Districts, Diversity and Fiscal Biases:

Evidence from the American States *

by

W. Mark Crain
Professor of Economics and Research Associate
James Buchanan Center for Political Economy
Mail Stop 1D3
George Mason University
Fairfax, Virginia 22030

Abstract: This paper argues that the configuration of legislative districts and not merely the number of districts matters for fiscal performance. District configuration mediates the extent of constituent diversity both across and within districts. Both dimensions of diversity affect the political calculus associated with pork barrel politics. The findings reveal statistically and quantitatively significant effects of constituent diversity on state total spending, the composition of spending, and the composition of state tax instruments. In the US this point acquires practical relevance from the Constitutional mandate for decennial redistricting in all jurisdictions based on geographic representation. Historically, the number of legislative districts changes only slightly during the redistricting process; in contrast, the configuration of districts appears relatively malleable.

April 1998

* I am grateful to Nicole Crain, Tom Gilligan, Ami Glazer, Tim Groseclose, John Matsusaka, and Robert Tollison for constructive comments. Remaining errors are my responsibility.

Districts, Diversity and Fiscal Biases:
Evidence from the American States

1. Introduction

Seminal work in the theory of public choice drew the parallel between legislative decision-making under majority rule and the common resource problem: legislators view the tax base as a common pool from which to finance constituent-specific projects, leading to the familiar problem of overutilization. Constituent groups internalize the benefits of the expenditures their legislators propose, while they internalize only a fraction of the requisite costs imposed on the whole economy. This insight paved the way for myriad studies of fiscal biases and how institutional arrangements affect the correspondence between the internalized benefits and costs in fiscal policy-making.[1]

Weingast, Shepsle, and Johnsen (1981) (hereafter, W-S-J) formalized the inherent fiscal inefficiencies associated with dividing the economy into ***n*** disjoint political units (electoral districts). Their analysis, and in particular the "Law of 1/***n***" which posits that fiscal inefficiency increases with the number of districts, provided the analytical anchor for a generation of work on "distributive politics."[2] The distributive hypothesis tied fiscal distortions to the divisibility of public budgets across legislative districts. However, as political economists elevate the Law of 1/***n*** into a stylized fact, the number of fiscal

---

[1] See Tullock (1959), Buchanan and Tullock (1962), and the surveys of the seminal public choice contributions by Mueller (1985), Ingberman and Inman (1987) and Tollison (1988). Inman and Fitts (1990) provides a useful framework for organizing the studies on fiscal institutions. Poterba (1996a and 1996b) surveys the empirical literature using American state data. See von Hagan (1992); von Hagen and Harden (1996); and Alesina and Perotti (1996) for surveys of the literature using cross country data.

[2] See Stockman (1975) for a non-formal precursor of the distributive politics framework. Fitts and Inman (1992) includes an overview of the subsequent literature on the distributive hypothesis.

policy participants ***per se*** has come to supplant the anchor of geographically-divisible political benefits and costs.[3]

In this paper I return to the geographic roots of the distributive hypothesis. I focus on the importance of the design of electoral boundaries and develop a straightforward thesis: the configuration of districts and not merely the number of districts matters for fiscal performance. District configuration mediates the extent of constituent diversity both across and within districts, and both dimensions of diversity affect the political calculus associated with pork barrel politics. I examine this thesis empirically using data on the fiscal performance of American states. The findings reveal statistically and quantitatively significant effects of constituent diversity on state total spending, the composition of spending, and the composition of state tax instruments.

Together the analysis and evidence emphasize the conditional nature of the "Law of 1/***n***." How the districting process transforms a diverse population into spatially-defined electoral districts conditions the fiscal bias associated with a given ***n***. In the US this point acquires practical relevance from the Constitutional mandate for decennial redistricting in all jurisdictions based on geographic representation. Historically, the number of legislative districts changes only slightly during the redistricting process; in contrast, the configuration of districts appears relatively malleable. Periodic redistricting thus presents the opportunity either to constrain or to promote fiscal distortions.

The remainder of the paper is organized as follows. Section 2 provides the analytical framework that stresses the role of constituent diversity on legislator fiscal policy incentives. Section 3 presents the measures of inter- and intra- district constituent diversity for each American state legislative chamber based on characteristics such as income, education, age, occupation and race. I then assess the importance of district

---

[3] For example the literature increasingly refers to "size fragmentation," and uses the number of participants in the fiscal policy process as analytically equivalent to the Law of 1/***n***. See the recent studies by: Hallerberg and von Hagen (1997); Kontopoulos and Perotti (1997); Stein, Talvi, and Grisanti (1997); Hallerberg and Von Hagen (1997); and Jones, Sanguinetti, and Tommasi (1997).

diversity on fiscal outcomes in the states following the 1990s round of redistricting. Section 4 summarizes and comments on the relevance of fiscal performance for redistricting decisions.

2. District Diversity Conditions "the Law of 1/*n*"

The presence of constituent-specific (non-general) benefits tied for example to demographic, spatial, and inter-generational diversity stands behind the common pool problem in fiscal policy. After all, the opportunity to gain differential advantage at the expense of fellow participants would not arise if project benefits are distributed equally among all citizens (present and future) and the output is financed by taxation that is also equally distributed. A system of representative democracy with geographically-defined constituencies appears particularly susceptible to the common pool problem, the point crystallized in the W-S-J exposition of the distributive hypothesis.

For certain classes of government projects dividing the economy into n political units is sufficient to cause divergence between economically relevant and politically relevant costs and benefits. Construction projects like roads, dams, and urban renewal constitute the obvious and well-worn examples. For other classes of government programs how the districting mechanism configures electoral boundaries becomes paramount.

