The Effects of Tax and Expenditure & Limitations
on the
Fiscal Structure of Local Government

by

Daniel R. Mullins
Associate Professor
The American University
Washington, D.C.
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Introduction

This paper begins a detailed consideration of the effects of tax and expenditure limitations on reorienting the structure of local finance and shifts in the distribution of service responsibilities between units of government. Previous research has shown that the enactment of limitations on property taxes and general expenditures has brought a shift toward non-tax sources of revenues (fees and charges, state transfers and debt) for financing local public services.[1] Implicit in these structural changes are changes in the distribution of the burdens for financing local government services and likely alterations in service availability, and possible increased reliance on intergenerational (and intergovernmental) transfers. Because the current wave of limitations have often exempted special districts from their effects, it is likely that their outcome will include a greater use of single purpose governmental units for local service delivery. These and other structural changes, often intended as benign adjustments to changing fiscal realities, may reorient the locus of expenditure responsibility away from local general purpose units of governments, altering access and voice within a framework of arbitrary constraint. The result may be serious implications for local autonomy and the ability of communities to match their service / tax packages to the preferences of their residents; seriously reducing the efficiency of resource allocation within the sector.

This research uses time series data on all units of government in 787 metropolitan counties in the United States to begin to assess the more micro effects of state imposed tax and expenditure limitations on the fiscal structure of local government in states enacting these limits.[2] The time frame of the study extends from 1972 through 1997 and draws on observation from six successive censuses of governments and a variety of geographically specific demographic and economic data to estimate the effects of these limitations, controlling for the demographic and economic characteristics of each unit of local government. Units studied include over 30,000 counties, cities, towns, school districts, and special districts in the 48 contiguous states for 1972, 1977, 1982, 1987, 1992 and 1997. The resulting data set includes over 190,000 observations and approximately 500 measures for each jurisdiction.

Local Autonomy v. State Authority

It is a curious turn of events which often couches proposals to limit the revenue or expenditure authority of "local" government within the guise of "grass-roots initiative" and "public choice." As general rule, the organizing basis for these initiatives are neither local nor

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1 See, for example, Philip G. Joyce and Daniel R. Mullins, "The Changing Fiscal Structure of the State and Local Public Sector: The Impact of Tax and Expenditure limitations," *Public Administration Review* 51 (May/June, 1991), 3: 240-253; and Daniel R. Mullins and Philip G. Joyce, "Tax and Expenditure Limitations and State and Local Fiscal Structure: An Empirical Assessment," *Public Budgeting & Finance* 16 (1996), 1: 75-101

2 For our purposes, tax and expenditure limitations are defined as limitations on the revenue raising or expenditure making abilities of local governments imposed universally by state statute or state constitutional amendment.

grass roots. They tend to be championed at the state level (by state level constituencies and often the result of the initiative of a small group of "reformers"), resulting in statutory or constitutional provisions of broad scope and wide applicability across virtually all local jurisdictions or classes of jurisdictions within a state.[3] By definition, they tend to provide for little in the way of local discretion in the application of their provisions to individual jurisdictions, and thus seriously limit local choice.[4] Such a result is diametrically opposed to local autonomy, as the universal and arbitrary imposition of constraints across local jurisdictions limits the ability of local populations to realize local community and public service goals.

Given the broad brush nature of these constraints, their effects across jurisdiction are likely to be non-uniform. They will imposes differential welfare loses across classes of communities depending on how binding a particular provision is in an individual setting. Communities with stagnant property values may not be seriously impacted by limits on assessment increases, however, property tax rate limitation may be seriously constraining. Communities preferring relatively low levels of local spending may not be seriously affected by constraints on general expenditures, while cities experiencing significant growth may find needed resources difficult to marshall, irrespective of their economic base.

It is precisely the fact that the effects of limitations are likely to be differentially felt by governments in different phases of growth and maturity (and with populations with different preferences and capacities for the outputs from the public sector) that makes these effects simultaneously so potentially arbitrary and biased. Further, the imposition of fiscal uniformity across areas with diverse preference and population bases is a prescription for inefficiency and dissatisfaction.[5] Because of desires to avoid these outcomes, the introduction of a policy wedge between public service demand and resource access is also a prescription for adaptation and mutation by/of the local public sector to avoid the welfare losses implied by the existence of arbitrary constraints. These adaptation provide only second-best solutions (to the absence of constraints) and create their own set of distortions. The likely results are: (i) a darwinian

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3   This modern wave of initiatives to limit local government can be viewed as a continuation of a centuries long struggle for autonomy between cities and their states. See Jon Teaford, "City Versus State: The Struggle for Legal Ascendancy," *The American Journal of Legal History* 17 (1973): 51-65.

4   Some point to the existence of local override measures, usually via popular vote (and sometimes requiring super majorities), as mechanisms for maintaining local control. However, the effectiveness of these measures for such is suspect.

5   The result is opposite of the prescription offered by the leading and most enduring model of local government efficiency articulated by Charles Tiebout and contrary to median voter prescripts. This assessment, however, is not universal. Some argue that if the leviathan model of budget maximizing bureaucrat is operational at the local level of government (the least likely level of government for it to be) the effect of limitations may be to constrain excessive government and waste. This view seems less than compelling, as it is highly unlikely that such excess would be universally existence in the local sector of a state and that the uniform application of local limitations would be effective in targeting and constraining only local jurisdictions operating in excess. Such broad brush application handed down from the state level is unlikely to enhance local efficiency in the aggregate. See Charles M. Tiebout, "A Pure Theory of Local Expenditures," *Journal of Political Economy* 64 (October 1956), 3: 416-424; and Therese J. McGuire, "Proposition 13 and its Offspring: For Good or for Evil?," *National Tax Journal* 52 (March 1999), 1: 129-138.

survival of the fittest at the local level, where localities possessing the greatest resource slack and resource options prove the most adaptable, (ii) the emergence of ever greater layers of complexity between citizens of localities and the governance structures intended to service their needs and preferences, and (iii) a new set of barriers to the maintenance of adequate public service levels in areas of greatest need.

Taking Stock of the Inventory

The only comprehensive inventory to date of the provisions of state-wide limitations on local fiscal autonomy identifies their existence in one form or another in forty-six states. As of 1995, only Connecticut, Maine, New Hampshire, and Vermont had none.[6] To be sure, several of these have existed for as long as a century, however, most emerged as a function of the more modern period of "tax revolt" beginning during the 1970's. There are six basic type of limitations: (1) overall property tax rate limits applying to all local governments, (2) specific property tax rate limits applying to specific types of local government (municipalities, counties, school districts and special districts) or specific functions, (3) property tax levy (revenue) limits, (4) General revenue or expenditure increase limits, (5) limits on assessment (base) increases, and (6) full disclosure (truth-in-taxation) requirements. Panel 1 describes each of these forms of limitation.

