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Fiscal decentralization, legislative institutions and particularistic spending

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ABSTRACT

This paper examines the determinants of particularistic government spending, where politicians have incentives to overspend on district-specific projects when the costs for paying for them are shared across districts. We argue that particularistic spending is the consequence of a common pool problem generated by a mismatch in the levels of tax and expenditure decentralization. When a low proportion of local spending is financed by local revenue, politicians are able to pawn off the costs of pecuniary projects to other districts, and fiscal discipline is weak. Based on cross-national time-series data, we find that government capital expenditures – our measure of particularistic "pork" – are higher when local revenue collection is centralized, but expenditure is decentralized. We examine the institutional features of government that mitigate or enhance the political incentives to overspend. When legislators do not directly compete with each other in elections – for example, elections are held in single-member districts – there are fewer inhibitions to log-roll spending, and indeed, capital expenditures are higher. Institutions such as bicameralism and presidentialism increase capital expenditures, since they add to the number of independently elected politicians that must assuage their constituents through particularistic projects.

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1. Introduction

Is particularistic government spending a result of political institutions that allow politicians to target benefits to their own districts, while dispersing costs? This question has been addressed in the US context, characterized by single-member districts and legislative bargaining based on norms of "universalism". Under these quite specific circumstances, the "*Law of 1/n*", proposed by Weingast, Shepsle, and Johnsen (1981, henceforth WSJ), states that distributive spending increases with the number of legislators. The mechanism at work is a common pool problem: government expenditures on *particularistic* projects will be above economically optimal levels because each legislator's district pays for only a small fraction of any spending item.[2]

The empirical evidence in favor of the *Law of 1/n* is mixed. In one of the more positive results, Baqir (1999) shows that it generally holds true in American city councils. He also finds that the effect is weaker in city councils containing at-large members (from proportional representation districts), suggesting that single member districts are crucial for the operation of the law. Across countries, Crain and Bradbury (2001) argue that government consumption is directly related to the size of the legislature. However, when an upper chamber exists, they find that the number of seats in that chamber mitigates the effect of the law of 1/n. Hence, institutional details seem to be quite consequential for the operation of the WSJ proposition.

A necessary condition for the law of 1/n is a fiscal arrangement that allows expenditure to benefit one jurisdiction, while dispersing costs among all, creating a common pool problem. Distributive politics can result in budgetary overspending (Persson, Roland and Tabellini, 2000) even absent the specific norms and institutions of the US Congress.

[2] Baron (1991) qualifies this result, writing that the common pool problem can be mitigated through procedural control in the legislature which generates Minimal Winning Coalitions (MWC) instead of universalism. Hence, a norm of "universalism," where legislators logroll each other's projects, is not a strictly necessary condition for overspending in models of distributive politics.

However, political institutions dictating the translation of district level preferences into national policy should affect whether politicians can ameliorate the common pool problem. Institutional details should determine the extent of particularistic spending, but the literature has not been very specific in what ways or through which mechanisms.

A growing literature has attempted to provide some insight into the process of interest aggregation to determine government spending across various institutional settings. Persson, Roland and Tabellini (1997) and Persson and Tabellini (1998) provide a theoretical model suggesting that when presidential and proportional-representation systems are compared, 1) presidential systems have smaller governments, and 2) universal public goods provision (such as education) is greater in proportional systems of representation. Milesi-Feretti, Perotti, and Rostagno (2001) posit that what they call "majoritarian" political systems (characterized by single member districts) are associated with greater government consumption and capital expenditures, while proportional representation generates larger transfers. These models undermine the Baqir (1999) and Crain and Bradbury (2001) results, because they suggest that their measure of government spending is too aggregated for differences in government size to be attributed to particularistic spending or "pork". The evidence offered by Persson and Tabellini (1998) and Milesi-Feretti, Perotti, and Rostagno (2001) supporting their models is, however, still very tentative.

The empirical results in each of the studies mentioned use dependent variables different from the indicators scholars and politicians have in mind when talking about particularistic projects, or "pork." At the same time, the empirical literature does not address the most crucial assumption in models of distributive spending: that politicians can transfer the costs of spending to other jurisdictions, while keeping the benefits in their own constituencies. Political institutions explaining overspending are frequently under-specified and over-simplified, and little theoretical effort is made at identifying the conditions under which the law of 1/n can apply across countries

This paper seeks to spell out the specific institutional features that affect the common pool problem in particularistic distributive spending. Our contribution is threefold. First, we test the tendency for overspending with an empirical measure of distributive spending that is substantively closer to “pork” projects than the prevailing indicators of central government expenditure or government consumption. We use the share of capital expenditure to total expenditure of all levels of government (central, state and local), as a measure of the prevalence of particularistic spending.

Second, we explicitly articulate the necessary condition which generates the collective dilemma of overspending: the presence of a fiscal system lacking the “Wicksellian connection” between those who benefit from spending, and those who pay for it. Specifically, we show that the greater mismatch between the decentralization of the system of expenditure and the centralization of taxation within a country, the greater that country’s trend towards overspending on particularistic “pork” projects.

Third, we demonstrate that specific institutional features of government, particularly federalism, unicameralism, multimember districts and parliamentarism, mitigate overspending. Crain and Bradbury (2001) argue that institutional features adding veto players in a system might reduce overspending. To be sure, veto players reduce the scope for policy instability (Tsebelis 2002); but in terms of the law of 1/n, they increase the number of political actors seeking to obtain resources. Hence we find that particularistic spending increases with bicameralism, presidentialism and single member districts. Once controlling for fiscal decentralization and the institutional features previously mentioned, other variables that have been proposed in the literature, such as the number of legislators, are not significant determinants of government spending.

Our argument is based on the effect that the division of power between central and local governments has on political accountability. The multiplicity of jurisdictions that characterizes decentralized fiscal regimes allows politicians to transfer blame for poor policies to other levels of government, reducing their own political accountability. Decentralization, however, enables citizens to exert tighter fiscal control over their local representatives, provided there is a clear benefit principle linking expenditure to taxation. Institutional details can mitigate these effects.

The paper is organized as follows. The following section reviews some of the findings in the theoretical and empirical literature related to the law of 1/n. The next section presents a simple model of capital goods expenditure as a common pool problem generated by the mismatch between taxation and spending. The fourth section presents an empirical test of the law of 1/n through a pooled time series analysis. Finally, we conclude with an agenda for further research.

2. The literature

The literature on particularistic spending has developed more on the theoretical than on the empirical front. Theoretically it usually starts with an elected official who represents a well-defined geographic district - either an electoral subunit or the entire polity. Among other things, she is responsible for catering to her jurisdiction's fiscal demands, particularly a demand for district-specific projects. Politicians at the national and local levels of government reallocate budgets to public works and other private goods in order to increase their chances of re-election. Voters, on the other hand, demand capital expenditures from government to provide consumption goods, as well as increased demand for labor and goods, to their districts. The costs of government projects are, however, usually funded by centrally collected taxes assessed without geographic discrimination. In other words, it is possible that a project benefits a specific district, but all districts pay for it.