Inter-District Diversity as a Determinant of Distributive Policies

I adopt the simplified exposition of the distributive hypothesis in Gilligan and Matsusaka (1995) to describe the relevance of district configurations and constituent diversity. Let $b\ (x_i)$ stand for the benefit of spending x dollars in district i to the constituents of legislator i, and let $c(x)$ stand for the costs the associated revenues impose on the whole economy. The efficient level of spending in district i is the x that solves $\boldsymbol{b'}(\boldsymbol{x_i}) = \boldsymbol{c'}(\boldsymbol{x_i})$. Given $\boldsymbol{n}$ districts and an equal distribution of the tax burden across districts, the constituents of legislator $\boldsymbol{i}$ bear only $(1/\boldsymbol{n})$th of the cost of spending in district $\boldsymbol{i}$. The legislator thus seeks spending for his or her district up to the point where $\boldsymbol{b'} = (1/\boldsymbol{n})\boldsymbol{c'}$. Assuming the norm of universalism where legislators logroll and defer to each other regarding district-targeted expenditures, total spending increases with the number of districts, $\boldsymbol{n}$.[4]

The effect of constituent diversity across districts follows from modifying the above notation slightly. Let $\boldsymbol{b}(\boldsymbol{x_i}) = b_1(\boldsymbol{x_i}) + b_2(\boldsymbol{x_i})$, where $b_1(\boldsymbol{x_i})$ stands for the benefits to constituents residing in district $\boldsymbol{i}$ and $b_2(\boldsymbol{x_i})$ stands for the benefits to constituents residing in districts other than $\boldsymbol{i}$ (***i.e.***, consumption externalities). W-S-J make the argument that a universalistic representative legislature is biased towards projects with high type b_1 benefits; a system with district-oriented electoral incentives fails to internalize type b_2 benefits. Here I emphasize a different point about the distinction between type b_1 and type b_2 benefits, namely that they are endogenously determined through the districting process. The design of districts configures the spatial distribution of voters with similar preferences and this determines in part the size of type b_2 benefits in relation to type b_1 benefits for a given government program.

A few examples illustrate. Consider a polity consisting of individuals with homogeneous policy preferences, labeled X, and a legislature with two electoral districts and two legislators. Xs have a preference for public parks and for public radio. Spending for a public park benefits only Xs in a single district ($b_1 > 0$ and $b_2 = 0$ in terms of the above notation), and each legislator reaps an electoral payoff by securing public funds for a park in his or her district. Spending on public radio yields equal benefits to all Xs ($b_1 = b_2 > 0$). In this example, the bias toward excessive spending will be limited to public parks (with district-specific benefits) but not public radio. As noted, W-S-J argue

[4] The norm of universalism is described in Weingast (1979), Emerson and Ordeshook (1985) and Collie (1988).

that public radio would be under-funded in this setting, a point I address in further detail below.

Contrast this hypothetical polity to one containing of two dissimilar constituent types, Xs and Ys, and that all Xs reside in one district and all Ys reside in the other. Suppose Xs and Ys hold an equal preference for parks, but only Xs desire public radio, and only Ys favor public monitoring of environmental quality. In this polity _ reflecting inter-district preference diversity _ public expenditures for public radio and for environmental monitoring happen to convey political benefits that are district-specific (***i.e.***, type b_2 benefits are zero for both public radio and environmental monitoring). Logrolling within the norm of universalism now promotes excessive spending for public radio and environmental monitoring as well as for parks. Yet this fiscal outcome emerges as an artifact of district design. An alternative districting design that places some Xs and some Ys in both districts transforms the politically relevant benefits and costs. Suppose the districting process equally divides Xs and Ys between the two districts. In that case, $b_2 = b_1 > 0$ for both public radio and environmental monitoring, and the fiscal outcome approximates that which emerges when all constituents in the polity were homogeneous. Logrolling bloats the park budget, but not the budgets for public radio and environmental monitoring.

These simple examples illustrate how alternative political boundaries add to or diminish fiscal distortions depending on the specific partitioning of constituents with similar preferences. Inter-district diversity determines whether some classes of public projects convey geographically-divisible and therefore electorally relevant benefits and costs. The design of districts establishes inter-district diversity and thereby shifts the frontier of distributive policies and legislator activity associated with pork barrel politics.

In sum, the diversity of constituent preferences across electoral districts conditions the extent of excessive spending associated with dividing the economy into ***n*** electoral districts. For a given number of legislative districts, the number of programs with district-specific (and therefore politically internalized) benefits should increase with the degree of inter-district diversity in constituent preferences. This implies that polities with inter-district constituent diversity experience a greater spending bias than polities with districts composed of similar constituencies.

Intra-District Diversity and the Costs of Legislative Transactions

The configuration of districts also affects the diversity of constituent preferences within a district, and I now turn to the influence of intra-district diversity on fiscal performance. This influence derives from the costs of coordinating legislative transactions, for example the time and effort required to negotiate vote trades with other legislators and to monitor and enforce agreements. These legislative transaction costs are higher for projects yielding district-specific benefits than for projects yielding generalized, or multi-district benefits. In terms of the notation introduced above, proposed projects yielding generalized benefits ($b_1 = b_2 > 0$) require minimal ***quid pro quo*** negotiating to attain consensus. Further, generalized projects do not entail enforcement and monitoring costs because legislators benefit in equal measure from the single project. The additional transactions cost (negotiating, monitoring, and enforcing logrolling agreements) come into play for proposed projects that yield district-specific benefits (b_2 0). Other things the same, this relative cost difference works to deter projects with district-specific benefits despite the obvious electoral payoff for such projects (that is, the 1/***n*** effect). In this context, the W-S-J model abstracts from differences in transaction costs associated with generalized versus district-specific projects to derive the bias against programs with type b_2 benefits. Consideration of transaction costs at least partially offsets the incentive to under-fund projects yielding generalized benefits.[5]

[5] Legislative institutions such as the committee system reduce the transaction costs of logrolling (see Weingast and Marshall, 1988). However, transaction costs remain positive, and the argument here relates to the relative costs of legislation conveying district-specific benefits versus legislation conveying generalized benefits.

Intra-district diversity enters into the analysis through its affect on the size of a legislator's electoral payoff from a district-specific project. Again let b_1 stand for the benefits to constituents residing in district ***i*** for spending ***x*** dollars on a given project. The value of b_1 depends on the number of constituents residing in district ***i*** who share a common preference for the project. Thus, the size of the payoff to legislator ***i*** (linked to the value of b_1) increases as the preferences of constituents residing in district ***i*** become more homogeneous.