[Insert Panel 1]

In general, the revenue and expenditure limits are potentially the most individually cumbersome, or binding. Rate limits and particularly assessment limits can be more easily overcome, however, they too can become seriously binding if used in conjunction with one another. The differences in the constraining qualities of their provisions have sometimes resulted in a sub-classification of limitations into type 1 (non-binding) and type 2 (potentially binding). Type 1 limitation include: (i) overall and specific property tax rate limitations, and (ii) assessment increase limitations. Type 2 limitations include: (i) property tax levy limits, (ii) general revenue or expenditure increase limits, and (ii) simultaneous property tax rate and assessment increase limitations.[7] While these categories imply inherent variation in the capacity to constrain, the actual limit is determined by the severity of the constraint and provisions available for circumvention and exclusions.[8] Limitations enacted across states vary dramatically in the severity of the constraint imposed. Within a given state, limitations may prove to be seriously binding constraints on some local governments but not others.

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6   See Daniel R. Mullins and Kimberly A. Cox, *Tax and Expenditure Limits on Local Governments*, M-194 (Washington, D.C.: Advisory Commission on Intergovernmental Relations, 1995).
7   Full disclosure requirements are often excluded altogether due to their procedural rather than revenue or expenditure focus.
8   Items frequently excluded from the provisions of limitations include special levies for functions such as roads and recreation, debt service, court judgments and pension liabilities.

Twelve states impose overall property tax rate limits, 30 states limit specific local governments (24 limit counties, 24 municipalities and 15 school districts), 27 states limit local tax levies (24 limit counties, 24 limit municipalities, and 15 limit school districts), six states limit the growth in assessments, two states limit general revenue increases, eight limit expenditure growth. Table 1 provides a summary of all existing limitations as of 1995.[9] Thirty-six state have a combination of limitations. Of these Arizona, California, Colorado and New Mexico have among the most restrictive.[10] The trend over the more recent period has been for amendments to relax the effects of limits as they have become more constraining. This is not to say that the continued enactment of stringent limitations has been held in abeyance.

[Insert Table 1]

The Initiative and referendum have continued as the dominant vehicle for establishing local tax and expenditure limitations. More than 150 measures were brought to vote during the 1990's alone.[11] Since 1995, new and strengthened limitations have been enacted in several states. For example, in:

> *California,* Article XIII of the state constitution was amended via proposition 218- "Right to Vote on Taxes Act." Effective July 1, 1997, proposition 218 requires majority voter approval for general taxes and a super majority (2/3) for special taxes, and prohibits the use of fee and charge revenue for general services. All property related fee and charge increases are subject to majority approval of property owners or 2/3 voter approval.[12]

> *Oklahoma,* new assessment limits took effect January 1, 1997, limiting residential assessment increases to 5 percent per year, until the property is sold, changed or improved. This was coupled with a freeze on the valuation of homesteads belonging to people over age 65 with household income of $25,000 or less.[13]

> *Oregon,* a property tax revenue limit (Measure 47) approved by referendum in November of 1996 was superseded through referendum (Measure 50) in March of 1997. It provides

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9   See Mullins and Cox, op cit., 1995 for a complete inventory

10 Arizona combines property tax revenue limits with general expenditure limits (both enacted more than 75 years ago, except for those affecting school districts) with modern period (1980) limits on both overall property tax rates and assessment increases. In addition to a school district general revenue limit enacted in 1972, California established an overall property tax rate limit coupled with an assessment increase limit in 1978 and added a general expenditure limit in 1979. Colorado's 1913 property tax revenue limits (applying to counties and municipalities) were reinforced in 1992 with a provision applying to school districts. In 1992 Colorado also applied specific property tax rate limits, general revenue limits, and general expenditure limits across all local governments (although school district general expenditure limits had existed since 1973). Colorado also requires full disclosure. New Mexico's limitations include overall property tax rate limits (1914), specific property tax rate limits (1973) property tax revenue limits (1979) and limits on assessment increases (1979).

11 David Brunori, "The Politics of State Taxation," *State Tax Notes*, Sept. 27, 1999, p. 841.

12 David Doerr, "Voters Approve Right to Vote on Taxes," *State Tax Notes*, Nov. 11, 1996, p. 1334.

13 Amy Hamilton, "Voters Pass Three Property Tax Amendments," *State Tax Notes*, Nov. 11, 1996, p. 1352.

for a revised property tax assessment limit coupled with a levy based rate freeze. Measure 50 rolled back assessments to 1996 levels less 10 percent and capped annual growth to three percent. It also established rates at a level producing a 17 percent reduction over that which would have occurred under Measure 47. New or additional taxes are to be approved at election with a minimum of 50 percent turnout and new fees also require voter approval.[14]

New Mexico, legislation was enacted (during February 2000) to limit assessment increases beginning in 2001. Yearly residential assessment increases are limited to 3 percent (with increases of 5 percent in counties with existing assessment sales rations of less than 85 percent).[15]

Washington, initiative 695 requiring voter approval of any increase in taxes, or licenses by state or local governments was adopted in 1999.[16] Before it could be implemented, the requirement for voter approval was ruled unconstitutional by the Washington Superior Court, March 14 2000,[17] a verdict ultimately concurred with by the State Supreme court October 26.[18] A substitute provision, initiative 722, was subsequently approved by voters in November 2000. It voids all taxes enacted without voter approval between certification of I-695 (July 2, 1999) and its intended effective date (January 1, 2000). It also limits property tax revenue increases to 2 percent per year or the rate of inflation, which ever is less with similar limits on assessment increases.[19] In December, implementation of 772 was also blocked by the Washington Superior Court.[20] In early June, the Washington Supreme Court heard arguments to restore implementation.[21] A new fall back petition (Initiative 747) to limit annual property tax revenue increases (to one percent) was approved for signature gathering in February.[22]

14 James Mayer, "Lawmakers Put Rewrite of Property Tax Limit on May Ballot," *State Tax notes,* April 7, 1997.
15 Barry Massey, "Governor Signs Property Tax Limit," *State Tax Notes*, Feb. 28, 2000, p. 648.
16 Don Burrows, "1999: The Year of the Citizen Tax Revolt," *State Tax Notes*, Jan. 10, 2000, p. 96.
17 Robert H. Alsdorj, "Initiative 695 Unconstitutional, Says Superior Court," *State Tax Notes,* Mar. 20, 2000, p. 895.
18 Don Burrows, "State High Court Rejects Measure to Require Vote on Tax, Fee Increase," *State Tax Notes*, Nov. 6 , 2000, p. 1213.
19 David Brunori, "Politics of State Taxation - The Citizens Set Policy in the 2000 Elections," *State Tax Notes*, Nov. 20, 2000, p. 1379.
20 Don Burrows, "Judge's Injunction Blocks Property Tax Limit," *State Tax Notes*, Dec. 11, 2000.
21 Don Burrows, "High Court Hears Arguments to Restore Rollback-Limit Measure," *State Tax Notes*, June 18, 2001, p. 2123.
22 Don Burrows, "Activist Sees Property Tax Limit Petition Approved," *State Tax Notes*, Feb. 12, 2001, p. 507; and Don Burrows, "Activist Files New Local Tax Limit Initiative," *State Tax Notes*, Jan. 15, 2001, p. 175.

