The Size and Composition of Government Spending in Multi-Party Systems[†]

Carlos G. Scartascini and W. Mark Crain[‡]

James M. Buchanan Center for Political Economy
George Mason University
MSN 1D3, Fairfax, VA 22030, USA

JEL Classification: D72, D78, H50, C23

Keywords: Public Expenditure, Political Parties, Electoral Systems, Legislatures.

ABSTRACT

This paper examines the structure of party competition across democratic nations and its impact on the size and composition of government spending. The analytical framework expands on the norm of universalism and applies it to multi-party legislatures. Empirically, we find that increases in the number of effective political parties increases the size of the government. We also find significant effects on the composition of spending. The empirical estimates further indicate that when a single party holds a parliamentary majority, the size of the majority party's share has a systematic, but non-linear impact on spending.

Comments Welcome

[†] We are grateful to Gordon Tullock, Richard E. Wagner, Tyler Cowen, Joe Reid, and the participants at the Public Choice Society Meeting in Charleston, SC, for constructive comments on a previous draft of the paper. Remaining errors are our responsibility.

[‡] Contact e-mail: cscartas@gmu.edu; mcrain@gmu.edu

The Size and Composition of Government Spending in Multi-Party Systems

1. Introduction

Research in the field of political economics has probed the relationship between electoral institutions and the size and composition of government spending. Evidence continues to mount that institutions such as legislative district size and electoral formulas that translate votes into seats shape economic and fiscal policy choices. This type of evidence is important as nations seek to adopt or reform political processes that accommodate citizen preferences and at the same time restrain fiscal excesses. This paper embraces and seeks to advance the political economy framework by examining how the structure of political party competition in national legislatures influences fiscal performance.

Our point of departure from the existing literature is straightforward: electoral institutions affect the structure of party competition and through this channel fiscal policy outcomes. Whereas prior work such as the studies by Persson and Tabellini (2000) and Milesi-Ferreti, *et al.* (2000) model the potential effects of electoral rules on "pre-election politics," we address the fiscal consequences of "post-election politics." Specifically, we focus on how the number and strength of parliamentary parties influences legislator incentives to bargain both within party ranks and across party lines. Of course, the pre-election and the post-election effects of electoral rules are not mutually exclusive. We simply seek to flesh out the post-election effects of electoral rules by incorporating the structure of party competition that in turn influences budget decisions.

In most of the world's democracies the electoral rules and consequently the structure of party competition differ substantially from those associated with a US-style system. For example, in most democracies no single political party holds a parliamentary majority, and the median number of parties represented in the national legislature is five. As these two simple statistics suggest, interaction and bargaining among non-dominant political parties distinguishes

fiscal policymaking in most countries in most budget cycles. We provide new evidence on the budgetary consequences of party competition based on two cross-country samples, one using OECD countries and the other using a large sample of free and partially free countries. For each effective political party that gains parliamentary representation, central government expenditure as a share of GDP increases by roughly two percentage points in OECD countries and by half a percentage point in the large sample of countries. In addition, we find that when a single party does hold a parliamentary majority, the size of the majority party's share has a systematic, but non-linear impact on spending. Because politicians rely on different sets of voters in order to ensure nomination and reelection under different electoral systems, we also observe systematic differences in the composition of spending.

The remainder of the paper is organized as follows. Section 2 discusses the notions of "universalism" and "constrained universalism," two concepts central to the hypothesis regarding the effect of party competition on fiscal outcomes. These concepts have been applied for the most part to US legislatures, which of course means to a system dominated by two political parties. We then modify these concepts to render them applicable to countries with multiple parties. Section 3 specifies the empirical model and provides the results using panel data for two different samples, OECD countries and a large sample of "free" and "partially free" countries.[1] Finally, Section 4 summarizes the major findings and offers some concluding remarks.

2. Universalism, the "Law of 1/*n*" and Legislative Majorities

Weingast and others have emphasized the norm of universalism and its impact on decision-making in a decentralized legislature with weak political parties. The concept of

[1] This large sample includes those countries with an average *Freedom House Index* score lower or equal to 3.5. Tables 12 and 13 in the Appendix list all the countries.

universalism is based on the process of reciprocity and deference among legislators.[2] In the absence of legally binding contracts among legislators, minimum winning coalitions (MWC) consisting of only 51 percent of the legislators are not stable. For example, a small percent of the MWC members could form a new coalition with the representatives in the minority that offers larger benefits than those under the existing coalition. This creates considerable uncertainty regarding which of the many possible MWCs will be formed and how long they might last. The norm of universalism is a hedge against this type of uncertainty because each representative trying to maximize the expected benefits for his or her constituents might prefer a certain, stable coalition of the whole legislature to an uncertain, unstable MWC. Under the norm of universalism, and assuming that public programs are financed by a general, uniform tax each legislator will favor a level of expenditure for his or her district such that the marginal benefit equals *1/n* of its marginal costs (where *n* equals the number of legislators). In turn, the budget approved by the legislature is larger than the budget expected from a minimum winning coalition.[3] Under the norm of universalism expenditures grow as the number of legislators increases, the so-called law of 1/n.[4]

Inman and Fitts (1990) develop and test the notion of "constrained universalism." The novel extension in their analysis incorporates the role of political parties in a two-party legislature, *i.e.*, the US Congress. Inman and Fitts demonstrate that when one party holds a

---

[2] Universalism is informally known as "pork-barrel politics." Weingast (1979, p. 249) defines universalism as "the tendency to seek unanimous passage of distributive programs through inclusion of a project for all legislators who want one." See also Niou and Ordeshook (1985) for a formal elaboration of the norm of universalism.

[3] The paper by Weingast (1979) and the extension by Shepsle and Weingast (1981) offer a thorough explanation of the decision problem faced by the legislator and prove the stability of the equilibrium.