Formally let ***p*** stand for the fraction of the district's constituents that actually benefit from a spending program, where ***p*** decreases with the amount of constituent diversity. The benefit of spending becomes $pb_1\ (x_i)$ and the cost is $(1/n)\ c\ (x_i)$. The first-order condition is then:

$$pb_1'\ (x_i) = (1/n)\ c'\ (x_i),$$

or put differently:

$$b_1' = (1/pn)\ c'.$$

This extension produces the "Law of 1/***pn***," where ***p*** measures the homogeneity of constituent policy preferences within a district (that is, ***p*** is an inverse measure of intra-district diversity). When all constituents are identical, ***p*** = 1, and this formulation reduces to the familiar "Law of 1/***n***."

The legislator's political calculus regarding projects with district-specific benefits weighs the marginally higher transaction costs against the marginally higher benefits of seeking a district-specific project. A homogeneous constituency presents this trade-off in the most favorable terms for district-specific projects; a diverse constituency presents this trade-off in the least favorable terms.

As an example, suppose a diverse district consists of pro- and anti- development coalitions, reducing the number of beneficiaries for a district-specific project such as highway construction. The representative would shift at the margin toward seeking fewer district-specific projects (in this case highways) that require high transaction costs, in favor of programs that generate multi-district projects that require lower transaction costs. Programs such as public welfare spending with geographically scattered beneficiaries become a relatively more appealing political alternative when individual districts contain diverse constituencies.

3. Evidence on the Fiscal Effects of District Diversity

Variable Definitions and Specification Issues

The empirical analysis seeks to identify and quantify the effects of alternative configurations of district diversity on: (i) American state government spending, (ii) the composition of spending, and (iii) the mix of state tax instruments. Defining operational measures for inter- and intra-district diversity is the first order of business.

I rely on differences in constituency demographic characteristics to reflect diversity in constituency preferences for government programs. Lilley, Defranco, and Diefenderfer (1995) provides district-level demographic data for each American state legislative chamber for the period following the 1990s redistricting. For the Inter-District Diversity measure I compute the coefficient of variation across districts in each state chamber for six constituent characteristics: average household income; percent of the population with at least a bachelor's degree; percent of the population employed in the manufacturing sector; percent of the population employed in the service sector; percent of the population age 55 and over; percent of the population receiving social security. The Data Appendix lists these six values for each state lower and upper chamber. In the regression models reported below, I use the average of these six coefficients of variation as the Inter-District Diversity variable.[6]

For the Intra-District Diversity measure I compute Herfindahl indices for three constituent characteristics: Income, Employment by Sector, and Race. To illustrate, I obtain a Herfindahl value on the racial composition for each district in a state's chamber,

[6] I also estimated models (not reported in the paper) using each of the six measures separately and in various combinations; the coefficients and significance levels generally follow the pattern observed using the average of the six inter-district diversity measures.

and then average the district-specific values across all districts. The result proxies the typical degree of racial diversity in that state chamber's districts. The Data Appendix reports these Intra-District diversity measures for each state upper and lower chamber. I use the average of these three Herfindahl indices as the Intra-District Diversity measure in the regressions reported below.[7] Finally, for expositional convenience I transform the Intra-District Diversity variable used in the regressions, using one minus the average Herfindahl value, so that increasing values reflect greater diversity.

Because the constituency characteristics data are not available at the state district level prior to the 1990s redistricting I begin the sample period with (fiscal year) 1993 data. That year reflects the last set of state budgets determined with the pre-redistricting districts in force.[8] My estimation strategy uses the 1993 budget outcomes as a benchmark for evaluating the effects of the newly-created district configurations on subsequent budgets in 1994 and 1995 (the latest available data). This provides two fiscal cycles, 1993-94 and 1994-95, to analyze changes in fiscal outcomes in response to the newly-constituted state legislative constituencies.[9] I estimate the models pooling the data for these two growth periods using weighted least squares and a common intercept term (***i.e.***, without state fixed effects because of the short time- series component).

The Data Appendix includes summary statistics for the District Diversity variables and the other variables used in the analysis. I adopt a set of core conditioning variables

---

[7] Again, my analysis using each of the three intra-district diversity measures separately and in various combinations largely conforms with the results reported in the text that uses the average of the three Herfindahl values.

[8] State 1993 Fiscal Year budgets that commenced in July of 1992 were decided in 1992 or in some cases 1991, before the election year in which the 1990 redistricting plans were in place.

[9] The relatively short time-period for the analysis has a somewhat subtle justification. The district demographic variables, based on the Census snapshot in the early 1990s, become less accurate measures as the decade progresses because of migration, aging, occupational changes, and so forth.

suggested in previous studies of state budgets (Gilligan and Matsusaka, 1995; Alt and Lowry, 1994; Poterba, 1994; Crain and Muris, 1995; Besley and Case, 1996; and Crain and Crain, 1998). These variables include: Income Per Capita Growth; Population Growth; Population; and Population Share in Metropolitan Areas. I also follow the literature by including dummy variables to control for: Non-Divided State Governments; Democrat Party Majorities in the Legislative Chambers; and a Democrat Governor.

Two final details about the estimation procedure require clarification. First, I follow the convention of dropping Alaska from the sample because of its atypical fiscal conditions (***e.g.***, its heavy dependence severance taxes). I also drop Nebraska because of its non-partisan legislature. All estimations thus use 96 observations (48 states over two budget cycles). Second, I report two model estimations for each dependent variable, one containing variables specific to the state upper chambers and one containing variables specific to the state lower chambers. I separate the chambers because my preliminary diagnostics revealed significant correlations between district variables for the upper and lower chambers.[10]

Results

Table 1 reports the results using total state spending and three sub-components of state spending as dependent variables (Highway spending, Public Welfare spending, and Education spending). The coefficient on the Inter-District Diversity variable is positive and significant at the 5 percent level in all but one of the eight models. The lower chamber model for Public Welfare spending provides the exception, and in that model the Inter-District Diversity variable meets the 10 percent significance level. The impact of inter-district diversity also appears to be economically significant. The estimated

[10] In a few regression models (not reported) that included both the upper and lower chamber district variables in a single estimation model, their significance levels stand-up to this multicollinearity problem. However, the significance levels vanish in most models that included both the upper and lower chamber variables.

coefficient in the lower chamber model indicates that a one standard deviation increase in the Inter-District Diversity index adds 0.9 percent to the annual growth in total state spending. In the upper chamber model, a one standard deviation increase in the Inter-District Diversity index adds 0.8 percent to total spending growth. The results in the Highway spending models show a particularly large impact. A one standard deviation increase in Inter-District Diversity adds 1.6 percent to the growth in Highway budgets in the lower chamber regression, and adds 2.7 percent to the growth in Highway budgets in the upper chamber regression.