Past Research on Effects

Previous research concerning tax and expenditure limitations has tended to focus on: (i) reasons for voter support, (ii) descriptive summaries and projected effects,[23] and (iii) estimates of their actual fiscal impacts, including their affect of the size of the public sector and its structure.

Research into public support for limitations suggests that they have been supported because of a desire for lower taxes and more efficiency in government, rather than any desire for reduced public services. Voters were, in essence, attempting to lower the price of the existing service package. Others have found that voters support local tax and expenditure limitations because of self-interest, with those whose tax burdens would be most clearly affected supporting the limitations.[24] The more recent research in this area finds that the passage of limitations is more related to economic growth. Growth in property taxes and local government's share of the state and local public sector were found to be more important than demographic or political factors.[25] Still no general desire to limit public services appears active.

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23 See John E. Peterson, "Tax and Expenditure Limitations: Projecting Their Impacts on Big City Finances," in Kaufman and Rosen, ed., *The Tax Revolts: The Case of Proposition 13* (New York: Harper, 1981); Helen F. Ladd, "An Economic Evaluation of State Limitations on Local Taxing and Spending Power," *National Tax Journal* 31 (1978): 1-18; Perry Shapiro and W. Douglas Morgan, "The General Revenue Effects of the California Property Tax Limitation Amendment," *National Tax Journal* 31 (1978), 2: 119-128; and Dale Bails, "A Critique of the Effectiveness of Tax-Expenditure Limitations," *Public Choice* 38 (1982): 129-138.

24 See Helen Ladd,and Julie Boatright Wilson, *Proposition 2 1/2: Explaining the Vote* (Cambridge, MA: John F. Kennedy School of Government, 1981); Helen Ladd and Julie Boatright Wilson, "Why Voters Support Tax Limitations: Evidence From Massachusetts Proposition 2 1/2," *National Tax Journal* 35 (1982), 2: 121-147; Helen Ladd and Julie Boatright Wilson, "Who Supports Tax Limitations: Evidence From Massachusetts' Proposition 2 1/2", *Journal of Policy Analysis and Management* 2 (1983): 256-279; Paul Courant, Edward Gramlich and Daniel Rubinfeld, "Why Voters Support Tax Limitations: The Michigan Case", *National Tax Journal* 38 (1985), 1: 1-20; Robert M. Stein, Keith E. Hamm and Patricia K. Freeman, "An Analysis of Support for Tax Limitation Referenda," *Public Choice* 40, (1983), 2: 187-194; and James Alm and Mark Skidmore, "Why Do Tax and Expenditure Limitations Pass in State Elections?," *Public Finance Review* 27 (1999), 5:481-510. Illinois offers as somewhat unique context. Because state imposed limitations do not affect home-rule cities, local populations can effectively choose to opt out of these limitations by adopting a home rule charter. One study tests the conditions affecting such local choice and finds that less homogenous communities are less likely to chose to opt out of state limitations. See Judy A. Temple, "Community Composition and Voter Support for Tax Limitations: Evidence from Home Rule Elections," *Southern Economic Journal* 62 (1996), 4: 1002-1016. In a similar vein, the execution of vote override options provides a similar research opportunity. Studies of proposition 2½ in Massachusetts have attempted to assess the determinants of support for such overrides and their implications. See David M. Cutler, Douglas W. Elmendorf, and Richard J. Zeckhauser, "Restraining the Leviathan: Property Tax Limitation in Massachusetts," NBER Working Paper No. 6196 (cambridge, MA: National Bureau of Economic Research, September , 1997); and Katherine Bradbury, Christopher J. Mayer and Karl E. Case, "Property Tax Limits and Local Fiscal Behavior: Did Massachusetts' Cities and Towns Spend Too Little on Town Services under Proposition 2½ ?" Federal Reserve Working Paper (Boston, MA: Federal Reserve Bank, July, 1998).

25 See Alm and Skidmore, op cit.

Studies of the fiscal effect of tax and expenditure limitations on the state and local sector focus have focused on tax burdens, the impact of limitations on single jurisdictions, and the affects of limitations on the level and mix of government revenues and expenditures in a cross-section of jurisdictions. Most of these have focused on single states, rather than evaluating effects generally.[26] The earlier cross-sectional studies tested only very general effects, with the most prominent focus being the size/scope of government.[27] Comprehensive analysis of overall effects of these limitations on the composition and structure of the state and local public sector have occurred more recently.[28] The findings of these studies include (i) little effect on the overall size of the state and local public sector,[29] (ii) decreased use of local broad based taxes

26 See Roger Kemp, "California's Proposition 13: A One-Year Assessment," *State and Local Government Review* 14 (January 1982); James N. Danziger, "California's Proposition 13 and the Fiscal Limitations Movement in the United States," *Political Studies* 28 (1980): 599-612; Perry Shapiro and Jon Sonstelle, "Did Proposition 13 Slay Leviathan?," *AEA Papers and Proceedings,* 72 (May 1982), 2: 184-190; Carolyn Sherwood-Call, "Tax Revolt or Tax Reform: The Effect of Local Government Limitation Measures in California," *Economic Notes* (San Francisco: Federal Reserve Bank, 1987): 57-67; Gary J. Reid, "How Cities in California Have Responded to Fiscal Pressures Since Proposition 13," *Public Budgeting and Finance* 8 (1988), 1: 20-37; David Merriman, "The Distributional Effects of New Jersey's Tax and Expenditure Limitations," *Land Economics* 62 (1986), 4: 354-361; Sharon Bernstein Megdal, "Estimating a Public School Expenditure Model Under Binding Spending Limitations," *Journal of Urban Economics* 19 (1986): 277-295; Lawrence Susskind and Cynthia Horan, "Proposition 2 1/2: The Response to Tax Restrictions in Massachusetts,", in L. E. Susskind, ed., *Proposition 2 ½* (Cambridge: Massachusetts Institute of Technology, 1983), p. 159-171; Ronald C. Fisher and Mary N Gade, "Local Property Tax and Expenditure Limits," in *State and Local Finance for the 1990s: A Case Study of Arizona*, T. J. McGuire and D. Wolf Naimark, editors (Tempe, AZ: Arizona State University, 1991); David M. Cutler, Douglas W. Elmendorf, and Richard J. Zeckhauser, op cit.; Katherine Bradbury, Christopher J. Mayer and Karl E. Case, op cit.; Richard F. Dye and Therese J. McGuire, "The Effect of Property Tax Limitation Measures on Local Government Fiscal Behavior," *Journal of Public Economics* 66 (1997), 3: 469-487; and Terri A. Sexton, Steven M. Sheffrin and Arthur O'Sullivan, "Proposition 13: Unintended Effects and Feasible Reforms," *National Tax Journal* 52 (1999), 1: 99- 111.

27 Richard J. Cebula "Tax-Expenditure Limitation in the U.S. - Two Alternative Evaluations,"<u>*Economic Notes*</u> (1986): 140-151; Daphne Kenyon and Karen Benker, "Fiscal Discipline: Lessons From the State Experience," *National Tax Journal* (1984) 37: 437-446; and Marcia Howard, "State Tax and Expenditure Limitations: There is No Story," *Public Budgeting and Finance* 9 (1989), 2: 83-90.