The *Law of 1/n* describes how legislators exploit this opportunity: the greater the disconnection (in numbers) between those who benefit and those who pay, the greater the temptation to spend on such projects. The numerator of the *1/n* represents the “one” district that benefits, while the denominator stands for the “n” many districts that must pay for the project. The most direct empirical implication is that particularistic overspending should increase with the number of legislative districts, which is what Crain and Bradbury (2001) and Baquir (1999) attempt to test, using the number of legislators.

However, in its original formulation, the *Law of 1/n* was intended to be a general phenomenon beyond individual districts: WSJ explicitly model the *Law of 1/n* as a comparative statics result of a variable “z”, where if $t'(z) < 0$ (*i.e.* the tax in the district gets smaller as z gets larger), then particularistic projects are larger when there is more z ($dx / dz > 0$).[3] “z” can be any institutional feature, such as the number of legislators or districts, which allows the tax costs of public expenditure to be dispersed across political units. The generalization of logic of the *law of 1/n* implies extending our knowledge of “z” to institutional features other than legislature size or number of districts. At the core of WSJ’s theory is the role of political institutions altering the economic basis of costs and benefits, resulting in a new ordering of preferred policies for the decision makers favoring particularistic policies over public goods policies. Thus, distinct institutional structures should derive different preference orderings for politicians.

In that respect, the existing literature has analyzed the effects of different institutions on particularistic expenditure and government size with contradictory and not entirely robust results. Table 1 shows some findings of the main studies on the topic. We provide a more

[3] See Theorem 3 in their paper.

ample focus on Baqir (1999) and Bradbury and Crain (2001, BC henceforth) as these are the two principal explicit attempts for testing the *law of 1/n*.

[Table 1 about here]

Electoral Districts: Baqir (1999) analyzes a cross-section of United States cities, finding that total city government expenditures and employee headcount can be represented as functions of ethnic heterogeneity, the size of city councils, and the centralization of power. Greater heterogeneity implies more diversified demands from citizens, and hence more social groups that must be assuaged for politicians. City councils are a straightforward representation of WSJ's "z": each additional city council representative increases the total budget size. Greater centralization of power, however, enables government heads to curtail the independent spending demands of each representative. Interestingly, Baqir finds that the type of electoral system employed for city governments – district (plurality) vs. at-large (PR) – has no significant impact on spending.

Baqir's results seem quite robust, even when controlling for a set of socioeconomic variables. However, the validity of his findings, in terms of testing the *law of 1/n* is somewhat suspect: it is not clear that his different specifications on the dependent variable are actually measuring spending in geographically located projects. It is not possible to discriminate between expenditure in public goods and "pork"-type policies using his measures of overall city government size.

Legislative seats: BC's work focuses on democratic national governments.[5] They conduct a cross-national test of the *Law of 1/n*, finding that the greater the number of

[5] They limit their cases mainly to democratic governments, although they include non-democratic periods in Argentina (1976-1983) and Mexico (1971-1988).

legislators in the lower legislative chamber, the larger the government's consumption budget. They add the caveat, however, that the effect of legislative size is mitigated by the presence of an upper chamber, which acts as a veto player in curbing excessive spending. Given that lower and upper chamber districts typically do not have matching jurisdictions and sizes, the two independently-elected bodies of representatives are less likely to agree on the distribution of taxes and benefits.

Although BC add important insights to the institutional foundations of government spending, it is not clear whether BC's operationalization of concepts actually corresponds to WSJ's *Law of 1/n*. First, BC's dependent variable – government consumption from the PennWorld Tables – includes such categories as transfers in social security and welfare, subsidies, and civil service wages, all of which are better defined as public goods, in the sense that their benefits are not geographically specific. Because any variance in the dependent variable may be due to cross-national differences in public goods provision, such as teacher payrolls, the extent to which legislature size explains the level of "pork" – and hence whether BC's results actually correspond to WSJ's *Law of 1/n* – is, at best, uncertain.[6]

At the same time, BC's independent variable – legislature size – is a flawed proxy for the common pool problem. The collective overspending dilemma results when each district attempts to transfer the costs of particularistic projects to other districts. In single-member districts, as in the US, where the number of districts equals the number of legislators, measuring the size of the legislature will capture the magnitude of the common pool problem. When each district elects multiple members, however, the relevant proxy should be the number of *districts*, rather than the more commonly used number of legislators. While it is possible that each additional legislator, irrespective of district magnitude, may increase the

[6] Consider, for example, the difference between high and low welfare spenders (e.g. Europe vs. the US). The size of government spending may be greater in the former, but this may be driven by government transfers, which is unrelated to particularistic overspending due to legislature size. Similarly, high government spending in Israel – one of BC's higher spenders – may be driven by higher military expenditures – another public goods – rather than "pork".

number of pork-bearers in the system, this is not a common pool problem, as the disconnection between costs and benefits is not what is being measured. Additional legislators within one given district would be (incorrectly) picked up by BC's model as an increase in "n," but would not affect the "common pool" nature of the situation.

Ultimately, BC's empirical test leaves us with more questions than answers. Although BC use legislature size as the institutional variable corresponding to WSJ's "z," each additional legislator has an additive impact on government spending only if the political arena is characterized by norms of "universalism," so that each juridical district is willing to logroll spending in every other district. Universalism is characteristic of systems with single-member districts and weak parties, such as the US, since the electoral fortune of each legislator is not significantly swayed by that of other incumbents. When the fates of same-party candidates are strongly correlated (*i.e.* highly partisan politics) or when politicians must compete against same-district incumbents for votes (*i.e.* in multi-member district electoral systems), then from a strategic perspective, politicians should refuse to logroll the particularistic projects of their competitors (other-party or same-district candidates). Universalism should fail under these conditions, and institutional features other than raw legislature size should drive government spending.[7]

Democracy/Authoritarism: Based on a median-voter model, Boix (2001) argues that in democratic regimes there is more particularistic spending as the franchise is greater than in authoritarian regimes. Therefore, as the number of groups required to get to the median voter in a democracy is greater, we should observe more particularistic spending. His empirical results, though, leave many open questions. For example, countries with low levels of per capita income show larger governments when they are autocracies than when they are democratic.

[7] Even for the United States case the literature still disagrees on the specific circumstances under which universalism is the norm; for instance, Baron (1991) model on government size argues that the United States legislature is better represented as operating under a system of *minimal winning coalition*.