[4] Gilligan and Matsusaka (1995 and forthcoming) examine the 1/*n* hypothesis empirically using data on American States in the pre- and post-World War II periods. In American State legislatures, where legislators are selected under a plurality rule from (mostly) single-member constituencies, they find a positive and significant correlation between the size of upper legislative chambers and state government expenditures. They also find that the size of state lower chambers has no systematic effect on spending, an interesting result in its own right.

majority of seats in the chamber, the instability of the legislative process is reduced. In turn this predictably lowers spending relative to the equilibrium under "unconstrained" universalism as conceived in the Weingast analysis. In the constrained universalism framework, increasing the majority party size has two opposing effects. First, government expenditures increase as the number of majority party legislators (M) rises, in other words, the 1/*n* effect except that the number of majority party legislators is relevant for spending decisions and not the total number of legislators. Second, increasing the majority party size increases the tax cost shared by the majority party's members. That is, the share of the tax cost that may be exported to the constituencies of non-party members falls as the size of the majority party increases. Constrained universalism assigns an explicit role to the party organization, namely that it seeks to internalize the cost spillovers to party members. This provides a mechanism that restrains government spending relative to the outcome in which each legislator ignores the cost-spillovers to other legislators' constituents. These two effects imply that the size of the budget follows a quadratic trend, growing as *M/N* increases from 0.5, and falling as *M/N* approaches 1. Inman and Fitts support this thesis empirically by examining the pattern of US federal spending over time as a function of the size of Congressional majorities. They find that federal spending in the US peaks when the majority party share equals 69 percent.

The norm of constrained universalism moves one step forward from the universalistic approach by explicitly recognizing the role of political parties in the legislative process. We extend this analysis further by considering the impact of multiple parties, an important institutional detail when applying constrained universalism to most democratic governments. Among the 106 "free" and "partially free" countries in 1996, the median number of parties with representation in the lower house equals five.[5] Table 1 provides an overview of the number of parties represented in the lower chambers of parliament for various regions of the world in 1996.

[5] The typically large number of parties is not peculiar to the lower houses of parliaments. More than 50 percent of bicameral countries had at least six parties represented in the upper house.

The median value among regions ranges from three parties (in Central American and Caribbean countries) to 9.5 parties (in the Middle East).

A large body of work in political science attributes these observed differences in party representation to electoral institutions, the most important being proportional representation. A number of studies find that proportional representation systems tend to generate a larger number of parties than plurality, single-member district systems.[6]

Table 1. Political Parties Represented in the Legislature in 1996

	Mean	Median	Std. Dev	Observations
All Countries	6.1	5	3.0	106
OECD	7.0	7	2.3	22
Latin America	5.0	4	2.4	22
Africa	5.5	5	3.4	21
Asia	7.6	5.5	4.5	12
Central A. and Caribbean	3.6	3	1.4	16
Middle East	9.2	9.5	1.7	4
North America	4.0	4	1.4	2
North West Europe	7.3	7	2.4	19
Oceania	5.0	5	1.6	5
South America	6.2	6	3.0	10
South East Europe	6.7	7	2.1	18
Ex-Communist Countries	7.4	7	1.6	11

In multi-party environments the probability of finding one party holding the majority of the seats falls rapidly. For example, Bolivia in 1996 had seven parties represented in the lower chamber, and the largest party held only 25 percent of the seats. Cases like Bolivia, where no party holds the majority account for more than 50 percent of the observations in our sample of countries. Nevertheless, we recognize that the complexity of the electoral system and problems of information could still allow a party to gain the majority even when multiple parties are present. Table 2 gives a broad overview of this pattern across regions, showing the summary statistics for the percent of seats held by the largest party in the lower chambers.

[6] Lijphart (1999) presents a summary on the determinants of the number of parties.

Table 2.Share of Seats Held by the Largest Party in Legislature in 1996				
	Mean	**Median**	**Std. Dev.**	**Observations**
All Countries	0.50	0.48	0.19	106
OECD	0.41	0.42	0.10	22
Latin America	0.49	0.49	0.13	22
Ex-Communist	0.41	0.41	0.12	11
North West Europe	0.37	0.39	0.09	19
South East Europe	0.45	0.41	0.16	18
North America	0.57	0.57	0.05	2
South America	0.42	0.44	0.13	10
Central A. and Caribbean	0.59	0.54	0.14	16
Africa	0.68	0.68	0.24	21
Middle East	0.36	0.35	0.15	4
Asia	0.50	0.46	0.17	12
Oceania	0.45	0.45	0.05	5

Because most countries in most years do not have a majority party in their legislature we seek to broaden the Inman-Fitts concept of constrained universalism to facilitate cross-country analyses. A multi-party legislature, in addition to reducing the probability that a single party holds the majority of the seats, creates an incentive structure that differs from that associated with the constrained universalism model in a two-party system.[7] For example, when multiple parties are present, the agents in charge of fiscal policy negotiations are party officials instead of the individual legislator as is the case in the US-style system. The link between parties and politicians is less evident in countries with single-member districts (and plurality or first-pass-the-post electoral rules) than in countries with party lists (proportional representation) because politicians seeking reelection have an incentive to respond to the groups that will increase their chances of retaining office. These groups differ markedly under each electoral system. Under a regime of single member districts and plurality rule, politicians respond to their local constituency to secure nomination. Under a regime of multi-member districts and proportional representation, politicians respond to the party leadership's platform to increase their chances of nomination. By following the party platform a candidate can obtain a spot on the party's list

[7] Additional evidence on the differences in legislators' behavior associated with alternative electoral systems is presented by Stratmann and Baur (2000).

under multi-member districts. Within that electoral structure, centralized nomination procedures result in substantial party cohesion.

The costs for the candidates for not serving the geographic constituency also differ under a plurality, single member district system versus a proportional representation, multi-member district system. While single member districts depend on the effort of their unique representative, the fate of the constituency in multi-member districts depends on the joint effort of several representatives from different parties. Consequently, problems of collective action arise where legislators find it profitable to serve broad-based interest groups because the benefits surpass those from helping the geographic constituency.[8]

Political parties and the norm of "modified universalism"

For multi-party legislatures where no party holds a majority of the seats, bargaining on bills and public projects relies on the party leadership and not on every legislator. This reduces the actual number of relevant bargaining agents to the number of parties.[9] Each leader reflects an amount of power proportional to the number of seats his or her party holds in the legislature.[10] In order to account for this relative bargaining power we rely on a variable that measures the number of effective parties with seats in the legislature (labeled *ENPP*). The effective number of political parties is the inverse of the Hirschman-Herfindahl concentration index and equals $1/\sum s_i^2$, where *s* represents the share of seats in the chamber held by each

[8] As a further distinction, in a two-party system, constituents are able to hold their specific representative accountable. Under government coalitions, lines of responsibility are blurred and each party attempts to blame its partners for failures while taking credit itself for successes. Katz (1980) exposits this distinction.

[9] In proportional systems a politician regards himself not as an ambassador of the district (as in single member constituencies) but as an ambassador of a particular segment of the population that is thought to vote for the party of the representative. With proportional representation, the bargaining is frequently between the parties representing different interest groups that are not necessarily geographically based (see Tullock, 1994, p. 33).