28 See Philip G. Joyce and Daniel R. Mullins, "The Changing Fiscal Structure of the State and Local Public Sector: The Impact of Tax and Expenditure limitations," *Public Administration Review* 51 (May/June, 1991), 3: 240-253; Harold W. Elder, "Exploring the Tax Revolt: An Analysis of the Effects of State Tax and Expenditure Limitation Laws," *Public Finance Quarterly* 20 (January, 1992),1: 47-63; Anne E. Preston and Casey Ichniowski, "A National Perspective on the Nature and Effects of the Local Property Tax Revolt: 1976-1987," *National Tax Journal* 44 (1991), 2:123-145; Daniel R. Mullins and Philip G. Joyce, "Tax and Expenditure Limitations and State and Local Fiscal Structure: An Empirical Assessment," *Public Budgeting & Finance* 16 (1996), 1: 75-101; Ronald J. Shadbegian, Do Tax and Expenditure Limitations Affect the Size and Growth of State Government?," *Contemporary Economic Policy* 14 (January 1996): 22-35;Ronald J. Shadbegian, "Do Tax and Expenditure Limitations Affect Local Government Budgets? Evidence from Panel Data," *Public Finance Review* 26 (March 1998), 2: 118-136; Ronald J. Shadbegian, "The Effect of Tax and Expenditure Limitations on the Revenue Structure of Local Government, 1962-87," *National Tax Journal* 52 (1999), 2: 221-237; and Mark Skidmore, "Tax and Expenditure Limitations and the Fiscal Relationship Between State and Local Governments," *Public Choice* 99 (1999), 1: 77-102.

29 Some studies find this effect to be larger than others. See Shadbegian, "Do Tax and Expenditure Limitations...," op cit.

(specifically property taxes) and shifts to state aide, user charges and miscellaneous revenues, (iii) expanded relative fiscal (revenue and expenditure) role for state governments.[30] Some have attempted to also assess the impact of limitation on long term public service performance.[31] Others have more specifically focused on public sector employment and wage effects.[32]

The Void: Intra-Local Effects

Previous cross state studies have all but neglected an assessment of the effects of tax and expenditure limitations on the fiscal structure within the local public sector. Even within the ranks of the individual state studies, there has been limited attention to these types of effects. While results point to the use of alternative revenue sources and intergovernmental transfers, effects on the actual composition and response of the local public sector are largely absent. Have tax and expenditure limitations changed the face of the local public sector and its interaction with local populations? Has it done so uniformly? And what are the implications of any of these structural changes for local governance? The imposition of tax and expenditure limitations on the local public sector is likely to result in local structural adjustments in fiscal and service delivery responsibility as government attempt to evolve mechanism to continue to satisfy demands for local public services. This may have serious implications for the ability of local populations to exercise voice and control over the totality of the public service / tax package made available to them and, thus, the accountability and responsiveness of government.

Potential outcomes of what are likely to be second-best solutions include: (i) reduced efficiencies through lessened ability to meet service preferences (due to resources constraints), (i) increased costs for service delivery due to constraints imposed on governance organizations with access to capacity for service production, (iii) lessened ability to coordinate services spatially and across functions (particularly if the role of general purpose jurisdictions is constrained), and (iv) greater compliance costs (for tax payers) and administrative costs (of government), if service delivery responsibilities are fragmented between providers.

While it is likely that a similar set of local structural response might be forthcoming (both within and across states) in the face of the imposition of similar constraints, significant

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30 See Joyce and Mullins, op cit. Mullins and Joyce, op cit.; Preston and Ichniowski, op cit.; Shadbegian, "The Effects of Tax..., op cit.; Shadbegian, "Do Tax and Expenditure Limitations..., op cit.

31 See Thomas A. Downs and David N. Figlio, "Do Tax and Expenditure Limits Provide A Free Lunch? Evidence on the Link Between Limits and Public Sector Service Quality," *National Tax Journal* 52 (1999), 1: 113-128 for a summary assessment of limitations effects on school performance. Based on a review of previous research, the author's conclude that limitations have adversely affected outcomes in public schools. Such conclusions are not universal, See Thomas A. Downs, Richard F. Dye and Therese J. McGuire, "Do Limits Matter? Evidence of the Effects of Tax Limitations on Student Performance," *Journal of Urban Economics* 43 (1998), 3: 401-417.

32 One such study assess the effect of limitations on employment levels, wages and public sector wage premiums, finding that limitation have limited effect on employment levels, while reducing relative wages in the local public sector. See James Poterba and Kim S. Rueben, "The Effect of Property-Tax lImits on Wages and Employment in the Public Sector," *American Economic Review* 84 (1995), 2: 384-389.

differences in the necessity and capacity for adaptation is also likely. Variability in the assignment of public service delivery responsibilities and options, and differences in local fiscal capacities and economic and demographic structures are likely to produce different adaptive responses.

The research reported here represents the first cut at multi-state, cross sectional time-series analyses attempting to assess the effects of the tax limitation "movement" on the internal structure of the local public sector across the United States. We analyze broad structural elements within metropolitan areas across the forty-eight contiguous states, including: (i) composition and distribution of both revenue and expenditure responsibilities between types of local governments, (ii) debt usage in aggregate, across types of governments and by broad category, (iii) spatial variability in revenue and expenditure levels. In addition , we attempt to begin to asses the degree to which such effects vary across jurisdictions and populations.

Research Method

A variety of statistical sources were used to estimate the effects of the imposition of tax and expenditure limitations on the local public sector. The focus of the analyses is on local government structural changes that have taken place within metropolitan areas in the contiguous forty-eight states between 1972 and 1997 which can be statistically associated with the enacting of these limitations. These initial analyses are conducted using county areas (and New England county equivalents) as the unit of analysis. Counties areas were chosen as the basic geographic unit because they generally provide the smallest geographic referent containing the universe of government organizations providing local services to individual local populations. Fiscal data were compiled individually for all units of local governments within 787 metropolitan counties at five year intervals (the only years for which complete information is available).[33] Over these six periods, these 787 counties average 31,804 units of government, producing a data set containing 190,823 observations of individual local government's finances over the 25 year period. Table 2 provides details of the number and type of local government units comprising these county areas over the six census periods. The table reveals a continuous increase in the number of governmental units, with relative increases only in the ranks of special districts and a 42 percent increase in their numbers since 1972. Table 3 provides a snapshot of relative fiscal significance by type of local government. Here, again, the greatest gain is in the area of special districts, with a 50 percent increase in their control over local revenues.

[Insert Table 2]

[Insert Table 3]

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33 Metropolitan counties and county equivalents were identified based on the Department of Commerce's designation of counties forming Metropolitan areas as of January 1, 1987.