These results give weight to the thesis that diversity across districts expands the number of government programs with geographically-defined political benefits. This outward shift in the frontier of logrolling opportunities exerts positive pressure on the growth rate in state spending.

The results for the Intra-District Diversity variables exhibit a revealing pattern. Total spending growth and Education spending growth appear uncorrelated with intra-district diversity. However, Public Welfare spending growth is positively and significantly correlated with intra-district diversity, and Highway spending growth is negatively and significantly correlated with intra-district diversity. These differences indicate that intra-district diversity affects the composition of state spending, favoring funding for Public Welfare at the expense of funding for Highways. The coefficients in the Public Welfare spending models indicate that a one standard deviation increase in lower chamber Intra-District Diversity adds 1.5 percent to the growth in Public Welfare budgets. A one standard deviation increase in the upper chamber model adds 1.2 percent to the growth in Public Welfare budgets. For Highway spending the comparable effects from increasing the Intra-District Diversity index by one standard deviation are a 1.9 percent cut (the lower chamber model) and a 1.7 percent cut (the upper chamber model) in Highway budgets. Together these findings support the proposition that a homogeneous constituency increases a legislator's incentive to endure the transaction costs associated with district-specific projects.[11] Finally, the result in Table 1 that Education spending is unaffected by the degree of intra-district diversity may reflect the mixed nature of such spending. Spending for higher education embodies both geographically-targeted benefits (***e.g.***, salaries for university personnel) as well as demographically-targeted benefits (***e.g.***, lower tuition for all state residents who attend or may attend state universities).

The results in Table 1 offer no support for the proposition that the number of districts increases state spending growth after controlling for district diversity. This does not necessarily contradict the previous findings in Gilligan and Matsusaka (1995).[12] The sizes of state legislatures changed little during the 1990s round of redistricting, and thus the effect of size may not show up in the first-differenced spending data.[13] In other words, states with large legislatures may have experienced high spending levels before and after redistricting, leaving the growth rate unaffected.

As a final gauge of the importance of district diversity I apply the same empirical specification to examine the composition of state tax instruments. Table 2 reports these results, which uses the share of state taxes raised from the personal income tax as the dependent variable.[14] Two propositions stand behind this specification. First, personal income taxes are a less general tax instrument than the general sales tax, the

[11] I note an alternative explanation for the opposite effects tied to the potential relationship between intra-district diversity and electoral security. A diverse constituency within a district may proxy electoral insecurity, which for its part causes a legislator to redirect political action away from projects such as highways that deliver benefits in the out-years; projects with more immediate benefits presumably deliver a relatively higher near term electoral pay-off. This reallocation of legislative effort in response to different time horizons squares with the findings that intra-district diversity: (i) favors Public Welfare spending growth, delivering constituent benefits in the near term, (ii) discourages Highway spending growth, and (iii) leaves total spending growth unaffected.

[12] Gilligan and Matsusaka (1995) examine the relationship between the sizes of American state legislatures and state spending, finding expenditures to be positively correlated with the size of a state's upper legislative chamber, and uncorrelated with the size of a state's lower chamber.

[13] The lower chambers changed in: AR (+1), ID (-14), MA (+2), NV (-2), NH (-1), ND (-8), PA (+2), SC (+2), and WY (-4). The upper chambers changed in: ID (-7), NV (+1), and ND (-4).

[14] Following the specification strategy described for the spending models I first-difference this dependent variable. The regressions in Table 2 again use 96 observations.

predominant alternative tax instrument relied upon for state revenues. Second, constituencies internalize a greater share of the costs of government programs under a regime of generalized taxation. A regime of non-general taxation expands a constituency's opportunities to avoid taxes, and thus internalize even less than 1/***n*** of the revenues associated with a program's costs. I expect a greater incentive to rely on the personal income tax in states with more inter-district diversity. Regarding intra-district diversity, a demographically-homogeneous district also faces better odds of avoiding taxes under a non-general tax regime; the options available to export costs through non-general taxes are greater under this configuration compared to a demographically-diverse district configuration. For example, a legislator has greater incentive to support a progressive income tax if his or her district contains only low income constituents than if the district contains both low and high income constituents.

The results in Table 2 offer partial support for these propositions. The Inter-District Diversity variable is insignificant both models. However, the Intra-District Diversity variable is negative and significant at the five percent level in both models. Districting plans that promote diversity within districts appear to discourage state reliance on the personal income tax. The estimated coefficients on the Intra-District Diversity variables in both regressions indicate a virtually identical relationship: a one standard deviation increase in Intra-District Diversity correlates with a 0.2 percentage point drop in income tax revenues relative to total tax revenues.

4. Concluding Remarks

This paper analyzes fiscal biases associated with the design of electoral district boundaries in systems of representative democracy based on geographically-defined constituencies. The analysis provides an elementary extension of the distributive hypothesis and its emphasis on the districting mechanism that transforms economic benefits and costs into political counterparts. I unfurl the conditional nature of the Law of 1/***n***; a polity with ***n*** districts can have quite different fiscal biases depending on how the district boundaries negotiate constituent diversity. The evidence from the American states indicates that diversity across districts promotes spending growth, and that diversity within districts alters the composition of spending and the composition of tax instruments.

The fiscal consequences of constituent diversity brings a novel perspective to the process of legislative redistricting, a process well-scrutinized from a number of legal and political angles. For example, the evaluation of districting plans normally centers on adherence to traditional criteria such as equal populations, compactness, and respect for political subdivisions. The potential for fiscal distortions poses an additional evaluation criterion. Further, the concept of fiscal gerrymandering offers a general perspective for analyzing isolated objectives such as districting for partisan advantage, incumbent protection, or enhanced minority influence. These objectives may be achieved through the common means of altering the relevant fiscal incentives tied to the organization of constituent diversity. Finally, the measures I derive for diversity may offer practical instrumental variables to control for institutional endogeneity in future research. District design may influence the selection of fiscal institutions early in each decade, and these district-induced institutional changes may endure and diverge from subsequent policy pressures.[15]

[15] Poterba (1996a and 1996b) discusses the potential endogeneity of budget institutions and alternative empirical strategies to cope with the problem. See Reuben (1995) for an example of the approach that employs variables that affect budget rules but not fiscal policy as instrumental variables.