[10] When a parliamentary party acts through a leader, its vote is worth exactly the number of legislators of the party. This means that the party's leader votes on behalf of the entire group of representatives (the vote weighted according to the size of the group) in Congress (see Sánches de Dios, 1999, p.150).

party. The ENPP index incorporates the relative bargaining strength of each party in the legislature and measures the number of parties of similar size included in the legislature.[11] This variable is widely used in the political science literature as an empirical approximation of the degree of proportionality of the electoral system. Most relevant to our analysis is the link between the number of parties and the electoral system originally developed by Duverger. The idea behind "Duverger's Law" is that a plurality ballot system favors the two-party system, while a proportional representation system favors multiple parties.[12] This important relationship has been extended and empirically tested by Laakso and Taagepera (1979), Powell (1982), Ordeshook and Shvetsova (1984), Taagepera and Shugart (1989), Lijphart (1990), Cox (1997), and Amorin Neto and Cox (1997).

To extend the framework in Weingast (1979) and Inman-Fitts (1990) to the multi-party, no majority-party environment we introduce the concept of "modified universalism." In multi-party legislatures as the effective number of parties increases, coalitions become unstable. For example, in a five-party legislature, a minimum size majority of three parties could be overturned easily by a new coalition formed by one of those parties and the two remaining parties. In that environment, party leaders faced with the prospects of being in the losing minority would trade uncertain benefits for lower but certain returns, leading to a universalistic legislature in the sense of political party inclusiveness.

We define the norm of modified universalism as the tendency to seek unanimous passage of expenditure programs through inclusion of a project for all the political parties that want one. In the traditional universalistic model each legislator proposes geographically

---

[11] For example, if there are four parties each with 25 percent of the seats, *ENPP*=4. If one party has 85 percent of the seats and the other three parties have only 5 percent each, *ENPP* is approximately 1.

[12] The theoretical explanations behind those statements are strategic voting (voters will only cast their vote for those with a positive chance of winning) and strategic contributions (political and monetary contributors who want to affect the electoral result will support those candidates with serious chances of winning).

targeted spending to increase his or her chances of reelection. In the party-based framework, parties promote the platform of spending that would bring them the higher voting advantage over the other parties by aiming the highest spending towards their supporters. If chosen to propose a budget, each party leader's first choice is to spend nothing on the projects that could benefit other parties and spend only on the projects that benefit their own supporters. However, absent a legislative majority that proposal is sure to lose in the legislature unless proponents can secure additional votes by including projects favored by other parties.

Proposition 1: An increase in the number of effective parties in the legislature raises the overall size of the budget because the norm of modified universalism.

The intuition behind this proposition is simply that the party leader, before choosing a strategy, has to evaluate the payoff from the universalistic coalition against the uncertain payoff from a minimum size coalition. Assuming that all the proposed projects have a benefit *b* greater than their cost *c*, and that these costs are the same for every project, then under a universalistic agreement the payoff would be *b-c*. Each party receives the benefit of the project they sponsored minus the party voters' share of the total costs, or *one nth* of *n* projects that cost *c*, where *n* stands for the number of effective parties in the legislature.

Following the formulation by Weingast (1979), the probability of belonging to a minimum size majority is *(n+1)/2n*, which we label *m*. The expected payoff of a MWC is:

$$m(b-mc)+(1-m)(-mc)=mb-m^2c-mc+m^2c=m(b-c)$$

Therefore, as long as the difference between the universalistic payoff and the expected payoff from a MWC is greater than zero, a political leader would always prefer a universalistic outcome instead of the lottery of MWC.[13] As the number of parties represented in the assembly

[13] Note that: (b-c) - m (b-c) = (1-m) (b-c) >0 for n>1. A more general proof, where *b* is not necessarily greater than *c*, can be found in Niou and Ordeshook (1985). In their set-up, either institutional constraints or repeated games yield the same universalistic outcome.

increases, the number of projects proposed and approved would increase accordingly. Each party's expenditure proposal would be at the level of provision such that the marginal benefit of the project equals *1/n* of its marginal cost. We reiterate that here, *n*, stands for the number of parties represented in the legislature.

The uncertainty of forming a minimum winning coalition approaches zero when one party holds the majority of the seats. In those cases, we return to the norm of constrained universalism to explain fiscal policy even in a multiparty environment. That case reduces to the model summarized above by Inman and Fitts (1990); expenditures follow a quadratic trend with respect to the size of the majority party, increasing from 0.5 and decreasing beyond some level of super-majority size. However, we offer a slight variation on the quadratic relationship posited by Inman and Fitts. Specifically, bare majorities are sometimes not sufficient to reduce uncertainty in the legislative bargaining process because some legislators might dissent from their party's leadership on some issues or be absent to cast key votes. Consequently, in a certain range over a bare 50 percent majority, an increase in the size of the majority party reduces need to include other parties in the winning coalition. Put differently, a majority party size above a bare minimum provides a valuable hedge against party member defections. After a certain threshold the probability that party defections or absences will be decisive tends to zero. Beyond that threshold, the system predictably follows the pattern described by Inman and Fitts. We state this implication as follows:

Proposition 2: Where one party holds a majority of legislative seats, the size of the government follows a cube relationship with respect to the share of seats held by the majority party.

In sum, this analysis differs from recent papers that tie electoral rules to fiscal policy through pre-election politics, a tradition well summarized in Persson and Tabellini (2000). In the pre-election politics framework, fiscal policy differs according to the optimal binding promises

made by the candidates during the campaign. For example, in majoritarian systems (a US-style electoral system characterized by small districts and plurality rules) spending tends to be larger and more narrowly targeted than under proportional representation systems (large districts with legislature seats allocated on the basis of total party votes). Candidates in majoritarian elections pay most attention to voters in marginal electoral districts, which induces more public goods expenditure.[14] These models, however, do not consider the impact of the electoral system on the structure of political party competition and post-election legislative bargaining. Here we seek to advance the state of analysis by blending the new tradition that stresses "pre-election politics," with an older tradition that stresses legislator bargaining, which we label "post-election politics." In the post-election politics perspective, factors such as party leader bargaining and logrolling expand the size of the budget, for example the now-familiar fiscal commons effect.

3. Empirical Evidence on the Size and Composition of Spending

The size of government in relation to national economies differs considerably around the globe. In most European countries the share of central government expenditures amounts to roughly 40 percent of GDP, while expenditures in the average South American country equals about 20 percent of GDP.[15] Traditional explanations for the wide variation among countries rely on demand-side determinants of public expenditures such as different preferences for public sector programs or simply different living standards, measured in terms of income per capita or

[14] Using a similar model, Milessi-Ferreti, *et al.* (2000) find that the electoral system determines the type of legislator that is elected to the legislature: plurality systems elect legislators with preferences for high spending on public goods while proportional systems elect legislators with preferences for high spending on transfers (see Milessi-Ferreti, *et al.*, 2000, p.10).

