Trading Interests: Legislature Size, Constituency Size and Government Spending in a Panel of Countries

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REPRESENTING INTERESTS: LEGISLATURE SIZE, CONSTITUENCY SIZE AND GOVERNMENT SPENDING IN A PANEL OF COUNTRIES

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Keywords: Legislature size, constituency size, lobbies, interest groups, government spending

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Representing Interests: Legislature Size, Constituency Size and Government Spending in a Panel of Countries

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Abstract

In this paper we study the relationship between legislature size and constituency size with respect to government spending. According to the theory, legislature size has an indefinite effect on government spending because logrolling and transaction costs may have a canceling effect. In turn, smaller constituency size is predicted to decrease government spending, because of homogeneity of interests and low monitoring costs. We use a panel of 23 OECD countries over the period 1975-1996 controlling for some institutional features that differ among these countries. We find that legislature size is a more powerful than constituency size in explaining the size of the government. Consequences for lobbies' behavior are drawn.

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> The foregoing discussion on the size of legislatures is long on problems and short on solutions. The problems are commended to economists, not only because of their obvious political importance, but also because these problems in general have counterparts in the organization of economic activity
>
> G. Stigler (1976, 31)

1. Introduction

According to the interest-group theory of government, in legislatures politicians act as brokers among to various groups in the economy by supplying different pieces of legislation. Lobbyists play an important role in this trading by creating issues, contacting politicians, making possible cross-voting between several laws and interests. The interest-group theory of government assumes that the vast majority of governmental activities involve transfers of resources among citizens. Some of them will ultimately result as net winners in this process, others will be net losers. This circumstance is based upon the fact that information is dispersed among interest-groups, politicians, and lobbyists, and exchanging information implies transaction costs. No Pareto-inferior policy will be adopted where a unanimity rule controls political decisions, and voting is costless. Moving away from this idealized world, wealth-transfer decisions become central: majority rule will raise their amount because it lowers the costs of influencing collective decisions. At the same time, the cost of information is twofold: on the one hand each decision maker has to uncover the effects of an issue on his personal wealth, on the other hand he has to identify other decision makers that will join him on the issue. Of course winners and losers change from issue to issue under the constraint of finding a majority in committees and in chamber(s). Legislatures resolve the conflict between different issues acting as place "to clear the market for wealth transfers" (Shughart and Tollison, 1986).

Previous studies have concentrated on the US States because of the homogeneity of the institutions and their rules. To the best of our knowledge, in this paper we provide the first cross-country comparisons of the effects of legislatures and constituency size on government spending. In doing so we control for some features that characterize different institutional systems, namely presidential/parliamentarian systems and

electoral rules.[1] In this way we link this literature on interest groups that has sprung in the '70s and the '80s with recent work in comparative politics as surveyed by Persson and Tabellini (2000 and 2003).

The paper is organized as follows: in Section 2 we review the theory and the empirics of legislature and constituency size and its relationship with government spending. Section 3 presents the variables used and the data in the panel estimation, while Section 4 presents the relevant results. Section 5 concludes.

2. The theory and the empirics of legislature size

Stigler (1979) models state legislatures as responsive to desires of different group interests. Representatives are chosen by these groups on the basis of the value that the group assigns to the particular policy in which they are interested. These values are obtained by summing and discounting the net benefits of any particular action over the potentially benefited people. These valuations have a probability density equal to $f(V_j) = e^{-v}$. Usually many of these evaluations are almost zero, while a few have a large value. These interests are those that select representatives. These valuations are perceived as demand for legislation. However, this does not imply that each interest group has its own representatives: some groups with similar interests may share some representatives and the distribution of values may be such that the organization costs to a group of voters will exceed the discounted present value of representation. Therefore, these groups do not find it efficient to seek representation. Stigler assumes that legislative size – for both houses - is a function of population, the rate of change in population, and population density.[2] The expectations are that larger populations lead to more demand for legislators, while larger rates of change and higher population density involve smaller legislatures. These variables are statistically significant with exception of population density for two cross-section samples: 49 US States and 52 countries.