Presidentialism/Parliamentarism Person and Tabellini (1998) and Person *et. al.* (2000) maintain that presidential systems have smaller governments as compared with parliamentary regimes. Their logic implies that a parliamentary regime favors redistribution towards a majority, more provision of public goods, and more rents to politicians, whereas a presidential-congressional regime has redistribution toward powerful minorities, less provision of public goods, but less rents to politicians. Similarly, Boix (2001) finds that presidential regimes have smaller governments overall.

Proportional representation versus majority: Milesi-Ferretti *et. al.* (2001) argue that proportional systems allow representation of a greater variety of interests, while majoritarian systems are more grounded in local interests. Moreover, proportional systems tend to spend on transfers, while majoritarian systems are more prone towards spending on public goods. However, their empirical results on government expenditures are not significant. On the same tack, Boix (2001) asserts that proportional representation systems in democracies have bigger governments.

Electoral institutions: Meltzer and Richard's (1981) model on the size of government predicts that voting rules which concentrate votes below the mean per capita income create incentives for greater redistribution, financed by taxes on higher income groups, and thereby increasing the size of government. Such a median voter result might be mediated by district magnitude: Milesi-Ferretti *et. al.* (2001) find that district magnitude is a significant determinant of transfers, but not of public goods or government expenditures as a whole. Hence, their study suggests that countries with single member districts would have lower levels of overall spending, which goes against the predictions of WSJ's theory.

Models on particularistic expenditure and government size can still be better specified on the basis of WSJ's law of 1/n. The literature exhibits no consensus on the specification on

[9] This is not to say that voters are indifferent regarding the uses of their tax dollars; however, their preferences on this matter are included in the political benefits function. We restrain the political vulnerability function to include only the disutility of collecting a given monetary sum.

the dependent variable, hence divergent results are generated claiming similar theoretical frameworks to justify them. Additionally, the specification on the independent variables is quite *ad hoc,* lacking a common theoretical logic.

In that sense, our goal is to present a solution to some methodological difficulties that any study of particularistic spending faces, while testing the relationship between a broader range of institutions and distributive politics. What control variables must be included in a reasonable estimation of the determinants of "pork" vs. "non-pork" government spending? Given that legislature size does not change frequently, what is the level of observation at which an empirical test should be carried out? What kind of institutional configurations, apart from upper chambers, limit the size of distributive expenditures?

3. A simple model of particularistic spending

3.1 Political factors

In order to explain particularistic overspending through the *Law of 1/n*, we must identify the political institutions that contribute to or mitigate the common pool problem. Specifically, we are interested in factors which weaken or strengthen the tax-benefit link. At the most fundamental level, some degree of fiscal decentralization is a necessary condition for the *Law of 1/n*. Fiscal mechanisms must allow costs from distributive projects to be transferred to districts other than that of the decision-maker in order for the common pool condition to hold. In a fully *decentralized* fiscal system, the number of districts should have no effect on the relative size of distributive spending, since each jurisdiction would fully pay for any particularistic projects it receives. When revenues are centrally collected, but spending is fully decentralized, as is typical in many countries, the tax-benefit link is weak, and politicians have strong incentives to overspend. Thus, any of the political effects that might determine particularistic expenditures (such as the number of districts or legislators) should depend on the mismatch between revenue and expenditure decentralization.

Once the conditions for overspending in particularistic projects exist, electoral systems which pit legislators against one another should make it less likely that all legislators' distributive projects are included in the government budget. Specifically, majoritarian single member districts should promote greater particularistic spending, while mixed electoral systems and proportional representation rules should limit particularistic spending. When inter-district competition for votes is stronger, incentives to logroll projects of other legislators -- norms of universalism -- will be weaker.

At the same time, procedural controls which fragment the decision-making powers of legislators might increase the tendency for particularistic spending. Veto players multiply the political actors seeking resources through legislative *quid pro quo* exchanges, exacerbating the common-pool spending problem. For example, presidentialism, which Persson and Tabellini (1998) highlight, should increase particularistic spending relative to parliamentarism.

As another example, bicameralism should also increase, rather than mitigate, pork, to the extent that members of the upper chamber represent different constituencies and have the budgetary powers to motivate overspending. Even if the upper chamber is just an additional geographic partition of the polity, it should reinforce trends towards pork barrel spending. When upper chambers represent jurisdictions that aggregate lower chamber jurisdictions, upper house representatives might seek to control overspending in lower house districts. If the upper chamber *cross-cuts* lower house jurisdictions and serves as just an additional geographic partition of the polity, however, it should reinforce trends towards pork.

The following model attempts to provide some guidance as to the different effects that can be expected in particularistic spending in various institutional settings.

3.2 Formal Model

The model presented below shares common features with the standard common pool models discussed, for example, by Persson and Tabellini (2001). However, we seek to highlight the direct political benefits of pork spending and the political costs of taxation, rather than the role of residual rents from office or the quest for pleasing the median voter. We start with a budget constraint and a definition of utility and political vulnerability functions. Given a hard budget constraint, we assume that expenditure must be balanced by revenue. If this is not true for individual jurisidictions, it must be true in the aggregate. Even deficit spending and the printing of currency do not allow an escape from this bind: both eventually become taxes, even if collected indirectly. Taxes create a political liability for politicians; ultimately, this is what contains government spending. The rational politician, therefore, must carefully weigh the political benefits of pork spending against the deleterious (to her popularity) effects of taxation. The model formalizes this decision.

Suppose two types of spending are available to each representative: public goods spending (g), and pork (p). The political utility function reveals the political (vote-getting) utility of any chosen level of spending, (g+p) to that representative. Similarly, the political disutility function reveals the vote-losing disutility of a level of spending.

Define representative i's political utility function as $t_i(g + p)$ and vulnerability function as $v_i(g + p)$. These functions map from an expenditure vector {g, p} to the positive and negative (respectively) political effects experienced by that legislator from that expenditure vector. The range (or "output") of these functions is an identical range of utility. Note that the vulnerability function takes only one argument; we write $v_i(\{g+p\})$, with brackets emphasizing the argument's singularity. In other words, increases in g and p affect the vulnerability function equally – tax dollars are tax dollars, having the same impact on political disutility, no matter where they eventually go.[9] In contrast, the political utility function needs separate g and p arguments, as the effects of public-goods and pork spending on political utility are potentially different. Specifically, the political utility function $t_i(\{g,p\})$ is equal to $z(g) + p$, where $z(g)$ is a function that models the widespread benefits of public goods spending (the utility of private-goods spending is normalized to 1). In general, $z(g) > g$, while trivially, $p = p$; in other words, public goods spending always produces more social good than private goods spending.

To model the *net* effects of expenditure decisions, we establish for each legislator a net utility function, which subtracts political costs from benefits. Because the net utility function includes the political benefit function, it necessarily takes g and p as separate arguments:

$$u_i(\{g,p\}) = t_i(\{g,p\}) - v_i(\{g+p\}). \quad (1)$$

<u>Pure Institutional Cases:</u> We begin by analyzing pure cases, at the extremes of the institutional spectrum. Consider the case of a legislator elected at-large, and another legislator representing one geographic district. Each can choose g and p (public and private spending). What motivates their choices on spending, and how do their respective motivations differ?