Measures of fiscal structure (constituting the dependent variables) are constructed based on the relative fiscal relationships between units of local government within these county areas. In effect, we are first measuring structural characteristics of individual county areas based on the individual (disaggregated) characteristics of the universe of their constituent local government units, and are then estimating the effect that the imposition of fiscal limitations has had on the evolution of these local governance structures. We do this controlling for a number of demographic, economic, social and structural characteristics of the individual county areas and controlling for broader national trend and state specific effects on the dependent measures.[34] Six observations are made at five year intervals, corresponding to availability of complete local government finance data over six contiguous government censuses. The existence and characteristics of local tax and expenditure limitations were identified for each state, and all modern period (1960-1997) enactments of limitations were included in these analyses.[35] This resulted in numerous time series (or panel) models, each of which include a dependent variable focusing on local government fiscal structure within individual county areas, independent variables representing various types of tax and expenditure limitations, and demographic and control variables.

Expected Effects and Dependent Measures

Measure have been constructed to explore the effects of tax and expenditure limitation over the following dimensions: (i) the locus of local control, (ii) local autonomy and the satisfaction of local preferences, and (iii) alternative financing. Further, because limitation are not expected to be symmetrical in their effects across local jurisdictions, each of the above effects will also be explored for a subset of units arrayed based on relative fiscal capacity and structural elements.

The locus of local control. The imposition of limitations on the local sector would be expected to provide fiscal incentives to shift revenue and expenditure responsibility to delivery vehicles experiencing the least constraint. Given the thrust of limitations to be generally directed at general purpose (and school district) governments and consistent with the overall rise in the usage of fees and charges for financing local services, one effect may be to elevate the the role of special district government within metropolitan areas. With vastly different (less democratic) mechanisms of popular control and much narrower public policy purviews, such a shift away from general purpose service responsibility may produce an net reduction in local accountability and increased compliance costs, impair the ability to tailor services to local populations (because of generally broader geographic coverage of such districts), and limit coordination (and trade-

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34 Revenue and expenditure data come from U.S. Department of Commerce, *Census of Governments: State and Local Government Finances,* machine readable files for 1972, 1977, 1982, 1987, 1992 and 1997(Washington, D.C.: U.S. Government Printing Office, Various Years); demographic data are from various governmental sources.

35 Specific dates of enactment (or significant modification) for each state were ascertained through the results of detailed legal and survey research reported in D. Mullins and K. Cox, op. Cit. Limitations enacted or modified after 1995 were identified through supplemental research by the author.

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offs) across services (which are the responsibility of different governmental units) in delivering a package of services to local populations. Measures used in assessing these effects are as follows.

- Special Districts Per Capita. A very gross measure of relative importance of different structural elements of the local public sector is the number of actual units. Growth in the number of special districts associated with the imposition of limitations likely indicates structural shifts in responsibility.
- Ratio of the Number of Special Districts to the Number of General Purpose Governments. Beyond absolute numbers, the relative role of special district governments and implications for cross service coordination can be roughly approximated by their relative numbers.
- Ratio of Special District Revenue to General Purpose Government Revenue. The above withstanding, fiscal significance is a much more telling indicator of the relative responsibilities of special district governments. A heightened service deliver role for special districts would likely be reflected in an increase in the relative control of these districts over resources.
- Ratio of Special District Operating Expenditures to General Purpose Operating Expenditures. Similar to the revenue measure above, the level of special district control of total local expenditure relates directly to the exercise of control over local resource allocation.

Local Autonomy and the Satisfaction of local preferences. The existence of binding tax and expenditure limitations are expected to constrain the choice set available to local governments in satisfying the preferences of local populations. These effects would be expected to be reflected in alterations in the levels of diversity reflected in the expenditures of local general purpose governments, indicating alterations in the ability to exercise local choice. If limitations were equally binding across all general purpose governments, we would expect these constraints to be reflected as a reduction in the overall level of variation. However, if limitations are asymmetric in their effects across governments, they may work to increase variation. If this asymmetry is systematic (rather than random) it may leave a discernible pattern in the local fisc. For example, because constraints tend to be imposed in absolute terms they may bind inverse to fiscal capacity (i.e., they may produce a more formidable constraint on governments with the weakest relative fiscal capacity). If this is the fact, limits may constrain the spending of relatively lower spending governments more than those with a greater fiscal base and relatively higher spending. The result would be an actual increase in the level of revenue and expenditure variation across communities, with unconstrained communities raising and spending more and constrained communities raising an spending less. Dependent measures used to represent these possible effects are as follows.

- Coefficient of Variation in Per Capita General Revenues of General Purpose Local Government. Binding constraints are expected to affect the ability to generate revenue to meet spending preference. Constraints which consistently bind across general purpose governments are expected to decrease this variation, while those with asymmetric effects may increase the variance.

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- Coefficient of Variation in Per Capita Expenditures of General Purpose Local Governments. Like the above, binding constraints are expected to affect the ability to tailor expenditures to meet service preference. Again, constraints which consistently bind across general purpose governments are expected to decrease this variation, while those with asymmetric effects may increase this variance.
- Coefficient of Variation in Per Student School District Revenues. As for general purpose units of government, constraints with consistently bind across school districts would be expected to decrease the revenue variation between them, while those with asymmetric effects may increase this variance.
- Coefficient of Variation in Per Student School District Expenditures. Uniformly binding constraints would also be expected to decrease the expenditure variation between school districts, while asymmetric effects will likely increase this variation.

Alternative Financing. Because limitations are often directed specifically at property tax revenue and more recently fees, and because they often exempt debt (particularly self-supporting - revenue - debt and debt of special districts) and debt service levies, they may encourage the increased use of debt financing (both traditional and creative) to support public services. While the use of debt (or even its increase) is not inherently bad public policy, the implications may be significant. This is particularly so if it is associated with attempts to circumvent current revenue and spending constraints imposed by limitations rather than the result of rational financial calculation. There are potentially serious implications for longer-term debt service requirements, debt head room and inter-generational equity and allocative efficiency.

- Per capita Total Long-Term Debt Outstanding for All Units of Local Government (in 1987 dollars).
- Per Capita Non-Guaranteed Long-Term Debt Outstanding for All units of Local Government (in 1987 dollars).
- Ratio of Non-Guaranteed Debt to Total Long-Term Debt Outstanding (in 1987 dollars).
- Total Per Capita New Long-Term Debt Issued by All units of Government During the Year (in 1987 dollars).

Asymmetric Effects. Because it is highly likely that limitations will prove to be more or less constraining on governments in different fiscal positions. Each of the above analyses will also be sub-set for overall fiscal and structural characteristics of local governments and populations within county areas. It may be for some measures that the effects on less constrained units off-set those active on a more constrained subgroup, rendering an aggregate analyses unable to ferret-out the meaningful effects.

- Primary County. Primary counties are defined as those containing the primary central city of the metropolitan area. Because these central counties house the oldest constituents units of the urban area, including central cities and older (less affluent) suburbs, limitations are expected to have a potentially more demonstrable effect in these areas. In order to assess the

implications of central urban structure on the effects of tax and expenditure limitations, analyses will be conducted including a term interacting the existence of a limitation with primary county status. In addition, when this effect is significant, the sample will be subset into to separate subgroup analyses for primary and non-primary county areas.