References

Alesina, A. and R. Perotti, 1996, "Fiscal Discipline and the Budget Process," ***American Economic Review***, 86 (2), pp. 401-407.

Alt, J.E. and R.C. Lowry, 1994, "Divided Government, Fiscal Institutions, and Budget Deficits: Evidence from the States," ***American Political Science Review***, 88, pp. 811-828.

Besley, T. and A. Case, 1995, "Does Electoral Accountability Affect Economic Policy Choices? Evidence from the States," ***Quarterly Journal of Economics***, Vol. 110, pp. 769-798.

Buchanan, J.M. and G. Tullock, 1962, ***The Calculus of Consent***, Ann Arbor: University of Michigan Press.

Collie, M., 1988, "The Legislature and Distributive Policy Making in Formal Perspective," ***Legislative Studies Quarterly***, Vol. 13, p. 427.

Crain, W.M. and N.V. Crain, 1998, "Fiscal Consequences of Budget Baselines," ***Journal of Public Economics***, Vol. 67 (3) March 1998, pp. 421-436.

Crain, W.M. and T.J. Muris, 1995, "Legislative Organization of Fiscal Policy," ***Journal of Law and Economics***, October 38, pp. 311-333.

Emerson, N. and P. Ordeshook, 1985, "Universalism in Congress," ***American Journal of Political Science***, p. 246

Fitts, M. and R.B. Inman, 1992, "Controlling Congress: Presidential Influence in Domestic Fiscal Policy," ***Georgetown Law Review***, Vol. 80 (5), pp. 1737-1785.

Gilligan, T.W. and J.G. Matsusaka, 1995, "Deviations from Constituent Interests: The Role of Legislative Structure and Political Parties in the States." ***Economic Inquiry***, Vol. XXXIII, pp. 383-401.

Hallerberg, M. and J. von Hagen, 1997, "Electoral Institutions, Cabinet Negotiations, and Budget Deficits in the European Union," mimeo, University of Bonn: Center for European Integration.

Ingberman, D. and R.P.Inman, 1988, "The Political Economy of Fiscal Policy, " in P.G. Hare (ed.) ***Surveys in Public Sector Economics***, New York: Basil Blackwell.

Inman, R.P. and M. Fitts. "Political Institutions and Fiscal Policy: Evidence from the US Historical Record." ***Journal of Law, Economics, and Organization***, Vol. 6, 1990, pp. 79-132.

Jones, M., P. Sanguinetti and M. Tommasi, 1997, "Politics, Institutions, and Fiscal Performance in the Argentine Provinces," mimeo.

Kontopoulos, Y. and R. Perotti, 1997, "Fragmented Fiscal Policy." mimeo. Columbia University.

Lilley, Defranco, and Diefenderfer, 1995, ***Almanac of State Legislatures***, Washington, DC: Congressional Quarterly, Inc.

Mueller, D. C., 1985, "Seminal Works in the Theory of Public Choice," Virginia Political Lecture, Fairfax, VA: Center for Study of Public Choice.

Poterba, J.M., 1994, "State Responses to Fiscal Crisis: The Effects of Budgetary Institutions and Politics," ***Journal of Political Economy***, 102, pp. 799-821.

Poterba, J.M. 1996a, "Do Budget Rules Work?" (Cambridge, MA: National Bureau of Economic Research, Working Paper 5550).

Poterba, J.M., 1996b, "Budget Institutions and Fiscal Policy in the US States," ***American Economic Review***, 86 (2), pp. 395-400.

Reuben, K.S., 1995, "Tax Limitations and Government Growth: The Effect of State Tax and Expenditure Limits on State and Local Government," mimeo, Massachusetts Institute of Technology.

Stein, E., E. Talvi and A. Grisanti, 1997, "Institutional Arrangements and Fiscal Performance: The Latin American Experience," mimeo, Office of the Chief Economist, Inter-American Development Bank.

Stockman, D. A., 1975, "The Social Pork Barrel," ***The Public Interest*** (39) Spring, pp. 3-30.

Tollison, R.D., 1988, "Public Choice and Legislation," ***Virginia Law Review***, Vol. 74, pp. 339-371.

Tullock, G., 1959, "Some Problems of Majority Voting," ***Journal of Political Economy***, Vol. 67, pp. 571-579.

US Department of Commerce, Bureau of the Census, annual editions, State Government Finances (Washington, DC: US Government Printing Office).

US Department of Commerce, Bureau of Economic Analysis, 1997, State annual summary tables (Washington, DC: Regional Economic Measurement Division, Web Site).

Von Hagen, J., 1992, "Budgeting Procedures and Fiscal Performance in the European Communities," ***Economic Papers***, 96 (October).

Von Hagen, J. and I. Harden, 1996, "Budget Processes and Commitment to Fiscal Discipline," ***IMF Working Paper***.

Weingast, B.R., 1979, "A Rational Choice Model Perspective in Congressional Norms," ***American Journal of Political Science***, Vol. 23, p. 245

Weingast, B.R. and W. Marshall, 1988, "The Industrial Organization of Congress; or, Why Legislatures, Like Firms, Are Not Organized as Markets," ***Journal of Political Economy***, Vol. 96.

Weingast, B.R., K. A. Shepsle, and C. Johnsen, 1981, "The Political Economy of Benefits and Costs: A Neoclassical Approach to Distributive Politics," ***Journal of Political Economy***, Vol. 89 (4), pp. 642-664.