The key difference in the choice faced by the two is that of the localization of costs and benefits. One geographic district may capture all the benefits of a pork project, but will necessarily suffer only its proportional share of the project's cost. On the other hand, the nation as a whole will capture both all the benefits and all the costs of a project. In other words, the district-specific utility function is a case of the "Wicksellian disconnect" between costs and benefits: the benefits side of the function refers to the entire project, while the costs side refers only to that district's share of the total tax cost.

First, consider the at-large legislator. Her constituency is the entire nation; we may imagine the political system to be one of proportional representation. Although her constituency may be divided along socioeconomic and other lines – we will broach this topic later – it is not explicitly defined in geographic terms. Thus, the at-large legislator, when evaluating projects, will weigh their effect on her popularity and unpopularity in the nation as a whole.

Specifically, the at-large legislator i's utility function is

$$u_{i(PR)}(\{g,p\}) = z(g) + p - v_i(g+p). \quad (2)$$

This corresponds to the sum of public and private goods, minus that legislator's vulnerability function for the spending vector. Note that her utility from private goods is simply p; because her constituents are geographically diffuse, there is no way for private goods to be targeted to them.

Now consider the utility function of a district-specific legislator i. Her constituency is only her district, which represents 1/n of the country. She suffers a tax vulnerability disincentive of only 1/n of the amount spent. Additionally, her constituents may receive more or less of their "share" of private goods, denoted by the multiplier s_i, where s_i is something like a legislator's seniority or political "pull." A legislator who is average in her ability to attract private goods to her district (and take credit for them) would have $s_i = 1$. A legislator who is hopeless at this would have $s_i=0$, while those more skilled would have $s_i>1$. Note that if s_i were strictly related to the ability to allocate dollars, then $\Sigma(s_i)$ across all i's would have to be equal to n. However, because it is related to the ability to allocate spending, as well as take political credit, we do not place any restrictions on the sum of s_i. In fact, the only restriction we place on s_i is that it be nonnegative.

$$u_{i(\text{district-specific})} = z(g) + s_i * p - v_i((g+p)/n) \quad (3)$$

Mixed institutional cases. Pure cases of at-large and district-based representation make useful examples of the logic behind our model. However, empirical results seldom obey theoretical dichotomies – our data demonstrate that institutional arrangements lie along the continuum of centralization, not merely at its poles. Thus, it is useful to consider mixed cases.

Recall again the pure cases (2) and (3) - it is easy to see that the s_i multiplier on private spending, and the divisor in the political vulnerability term drive the differences between the two models. Both are ordinality-preserving, and linearly multiplicative. Thus, it does no violence to combine them in a linear fashion.

We establish a "mixed case utility function" as a convex combination of the two "pure case utility functions" given above. The mixed case utility function is given by the convex combination of the two pure cases. Note that the z(g) term is identical in both pure cases, and thus it is left outside the notation of the convex combination.

$$u_{i(\text{mixed-case})}(\{g,p\}) = z(g) + (a)\ (s_i * p - v_i((g+p)/n)) + (1-a)\ (p - v_i(g+p)) \quad (4)$$

Comparative statics (still missing, Sorry!)

We are interested in how the at-large and the district-specific representative differ in their spending choices.

Consider the following forms of the functions we have described

z(g) = g + log(g).

v(x) = x^2

Then the at-large representative has the utility function

$u_{i(PR)}$ = g + log(g) + p – (g+p)^2

diff wrt p: dg/du + dg/du * 1/g + 1 – (2 * (dg/du + 1))

diff wrt g: 1+ 1/g + dp/du – (2 * (dp/du + 1))

and the district-specific representative has the utility function

$u_{i(district\text{-}specific)}$ = g + log(g) + s_i*p – ((g+p)/n)^2

diff wrt p: dg/du + dg/du + 1/g + s_i – 1/n^2 * (2 * (dg/du + 1))

diff wrt g: 1 + 1/g + si * dp/du - 1/n^2 * (2 * (dp/du + 1))

In decentralized spending systems politicians have greater incentives to transfer central government funds to finance local projects, because the link between taxes and expenditures is not readily observable, nor experienced, by constituents: accountability over local expenditures is reduced. The common pool problem is reflected in a greater share of capital expenditure in budgets. When revenue collection is decentralized, however, both spending and taxation decisions are made locally, and politicians cannot transfer the costs of particularistic projects to other jurisdictions. This increases the extent to which politicians are held accountable for overspending, consequently mitigating the common pool problem and reducing particularistic expenditures.

Forms of political representation can diminish or enhance the fundamental common pool problem. When politics is organized on the basis of territorially distinct, single member districts, each legislator seeks to bring projects to his district, internalizing only a small fraction of the costs (the mechanism identified by WSJ as the law of 1/n). In more proportional representation systems, individual legislators might still wish to claim credit for projects that are specifically targeted, but their link to territorial constituencies is more tenuous.

4. Empirical Test

4.1 Operationalizing the Dependent Variable

The domain terrain of WSJ's *Law of 1/n* should be restricted to explaining the variance in particularistic government expenditures, not the size of government as a whole. Particularistic spending encompasses "projects, programs, and grants that concentrate benefits in geographically specific constituencies, while spreading their costs across all constituencies through generalized taxation" (WSJ, 643). The dependent variable must capture geographically targeted discretionary government spending, or what we commonly call "pork."

Which government programs can be geographically targeted to a small, well-defined area, perhaps no larger than one district? Transfer programs, with beneficiaries decided upon as a general class, are almost impossible to target geographically -- at least not while maintaining the guise of truly universal public expenditure. Similarly, consumption-based government spending programs are difficult to target geographically, as small consumption goods (e.g. pencils) are unlikely to be produced only in one small geographic area, and it is even less likely for their procurement to produce a visible "landmark" for legislators to display, come re-election time.

Instead, we assert that in order to be geographically targeted, a project must involve some physical good that can be localized in one place. For this reason, we choose to focus on *capital expenditures*.[10] These are often large physical infrastructure projects, such as buildings, bridges, roads, etc., which are visibly located in one place and usually impossible to relocate or withdraw.[11] Such expenditures benefit districts both as consumers' surplus to users of the project (net of their share of additional taxes), and as payments to construction firms, suppliers, and other businesses in the district involved in creating the infrastructure.

Public employment is also geographically located, since governments must spend wages in the place where their employees work. However, current-period expenditure such as wages is not necessarily particularistic spending. While patronage is often discussed in terms of bloated public employment, wage and salary expenditures include the whole gamut of government activity: most education and health expenditure, for example, is made up of

[10] Capital expenditures contain: 1) acquisition of fixed capital assets, 2) purchases of stocks, 3) purchases of land and intangible assets, 4) capital transfers: domestic, to other levels of natl gov, to non-financial public enterprises, to financial institutions, to other enterprises and other domestic capital transfers, and abroad.