- Relative Stress. Because tax and expenditure limitations may be expected to be more binding constraints in county areas with fewer relative resources, analyses will be conducted including a term interacting the existence of a limitation with a measure of the relative affluence of the county area. The affluence measure used is family poverty rate. Counties with 1990 family poverty rates greater than 110% of the average for all metropolitan counties in their state were classified as in under relative stress. A dichotomous variable with the value of one for these counties (and zero otherwise) was included in the analysis and forms the basis for this interaction term.

Institutional Constraint Measures (Local Tax and Expenditure Limitations).

For the purposes of this research, a number of different representations of local tax and expenditure limitations are used in different models. In each case, measures are constructed identifying the existence of a limit in the state in which a local unit is located for the year of the observation. One set of models divides limitations into two broad categories outlined above: non-binding (TYPE1) and potentially binding (TYPE2).[36] Each are represented by a binary variable indicating "1" for their presence and "0" otherwise in each state for each year.[37] Because we expect the effects of limitations to grow over time (as their potential to constrain becomes more pronounced), we included a variable in our models which indicates the number of years which have elapsed since the enactment of local potentially binding limits (TYPE2_y) for each state in each cross-section. This model also includes a binary measures interacting the existence of limitations within a central (i.e.,"primary") county. In effect, providing a separate estimate of the effect of the limitations in the core urban counties (TYPE1i, TYPE2i, and TYPE2_yi). The same is done for models exploring the differential effect in county areas experiencing relative fiscal stress. For these models, the measures (TYPE1i, TYPE2i and TYPE2_yi) reflect the interaction of limitations with the existence of county areas in "stress," instead of primary counties.

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36 Due to the relative non-constraining nature of full disclosure requirements, they are omitted from consideration in any category of this analysis. This is the same classification used in the analyses reported in Joyce and Mullins, op cit. and Mullins and Joyce, op cit.

37 The designation of non-binding v. potentially binding refers to a generic assessment of the formidableness of the constraint imposed by a category of limitations. In essence, this classification reflects a hypotheses regarding the likely relative effect of the adoption of a limitation. Also referred to as "type 1" constraints, the "non-binding" category includes: local overall and specific property tax rate limits or limits on assessment increases. Potentially binding ("type 2") limitations include property tax revenue limits, general revenue limits, general expenditure limits and limits on assessment increases concurrent with specific or overall property tax rate limits. Dummy variables representing each type of limitation take on the value of "1" if such limits are imposed on any category of local government (municipality, county or school district) in a state.

A second set of models (actually the first presented in the results) limits the representation of local tax and expenditure limits to a binary indicator (LIMITS) of the existence of any limitation in the state in which the local units are located in the year of the cross section (i.e., the existence of either a TYPE1 or a TYPE2 limit). In an attempt to capture the potential interactive effects of binding and non-binding limitations, we also include a binary variable indicating the simultaneous existence of both categories of local limits (BOTH). Urban core and relative stress effects are again represented as separate binary measures (LIMITSi and BOTHi).

A final set of estimate are made using a less aggregate representation of existing limitations (or the "form" of limitation). For these models, limitations are separated into those which are universally applied across local jurisdictions in the form of overall property tax rate limits or limitations on assessments, and those directed at general purpose governments (counties and municipalities) verses school districts. Two dichotomous variables are established indicating the existence of an overall property tax rate limit (RATE_L) and assessment limits (ASMT_L), a second set of measures indicate the existence of specific rate limits, levy limits, revenue limits or expenditure limits applied to general purpose (GP_LMT) or school district (SC_LMT) governments. Again, urban core and fiscal stress effects are represented by an additional set of binary measure (RATE_Li, ASMT_Li, GP_LMTi, and SC_LMTi).

Structural/Demographic Control Measures.

In order to control for the possibility of spurious correlations between our measures of institutional constraints (tax and expenditure limitations) and the spatial, economic, demographic and structural characteristics of county areas, we have included in our models several measures commonly associated with the demand for local public services, the composition of the resource base, and important structural and cost elements.[38] The following "control" variables are included:

Scale and Supply Measures. These include measures of service delivery scale, concentration, stability, and age of infrastructure.

- Population (RESPOP). The total aggregate resident service population of the county area serves as a general measure of the scale of service deliver responsibilities faced by governments in the area, the possible existence of economies of scale, labor market and supply cost structure, urban externalities and governance structure.
- Population Squared (RESPOP2). A polynomial of population is used to allow the non-linear effects of resident population size to be incorporated into the model. The linear relationship between population and dependent measures may diminish or accelerate as population scale increases. This measure allows those relationships to be captured.

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38 Measures such as these have their origins in the expenditure determinants literature. For early examples, see T. E. Borcherding and R. T. Deacon, "The Demand for Services of Non-Federal Governments," <u>American Economic Review</u>, vol. 62 (1972): 891-901; and T. C. Bergstrom and R. P. Goodman, "Private Demands for Public Goods," <u>American Economic Review</u>, vol. 63 (1973): 280-296.

- Population Density (DENSITY). Population density (congestion) is also expected to effect the cost and delivery environment of local government services in a manner separate from the over all scale effects of population itself. In order to account for these effects a measure of resident population divided by land area (square miles) has been include in the estimation.
- Population Growth Rate (POPGROW). Service delivery demand/requirements differ between stagnate and dynamic environments. Accelerating expenditures are required in periods of significant growth. The relationship is likely to not be symmetrical, however, as fixed costs to service existing infrastructure and services maintains expenditure pressure in periods of population decline. We have include a measure of the average compound growth rate of the county resident population between each interval of observation to capture this dynamic effect.
- Household Size. Because many services delivered by local governments are delivered to households rather than individuals, we have also included a measure of average household size (PERS_HLD). Incorporation of this measure simultaneously controlling for population, provides a measure of the effect of concentrating or deconcentrating the population into households.
- Pre 1940 Housing Stock (PRE1940). Age of infrastructure and city formation are important determinants of structural characteristics, service delivery costs and needs for maintenance spending. To account for differences in the age of infrastructure within county areas, we include a measure of the proportion of housing units built before 1940.