[15] Table 7 in the Appendix presents an overview of the differences on the size of the government among geographic regions. We follow related studies and use the World Bank definition of central government expenditure, which equals the sum of goods and services (including wages and salaries), capital expenditure, subsidies and transfers, and interest payments.

the distribution of income.[16] However, differences in living standards, income equality, and other demographic characteristics provide only partial explanations for the observed range in the size of government.

Our empirical specification builds on the analysis of modified universalism that predicts that the size of the government increases as the number of effective political parties in the legislature increases. As a first look at the data, Table 3 splits the sample of countries by the median of the effective number of parties in the legislature. For countries with bicameral legislatures, we use the number of effective parties in the lower chamber. The first column reports the average size of the government for those countries with a below-median value of ENPP, and the second column reports the average size of the government for those countries with an above-median value of ENPP. The data cover the period 1970 through 1990 for OECD countries, and 1980 through 1996 for the large sample.[17] The top panel of Table 3 indicates that OECD countries with a number of effective parties above the median have an average size of the government, measured by central government expenditures as a share of GDP, over 20 percent larger than those countries with a number of effective parties below the median. Roughly the same difference exists for the World sample of 106 countries. Interestingly, Persson and Tabellini (1999) report a similar correlation between the degree of proportionality of the system and the size of the government. Using a sample of more than 50 democracies for 1990, after controlling for other economic and social variables, they find that spending on public goods as a percentage of GDP is one and a half percentage points lower in countries with majoritarian elections.

[16] For thorough surveys of the literature on the determinants of government spending see Mueller (1989) and Holsey and Borcherding (1997).

[17] The data range differs because we use two different data sources. The political data for the OECD were obtained from the International Almanac of Electoral History (1991). The political data for the large sample were obtained from the Inter-parliamentary Union (various years).

Table 3. A first look at the norm of modified universalism [a]		
	Countries below the ENPP median	Countries above the ENPP median
	OECD countries [b]	
1970-1990		
Mean	30.5	36.7
Median	30.4	37.0
Std. Deviation	9.4	10.4
	World sample [c]	
1980-1996		
Mean	28.0	34.0
Median	26.2	33.7
Std. Deviation	10.6	13.2

Notes to Table 3:
[a] Values in table correspond to central government expenditure as a share of GDP
[b] Median value of ENPP: 3.1
[c] Median value of ENPP: 2.7
The differences in means are statistically significant at the 1% level.

Using central government expenditure as a share of GDP (labeled *CGE/GDP*) as a proxy for the size of the government, we estimate several panel-data regressions to examine these differences more rigorously. Equation 1 specifies the model.

$$(CGE/GDP)_{i,t} = a + b_1 ENPP_{i,t-1} + b_2 \mathbf{P_{i,t-1}} + b_3 \mathbf{X_{i,t-1}} + \text{ä}_R + \text{ä}_t + e_{i,t} \qquad [1]$$

In Equation 1, the subscript *i* represents an observation for a particular country, and the subscript *t* represents an observation in a specific year. ENPP is the number of effective parties in the lower chamber, our main variable of interest. ENPP and all the control variables in Equation 1 are lagged one year with respect to the size of the government to take into account the budget cycle. The vector ***X*** includes a set of four economic and demographic control variables commonly found in empirical studies of spending across countries. First, the *log of GDP per capita* is a proxy for the development of the country and could influence voters' preferences for public goods as well as the size of the tax base. Second, the model includes an *Openness* variable*,* measured as the sum of exports plus imports as a percent of GDP, following the results in Cameron (1978), Rodrik (1998), and Alesina and Wacziarg (1998). Third, the *log of population* controls for potential economies of scale in the provision of public services. Fourth, *Senior population*, measured as the percentage of the population aged 65 and

over, controls for the demand for major government programs for the elderly such as social security, health insurance, and retirement benefits.

The vector ***P*** includes a set of five political control variables. *MAJPARL50* is a dummy variable equal to one in those cases where a party holds more than 50 percent of the total number of seats. M/N reflects the percentage of seats held by the largest party in the chamber. Extending the specification in Inman and Fitts (1990) we include three interaction terms, *M/N*MAJPARL50, (M/N*MAJPARL50)*^{2}*,* and *(M/N*MAJPARL50)*^{3}, to examine the modification to the norm of constrained universalism. These interaction variables investigate the non-linear effect on spending as the size of the majority party changes and opposing forces come into play. First, a minimum majority does not ensure passage of the party leadership's desired agenda; increases in the majority share above a bare minimum reduces the need to include proposals desired by another party. Second, following the traditional 1/*n* effect, an increase in the majority share lowers the internalized cost per party member, increasing the incentive to spend. Finally, as the majority party's share increases beyond a threshold value, the party's incentive to internalize the 1/*n* effect grows, which exerts a restraining effect on spending.

In addition to the variables controlling for party structure, the vector ***P*** includes three other political variables. *Seats in the lower chamber* controls for the size of the legislature. Even though in multiparty legislatures each individual legislator does not have extensive bargaining power, legislature size affects the degree of fractionalization within a party. That is, because the majority party variables are denominated in terms of the share of legislative seats, we also control for a legislature's absolute size. The two final political variables are *Federal Country* and *Presidential Country. Federal Country* is equal to 1 for federal countries and equal to zero for unitary countries (Cameron, 1978). The importance of controlling for the type of regime (*i.e.*, the *Presidential Country* variable) is twofold. First, presidential regimes tend to have lower expenditures because of competition among candidates, and presidents are held directly and separately accountable by the voters, as suggested by Persson and Tabellini

(1999). Second, if the president can veto the budget, then any coalition that includes the party of the president will be more stable than any other coalition. This reduces uncertainty and therefore the tendency for universalistic outcomes that include programs for multiple parties. Finally, $\ddot{a}_R$ and $\ddot{a}_t$ are vectors of fixed effects variables. $\ddot{a}_R$ controls for *region specific effects* with dummies for North West Europe, South East Europe, South America, North America, Central America and the Caribbean, Asia, Africa, Middle East, Oceania, and the Ex-Communist countries. $\ddot{a}_t$ controls for year specific effects.