[11] The fact that fixed capital assets cannot be easily withdrawn makes it very different from wages for patronage jobs, which can be cancelled: it's easier to fire a worker than it is to remove a dam. This makes fixed assets a more preferable good from the voters' perspective.

salaries and wages to teachers, doctors, and nurses, which can be easily characterized as public goods. Because of the difficulty in determining whether variance in public employment costs is due to patronage or to universalistic public goods provision, we prefer to specify a dependent variable that is less ambiguous.

Thus our dependent variable is the *proportion of central and subnational (local and state)* ***capital*** *expenditures to* ***total*** *expenditures*. The data comes from the International Monetary Fund's Government Finance Statistics, which provides annual information reported by national governments. The data is expressed as a share, in order to highlight the relative importance of pork in national spending priorities. It is not restricted to central government capital expenditure, but rather to "pork" pursued by all levels of government. We include all democracies where GFS reports data on capital expenditures between the 1983 and the 1995. We also include some ambiguous cases that are controversial in terms of their status as democracies, but where political institutions play a key role in the allocation of budgets. We did not include countries which became democratic in the early 1990s, although a natural extension of the dataset is to code political institutions for those additional 31 countries (mostly countries in Eastern Europe and the former Soviet Union and Africa). The appendix lists the countries included. We believe that our dependent variable captures the type of spending that is easy to target geographically, and thus constitutes a large fraction of "pork" spending.

4.2 Independent variables: Controls

Although "capital expenditures" encapsulates the full range of particularistic spending, there is a danger that this measure overestimates the extent to which capital expenditure is "pork" in nature, *i.e. particularistic* spending is probably a subset of capital expenditures. At one level, this is a structural issue: public works in a developing country may be vital infrastructural projects that constitute a public good, while the same projects in a post-industrial nation may be electoral advantageous but economically inefficient (pork). At the same time, there is also a question of interpretation: public works can be seen as a de facto job-creation program based on government-induced labor demand (public good), or as an underhanded way for legislators to reward vital political sponsors (pork).

Given that these confounding factors make the translation of the theoretical concept "pork" to the empirical measure "share of capital expenditures" problematic, we include level of development and country size as controls for non-institutional factors which contribute to cross-national variances in spending. Presumably these control variables should account for variances in the importance of capital expenditures not attributable to political influence.

A) GDP. The level of development is measured by the log of per capita GDP (*gdppclog*). The variable is coded in logarithms in current US dollar terms, from the Economist Intelligence Unit (EIU). We expect the level of development to have a negative effect on capital expenditure. The reasoning is twofold: first, to the extent that poor voters are more likely to be swayed in their political preferences by monetary transfers (Dixit and Londregan, 1996), capital expenditures qua pork might be higher in poorer countries. Second, public works spending has a vital *social* role to play in poor countries with an underdeveloped infrastructure, since newly-paved roads facilitate the transportation of people and goods, sewage systems ameliorate public health, and dams provide scarce electricity. The proportion of the budget devoted to installing these public goods should, *ceteris paribus*, be lower in countries that developed these facilities decades ago (*i.e.* advanced industrialized democracies), than in countries lacking such infrastructure.

B) Population. We control for country size with the log of population (*logpop*). Population is measured in thousands, from data provided by EIU. *Ceteris paribus*, spending on capital expenditures is likely to be higher in countries with larger populations. However, the greater the number of people, the more widely used are roads, sewer systems, and other public facilities. Hence, although capital expenditures in total amounts should be larger in bigger countries, as a percentage of the total budget we expect the effect to be exactly the opposite: smaller countries have high fixed costs in the construction of physical infrastructure that is shared among a smaller number of people. This control variable is important since the dependent variable is not measured in *per-capita* terms, but rather as a percentage of the expenditure budget of all levels of government.

Independent variables: Institutional Features

In addition to the control variables, we operationalized a variety of independent variables, many discussed in previous studies but some others collected by the authors, to measure the causal effects of fiscal decentralization and political institutional features on capital expenditures, as suggested by the theoretical discussion.

A) Decentralization. Decentralization can be measured through revenues or expenditures. Although highly correlated, they reflect distinct processes. Expenditure decentralization breaks the benefit principle, when not accompanied by greater responsibility to local governments for the collection of revenue. Revenue decentralization, on the other hand, reflects the willingness by central governments to grant authority to tax to their subnational units, and hence lose control over the discretional use of those resources. Hence, while in expenditure decentralization central governments might dictate the way funds are earmarked and allocated, in revenue decentralization politicians at the subnational (state or local) levels decide the allocation of funds to alternative uses. When revenue is decentralized most often expenditure is also decentralized, but the opposite is generally not true. We measure both expenditure (*expdec*) and revenue decentralization (*revdec*) as the share of state (provincial) plus local government in total government expenditure and revenue. Both indicators are calculated from the IMF's Government Finance Statistics. Given that central governments transfer sizable funds in most decentralized systems, it is not surprising to note that virtually everywhere revenue decentralization is lower than expenditure decentralization.

B) Parliamentarism. We employ a dummy variable for whether a country's regime is presidential or parliamentary. The literature associates presidentialism with greater distributive spending, but less transfer spending, while parliamentarism is supposed to lead to less pork spending but higher universal transfer spending. Our theoretical discussion suggests that presidentialism should have a positive effect on pork only to the extent that it increases the number of political actors who seek to take advantage of a mismatch in the benefit principle in taxation. If a president's party has unified control of the legislature, however, she might actually exercise fiscal discipline, by internalizing the costs of expenditure. In a model of presidential veto, McCarty (1998) addresses how the particularistic preferences of the president over specific electoral subunits might affect distributive spending. He contends that the presence of the executive veto reduces inefficient spending. Moreover, it may have larger effects on an efficient distribution of spending when the president chooses to favor small coalitions.

In parliamentary systems with high party discipline, one could expect that the collective dilemmas of excessive distributive spending could be reduced, as compared to those of a presidential system with a fragmented legislature. Thus, the net effect of this variable is ambiguous. We coded both parliamentary and semi-presidential regimes as a dummy variable (*parliam*). The data was obtained from the "Database of Political Institutions 3".[12]

[12] http://paradocs.pols.columbia.edu/datavine/MainFrameSet.jsp

C) Single member districts. The direct test of the law of 1/n in our model is a continuous variable measuring the proportion of single-member districts in the legislature (*sesmd*). This variable is calculated from the particularism database, constructed by Seddon, Gaviria, Panizza, and Stein (2000). The variable measures the proportion of legislators elected from single member districts in both the lower and the upper chambers. We also use a dichotomous operationalization of this variable, which simply measures whether single member districts are more than 50 percent of the legislative seats (*smdmaj*). In both cases, we expect the effect to be positive, suggesting that territorial forms of political respresentation should lead to a weak benefit principle, and hence more pork.