McCormick and Tollison (1981) formalize the problem of an interest group that decides how much to spend on buying legislative influence, and its agent (lobby)

[1] Throughout the paper we interchangeably use the words house, lower house and lower chamber on the one hand, and senate, upper house and upper chamber on the other hand.
[2] There is also a dummy variable for New England, which has an exceptionally large legislature.

must decide how to allocate this budget (E) across the two houses of the legislature to maximize the organization's return from legislative influence. The organization knows that the votes (V) it will receive in the two houses are function of its expenditure in each house (E^h and E^s), and the size of each house (h and s), therefore: $V^h = V^h(E^h, h)$ and $V^s = V^s(E^s, s)$. The problem faced by the interest group is to maximize the net returns (Y_n) from legislative influence:

$$Y_n = Y - E, \tag{1}$$

$$E = E^h + E^s, \tag{2}$$

$$Y = Y(V^h, V^s, L, W, P), \tag{3}$$

$$V^h = V^h(E^h, h), \tag{4}$$

$$V^s = V^s(E^s, s), \tag{5}$$

where W is wealth of the community, P is population, and L is legislative size.[3] Larger legislature size (defined as the sum of lower and upper house) has an indefinite effect on government spending. On the one hand, an increase in the number of legislators results in lower cost of lobbying because of additional competition between vote suppliers.[4] Furthermore, when the total number of legislators increases, there are potential gains from increased specialization of labor in the committee apparatus. On the other hand, as long as the number of legislators increases, the transaction costs needed to find a viable majority of votes are also increased. Eventually, the problem is an empirical one.

Weingast *et al*. (1981) provide a formal model on the size of legislatures, in which they consider each chamber in itself, not the overall number of legislators. Let $b_i(x)$ be the benefit of spending x dollars in district i to the constituents of legislator i, and let $c(x)$ be the cost of spending. The efficient level of spending is such that $b'_i(x) = c'(x)$. If there are n districts and taxes are spread evenly across districts, the legislator i bear $(1/n)$th of the cost of spending in district i. Therefore, legislator i pushes x up to the point in which $b'_i(x) = (1/n)c'(x)$. This implies that the optimal level of spending for each legislator is increasing in n. If legislators logroll and defer to each other regarding

[3] A detailed account of this model is beyond the scope of this paper, see McCormick and Tollison (1981, ch. 4).

[4] In other words, in a larger legislature each representative commands a smaller brokerage fee.

such expenditure, then the total spending is increasing in *n*. This implication is called "the Law of 1/*n*".

Using a cross section of US states for a given year, McCormick and Tollison (1981) find considerable support for the implications of their theory with respect to three issues that are relevant to lobbies activity: the degree of economic regulation, the degree of occupational regulation, and bills enacted. Crain (1979) estimates a production function for output of the legislative firm. Although he finds evidence that some variables (i.e., length of the legislative session, majority proportions of the legislature, and bill introduced), he does not find any relationship between legislature size and bills introduced, and to find a significant relationship with bicameralism has to apply an exponential transformation to this variable. Shughart and Tollison (1986) find a positive relationship between real per-capita government spending and the number of public and private bills enacted into law. They show that these results hold in the long-run, using data for legislature and laws ranging from 1889 to 1980. Gilligan and Matsusaka (1995) find that, after controlling for constituent interests, the number of seats in the upper house is positively associated with per-capita state and local direct general expenditure. Furthermore, a large legislature leads to higher spending in both capital and non-capital programs, welfare, education and highway expenditures. Possibly these results do not extend to lower chamber because bicameralism is not taken into account as an explanatory variable. These results are viewed as a confirmation of "the Law of 1/*n*". They are also compounded by those of Matsusaka (1995) that finds that spending is considerably lower in states in which voters can initiate and approve laws by popular vote with respect to states in which these initiatives are not allowed. Therefore, citizens would appear to prefer a smaller scope of the government with respect to politicians.