Table 1: State Government General Fund Spending
Annual Growth Rate Per Capita (1993-94 and 1994-95)

(t-ratios in parentheses)

	Total Spending		Highway Spending		Public Welfare Spending		Education Spending	
Independent Variables	**Lower**	**Upper**	**Lower**	**Upper**	**Lower**	**Upper**	**Lower**	**Upper**
Lower: Inter-District Diversity	0.275 (3.75) **	--	0.481 (2.06) *	--	0.289 (1.88)	--	0.265 (3.18) **	--
Lower: Intra-District Diversity	0.016 (0.42)	--	-0.346 (-2.35) *	--	0.269 (2.24) *	--	-0.018 (-0.28)	--
Lower: Number Districts	-0.00003 (-0.50)	--	-0.0006 (-3.57) **	--	-0.00004 (-0.28)	--	0.0001 (1.29)	--
Upper: Inter-District Diversity	--	0.219 (2.76) **	--	0.757 (3.34) **	--	0.526 (3.31) **	--	0.123 (2.19) *
Upper: Intra-District Diversity	--	0.026 (0.62)	--	-0.303 (-2.20) *	--	0.213 (1.88)	--	-0.018 (-0.34)
Upper: Number Districts	--	-0.00011 (-0.60)	--	-0.00001 (-0.02)	--	-0.001 (-2.70) **	--	0.0004 (1.87)
Income Per Capita Growth	0.791 (7.46) **	0.813 (8.41) **	-0.556 (-1.46)	-0.256 (-0.87)	0.081 (0.30)	0.130 (0.49)	1.088 (5.15) **	1.270 (5.45) **
Population Growth Rate	-0.335 (-1.50)	-0.286 (-1.29)	-1.642 (-1.72)	-1.255 (-1.20)	-0.845 (-1.84)	-1.500 (-3.67) **	0.062 (0.23)	0.083 (0.32)
Log (Population)	0.007 (2.28) *	0.008 (3.88) **	0.020 (2.36) *	0.017 (1.67)	-0.016 (-2.41) *	-0.010 (-1.32)	0.007 (1.57)	0.004 (1.04)
Log (Metropolitan Pop. Share)	-0.013 (-1.85)	-0.018 (-2.56) **	0.026 (1.25)	0.026 (1.06)	-0.004 (-0.28)	-0.014 (-0.88)	-0.020 (-2.00) *	-0.007 (-0.81)
Non-Divided Government	-0.006 (-1.31)	-0.006 (-1.48)	-0.032 (-3.21) **	-0.030 (-3.20) **	-0.006 (-1.01)	-0.016 (-2.01) *	-0.002 (-0.38)	0.004 (1.25)
Democrat Maj. Lower Chamber	-0.006 (-0.97)	-0.002 (-0.50)	0.004 (0.29)	-0.009 (-0.88)	-0.038 (-3.53) **	0.038 (-3.59) **	-0.009 (-1.84)	-0.006 (-1.64)
Democrat Maj. Upper Chamber	-0.011 (-2.44) *	-0.011 (-2.31) *	-0.037 (-3.12) **	-0.043 (-3.91) **	-0.025 (-3.75) **	-0.026 (-4.01) **	-0.008 (-1.53)	-0.009 (-2.52) *
Democrat Governor	0.006 (1.38)	0.006 (1.41)	0.012 (1.08)	0.017 (1.56)	0.003 (0.32)	0.003 (0.34)	0.004 (0.82)	0.001 (0.26)
Constant	-0.054 (-2.26) *	-0.027 (-1.35)	-0.156 (-1.82)	-0.249 (-3.00) **	0.026 (0.78)	0.042 (1.83)	-0.040 (-1.22)	-0.032 (-1.13)
Adjusted R-Square	0.88	0.91	0.40	0.42	0.92	0.92	0.60	0.86

"Lower" denotes the use of district variables for state lower chambers; "Upper" denotes the use of district variables for state upper chambers.
** Indicates significance at the 0.01 level.
* Indicates significance at the 0.05 level.

Table 2: State Personal Income Tax Revenues (Percent of All Tax Revenues) First Differenced, 1993-94 and 1994-95

(t-ratios in parentheses)

Independent Variables	Lower Chamber	Upper Chamber
Lower Chamber: Inter-District Diversity	0.60 (0.34)	--
Lower Chamber: Intra-District Diversity	-3.09 (-2.17) *	--
Lower Chamber: Number Districts	-0.001 (-0.83)	--
Upper Chamber: Inter-District Diversity	--	1.17 (0.63)
Upper Chamber: Intra-District Diversity	--	-3.10 (-2.24) *
Upper Chamber: Number Districts	--	-0.012 (-2.15) *
Per Capita Income Growth	-9.29 (-2.59) *	-9.30 (-2.62) **
Log (Population)	-0.115 (-1.37)	-0.040 (-0.46)
Log (Metropolitan Population Share)	0.567 (2.61) **	0.326 (1.43)
Democrat Majority in Lower Chamber (Yes=1)	0.421 (3.92) **	0.353 (3.50) **
Democrat Majority in Upper Chamber (Yes=1)	0.037 (0.43)	0.033 (0.38)
Democrat Governor (Yes=1)	-0.178 (-1.89)	-0.151 (-1.55)
Non-Divided Government (Yes=1)	0.093 (1.11)	0.061 (0.72)
Constant	-0.572 (-0.88)	0.077 (0.10)
Adjusted R-Square	0.27	0.22