D) Bicameralism. We employ a dummy variable for bicameralism, which measures whether an upper house exists AND it is elected using different electoral rules from those of the lower chamber AND it has substantive fiscal authority (*bicameral*). If legislators are selected by subnational governments rather than through elections, such as in the German Bundesrat, the system is not counted as being bicameral. The bicameralism we are interested in, in Lijphart's terminology, is significant (there is fiscal authority) and incongruent (the upper chamber's interests are presumably different from the lower chamber's). The data is taken from Henisz's "Political Constraints" dataset.[13]

E) Federalism. We constructed a dummy variable for federalism (*federal*), which indicates whether sub-national units, particularly states, have substantive fiscal authority. This fiscal authority might not be reflected in the revenue decentralization variable. Though formally federal arrangements differ dramatically in the degree of fiscal authority that is decentralized (very low in a country like Venezuela, or very high, for example, in the US), the idea behind this variable is to capture legal and functional divisions of responsibilities that might give state or provincial governments a greater say in the allocation of budgets to capital

[13] Also available at http://paradocs.pols.columbia.edu/datavine/MainFrameSet.jsp.

expenditures, even when that authority is not reflected in financial terms. To the extent that state governments can internalize the fiscal costs of expenditure, we expect this dummy variable to have a negative effect. However, if fiscal management in a federation is characterized by bailouts and moral hazard problems between states and the federation (as in Brazil until quite recently), the variable could have a positive effect on pork. The data is taken from Henisz's "Political Constraints" dataset.

F) Lower chamber seats. The count of legislative seats in the lower house (*lowseat*) is a discrete variable, which seeks to contrast our results with those in Crain and Bradbury (2001). Data is taken from (and cross-referenced between) Political Handbook of the World (various issues) and PoliSci.com.

H) Upper chamber seats. The count of legislative seats in the upper house (*upseat*) is also a discrete variable. Data is taken from PoliSci.com.

G) Number of districts. We include a variable on the number of districts in the lower chamber (*ldistr*) as a more precise indicator of the type of empirical test Crain and Bradbury sought to make. The data was obtained from the "Database of Political Institutions 3" and Political Handbook of the World.

Descriptive statistics for the dependent and all the independent variables are reported in the appendix.

4.4. Results

We estimate pooled time series regressions with random effects of the determinants of the share of capital expenditure in total government expenditure. Since institutional features do not vary much through time, we also performed cross sections for each individual year. The results of those yearly regressions are very similar to the pooled ones, particularly during the 1990s.

Table 1 reports our findings with two operationalizations of the institutional variable for single member districts (*sesmd* in estimate 1 and *majsmd* in estimate 2) and with slightly different specifications for the fiscal decentralization variables. Estimate 3 only keeps the expenditure decentralization variable, which is collinear with tax decentralization; while estimate 4 includes a lag of the dependent variable (Pending: test serial autocorrelation in the panel).

The main results in estimate 1 suggest that fiscal decentralization is an important determinant of pork. While tax decentralization decreases pork, expenditure decentralization that breaks the Wicksellian principle increases the share of capital expenditure. Since the coefficient for expenditure is higher than that of revenue, and expenditure is usually more decentralized than taxation, these results suggest that decentralization increases the scope for particularistic spending at all levels of government.

The institutional variables suggest that federalism and parliamentarism reduce capital expenditure, while single member districts and bicameralism enhance it. However, the continuous variable measuring the proportion of single member districts fails to reach statistical significance. Estimate 2 shows that a dichotomous variable, indicating whether single member district dominate as a form of political representation performs much better, suggesting that pork is higher when this is the case.

Figure 1 reports a simulation of the effect of parliamentarism, federalism, single member districts and bicameralism on particularistic spending, according to estimate 2. The graph depicts the mean predicted effect of each institutional trait on capital expenditure, together with 95% confidence intervals. The baseline category corresponds to a country with the institutional characteristics of Ecuador or Sri Lanka: a presidential, unitary and unicameral system, where the majority of the districts are multimember (that institutional combination would yield an indicator of pork of around 11.1 percent, while the average in the sample is 14.2).

The graph suggests that we can be quite confident that parliamentarism and federalism reduce particularistic spending, while bicameralism and single member districts increase it. At the extreme, our results predict the highest degree of pork in South Korea, with an institutional combination of presidential, unitary regime with a unicameral legislature using single member districts (there is no country in the dataset with a combination like this, but with bicameral legislature, which should theoretically produce more pork). The lowest levels of pork would be predicted in a country with the institutional makeup of Germany.

