water works, sewers, refuse collection and disposal), planning and construction, industry development, and operation of public utilities and tax collection.
 19. Exceptions are Oslo and Bergen, which operate on a parliamentary principle.
 20. The reason for choosing the final year becomes evident by looking at the wording in the survey question tapping the local representatives lobby contracts, which is reproduced in the main text.
 21. An attempt was made to explain the lobby frequencies of municipalities by constructing an *a priori* probability of true bailout by utilising the register for fiscal problems established in 2001 (see Note 12). This attempt did not lead to significant results.

22. This does not detract from the fact that almost all Norwegian governing coalitions in the postwar era have included the median (= the pivotal) party of the national assembly.
23. At least this is true for the majority of situations where no single party obtains a majority in the local elections.
24. A weighted average of election surveys enveloping the local election period was also tried. Using a weighted average does not alter results qualitatively.
25. One often talks about the left-hand and the right-hand side of politics: Where would you place your self in politics on a scale from 0 to 10 where 0 is far left and 10 is far right?
26. The options were to tag off in one out of four categories: More than 7 times; Between 3 and 6 times; Between 1 and 5 times; Not at all.
27. The effect of such incentives on resource allocation has been demonstrated in an exchange model (Sørensen 2003), as well as in a probabilistic voting model (Helland et al. 2005). The final model extends the tactical budgeting logic of electoral competition (Dixit & Londregan 1996; Cox & McCubbins 1986; Lindbeck & Weibull 1987) to account for geographical over- and under-representation.
28. The social preference concept is wide, incorporating intention-based as well as outcome-based preferences. What we have in mind is theories such as those presented by Bolton and Oxenfels (2000) and Fehr and Schmidt (1999) postulating that individuals (and by aggregation, collectives) have preferences over pecuniary gains as well as the distributive outcome.
29. Based on Model 4 (Table 2) the cut point of the dummy for heterogeneity was varied between 0.75 and 1.25 with increments of 0.05, the resulting coefficient values were: -0.2, -0.2, -0.2, -0.15, -1.1, -1.1, -1.1, -1.1, -1.3, -0.6, -0.6, with corresponding p-values of 0.7, 0.7, 0.7, 0.8, 0.06, 0.06, 0.06, 0.06, 0.06, 0.03, 0.6, 0.5). The other independent variables in Model 4 (Table 2) were largely unaltered by this. As can be seen, the sensitivity analysis indicates a critical range of conflict around an absolute deviation of unity.
30. Aardal (2003) documents the overlapping dimension structure of Norwegian politics.
31. Control variables are held at their sample means.
32. Corresponding to a situation where every fifth local representative contacts national representatives with the intention of obtaining additional funding.

References

- Aardal, B. (2003). *Velgere i villrede*. Oslo: N.W. Damm & Sønn.
- Austen-Smith, D. & Wright, J. (1992). Competitive lobbying for a legislators vote. *Social Choice and Welfare* 9: 229–257.
- Austen-Smith, D. & Wright, J. (1994). Counteractive lobbying. *American Journal of Political Science* 38: 25–44.
- Austen-Smith, D. & Wright, J. (1996). Theory and evidence for counteractive lobbying. *American Journal of Political Science* 40: 543–564.
- Balla, S. & Wright, J. (2001). Interest groups, advisory boards and congressional control of the bureaucracy. *American Journal of Political Science* 45: 799–812.
- Banks, J. (1991). *Signalling games in political science*. Chur: Harwood Academic.
- Baumgartner, F. & Leech, B. (1996a). The multiple ambiguities of ‘counteractive’ lobbying. *American Journal of Political Science* 40: 521–542.
- Baumgartner, F. & Leech, B. (1996b). Good theories deserve good data. *American Journal of Political Science* 40: 565–569.