Table 4 presents the results of estimating Equation 1 using panel data. Here the sample includes the OECD countries for 1970-1990.[18] The positive and significant coefficient on ENPP indicates that central government expenditure as a share of GDP increases approximately 2 percentage points per each effective political party that gains representation to the lower house without the control variables, and half a percentage point when all control variables are included.[19] This increase in the number of effective parties could be caused either by the entry of new parties into the assembly or by a reduction in the standard deviation among parties in their shares of the seats in the legislature.[20]

The results on the interaction terms indicate that an increase in the size of the majority reduces government spending for party shares slightly above 50 percent. Based on the estimated coefficients, government spending as a share of GDP falls until the majority party share reaches 55 percent. Beyond this majority size, spending rises, which supports the

[18] Because the standard errors are panel-corrected, we reduce the risk of inflated t-statistics considerably. We obtain the economic and fiscal policy data from the World Development Indicators (1999) and the Penn World Tables.

[19] Stein, Talvi and Grisanti (1999) find a similar correlation between the number of effective parties and government expenditure in a sample of Latin American countries. In their model, an additional effective party increases government expenditure / GDP by 2 percentage points. We note that in the Stein, Talvi and Grisanti (1999) study, the district magnitude (a variable described in the "pre-election politics" models) is not significantly correlated with the size of the government.

[20] For example, the number of effective parties increases by one as the share of the seats for four parties represented in the legislature changes from (70,10,10,10) to (52,16,16,16). ENPP equals 1.9 and 2.9 respectively.

conceptual argument and the Inman-Fitts results for the US. Spending reaches a maximum at a 68 percent majority party share, above which increasing public expenditures apparently becomes too politically expensive for the majority party.[21] Again, similar to the Inman-Fitts findings for the US, the majority party evidently internalizes the cost spillovers beyond this range.

As expected from past studies, presidential and federal countries have lower expenditures than other countries. The log of per capita income is negative and significant. Openness is statistically significant and positive as reported by Rodrik (1998). The size of the country in terms of population is positive and statistically significant. We also find a positive correlation between spending and the percent of the population above 65.[22]

Even though we do not completely address the problem of causality, two main aspects of the model indicate that the relationship goes from party structure to expenditure and not the reverse. The first is that the correlation between the party variables and expenditure increases when ENPP is lagged with respect to expenditure. Second, a well-established literature on the determinants of the number of parties has not mentioned the size of the government as a potential explanatory variable. Although government expenditure could affect the incentives for entering into politics, it does not necessary imply that new parties will be formed and be successful in the electoral competition. Following a well-established literature in the field, the electoral laws and social cleavages in society determine the number of effective political parties.[23]

---

[21] The actual range for the size of the majority party in the sample is [0.5, 0.74].

[22] In other model specifications (not reported) we included population density, the log of urban population and land area as control variables. None of these variables modified the main results presented in Table 4.

Table 4. *Dependent variable is Central Government Expenditure/GDP[a] – [Equation 1]*				
Independent Variables	(1)	(2)	(3)	(4)
ENPP	2.05 (0.13)***		0.24 (0.09)***	0.55 (0.16)***
*M/N * MAJPAR50*				-6427.55 (2325.70)***
*$(M/N)^2$ * MAJPAR50*				10611.76 (3826.02)***
*$(M/N)^3$ * MAJPAR50*				-5772.15 (2074.50)***
MAJPAR50				1285.20 (466.30)***
Seats in the lower chamber			-0.03 (0.001)***	-0.03 (0.001)***
Presidential			-8.19 (0.29)***	-9.20 (0.73)***
Federal			-7.09 (0.38)***	-6.78 (0.48)***
Log of GDP per capita		-9.08 (0.87)***	-4.26 (0.75)***	-4.55 (0.79)***
Log of population		1.35 (0.16)***	5.38 (0.25)***	5.10 (0.23)***
Openness		0.15 (0.01)***	0.16 (0.01)***	0.15 (0.01)***
Senior population		1.56 (0.04)***	2.06 (0.05)***	2.02 (0.09)***
Year fixed effects	Yes	Yes	Yes	Yes
Adjusted R^2	0.21	0.59	0.72	0.73
Observations	408	408	408	408

Notes: Regressions use PCSE according to Beck and Katz (1995)
Std. Errors in parenthesis.
*** *indicates significance at the 1% level*
** *indicates significance at the 5% level*
* *indicates significance at the 10% level*
[a] *The sample includes the OECD countries during 1970-1990 with the independent variables lagged one period.*

[23] See Amorin Neto and Cox (1997) for a thorough overview of this hypothesis.

Table 5 presents the results for the large sample of free and partially free countries for 1980-1996.[24] Again, the estimated coefficient on ENPP is positive and statistically significant. In this sample, an increase in the number of effective parties by one raises central government expenditure as a share of GDP between 0.38 and 0.6 percentage points depending on the specification. The interaction terms provide additional support for our proposed modifications of the "universalism" framework to fit multiparty systems. The parameter estimates for this sample indicate that spending reaches a minimum with a 54 percent majority share and a maximum at an 87 percent majority share. Figure 1 illustrates these results, graphing the fitted values for government spending with respect to majority party shares. To derive the fitted values we use the average values for the other variables based on the large sample of countries. As Figure 1 illustrates, expenditures in the typical country fluctuate between 27 and 33 percent of GDP depending on the majority party share of seats.

The control variables behave as expected, particularly the dummies for presidential countries and federal countries. A country that is both federal and presidential would have a level of central government expenditure markedly lower than a country that is unitary and parliamentary (that is, a combined legislative and executive branch). Based on the coefficients reported in Table 5, a presidential regime reduces spending by about four percentage points, and a federal structure reduces spending by about one percentage point.[25] The coefficient on the number of representatives in the lower house is significant and positive. The coefficients on the Openness and Senior Population variables behave as expected, while the coefficients on the log of population and the log of GDP per capita variables are not significant.[26]

---

[24] For these countries the data for the political variables were obtained from the Chronicle of Parliamentary Elections (several volumes), and the economic and fiscal data from the World Development Indicators (1999).