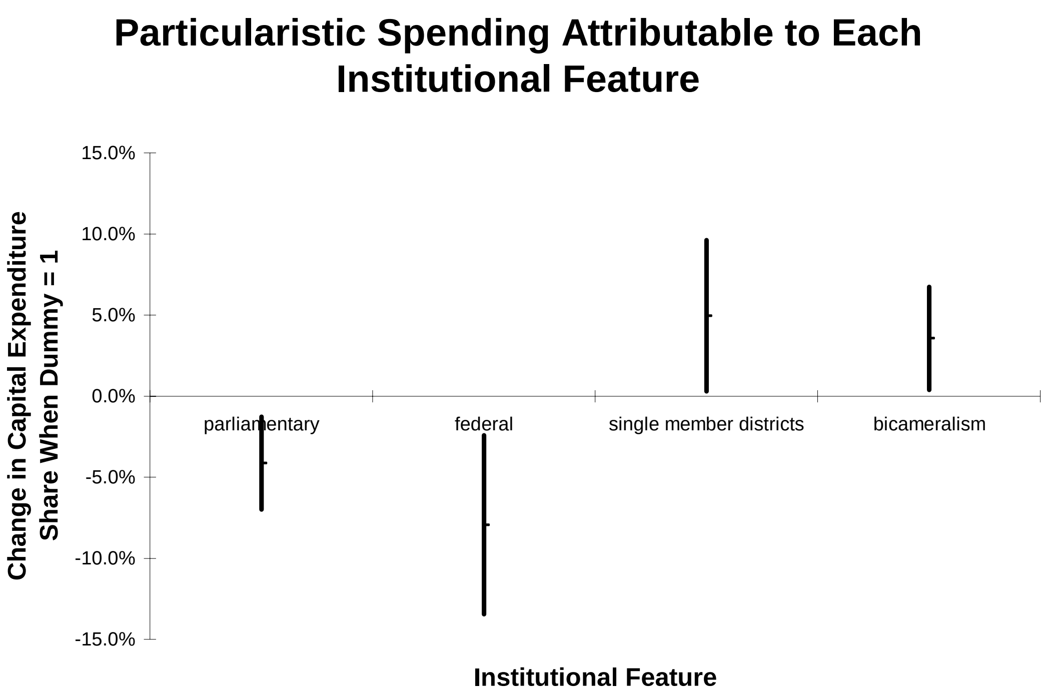

Table 4 simulates the effects of decentralization on a unitary, unicameral parliamentary system, where most legislative districts are multimember, also for estimate 2. The average capital expenditure with the average decentralization in taxes and expenditure (around 18 percent) is predicted to be 11.1 percent. When taxes and expenditure are both decentralized by one standard deviation, the model predicts capital expenditures to drop to 9.1 percent. When both expenditure and decentralization increase by one standard deviation, particularistic spending rises to 13.1 percent. However, the most striking effects are found in the cells off the diagonal, where there is a mismatch between expenditure and tax decentralization. In the case where expenditure decentralization is one standard deviation higher, while tax decentralization is one standard deviation lower than the average, pork allocations almost double, to 18.8 percent. When decentralization in expenditure is very limited, while tax decentralization is high, particularistic spending is dramatically reduced.

Table 3

	TAX	
EXP	Less	more
Less	9.1	3.3
More	18.8	13.1

Pending: calculate standard errors of simulation

Estimate 3 in table 1 shows a specification that does not include tax decentralization. In that estimate, the net effects of both revenue and spending seem to be captured by expenditure decentralization: the size of the coefficient for expdec in estimate 3 is roughly the same as the difference in the coefficients of taxdec and expdec in estimate 2. This suggests that decentralization, even if balanced on the revenue side, generates common pool problems, and politicians, regardless of the institutional configuration, take advantage of that feature in order to increase distributive spending. Estimate 4 uses the lagged dependent variable, which accounts for most of the variance previously attributed to the decentralization variables. The coefficients for the institutional variables determining capital expenditures remain roughly the same, even under this specification.

Table 4 presents some indicators of the robustness of the results to additional institutional specifications, including in particular the Crain and Bradbury (2001) variables for the number of legislative seats in both upper and lower chambers. Our regression actually shows the opposite sign for the lower chamber, and when the number of legislative districts is used instead of seats, does not show a statistically significant effect. The number of *single-member* lower house seats (*ldistric*sesmd)* also has a negligible statistical impact. More importantly, however, the *substantive* import of all these factors are minute, suggesting that a naïve version of the law of 1/n, which only takes into account the sheer number of legislators, does not stand empirical scrutiny.

5. Discussion, Conclusion (incomplete)

The empirical contribution of this paper to the literature on fiscal politics in general, and the *Law of 1/n* in particular, is the importance of accounting for fiscal federalism to explain the size of government capital expenditures. We find that greater fiscal control by the central government results in lower capital expenditures ("pork") for the government as a whole. Our central argument is that the common pool problem of overspending, and hence the logic underlying the *Law of 1/n*, is driven by the extent to which accountability for spending and taxation is severed by the allocation of fiscal control in that polity.

While not discussed explicitly in the model, there are other theoretical links between fiscal decentralization and propensities to dispense pork. When budgetary decisions about particularistic projects are made locally, each locality will favor only that quantity of goods that constituents are willing to pay for. When decisions are centralized, on the other hand, local governments cannot by themselves satisfy their constituents' demand for pork, and voter demand for particularistic projects diffuses to the national level. This increases the marginal electoral utility that central politicians gain from providing pork, as compared to nationally-based transfer programs, and incentives to cultivate the personal vote through pecuniary redistribution will intensify.

At the same time, fiscal federalism affects political competition by assigning property rights over the distribution of pork projects. For politicians to credibly claim credit for the provision of public or private goods, they must have the political power to actually influence the relevant decision-making process. In other words, for national politicians to credibly claim credit for particularistic projects that are developed in their districts, fiscal power must be centralized. This lets politicians promote themselves to voters based on the pork they bring to their districts, and lets political competition be increasingly driven by the distribution of pecuniary goods.

In many ways, studies linking government spending decisions to electoral incentives have focused too greatly on the role of electoral institutions, such as district magnitude, the number of legislators, bicameralism, and the like. While these factors undoubtedly play a critical role in the strategic incentives of political actors, it is important to remember that decisions over budgetary redistribution are constrained by non-electoral factors. We have highlighted fiscal federalism as one such factor affecting the common pool problem of overspending. The relationship between local and central governments, not only in terms of fiscal authority but also in terms of voter expectations about what (and how much) each level of government should provide, has potentially far-reaching effects on our understanding of the electoral incentives, voter behavior, and government spending. A further theoretical and empirical examination of the links between decentralization and political decision-making is warranted in future research.

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Table 1. Empirical evidence for government size and political institutions

Study	**Dependent variable(s)**	**Independent variables**	**Sample**	**Main Findings**
Persson and Tabellini (1998)	1. Expenditure of central government / GDP 2. Public goods (transportation, education, and order and safety)	- Presidentialism. - Majoritarian. - Per capita income. - Openness. - Population>65. - Ethno linguistic fractionalization. - Centralization.	Cross-section data for 54 democracies (40 in public goods) from "around" 1990.	- Presidential systems have smaller governments than parliamentary regimes. - Majoritarian electoral systems generate more government expenditure, although it is a non-robust result.
Baqir (1999)	1. Per capita city expenditure. 2. City expenditure / city income. 3. Government employment per capita.	- Council size. - Mayor veto. - Mayor budget power - Fused mayor. - Ethnic heterogeneity. - Population. - Income. - Education. - Income inequality.	Cross-section data for 1972 US cities in 1990.	- The greater the number of districts, the more government spending. - More ethnic heterogeneity and more inequality produce more government spending. - Mayors' veto power reduces government spending.
Persson, Roland, and Tabellini (2000)	- Total expenditures of central government.	- Income - Openness - Population>65. - Ethno linguistic fractionalization.	Cross- section data for 54 democracies from 1988-1992.	- Parliamentary regimes spend on average more than congressional-presidential regimes.
Boix (2001)	- Current receipts of the general government.	- Democracy. - Turnout in Dems. -Proportional representation in Democracies - Presidentialism in Democracies - Federalism in Democracies - Income. - Openness.	Panel data for 65 countries in two periods: 1950-1990, and 1970-1990.	- Democracies have bigger governments than authoritarian regimes; except for low levels of income. - Presidential regimes in democracies have smaller governments. - Proportional representation systems have bigger governments for 1970-90.
Bradbury and Crain (2001)	1. Government Consumption/GDP. 2. Government Consumption per capita.	- Size of upper and lower chambers. - Population. - Openness. - Per capita GDP.	Panel data for 37 democracies from 1971-1989.	- The bigger legislature size, more government expenditure. - The effect is greater in unicameral settings. - A second legislative chamber mitigates spending.
Milesi-Ferretti, Perotti, Rostagno (2001)	1.Expenditure/GDP 2.Transfers. 3.Current and capital expenditure.	- District magnitude (average, effective and standardized). - Rae deviation from proportionality. - Population - Per capita GDP. - Ethnicity. - Ideology.	Cross-section data for 20 OECD and 20 Latin American countries from 1991-1994.	(For the full sample) - District magnitude and Rae deviation are positively related to transfers; results are not significant for either expenditure nor public goods.