- Bolton, G. (1998). Bargaining and dilemma games: From laboratory data towards theoretical synthesis. *Experimental Economics* 1: 257–281.
- Bolton, G. & Oxenfels, A. (2000). ERC: A theory of equity, reciprocity and competition. *American Economic Review* 90: 166–193.
- Caldeira, G. & Wright, J. (1998). Lobbying for justice: Organized interests, Supreme Court nominations and the United States Senate. *American Journal of Political Science* 42: 499–523.
- Camerer, C. (2003). *Behavioral game theory: Experiments in strategic interaction*. Princeton, NJ: Princeton University Press.
- Carpenter, D. (2002). Groups, the media, agency waiting costs and FDA drug approval. *American Journal of Political Science* 46: 490–505.
- Cox, G. & McCubbins, M. (1986). Electoral politics as a redistributive game. *Journal of Politics* 48: 370–389.
- Dixit, A. & Londregan, J. (1996). The determinants of success of special interest groups in redistributive politics. *Journal of Politics* 58: 1132–1155.
- Fehr, E. & Schmidt, K. (1999). A theory of fairness, competition and cooperation. *Quarterly Journal of Economics* 114: 817–868.
- Fowler, L. & Shakió, R. (1987). The grass roots connection: Environmental activists and Senate roll calls. *American Journal of Political Science* 31: 484–510.
- Grossman, G. & Helpman, E. (2001). *Special interest politics*. Cambridge MA: MIT Press.
- Helland, L., Sørensen, R. & Boge, K. (2005). *A politico-economic model of road investments in Norway: Seat maximizing parties, probabalistic voting and disproportional geographical representation*. Working Paper. Sandvika: Norwegian School of Management. Available online at: <http://home.bi.no/a0111218/roadfunding.pdf>.
- Lindbeck, A. & Weibull, J. (1987). Balanced-budget redistribution as an outcome of political competition. *Public Choice* 52: 272–297.
- Lupia, A. & Strøm, K. (1995). Coalition termination and the strategic timing of elections. *American Political Science Review* 89: 648–665.
- Mahoney, C. (2004). The power of institutions: State and interest group activity in the European Union. *European Union Politics* 5: 441–466.
- Monkerud, L. (2003). *Undersøkelse av lokalpolitikere og rådmenn 2002/2003. En redegjørelse for undersøkelsens relevans, gjennomføring og datakvalitet – samt noen hovedtendenser*. Discussion Paper 3/2003. Sandvika: Norwegian School of Management. Available online at: <http://home.bi.no/a0110709/dp2003-03.pdf>.
- Persson, T. & Tabellini, G. (2000). *Political economics: Explaining economic policy*. Cambridge, MA: MIT Press.
- Potters, J. & Winden, F. van (1992). Lobbying and asymmetric information. *Public Choice* 74: 269–292.
- Potters, J. & Winden, F. van (1996). Comparative statics of a signalling game: An experimental study. *International Journal of Game Theory* 25: 329–353.
- Potters, J. & Winden, F. van (2000). Professionals and students in a lobbying experiment. *Journal of Economic Behavior and Organization* 43: 499–522.
- Quinn, D. & Shapiro, R. (1991). Business and political power: The case of taxation. *American Political Science Review* 85: 851–874.
- Rasmusen, E. (1993). Lobbying when the decisionmaker can acquire independent information. *Public Choice* 77: 899–913.
- Rattsø, J. (2004). Fiscal adjustments under centralized federalism: Empirical evaluation of the response to budgetary shocks. *FinanzArchiv* 60(2): 240–261.

- Rodden, J., Eskeland, G. & Litvack, J. (eds) (2003). *Fiscal decentralization and the challenge of hard budget constraints*. Cambridge, MA: MIT Press.
- Schneider, F. & Naumann, J. (1982). Interest groups in democracies – how influential are they? An empirical examination for Switzerland. *Public Choice* 38: 281–303.
- Segal, J., Cameron, C. & Cover, A. (1992). A spatial model of roll call voting: Senators, constituents, presidents and interest groups in Supreme Court confirmations. *American Journal of Political Science* 36: 96–121.
- Sloof, R. (1998). *Game-theoretic models of the political influence of interest groups*. London: Kluwer Academic.
- Sørensen, R. (2003). The political economy of intergovernmental grants: The Norwegian case. *European Journal of Political Research* 42: 163–195.
- Wright, J. (1990). Contributions, lobbying and committee voting in the US House of Representatives. *American Journal of Political Science* 84: 417–438.

Address for correspondence: Leif Helland, Department of Public Governance, Norwegian school of Management (BI), Box 580, 1302 Sandvika, Norway. Tel.: +47 67 55 72 14; Fax: +47 67 55 77 80