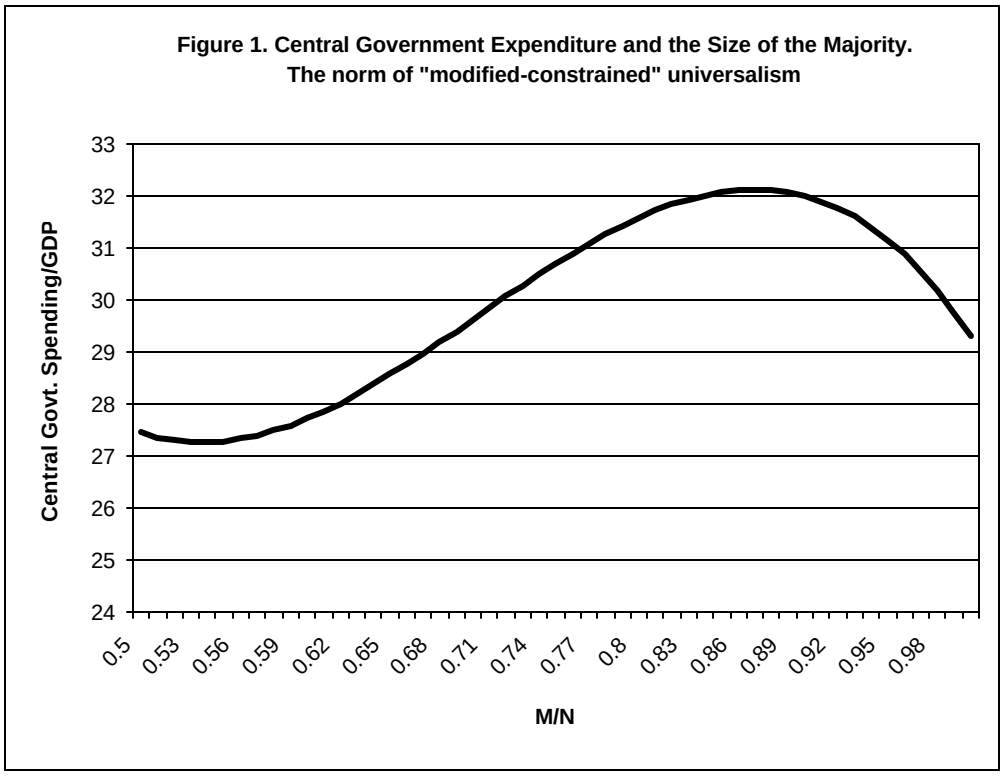
[25] See Table 9 in the Appendix for additional comparisons.

[26] In regression models not reported we also included the ideology of the parties in government, both in the executive and the legislative branches, as presented in the Database of Political Institutions. While ideology variables were statistically significant in the regressions without fixed effects, their statistical

Table 5*. Dependent variable is Central Government Expenditure/GDP*[a]				
Independent Variables	(1)	(2)	(3)	(4)
ENPP	0.60		0.44	0.38
	(0.11)***		(0.10)***	(0.17)**
*M/N * MAJPAR50*				-369.46
				(218.46)*
*$(M/N)^2$ * MAJPAR50*				556.43
				(314.18)*
*$(M/N)^3$ * MAJPAR50*				-263.68
				(147.32)*
MAJPAR50				76.68
				(49.42)*
Seats in the lower chamber			0.01	0.01
			(0.002)***	(0.002)***
Presidential countries			-4.25	-3.91
			(1.01)***	(0.90)***
Federal countries			-1.04	-1.24
			(0.42)**	(0.46)***
Log of GDP per capita		-1.17	-0.80	-0.66
		(0.41)***	(0.38)**	(0.34)*
Log of population		0.38	0.50	0.55
		(0.17)**	(0.56)	(0.54)
Openness		0.05	0.06	0.06
		(0.01)***	(0.01)***	(0.01)***
Senior Population		1.52	1.13	1.03
		(0.07)***	(0.09)***	(0.09)***
Year dummies	Yes	Yes	Yes	Yes
Regional dummies[b]	Yes	Yes	Yes	Yes
Adjusted R^2	0.44	0.49	0.59	0.60
Observations	1003	1003	1003	1003

Notes: Regressions use the Beck and Katz (1995) PCSE method.
Std. error in parenthesis.
*** *indicates significance at the 1% level*
** *indicates significance at the 5% level*
* *indicates significance at the 10% level*
[a]*The sample includes "free" and "partially free" countries for 1980-1996 with the independent variables lagged one period.*
[b] *Regional dummies include South America, North America, Central & Caribbean, NW Europe, SE Europe, Oceania, Asia, Africa, Middle East, and the Ex-Communist Countries.*

significance disappeared when we controlled for regional fixed effects, without affecting the significance and sign of ENPP.



Party Competition and the Composition of Spending

We now turn to examine the relationship between the structure of party competition and the composition of government spending. Motivating the empirical analysis is the idea that electoral rules not only affect the number of political parties but also the organization of the groups that support the election of candidates. Candidates will consequently try to pass the mix of expenditures that favors specific groups and thereby raise their chances of election. Under plurality systems legislators favor geographically targeted spending and under proportional representation system legislators favor demographically based spending. Consequently, we should find that a large number of effective parties increases the amount of spending on transfers and reduces spending on public goods.[27] Table 6 presents evidence of these

[27] "Public goods expenditures" equals the sum of spending on goods and services (including wages and salaries) and capital. "Transfer expenditures" equals the sum of spending on subsidies and transfers.

relationships for the large sample of countries for 1980-1996.[28] An increase in one effective party reduces public goods expenditures as a share of GDP by almost 0.4 percentage points and increases transfers more than half a percentage point. As expected, federal and presidential countries have lower expenditures on both public goods and transfers than unitary and parliamentary countries. Finally, it is worth noting that an older population and higher dependency on foreign trade increase the amount of transfers in the economy.[29]

[28] We find virtually identical results (not reported) for the OECD country sample for the 1980-1996 period. In that sample, the coefficient on ENPP is statistically significant at the 1 percent level for public goods expenditure (the coefficient equals –0.53) and transfers (the coefficient equals 0.96).

[29] These results are consistent with the literature summarized in Persson and Tabellini (2000, Chapter 8). In particular, Alesina and Wacziarg (1998) offer similar evidence on the positive relationship between openness and government transfers.