Table 2

Random-effects GLS regression on *capexp* as dependent variable				
	Coefficient (S.E.)	Coefficient (S.E.)	Coefficient (S.E.)	Coefficient (S.E.)
	Estimation 1	**Estimation 2**	**Estimation 3**	**Estimation 4**
capexp (t-1)				0.9074*** (0.0225)
decexp	0.2745*** (0.0888)	0.2723*** (0.0884)	0.1246** (0.0489)	0.0156 (0.0506)
dectax	-0.1572** (0.0777)	-0.1567** (0.0777)		-0.0054 (0.0503)
parliam	-0.0403*** (0.0147)	-0.0413*** (0.0146)	-0.0418*** (0.0145)	-0.0065* (0.0037)
feder	-0.0770*** (0.0286)	-0.0794*** (0.0281)	-0.0786*** (0.0278)	-0.0074* (0.0045)
sesmd	0.0423 (0.0277)			
smdmaj		0.0495** (0.0238)	0.0488** (0.0235)	0.0116*** (0.0037)
bicam	0.0352** (0.0163)	0.0356** (0.0162)	0.0340** (0.0161)	0.0064* (0.0035)
poplog	-0.0081 (0.0070)	-0.0095 (0.0069)	-0.0104 (0.0068)	0.0031** (0.0014)
gdppclog	-0.0148*** (0.0047)	-0.0152*** (0.0046)	-0.0156*** (0.0046)	0.0031*** (0.0011)
Constant	0.2792*** (0.0406)	0.2837*** (0.0403)	0.2874*** (0.0401)	0.0446*** (0.0136)
R^2-Overall	.2855	.3209	.3163	.8785
n	476	476	477	433
Groups	48	48	48	48
Min. Obs. Per group	1	1	1	1
Max. Obs. Per group	13	13	13	12
Rho (u_i's variance)	.7994	.7912	.7858	/a
Hausman-Prob Chi-2	.0368	.0183	.0126	/a

*****P>0.01, **P>0.05, *P>0.1**
/a: Estimate of sigma u = 0, random-effects estimator has degenerated to pooled OLS.

Table 4

Random-effects GLS regression on *capexp* as dependent variable				
	Coefficient (S.E.)	Coefficient (S.E.)	Coefficient (S.E.)	Coefficient (S.E.)
	Estimation 1	**Estimation 2**	**Estimation 3**	**Estimation 4**
capexp (t-1)			0.9077*** (0.0233)	
decexp	0.2946*** (0.0884)	0.2756*** (0.0881)	0.0110 (0.0506)	0.2813*** (0.0889)
dectax	-0.1730** (0.0773)	-0.1611** (0.0774)	-0.0020 (0.0503)	-0.1647** (0.0775)
parliam	-0.0262* (0.0156)	-0.0394*** (0.0145)	-0.0066* (0.0037)	-0.0397*** (0.0147)
feder	-0.0847*** (0.0291)	-0.0835*** (0.0278)	-0.0076* (0.0045)	-0.0799*** (0.0294)
smdmaj	0.0580** (0.0254)	0.0710*** (0.0253)	0.0136*** (0.0047)	
sesmd				0.0340** (0.0162)
bicam	0.0335** (0.0162)	0.0341** (0.0160)	0.0054 (0.0036)	0.0842** (0.0375)
lowseat	-0.0002** (0.0001)			
upseat	-0.0001 (0.0001)			
ldistric		-0.0001** (0.0001)	0.0000 (0.0000)	-0.0002 (0.0002)
ldistric*sesmd				0.0000 (0.0002)
gdppclog	-0.0131*** (0.0047)	-0.0139*** (0.0046)	-0.0030** (0.0014)	-0.0131*** (0.0047)
poplog	0.0061 (0.0089)	-0.0026 (0.0075)	-0.0023* (0.0014)	-0.0003 (0.0077)
_cons	0.2569*** (0.0412)	0.2645*** (0.0407)	0.0433*** (0.0136)	0.2547*** (0.0414)
R^2-Overall	.3074	.3500	.8788	.3175
n	475	474	432	474
Groups	48	48	48	48
Min. Obs. Per group	1	1	1	1
Max. Obs. Per group	13	13	12	13
Rho (u_i's variance)	.8001	.7880	/a	.7961
Hausman-Prob Chi-2	.0066	.0396	/a	.0001

*****P>0.01, **P>0.05, *P>0.1**

/a: Estimate of sigma u = 0, random-effects estimator has degenerated to pooled OLS.

Appendix

Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
y1	575	0.1422574	0.0897805	0.0294586	0.5676818
gdppclog	637	8.381853	1.375641	5.450609	10.71691
poplog	585	2.483021	1.685518	-1.443923	6.83778
mdmh	610	14.35891	33.84705	1	180
presid	619	0.3441034	0.4754592	0	1
dectax	578	0.1775958	0.1828282	0	0.9323009
decexp	579	0.173157	0.1785588	0	0.9140007
parliam	619	0.641357	0.47999	0	1
feder	637	0.1868132	0.3900678	0	1
sesmd	586	0.2584451	0.404267	0	1
smdmaj	586	0.2969283	0.457295	0	1
bicam	619	0.368336	0.4827433	0	1
upseat	614	73.93974	170.7306	0	1100
lowseat	618	224.1667	168.105	0	672
ldistric	611	103.7938	156.932	0	651

Countries included in dataset

Argentina
Australia
Austria
Bahamas
Belgium
Belize
Bolivia
Botswana (2.3)*
Brazil
Canada
Colombia
Costa Rica
Cyprus
Denmark
Dominican republic
Ecuador
El Salvador
Finland
France
Gambia, The (3.4)*
Germany, West
Greece
Guatemala
Iceland
India
Ireland
Israel
Italy
Jamaica
Japan
Korea, South
Luxembourg
Madagascar (5.4)*
Malaysia (3.4)*
Malta
Mauritius
Mexico (3.4)*
Netherlands
New Zealand
Nicaragua *
Norway
Pakistan (4.5)*
Papua New Guinea
Peru
Philippines (4.4)*
Portugal
Singapore (4.5)*
Spain
Sri Lanka (3.4)*
Sweden
Switzerland
Turkey
United Kingdom
United States
Uruguay
Venezuela

Inclusion criterion: Democracies according to both Freedom House (score of more than 5.4) and Przeworski et. al. (2000).
* Not democratic according to Przeworski et. al., although included in database due to the prominent role played by formal political institutions.