As the number of constituents per legislator increases, it becomes more difficult for voters to monitor their representatives. Electors are less likely to know their representatives or to have information on their behavior on the laws they have presented and approved. There is therefore a room for lobbies to buy support to their policies under a veil of ignorance of voters. A higher percentage of voters must rely on higher-cost monitoring methods as constituency size increases. Smaller constituency size reduces monitoring costs and therefore can improve monitoring and representation of

constituent interests. Smaller constituency size also produces districts that are more homogeneous in terms of population and economic interests. When interests are not divided within the district, representatives find it more costly to trade their votes. It is more costly for a legislator from a district with relatively homogeneous interests to vote against a bill in his district's interest or to vote for a bill that is not in the district's interest compared to legislators coming from more diverse interests. Smaller constituency size makes legislators weaker and less influent. McCormick and Tollison (1981, 33) call this result the "small-fish-in-the-pond-effect": larger legislatures may increase the cost of producing legislation because although the price of individual voters is lower, interest groups must purchase more votes to produce a certain piece of legislation. At extremely low prices, the interests of constituents and the legislator's interests will successfully compete with those of organized interest groups. Moreover, if the "small-fish" effect produces a greater turnover in the legislature, the cost of produce legislation may increase even more, because it would be more difficult to keep legislators bought over time.[5]

Atlas *et al*. (1997) find that the net federal spending per capita secured by a state is negatively related with the state population size for US States. The reason is twofold: first, residents from more populous states are underrepresented in the Senate; second, senators representing more populous states exert less effort on local benefit-seeking relative to national policymaking because the former is less appropriable in more populous constituencies. Thornton and Ulrich (1999) find that larger constituency sizes for both houses produce higher level of government per-capita spending in the US States, and this effect is stronger on state government spending than on federal spending. However, one should bear in mind that the significance level for constituency size of the house is borderline (significance at the 0.13 level).

[5] Crain and Tollison (1977) show that higher seniority leads to higher government spending within the district for the US House of Representatives, but not for the Senate. This result is rationalized noting that the upper house has a limited power in the budgetary process.

3. Variables, methodology and data

In this Section we introduce the legislature variables that are relevant for this study, then we present the control variables. Finally, the equations of the models we test are spelled out, together with variables' data sources.

3.1 Legislature variables

The size of legislatures enters in our analysis in three ways. With the variable *LEG* we sum up the number of seats of the lower and the upper houses, the latter may yield a number equal to zero if the system is monocameral. According to the theory, there is no expected sign on this variable. With the variables *HSIZE* and *SSIZE*, we indicate the number of legislators in each chamber, under the expectation of a positive sign, according to the so-called "Law of 1/*n*".

Bicameralism plays an important role in the legislature size theory and in determining the costs structure for lobbies. By the variable *S/H* we measure the size of the upper house relative to the size of the lower house. From this definition we can obtain different degrees of bicameralism.[6] The degree of bicameralism affects the production cost of legislation in two ways: by altering the similarity between the bases of representation in the two chambers, and by altering the labor specialization within each chamber. For a given polity size (i.e., a given sum of house plus senate legislators), an increase in the relative size of one chamber alters the representation within each assembly, tending to reduce the homogeneity of the constituency between the two respective bases. For example, if the degree of bicameralism shrinks, the majority needed for each senator to be re-elected has broadened to encompass other minority interests. By the same token, the number of constituents per legislator in the lower house has been reduced, having the reverse effect of increasing the homogeneity of the interests within each constituency. As the level of bicameralism decreases, the disparity between the respective bases of representation increases, raising decision-making costs. Therefore, finding a viable majority in both houses becomes more expensive for lobbies. Bicameralism also affects the specialization of work in committees and

[6] Perfect bicameralism would imply two houses of the same sizes. A low degree of bicameralism entails two chambers of radically different sizes and possibly different bases of representation (e.g., one elected on the basis of population, and the other on the basis of geographic/administrative delimitation).

house(s). Legislators in smaller houses carry a higher per-man workload than representatives in larger houses, and this is especially reflected in the work in committees, which can be modified by changing the size and the number of these bodies. Higher degrees of bicameralism lower the net cost of decision making, and have a positive effect on legislative output, given the assumption of diminishing returns.

Constituency size house (*CSH*) and constituency size senate (*CSS*) are calculated as the number of voters per legislator, and population is used as proxy for voters. Our expectation on these variables, taking into account the theoretical reasoning exposed in Section 2, is that they show a positive relationship with government spending.

3.2 Control variables

Countries considered in this paper differ from several institutional features, an issue that we have to contemplate doing a cross-country comparative analysis. We highlight the role of two characteristics that can control for. The first one is related with the presidential or parliamentarian nature of the political system. Recent studies in comparative politics (Persson and Tabellini, 1999) show that presidential systems are more accountable and tend to reduce government spending. Presidential systems are centered on a directly elected president that has formal power on the government and even veto power on parliamentary decisions. In contrast, parliamentary systems rely on bargaining between parties, with the related delays in stabilization policies and capture from interest groups. The variable *SYS* is a dummy variable that is equal to one for presidential systems and zero for parliamentary ones.