Table 6*. Dependent variables are the components of Central Government Expenditure/GDP*[a]		
Independent Variables	Public Goods	Subsidies and transfers
ENPP	-0.37 (0.08)***	0.66 (0.06)***
Seats in the lower chamber	0.01 (0.001)***	-0.003 (0.001)***
Federal countries	-0.36 (0.18)**	-1.25 (0.16)***
Presidential countries	-0.78 (0.32)**	-0.77 (0.65)
Log of GDP per capita	-1.52 (0.35)***	-0.19 (0.37)
Log of population	-2.13 (0.19)***	1.61 (0.24)***
Openness	0.02 (0.005)***	0.03 (0.01)***
Senior Population	-0.23 (0.05)***	1.34 (0.07)***
Year dummies	Yes	Yes
Regional dummies[b]	Yes	Yes
Adjusted R^2	0.47	0.73
Observations	1011	1009

Notes: Regressions use the Beck and Katz (1995) PCSE method.
Std. error in parenthesis.
*** *indicates significance at the 1% level*
** *indicates significance at the 5% level*
* *indicates significance at the 10% level*
[a] *The sample includes "free" and "partially free" countries for 1980-1996 with the independent variables lagged one period.*
[b] *Regional dummies include South America, North America, Central & Caribbean, NW Europe, SE Europe, Oceania, Asia, Africa, Middle East, and the Ex-Communist Countries.*

5. Concluding Comments

The cross-country empirical analysis reveals a clear systematic relationship between the number of effective parties in the legislature and the size of government. This relationship is consistent with a simple extension and modification of the norm of universalism that was originally developed and applied to the organization of US legislatures. In multiparty settings,

party leaders prefer to include projects favored by opposition parties rather than face the uncertainty of forming a minimum size winning coalition. The impact of a multiple party structure is also evident in the empirical models that examine spending on transfers and public goods. We further corroborate the importance of the size of the majority party on fiscal policy in settings where one party holds the majority. In those cases, government expenditures follow a non-linear (cubed) relationship with respect to the size of the majority.

The observed relationships between the number and sizes of parties and the size of the government strengthens and illuminates earlier work that stresses the importance of electoral institutions. Electoral rules influence the effective number of political parties; a plurality-voting system with single member constituencies fosters two-party competition, while a proportional representation system with multimember constituencies facilitates multiple parties. These findings suggest that by looking at the consequences on party structure, constitutionalists may evaluate more precisely the benefits and costs of changing the electoral rules.

References

Alesina, Alberto and Romain Wacziarg. (1998), Openness, Country Size and Government, *Journal of Public Economics 69*, pp. 305-321.

Amorin Neto, Octavio and Gary Cox. (1997), Electoral Institutions, Cleavage Structures and the Number of Parties, *American Journal of Political Science 41*, 1, pp. 149-174.

Baron, David. (1991), Majoritarian Incentives, Pork Barrel Programs, and Procedural Control, *American Journal of Political Science 35*, 1, pp. 57-90.

Beck, Nathaniel and Jonathan Katz. (1995), What to do (and not to do) with Time Series Cross-Section data, *American Political Science Review 89*, 3, pp. 634-647.

Buchanan, James M. and Gordon Tullock. (1962), *The Calculus of Consent*, Ann Arbor: Michigan University Press.

Cameron, David. (1978), The Expansion of the Public Economy: A Comparative Analysis, *American Political Science Review 72*, 4, pp. 1243-1261.

Cox, Gary. (1997), *Making Votes Count*, Cambridge: Cambridge University Press.

Fitts, Michael and Robert Inman. (1992), Controlling Congress: Presidential Influence in Domestic Fiscal Policy, *Georgetown Law Journal 80*, pp. 1737-1785.

Gilligan, Thomas and John Matsusaka. (1995), Deviations from Constituent Interest: The Role of Legislative Structure and Political parties in the States, *Economic Inquiry 33*, July, pp. 383-401.

Gilligan, Thomas and John Matsusaka. (forthcoming), Fiscal Policy, Legislature Size, and Political Parties: Evidence from State and Local Governments in the First Half of the 20th Century, unpublished manuscript, University of Southern California.

Holsey, Cheryl and Thomas Borchering. (1997), Why Does Government's Share of National Income Grow? An assessment on the Recent Literature on the U.S. Experience, in *Perspectives on Public Choice*, Dennis Mueller (ed.), Cambridge: Cambridge University Press.

Inman, Robert and Daniel Rubinfeld. (1997), The Political Economy of Federalism, in *Perspectives on Public Choice*, Dennis Mueller (ed.), Cambridge: Cambridge University Press.

Inman, Robert and Michael Fitts. (1990), Political Institutions and Fiscal Policy: Evidence from the U.S. Historical Record, *Journal of Law, Economics and Organization 6*, Special Issue, pp. 79-132.

Inter-Parliamentary Union, *Chronicle of Parliamentary Elections 1989-1997,* Geneva: International Centre for Parliamentary Documentation.

Katz, Richard. (1980), *A Theory of Parties and Electoral Systems*, Baltimore: The Johns Hopkins University Press.

Kontopoulos, Yianos and Roberto Perotti. (1999), Government Fragmentation and Fiscal Policy Outcomes: Evidence from OECD Countries, in *Fiscal Institutions and Fiscal Performance*, James Poterba and Jurgen von Hagen (eds.),Chicago: University of Chicago Press.

Laakso, Markku and Rein Taagepera (1979), Effective Number of Political Parties. A Measure with Application to West Europe, *Comparative Political Studies 12*, 1, pp. 3-27.

Lijphart, Arend. (1990), The Political Consequences of Political Laws, 1945-85, *American Political Science Review 84*, pp. 481-96.

Lijphart, Arend. (1999), *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries*, New Haven and London: Yale University Press.

Mackie, Thomas (ed.). (1991), *The International Almanac of Electoral History*, London: Macmillan.

McCarty, Nolan, Poole, Keith and Howard Rosenthal. (1999), The Hunt for Party Discipline in Congress, ms, March.

Milesi-Ferreti, Gian Maria, Perotti, Roberto and Massimo Rostagno. (2000), Electoral Systems and Public Spending, ms.

Mueller, Dennis. (1989), *Public Choice II*, Cambridge: Cambridge University Press.

Mueller, Dennis. (1996), *Constitutional Democracy*, Oxford: Oxford University Press.

Niou, Emerson and Peter Ordeshook. (1985), Universalism in Congress, *American Journal of Political Science 29*, 2, pp. 246-58.

Ordeshook, Peter and Olga Shvetsova. (1984), Ethnic Heterogeneity, District Magnitude, and the Number of Parties, *American Journal of Political Science 38*, 1, pp. 100-123.

Persson, Torsten and Guido Tabellini. (1999), The Size and Scope of Government: Comparative Politics with Rational Politicians. 1998 Marshall Lecture, *European Economic Review 43*, pp. 699-735.

Persson, Torsten and Guido Tabellini. (2000), *Political Economy. Explaining Economic Policy*, Cambridge: MIT Press.

Persson, Torsten (2000), Do Political Institutions Shape Economic Policy?, ms.