** Indicates significance at the 0.01 level.
* Indicates significance at the 0.05 level.

Data Appendix: Upper Chamber Diversity Measures

	Intra-District (Herfindahl Indices)			Inter-District (Coefficients of Variation)					
State	Income	Industry Occup.	Racial Make-up	Income	BA + Degree	Manufact Sector	Service Sector	Age 55 +	Soc. Sec. Recipients
AL	0.7314	0.4855	0.6987	0.2373	0.4212	0.3085	0.1620	0.1000	0.1414
AK	0.6688	0.5180	0.7885	0.1509	0.2456	0.4118	0.1071	0.2679	0.2986
AZ	0.6822	0.5412	0.6813	0.2641	0.3932	0.2363	0.0857	0.3123	0.2894
AR	0.7898	0.4721	0.7774	0.1888	0.4362	0.2323	0.1325	0.1947	0.1912
CA	0.5423	0.5236	0.4884	0.2310	0.3042	0.2643	0.0939	0.1615	0.1493
CO	0.6431	0.5543	0.7173	0.2622	0.3470	0.2280	0.0706	0.2920	0.3236
CT	0.4891	0.5393	0.7686	0.3638	0.3117	0.1754	0.0706	0.1366	0.1227
DE	0.5848	0.5100	0.7075	0.2783	0.4382	0.1309	0.0843	0.2785	0.2473
FL	0.6662	0.5661	0.6699	0.1832	0.2268	0.1530	0.0605	0.3027	0.2818
GA	0.6609	0.5089	0.6620	0.3042	0.5037	0.3318	0.1548	0.2237	0.2630
HI	0.5132	0.5555	0.5053	0.2091	0.2565	0.2321	0.0804	0.3206	0.2824
ID	0.7407	0.4630	0.8834	0.1377	0.3017	0.2118	0.1216	0.2104	0.2045
IL	0.6099	0.5384	0.7274	0.3365	0.4376	0.2549	0.0985	0.2343	0.2431
IN	0.6752	0.4990	0.8656	0.1583	0.3794	0.2290	0.1278	0.1084	0.1321
IA	0.7287	0.4992	0.9306	0.1734	0.3979	0.2350	0.1256	0.1975	0.2035
KS	0.6979	0.5098	0.8300	0.3121	0.4277	0.3122	0.1117	0.2594	0.2748
KY	0.7541	0.4793	0.8780	0.2571	0.5348	0.2788	0.1320	0.1517	0.1612
LA	0.7426	0.5258	0.6104	0.2056	0.3981	0.2801	0.1035	0.1542	0.1569
ME	0.6995	0.5073	0.9753	0.1609	0.2756	0.2683	0.1215	0.1188	0.1121
MD	0.5328	0.5147	0.6806	0.3132	0.4696	0.3187	0.0811	0.2639	0.3091
MA	0.5254	0.5617	0.8032	0.2112	0.2888	0.2780	0.0951	0.1535	0.1640
MI	0.6238	0.5042	0.8100	0.2410	0.3550	0.1789	0.0768	0.1755	0.1850
MN	0.6472	0.5327	0.9127	0.2993	0.3505	0.2499	0.1115	0.3037	0.3311
MS	0.7837	0.4699	0.6132	0.2230	0.3846	0.3293	0.1599	0.1267	0.1475
MO	0.7009	0.5153	0.8469	0.2968	0.4170	0.1961	0.0992	0.1705	0.1882
MT	0.7714	0.5283	0.9588	0.1815	0.2938	0.4160	0.1436	0.2169	0.2179
NE	0.7335	0.5305	0.8996	0.2696	0.3689	0.2742	0.1359	0.2811	0.2835
NV	0.6318	0.5638	0.6968	0.1849	0.2874	0.1965	0.1342	0.2091	0.1885
NH	0.5705	0.5124	0.9514	0.1970	0.2258	0.1828	0.0833	0.1939	0.1975
NJ	0.4942	0.5572	0.6451	0.2600	0.3208	0.1693	0.0537	0.1956	0.2041
NM	0.7330	0.5207	0.5601	0.2529	0.4172	0.2111	0.0819	0.2439	0.2153
NY	0.5762	0.5847	0.6730	0.3584	0.3642	0.2850	0.0895	0.1763	0.1732
NC	0.7061	0.4831	0.6621	0.2139	0.3905	0.2758	0.1580	0.2017	0.2042
ND	0.7770	0.5404	0.9697	0.1727	0.3146	0.2896	0.1602	0.3174	0.3010
OH	0.6641	0.5127	0.8164	0.1775	0.2993	0.2096	0.0978	0.1190	0.1347
OK	0.7401	0.4941	0.8227	0.2445	0.4013	0.2537	0.0959	0.2219	0.2425
OR	0.6964	0.5056	0.8557	0.1994	0.3435	0.1838	0.1030	0.1595	0.1774
PA	0.6593	0.5280	0.8365	0.2600	0.3481	0.2539	0.1029	0.1147	0.1446
RI	0.6076	0.5193	0.8406	0.2248	0.3906	0.2807	0.1145	0.1922	0.1622
SC	0.7082	0.4789	0.6288	0.1875	0.3844	0.2888	0.1504	0.1468	0.1798
SD	0.7931	0.4853	0.9751	0.1916	0.2573	0.2916	0.1370	0.2536	0.2354
TN	0.7202	0.5042	0.7994	0.2363	0.4112	0.3244	0.1672	0.1485	0.1749
TX	0.6751	0.5217	0.5584	0.2619	0.3881	0.2087	0.0582	0.2204	0.2790
UT	0.6804	0.5179	0.8625	0.1873	0.3036	0.2761	0.1359	0.3526	0.2939
VT	0.6816	0.4945	0.9803	0.1143	0.2020	0.1312	0.0805	0.1556	0.1581
VA	0.6092	0.4913	0.6708	0.3425	0.4793	0.3907	0.1174	0.2530	0.3389
WA	0.6317	0.5146	0.8003	0.2136	0.3287	0.2770	0.1057	0.2121	0.2236
WV	0.7867	0.4909	0.9322	0.1162	0.3066	0.3051	0.0839	0.0851	0.0965
WI	0.6776	0.4857	0.8968	0.2006	0.3390	0.2134	0.1092	0.1716	0.1620
WY	0.7081	0.4896	0.8748	0.1516	0.2742	0.2208	0.1110	0.2889	0.2920