Voting rules also greatly differ among political systems. We use the notion of "mean district magnitude", that is the average number of representatives elected in a single district, to operationalize the difference between different voting systems. Under plurality this number is equal to one since only the candidate who receives the majority of the votes is elected. In proportional representation systems the number varies according to the degree of proportionality in the system. For example, in Spain the mean district magnitude is 6.73 and the Socialist Party was able to get 52.6% of seats in the Congress of Deputies with a mere 44.3% of votes. In contrast, the Netherlands system is the most proportional since the entire country is a single district composed of 150 seats, and with less than 1% of votes a party can get a seat. Milesi-Ferretti *et al*.

(2002) show that voters anticipating government policymaking under different electoral systems have an incentive to elect representatives more prone to higher total primary spending in proportional (majoritarian) systems when the share of transfer spending is high (low). We use the variables *MDMH* and *MDMS*, respectively for the house and for the senate to measure the mean district magnitude of each house. If there is no upper chamber in a given political system, it will get zero. As long as the overall number of legislators is concerned *(LEG*), we construct the variable *MD*, as the unweighted average between *MDMH* and *MDMS*.[7] We acknowledge that this is a crude way to calculate the overall mean district magnitude in a political system, but weighting *MD* according to the size of each chamber would have created a collinearity problem with the variable *S/H*, which already measures the relative size of the houses.

We also control for the Wagner Law, the relationship that maintains that government spending tends to increase as income grows, using per-capita GDP (*PGDP*). Population (*POP*) enters in our regressions to take into account three effects. First, a large population increases the marginal benefit of spending if population density creates unique public good problems. Second, large populations may present opportunity for economies of scale in the production of government services. Third, the logrolling theory we are going to test relies on the idea that representatives can target spending to specific subsets of population, and holding constant the number of districts, this should be more difficult with a small population rather than with a large population. Finally, we control for the ideology of government. A large literature (e.g., Perotti and Kontopoulos, 2002) maintains that left-wing governments tend to higher government expenditure, higher taxation and lower budget surpluses than right-wing ones. We use the variable *POL* to measure the political orientation of governments: executives receive points ranging from 1 (most right-wing) to 5 (most left-wing).

3.3 Model and data

We study two general relationships, the first one for legislature size, the second one for constituency size:

[7] When the Parliament is monocameral, *MD* is equal to *MDMH*.

$$PGOV_{i,t} = \alpha_0 + \alpha_1 PGDP_{i,t} + \alpha_2 POP_{i,t} + \alpha_3 POL_{i,t} + \alpha_4 SYS_{i,t} + \alpha_5 LEG_{i,t} + \\ + \alpha_6 \mathrm{MD}_{i,t} + \alpha_7 S/H_{i,t} + \alpha_8 HSIZE_{i,t} + \alpha_9 SSIZE_{i,t} + \alpha_{10} MDMH_{i,t} + \\ + \alpha_{11} MDMS_{i,t} + u_{i,} \qquad (6)$$

$$PGOV_{i,t} = \beta_0 + \beta_1 PGDP_{i,t} + \beta_2 POP_{i,t} + \beta_3 POL_{i,t} + \beta_4 SYS_{i,t} + \beta_5 CSH_{i,t} + \\ + \beta_6 CSS_{i,t} + \beta_7 S/H_{i,t} + \beta_8 MDMH_{i,t} + \beta_9 MDMS_{i,t} + u_{i,t} \qquad (7)$$

where *t* and *i* respectively indicate years and countries. To control for common cycles that are likely to occur in such a homogeneous group of countries, we use time dummies. Since institutional features are almost invariant for each country, country-dummies are not used to avoid collinearity problems. Finally, the Least Squares Dummy Variables method is corrected for the unbalanced panel.