Rodrik, Dani. (1998), Why Do More Open Economies Have Bigger Governments?, *Journal of Political Economy 106*, 5, pp. 997-1032.

Sánchez de Dios, Manuel. (1999), Parliamentary Party Discipline in Spain, in Bowler, Farrel and Katz (eds.), *Party Discipline in Parliamentary Governments*, Ohio State University Press

Shepsle, Kenneth and Barry Weingast. (1981), Political Preferences for the Pork Barrel: A Generalization, *American Journal of Political Science 25*, 1, 96-111.

Shepsle, Kenneth and Barry Weingast. (1984), When Do Rules of Procedure Matter?, *Journal of Politics 46*, 1, pp. 206-221.

Stein, Ernesto, Ernesto Talvi and Alejandro Grisanti. (1999), Institutional Arrangements and Fiscal Performance: The Latin American Experience, in *Fiscal Institutions and Fiscal Performance*, James Poterba and Jurgen von Hagen (eds), Chicago: University of Chicago Press, pp. 103-33.

Stratmann, Thomas and Martin Baur. (2000), Plurality Rule vs. Proportional Representation. How Much of a Difference Do Electoral Rules Make? Evidence from Germany, ms, September.

Taagepera, Rein and Matthew Shugart. (1989), *Seats and Votes*, New Haven: Yale University Press.

Tullock, Gordon. (1998), *On Voting*, Northampton: Edward Elgar.

Tullock, Gordon. (1994), Thoughts About Representative Government*, European Journal of Political Economy 10,* pp. 27-39.

von Hagen, Jurgen and Ian Harden. (1996), Budget Processes and Commitment to Fiscal Discipline, IMF Working Paper 78.

Weingast, Barry. (1979), A Rational Choice Perspective on Congressional Norms, *American Journal of Political Science 23*, nº 2, pp. 245-62.

Weingast, Barry, Shepsle, Kenneth and Christopher Johnsen. (1981), The Political Economy of Benefits and Costs: A Neoclassical Approach to Distributive Politics, *Journal of Political Economy 89*, 4, pp. 642-664.

Weingast, Barry and William Marshall. (1988), The industrial Organization of Congress; or, Why Legislatures, Like Firms, Are Not Organized as Markets, *Journal of Political Economy 96*, 1, pp. 132-163.

World Bank. (1999), *World Development Indicators [CD-Rom]*, Washington, DC.

Appendix

Table 7. *Size of the government per geographic region for 1980-1995*

Central Government expenditure/GDP	Mean	Median	St. deviation
South America	18.98	17.44	6.67
SE Asia	19.95	18.46	5.90
Latin America	22.93	20.35	12.86
North America	23.54	23.59	1.10
Central America and Caribbean	28.47	26.13	15.20
Africa	28.83	28.98	8.48
Oceania	30.60	27.67	6.54
South East Europe	36.77	36.65	10.06
OECD	37.62	39.54	9.78
Ex Soviet Countries	40.20	40.12	10.38
Middle East	40.30	35.73	16.51
Western Europe	40.48	40.95	7.91

Table 8. *Summary statistics*

	Mean	Median	St. deviation	Minimum	Maximum
Central Govt Expenditure	32.60	32.11	12.26	9.42	89.08
Public Goods	14.63	13.57	6.98	3.50	56.44
Subsidies and Transfers	12.16	9.18	9.66	0.03	42.70
ENPPL	3.12	2.74	1.44	1.00	8.62
Seats in the lower chamber	203.40	159	156.95	15	656
Log of GDP per capita	8.99	9.19	0.71	6.55	10.10
Log of population	1.99	2.12	1.85	-1.56	6.74
Openness	74.50	62.8	48.68	6.32	439.59
Senior Population	7.27	4.93	4.39	1.98	17.87

Table 9. *Type of regime and size of the government.*

Sample 1980 – 1996	Central Government Expenditure/GDP	
	Presidential	**Parliamentary**
Mean	23.40	35.61
Median	21.07	36.11
Std. Deviation	10.15	11.15
	Federal	**Unitary**
Mean	26.39	32.38
Median	24.24	32.65
Std. Deviation	9.79	12.67

Notes to Table 9:
The difference in means are statistically significant at the 1% level

Table 10. ***Political Parties in OECD and Latin America. Lower House***

OECD	Political Parties	Latin America	Political Parties
Australia	5	Argentina	4
Austria	5	Bolivia	8
Belgium	7	Brazil	10
Canada	5	Chile	8
Denmark	9	Colombia	3
Finland	8	Costa Rica	5
France	7	Dominica	3
Germany	6	Dominican Rep	3
Greece	5	Ecuador	9
Ireland	6	El Salvador	4
Italy	10	Grenada	3
Japan	8	Guatemala	7
Luxembourg	5	Guyana	4
Netherlands	11	Honduras	3
New Zealand	6	Mexico	4
Norway	8	Nicaragua	5
Portugal	4	Panama	5
Spain	9	Paraguay	3
Sweden	7	Peru	10
Switzerland	12	Trinidad y Tobago	3
UK	9	Uruguay	4
USA	3	Venezuela	3

Table 11. *OECD countries included in the regression for Table 4*

Australia	France	Netherlands	Switzerland
Austria	Greece	New Zealand	United Kingdom
Belgium	Ireland	Norway	United States
Canada	Italy	Portugal	
Denmark	Japan	Spain	
Finland	Luxembourg	Sweden	

Table 12. *Countries included in the regressions for Tables 5 and 6*

Argentina	Estonia	Luxembourg	Russia
Australia	Fiji	Madagascar	Singapore
Austria	Finland	Malawi	South Africa
Bahamas	France	Malaysia	Spain
Bangladesh	Germany	Mali	Sweden
Barbados	Ghana	Malta	Switzerland
Belgium	Greece	Mauritius	Syria
Bolivia	Grenada	Mexico	Thailand
Botswana	Guatemala	Mongolia	Trinidad y Tobago
Brazil	Hungary	Morocco	Tunisia
Bulgaria	Iceland	Namibia	Turkey
Cameroon	India	Nepal	UK
Canada	Indonesia	Netherlands	USA
Chile	Ireland	New Zealand	Uruguay
Colombia	Israel	Nicaragua	Venezuela
Costa Rica	Italy	Norway	Yemen
Croatia	Jamaica	Pakistan	Zambia
Cyprus	Japan	Panama	Zimbabwe
Czech Republic	Jordan	Paraguay	
Denmark	Kenya	Peru	
Dominican Rep	Korea	Poland	
Ecuador	Latvia	Portugal	
Egypt	Lithuania	Romania	