   Socio-Demographic and Demand Measures. Estimating models also attempt to account for the effects of a variety of population and income distribution, and need and demand measures, in isolating the effects of limitations. These include:

- Population Under 17 (PYOUNG). Youth populations reflect both a level of dependency and present critical demands on local governments for education, recreational and, sometimes, police services. A measure of the percentage of the population age 17 or under in the county is used to incorporate these elements.
- Private School Enrollment (PVT_SCH). Enrollment of youth populations in private educational institutions to a degree mitigates the demand for public education and possibly recreation expenditures. This is reflected by a measure of the percent of students enrolled in private primary and secondary education programs.
- Population Over 65 (POP65). The demands of aged populations for public expenditures and even their response to financing arrangement vary from those of other groups. They are often associated with increased demands on medical and social support services. The effects of concentrations of populations in this demographic group is reflected by a measure of their portion of the total population.
- Income Distribution. The income distribution reflects measures of capacity, demand, dependency, and diversity of preferences. We have incorporated four measures in our models to account for these effects. Per capita income[39](PCINC) of the resident population is

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39 All absolute income measures are deflated to 1987 values (i.e., by the CPI with 1987 as the base year).

employed in order to adjust for variations in structure associated with a relatively more prosperous and developed economic system, demand elasticities, and any centralizing or decentralizing tendencies of the local public sector associated with income. Likewise, differential levels of dependency and social support needs are reflected by a measure of the percentage of families living in poverty within the county (POVERTY). A specific measure of the income of older age populations (average monthly social security payments to social security recipients, PC_SSCI) is included to assess the impact which the relative economic capacity of this segment of the population has on both the resource base and demand for public services. A gross measure of the diversity of the income distribution and thus a gross measure of income derived variations in the demand for public service packages (and therefore for variations in service delivered) is also included in the form of a measure of per capita income weighted by poverty rate (DIVERSITY). Higher levels on this measure imply less income homogeneity and greater demand for variation in public service levels across populations.

Economic/Employment Structure and Economic Centrality of Place. Because the structure of the employment base, its magnitude and the centrality of local governments has implications for both resources and service requirements we have incorporated measures of both economic structure and measures of the central nature of the county with its metropolitan urban system.

- Employment ratios. Because regional employment is critical to assessing service requirements to meet the needs of daily commuters and to support the infrastructure required to meet the needs of employers, a measure of the ratio of total employment in establishments in the county to the total county resident populations (EMP_RESI) is incorporated. Higher values for this ratio imply a significantly greater demand for locals services, as well as potentially greater relative resource capacity. Also, because employment in different sector has different implications for infrastructure needs and wage levels, we have also incorporated separate measures of the ratio of employment in manufacturing (MANU_RES), retail (RETL_RES) and service (SERV_RES) sectors to resident population.
- Economic and social centrality is also reflected in designations of centrality conferred on units by the department of commerce. Earlier such designations reflect the historic constituent portions of the urban core. Within these locations are found traditional central cities and their dependent populations, surrounded by older and generally less affluent suburbs. The erosion of property values and tax bases and the concentration of populations in relatively higher levels of need in these localities, coupled with relatively high regional infrastructure maintenance and service delivery costs, suggests both that that structural features and demands may be different in these areas as will the potential effects of limitations. To account for this, we control for core centrality by incorporating measures of whether the county area was considered a primary central county during 1974 (PRIMARY), a co-central county (CO_PRIM) or an urban fringe county (FRINGE).[40] In addition, and as identified

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40 Co-primary central counties were counties containing a co-central city of the MSA, with a smaller population

above, the PRIMARY measure is interacted with the measures of limitations to estimate the unique effects limitation have in the central urban core regions.[41]

Complete Model.

The effects of tax and expenditure limitations on local structure are investigated by estimating three different models (reflecting the three different approaches to classifying limitations for analysis) for each of the dependent measures (and for models including only primary and fringe counties). Each is estimated using pooled cross-sectional time series techniques, with the institutional and control variables regressed against the dependent variables. The design employed is a standard fixed effect time-series regression model, with binary variables representing each year and each state in order to hold constant the effects of general patterns across time and to adjust for the unique structural qualities of each state.[42]

These models use a quasi-experimental time-series design in which the enactment of limitations in differing states at differing times represents the existence of multiple treatments and where the absence of limitations in some states during a subset of years and across all years in other states act implicitly as a control group. The results obtained can be considered a conservative assessment of the effects of the enactment of limitations and the limitation movement.[43] While a firm causal relationship between institutional constraints and fiscal shifts cannot be established, a variety of plausible rival explanations are accounted for in these models, and a strong indication of the effects of enacting formal limitations is suggested.

Results

The results of the statistical models are presented in Tables 4a through 4g. Tables 4a and 4b are focused on the effects of tax and expenditure limitations on aggregate governance organization and the locus of control. Tables 4c and 4d show the results of models assessing the implications of local limitations for the ability of the local governance structure to satisfy variations in local preferences. Tables 4e, 4f and 4g display results of models attempting to assess the implications of limitations for encouraging the use of alternative service financing, specifically in the form of debt. In each case, these tables display only the results for the

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than the central city located in an adjacent (primary) county. Fringe counties were counties which were not included as constituent components in the 1974 definition of metropolitan areas but had been added by 1987.

41 The measure of relative "stress" (described above is) is also include as a control in models incorporating the corresponding interaction effects.

42 The model employed assumes constant slope coefficients and an intercept which varies over states and time. This construction is widely considered appropriate for this type of analysis. For a general treatment of cross-sectional time series models see George G. Judge, et al., The Theory and Practice of Econometrics (New York, NY: John Wiley & Sons, 1980). ch.8.

43 Behavior altering adjustments resulting from the spillover of "informal" moods between neighboring states but not consummated in the enactment of limitations can not be estimated and are not included in our assessment of the impact of this "movement." On the same token, however, those affects associated with the enactment of limitations reflect unique contributions of a class of specific institutional constraints.

institutional constraint measures, omitting results for the 20 control measures and the 54 (year and state) fixed effect parameters. While the parameter estimates for these control variables and individual year and state fixed effects are interesting in their own regard, because our specific focus is on the effects of tax and expenditure limitations (and due to the table size requirements to do otherwise), it seems appropriate to limit the presentation to only the estimated coefficients for the institutional constraints.

With two exceptions, all models have been estimated in exponential from (i.e., with the dependent variable transformed as its natural log) using OLS.[44] As indicated above, the universe of governments within metropolitan counties defined for this analyses consists of 787 county areas over six successive five year observation periods, yielding 4,722 county area observations. However, for a variety of reasons, it was necessary to exclude some areas from each model. Because of the anomalous characteristics of a few specific areas (particularly small and populous county areas virtually contiguous with their central cities) five county areas were excluded from all analyses, resulting in 4692 area observations.[45] In addition, for specific analyses, the absence of special district of fiscal significance or of school districts required additional exclusions.[46] Models focusing on spatial variability in per capita general purpose revenue and expenditures required, for both conceptual and statistical reasons, the elimination unified structures which preclude such variation (mostly independent cities in Virginia).[47] Some debt model were limited to observations with non-zero values on dependent measures. Finally, observations with data errors and extreme outliers were excluded.[48] To focus the analyses on the impact of limitations

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44 Diagnostics were conducted for each model in its non-transformed state. In each case (save one), the results revealed a skewed distribution of residuals and non-constant variance. A natural log transformation of the dependent variables successfully corrected these problems in all cases, rendering the use of ordinary least squares estimation procedures appropriate.

45 Because of being virtually coterminous (or completely within) core central cities, generally small in geographic size and the absence of fiscally significant internal variability, New York county areas, Philadelphia, San Francisco, and Suffolk (Boston) counties were excluded. Due to its small size (46 square miles) and extremely high population density (59,000 - 69,000 persons per square mile) Hudson County, New Jersey was also excluded.