Countries and relevant chambers are: Australia (House of Representatives, Senate), Austria (Nationalrat, Bundesrat), Belgium (Sénat/Senaat, Chambre des représentants/Kamer van Volksvertegenwoordigers), Canada (House of Commons, Senate), Denmark (Folketing), Finland (Euduskunta), France (Assemblée Nationale, Senat), Greece (Vouli ton Ellinon), Iceland (Althingi), Ireland (Dáil Eireann, Seand Eireann), Italy (Camera dei Deputati, Senato della Repubblica), Japan (Shugiin, Sangiin), Luxembourg (Chambre des Députés), The Netherlands (Eerste Kamer der Staten-Generaal, Tweede Kamer der Staten-Generaal) New Zealand (House of Representatives), Norway (Startinget), Portugal (Assembleia da Republica), Spain (Congreso de los Diputados, Senado), Sweden (Riksodagen), Switzerland (Conseil des Etats/Ständerat/Consiglio degli Stati, Conseil National/Nationalrat/Consiglio Nazionale), United Kingdom (House of Commons),[8] USA (House of Representatives, Senate). The period considered spans from 1975 through 1996.

Per-capita government spending (*PGOV*), per-capita GDP (*PGDP*), and population (*POP*) are taken from the Penn World Tables 6.1 (Heston *et al*., 2002) and are expressed in purchase parity power; political orientation (*POL*) is taken from Volkerink and de Haan (2001); mean district magnitude house (*MDMH*), mean district

[8] Since members of the House of Lords are hereditary peers or appointed, we have dropped it from our sample.

magnitude senate (*MDMS*), and system (*SYS*) are taken from the Database of Political Institutions (Beck *et al*., 2001). The size of each chamber, from which we compute legislature size (*LEG*), the senate/house ratio (*S/H*), constituency size house (*CSH*), and constituency size senate (*CSS*) are taken from Inter-Parliamentary Union (various years). Table 1 reports the average number of seats for each chamber and their constituency size for each country in the considered period. It shows that although countries have different size in terms of population and land area, the dispersion of the size of their parliaments is definitely lower, while the dispersion of constituency size is much higher. Table 2 reports the summary statistics of the variables involved in the estimations. Table 3 gives the correlation matrix for the variables involved in our regressions. It suggests a reduced overlap among the variables, and in the estimations we take into account its results

[Table 1 approx. here]

[Table 2 approx. here]

[Table 3 approx. here]

4. Empirical results

Table 4 reports results for the estimations of model (6). The overall number of legislators has a positive but insignificant effect on government spending, showing that the opposite forces that drive its value have a canceling effect, and none of them is able to overcome the other. In estimation 2, *LEG* is still not significantly different from zero at the conventional levels, but in this case the p-value is equal to 0.122, which makes it borderline insignificant, while in estimation 1 the relevant p-value is 0.291. The degree of bicameralism has a negative and highly significant influence on government spending. Controlling variables are often insignificant, with the exception of *POL*, saying that an increase in "leftism" of the government leads to higher government spending. The goodness-of-fit is fairly good.

[Table 4 approx. here]

The picture is somehow different when we distinguish between the two houses. Firstly, the sizes of both houses are significantly different from zero, but have an opposite effect: a larger lower house tends to increase government spending, while a larger upper house tends to reduce it. This result may motivate the inconclusive outcome obtained in the earlier estimations using the overall number of legislators. This result is not driven by the presence in the sample of the US, where the two chambers have asymmetric powers concerning government spending and taxes (the latter may only originate from the Senate, while the former from both houses). An additional regression run without the US, not shown in Table 4, gives results very close to estimates (3) and (4). Another regression (not shown) in which the mean district magnitude of both houses are not considered yields very similar results in terms of magnitude and significance of all coefficients, but the ability to explain the phenomenon is reduced, since the adj-R^2 reaches the minimum of 0.440. *POL* is again positive and significant, and per-capita GDP is always positive and significant, meaning a confirmation of the Wagner Law, in contrast with previous inconclusive results.

Table 5 concerns constituency size and government spending. Estimation (1) shows the results for all the variables of the model, while estimation (2) deletes two insignificant variables, and in (3) *SYS* is omitted because of the high correlation with the constituency size variables shown in the correlation matrix (Table 3). We cannot put much confidence on the results for *CSH* and *CSS*, since they are often not significantly different from zero, and may change their signs from one estimation to the another; tough one has to notice that in the first estimation the p-value of *CSS* is 0.142. The degree of bicameralism confirms its significantly negative effect on government spending, while both *MDMH* and *MDMS* are significant but with opposite effects on the size of government: negative the former and positive the latter. When *SYS* is included we do find the result that presidential systems tend to reduce the level of government spending. Not surprisingly, given the larger number of significant variables, in these regressions the goodness of fit of the regression is notably increased with respect to the previous model.