Data Appendix: Lower Chamber Diversity Measures

	Intra-District (Herfindahl Indices)			Inter-District (Coefficients of Variation)					
State	Income	Industry Occup	Racial Make-up	Income	BA + Degree	Manufact Sector	Service Sector	Age 55 +	Soc. Sec. Recipients
AL	0.7347	0.4897	0.7152	0.2747	0.5152	0.3423	0.1825	0.1643	0.1934
AK	0.4958	0.5023	0.8090	0.2173	0.3149	0.5131	0.1242	0.3319	0.3535
AZ	0.6822	0.5412	0.6813	0.2641	0.3932	0.2363	0.0857	0.3123	0.2894
AR	0.7943	0.4753	0.7858	0.2308	0.5257	0.2729	0.1597	0.2304	0.2211
CA	0.5486	0.5247	0.5066	0.2601	0.3579	0.2971	0.1063	0.1996	0.1907
CO	0.6470	0.5549	0.7196	0.2925	0.3692	0.2515	0.0762	0.3183	0.3522
CT	0.5038	0.5423	0.7823	0.4150	0.3911	0.2273	0.0912	0.2218	0.2036
DE	0.5892	0.5128	0.7193	0.2904	0.4808	0.1529	0.0896	0.3351	0.2965
FL	0.6694	0.5685	0.6837	0.2237	0.3139	0.2133	0.0775	0.3440	0.3210
GA	0.6678	0.5123	0.6839	0.3556	0.5751	0.3620	0.1685	0.2801	0.3142
HI	0.5204	0.5588	0.5255	0.2552	0.3059	0.2452	0.0871	0.3445	0.3201
ID	0.7407	0.4630	0.8834	0.1377	0.3017	0.2118	0.1216	0.2104	0.2045
IL	0.6129	0.5391	0.7378	0.3538	0.4753	0.2708	0.1041	0.2552	0.2642
IN	0.6780	0.5018	0.8659	0.2045	0.4591	0.2491	0.1387	0.1481	0.1721
IA	0.7298	0.5028	0.9314	0.1849	0.4323	0.2669	0.1365	0.2108	0.2175
KS	0.7019	0.5143	0.8326	0.3533	0.4763	0.3387	0.1257	0.2825	0.2914
KY	0.7589	0.4821	0.8805	0.2936	0.5998	0.3113	0.1472	0.1837	0.1838
LA	0.7457	0.5295	0.6358	0.2699	0.5148	0.3362	0.1206	0.2207	0.2203
ME	0.7025	0.5141	0.9764	0.2276	0.3787	0.3330	0.1466	0.1931	0.1701
MD	0.5398	0.5101	0.7024	0.3100	0.4912	0.3206	0.0882	0.2832	0.3344
MA	0.5372	0.5649	0.8192	0.3029	0.4008	0.3113	0.1079	0.2080	0.2042
MI	0.6298	0.5081	0.8261	0.3356	0.4772	0.2197	0.0987	0.2202	0.2229
MN	0.6499	0.5350	0.9143	0.3117	0.3803	0.2717	0.1236	0.3350	0.3564
MS	0.7878	0.4743	0.6313	0.2594	0.4804	0.3567	0.1826	0.1590	0.1826
MO	0.7091	0.5205	0.8658	0.3650	0.5441	0.2600	0.1273	0.2502	0.2688
MT	0.7739	0.5358	0.9586	0.2186	0.3578	0.4394	0.1633	0.2603	0.2600
NV	0.6387	0.5798	0.6832	0.2355	0.3389	0.2398	0.1273	0.2938	0.2446
NH	0.5938	0.5136	0.9628	0.2529	0.3221	0.2561	0.1183	0.2603	0.2449
NJ	0.4942	0.5572	0.6451	0.2600	0.3208	0.1693	0.0537	0.1956	0.2041
NM	0.7412	0.5225	0.5735	0.2851	0.4699	0.2587	0.0969	0.2561	0.2285
NY	0.5835	0.5853	0.6973	0.3971	0.4193	0.3064	0.0968	0.2113	0.2040
NC	0.7024	0.4873	0.6769	0.2402	0.4635	0.3130	0.1838	0.2180	0.2336
ND	0.7770	0.5404	0.9697	0.1727	0.3146	0.2896	0.1602	0.3174	0.3010
OH	0.6689	0.5159	0.8339	0.2440	0.3978	0.2363	0.1116	0.1594	0.1682
OK	0.7422	0.4953	0.8268	0.2712	0.4668	0.2867	0.1097	0.2517	0.2814
OR	0.6972	0.5079	0.8589	0.2206	0.3919	0.2132	0.1163	0.1885	0.1967
PA	0.6646	0.5327	0.8622	0.3198	0.4641	0.2913	0.1209	0.1716	0.1878
RI	0.6094	0.5196	0.8472	0.2586	0.4427	0.2988	0.1211	0.2228	0.1980
SC	0.7115	0.4850	0.6324	0.2164	0.4503	0.3246	0.1774	0.2276	0.2288
SD	0.7948	0.4819	0.9752	0.1939	0.2631	0.3008	0.1430	0.2573	0.2379
TN	0.7261	0.5095	0.7990	0.3091	0.5272	0.3546	0.1883	0.2016	0.2287
TX	0.6796	0.5241	0.5852	0.3043	0.4868	0.2782	0.0930	0.2981	0.3405
UT	0.6857	0.5203	0.8662	0.2450	0.3556	0.3032	0.1473	0.3919	0.3442
VT	0.6660	0.5135	0.9773	0.2161	0.3398	0.2519	0.1259	0.2464	0.2436
VA	0.6127	0.4947	0.6716	0.3587	0.5117	0.4159	0.1333	0.3105	0.3827
WA	0.6317	0.5146	0.8003	0.2136	0.3287	0.2770	0.1057	0.2121	0.2236
WV	0.7937	0.4777	0.9401	0.1583	0.3388	0.3496	0.1206	0.1232	0.1355
WI	0.6821	0.4904	0.9026	0.2417	0.4106	0.2527	0.1435	0.2044	0.1993
WY	0.7097	0.4949	0.8728	0.1830	0.3171	0.2607	0.1258	0.3421	0.3500

Data Appendix: Summary Statistics

Variable	Mean	Std Dev	Max	Min
Lower Chambers				
Inter-District Diversity	0.265	0.033	0.352	0.198
Intra-District Diversity	0.341	0.054	0.473	0.238
Number of Districts	97	44	203	30
Upper Chambers				
Inter-District Diversity	0.228	0.036	0.320	0.140
Intra-District Diversity	0.345	0.056	0.482	0.238
Number of Districts	39	12	67	13
Personal Income Growth ✿	1.8%	0.9%	3.7%	-0.6%
Population (1,000s)	5,220	5,740	31,510	478
Population Growth Rate	1.1%	1.0%	5.1%	-0.5%
Metropolitan Population Share (x100)	64.5	21.7	100.0	21.4
State General Fund Spending Growth ✿	2.4%	2.4%	10.8%	-2.1%
Public Welfare Spending Growth ✿	3.5%	3.7%	12.6%	-6.3%
Education Spending Growth ✿	2.5%	4.3%	24.7%	-5.3%
Highway Spending Growth ✿	0.6%	6.8%	14.3%	-16.0%
Income Tax Revenues (Share of All Tax Revenues x 100)	28.9	15.7	64.6	0.0

⭑ Variables included as real, annual growth rates per capita.