[Table 5 approx. here]

5. Conclusions

In this paper we have extended previous empirical analyses on the interest-group theory of government to a panel of OECD countries. Our results relate to previous findings in a complex way. Firstly, we find evidence that the overall number of legislators has an indefinite effect on government spending as predicted by the theory. Secondly, when we distinguish between the chambers, we find a positive relationship for the lower house and a negative for the upper one. Thirdly, when we turn to the effects of constituency size, poor matching is found with the theory and previous empirical research concerning the US. This allows us to conclude that models of legislature size are more powerful than models of constituency size.

To conduct this analysis across countries, we introduce a number of controlling variables to take into account their different institutional features. Results for these variables are not consistent across estimations, and sometimes they differ from the expected sign predicted by the theory. However, the picture is not discouraging. On the one hand we have shown that it is possible to carry out such an empirical analysis, not only in a unified constitutional framework as the US in all previous studies. On the other hand, we find results consistent with the role of lobbying in affecting fiscal policy. The positive relationship for the lower chamber is consistent with the view of representatives trading different interests in the legislature, and the negative effect of the dissimilarity of the two chambers shows that asymmetric bicameralism is effective in taming the trade between interests. The opposite effects of the two houses suggests that logrolling is a powerful instrument for increasing government spending, given that the lower house size is always (much) larger than the upper house size (if any). Although transaction costs are be lower, the upper house size has a negative effect on government spending because there is lower demand for trading interests between representatives, and therefor lower lobbies activity. This result also suggests the existence of a threshold in house size: below it negative effects prevail, while above it positive effects lead. Yet, these results may well deserve further scrutiny to understand the differences between the two chambers.

Possible extensions of this empirical analysis may include variables that capture the existence of closed lists in proportional representation systems, and the constitutional linkages that exist in some countries between legislators seating in the upper chamber and local authorities. In the first case, when lists are open, lobbies can select specific candidates among competing lists, and may fund their campaigns to receive benefits when they are elected. In contrast, closed lists do not allow this channel to contact candidates, which are placed in the list according to the centralized decision of the party, and elected depending on the number of overall votes obtained by the party. When the constituency of a legislator is territorially determined, he is the representative of all the interests on the constituency in the Parliament, making him more responsive to their interests than those of the country. We have concentrated on the relationship between representation and the size of the public sector. However, different kinds of government activities may have different degrees of capture from different lobbies, therefore, it might be useful to distinguish between various kinds of government spending.

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Table 1 – Average houses sizes and average constituency sizes

	Lower house size	Upper house size	Constituency size lower house	Constituency size upper house
Australia	141	70	114.43	228.95
Austria	183	61	41.96	126.12
Belgium	214	181	46.44	54.80
Canada	282	99	92.97	264.56
Denmark	176	-	29.25	-
Finland	200	-	24.52	-
France	519	308	109.85	184.32
Germany	552	47	144.41	1747.36
Greece	300	-	32.98	-
Iceland	61	-	4.02	-
Ireland	159	60	21.93	57.85
Italy	630	315	89.80	179.59
Japan	509	252	235.92	476.92
Luxembourg	60	-	6.27	-
Netherlands	150	75	97.25	194.51
New Zealand	94	-	35.43	-
Norway	158	-	26.51	-
Portugal	244	-	40.50	-
Spain	350	253	109.79	151.97
Sweden	348	-	24.31	-
Switzerland	200	46	33.06	145.18
United Kingdom	643	-	88.81	-
USA	435	100	552.00	2461.18

Table 2 – Descriptive statistics

		Mean	St. dev.	Max	Min
PGDP	Per-capita GDP	17639.02	4256.64	35144.24	7438.67
PGOV	Per-capita gov. spending	2950.06	960.58	5614.59	1182.51
POP	Population (000s)	3384.89	53247.99	265504.00	216.00
SYS	System	1.85	0.51	2.00	0.00
POL	Political orientation	2.44	1.57	5.00	1.00
MDMH	Mean district magnitude House	5.22	4.49	16.00	1.00
MDMS	Mean district magnitude senate	4.20	7.34	35.00	0.00
S/H	Senate/house	0.25	0.27	0.85	0.00
HSIZE	House size	287.02	177.10	672.00	55.00
SSIZE	Senate size	84.17	103.76	321.00	0.00
LEG	Legislature size	367.49	248.65	945.00	55.00
CSH	Constituency size house	87.11	113.28	610.35	3.63
CSS	Constituency size senate	446.68	695.46	2655.04	0.00

Table 3 – Correlation matrix

	POP	PGDP	PGOV	SYS	POL	MDMH	MDMS	MD	S/H	HSIZE	SSIZE	LEG	CSH	CSS
POP	1.000	0.373	0.370	-0.858	-0.239	-0.490	-0.296	-0.404	-0.277	0.519	0.139	0.452	0.965	0.831
PGDP		1.000	0.578	-0.429	-0.120	-0.077	0.078	0.036	-0.234	0.009	-0.139	-0.052	0.420	0.377
PGOV			1.000	-0.460	-0.006	-0.381	0.142	-0.105	-0.402	0.207	0.285	0.037	0.388	0.386
SYS				1.000	0.162	0.235	0.165	0.215	0.022	-0.125	0.085	-0.058	-0.919	-0.785
POL					1.000	0.185	0.045	0.095	0.205	-0.188	0.059	-0.118	-0.194	-0.159
MDMH						1.000	0.419	0.665	0.440	-0.628	-0.094	-0.516	-0.402	-0.378
MDMS							1.000	0.956	0.557	-0.408	0.042	-0.291	-0.204	-0.182
MD								1.000	0.590	0.529	-0.005	-0.404	-0.303	-0.278
S/H									1.000	-0.318	0.677	0.045	-0.199	-0.398
HSIZE										1.000	0.384	0.921	0.303	0.284
SSIZE											1.000	0.714	0.058	-0.152
LEG												1.000	0.254	0.151
CSH													1.000	0.840
CSS														1.000

Table 4 - Legislature size and government spending

	(1)	(2)	(3)	(4)
PGDP	0.084	0.094**	0.103**	0.104**
	(0.051)	(0.046)	(0.052)	(0.045)
POP	0.002	-	0.0004	-
	(0.005)		(0.0045)	
POL	0.627**	0.574**	0.674**	0.674**
	(0.222)	(0.239)	(0.246)	(0.229)
SYS	0.128	-	0.054	-
	(0.342)		(0.032)	
LEG	0.564	0.820	-	-
	(0.054)	(0.517)		
MD	0.401	0.353	-	-
	(0.312)	(0.306)		
S/H	-1.541***	-1.535***	-	-
	(0.534)	(0.531)		
HSIZE	-	-	1.765**	1.799**
			(0.868)	(0.767)
SSIZE	-	-	-3.924***	-3.872***
			(1.312)	(1.314)
MDMH	-	-	0.212	0.221
			(0.363)	(0.138)
MDMS	-	-	0.218	0.207
			(0.125)	(0.368)
Adj-R^2	0.451	0.448	0.447	0.440

The number of observations is always equal to 498. Figures in brackets are robust standard errors. ***,**, and * indicate, respectively, significance at 1%, 5%, and 10%.

Table 5 - Constituency size and government spending

	(1)	(2)	(3)
PGDP	0.0127	-	-
	(0.038)		
POP	-0.001	-	-
	(0.005)		
SYS	-0.116**	-0.118**	-
	(0.049)	(0.052)	
POL	0.803**	0.821**	0.908***
	(0.329)	(0.325)	(0.424)
CSH	-1.577	-1.894	2.946**
	(3.619)	(2.850)	(1.383)
CSS	-0.225	-0.246*	-0.285
	(0.155)	(0.135)	(0.226)
S/H	-1.456**	-1.550***	-1.956***
	(0.621)	(0.530)	(0.519)
MDMH	-0.977***	-0.946***	-0.557***
	(0.341)	(0.358)	(0.297)
MDMS	0.385***	0.412***	0.433***
	(0.113)	(0.098)	(0.083)
Adj-R^2	0.758	0.757	0.667

The number of observations is always equal to 302. Figures in brackets are robust standard errors. ***,**, and * indicate, respectively, significance at 1%, 5%, and 10%.