46 Because the organization of school districts at the county level in a few states precludes the existence of county area variance in school revenues and expenditures, it was also necessary to exclude these counties from those models. This analyses is being reconstituted at the metropolitan area level to reconsider the effect of limitations on variations for these areas as well.

47 These structures function as both municipality and county with no true county government on area unincorporated by the central city. In addition to Virginia, such cities units also exist in a few other areas such as St. Louis, Baltimore and San Francisco. Many, however, have significant special district activity and have been retained in theses analyses.

48 Observations in the transformed models with extreme values (i.e., greater than three interquartile ranges from the 25th and 75th percentiles of the distribution, respectively) on the residuals or dependent variables were removed from analysis. As a rule, removal of an observation for a county area because of data error or outlier leads to that county area's removal from the panel. Single anomalous observations in an interior year may allow estimation of substitute values and retention of non-offending observations.

on service populations, all models (with the exception of those considering the number and ratio of special districts to general purpose units) were weighted by population density.[49]

The Structural Locus of Control

Models were estimated exploring a possible link between limitations and a shift in governance control away from general purpose to special purpose districts. Table 4a presents the results of the models relating absolute changes in special districts per capita and their numbers relative to general purpose units (i.e., governance form). Table 4b estimates the possible effects of limitations on the relative control of these units over revenues and expenditure decisions (i.e., their relative fiscal significance).

Governance Form. The top panel of Table 4a, column 1 shows the coefficients for the model regressing all control variables and the existence of either type 1 or type 2 limits (LIMITS) with the combined effect of simultaneously imposing both type of limits (BOTH) on the absolute number of special purpose districts functioning in all counties relative to county population (i.e., special districts per-capita). The coefficient for the existence of any limit (LIMIT) is positive, although insignificant. The coefficient for simultaneously imposing both types of limitations (BOTH) is also positive and marginally significant ($p <= .10$), implying an increase in special districts with the imposition of both types of limitations (above and beyond any effect of a single limit). In fact, they indicate a 10 percent increase in special districts (per capita) with the existence of both categories (type 1 and type 2) of limits.[50]

[Insert Table 4a]

The middle panel of Table 4a, column 1 attempts to assess more specifically the existence of potentially differential effects associated with the "type" of limitation. As defined

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49 Because the desire is to explore the aggregate impact of limitations on people rather than space, a population weighting is in order. However, because it is the location of population in relative space that provides avenues to exercise choice via spatial location, provides the opportunity for multiple units to respond to differences in preferences, and partitions resource bases, the interaction between population and space is more critical than population alone, suggesting the appropriateness of a population density weighting. Further the variance on population density is not as extreme as population itself, eliminating the possible excessive influence of the most populous places. An alternative construction would be to weight by the log of density, however, this reduces the directness of the linkage of the implication of limitations to people.

50 At small magnitudes (up to approximately .25), the parameter coefficients for for this type of exponential model (logged dependent variable) can be approximately interpreted as ratio changes (as percentage changes, if multiplied by 100) from the mean of the dependent variable. As the magnitude of the coefficient increases, it departs from a direct approximation of relative change, however, the exact magnitude can be easily calculated by taking the antilog of the coefficient, subtracting 1 and multiplying by 100 ($(e^b-1) \times 100$). For the coefficient on the variable BOTH the result is 10.41, or a 10.41 percent change ($(1.10406-1) \times 100$), a value approximated by the coefficient itself, multiplied by 100 (9.9 percent). At a value of a coefficient of near .25, this approximation begins to diverge from the actual relative change. The true relative change implied by a coefficient of .25 is 28.4 percent ($(1.284-1) \times 100$). This departure becomes progressively greater as the value of the coefficient increases.

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above, TYPE1 limitations are often categorized as less-binding, and TYPE2 limitations are generally considered at least potentially more constraining. In addition, a year counter is incorporated into the model to determine whether or not any effects of a TYPE2 limitation grow or diminish over time. In this formulation, only the potentially binding (TYPE2) limitation is associated with a significant effect (an approximate 13 percent increase at a $p<=.01$). This highly significant effect does not appear to systematically grow or diminish over time. This result supports the contention that a potentially binding local limitation provides an incentive to alter the locus of authority away from general purpose governments.

The lower panel of Table 4a presents results separately estimating the effects of different "forms" of limitations, categorized as to whether the are imposed universally across local governments, in the form of overall property tax rate limits (RATE_L) or limits on assessment increases (ASMT_L), or are targeted at specific types of governments. Those targeted at specific types of governments are categorized into either specific rate limits, revenue limits or expenditure limits imposed on general purpose county, municipal, or township governments (GP_LMT) or such limits imposed on school districts (SC_LMT). Results indicate the existence of differential effects. A specific general purpose limit (GP_LMT) is associated with a highly significant 19 percent increase in special districts (i.e., $[[[exp[.171] - 1] \times 100] = [[1.1865-1] \times 100] = 18.65$ percent). This strong effect is countered by an only marginally significant, though relatively high magnitude, negative effect of overall rate limits (RATE_L) and the highly significant negative effect of a specific limit directed at school districts (SC_LMT). At first glance, this might appear counter intuitive and counter to expectations. However, it may imply a less stringent effect for overall rate limits[51] and possibly an inverse linkage between general purpose and school district limitations due to tax base competition. A likely side effect of a limit directed toward school districts is to free-up resources for general purpose use (given that they compete for the same tax base). If this is the case, then the existence of school district limits would negatively affect limitation induced incentives for the use of special districts. In essence, these results suggest that the target and form of the limitation adopted significantly affects outcomes.

Column 2, 3 and 4 of Table 4a should be considered simultaneously. Column 2 adds interaction effects to the initial models. As described above, these parameters interact limitation measures with the presence of the central county ("primary" county) of the metropolitan area. In essence, they test for the existence of differential effects between central counties with limitations and all other counties, fringe and primary with and without limitation. The non interacted parameters of column 1 reflect the average effect of limitations across all counties (relative to counties without limitations), the non interacted parameters of column 2 (LIMITS, BOTH, TYPE1, etc.) reflect the overall effect minus that specifically varying with central county status. The interacted parameters (LIMITSi, BOTHi, TYPE1i, etc.) to separately capture differential central (primary) county effects of limitations. Column 2 indicates that the effects of

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51 It may also reflect their more limited applications. Only six states have adopted such limitations during the
   modern period limitation movement.

limits in primary counties do not significantly vary from those across all counties.   Still, it refines the interpretation. The trend parameter for type 2 limits (TYPE2_y) now becomes significant, as the depressing effect of the negative value for the TYPE2_yi coefficient for primary counties is implicitly removed. This suggests that the effects of the type 2 limit do increase in the fringe counties over time.

Columns 3 and 4 provide an alternative presentation of the results presented in column 2. By displaying the results of the models run separately on a data sub-set by primary vs fringe counties, the comparison group is changed. Fringe counties with limitations are compared only to fringe counties without and primary counties with limits are compared only to primary counties without. The existence of any limit (LIMITS) in fringe counties now displays a marginally significant effect on the number of special districts (a 7 percent increase), which is not significantly reinforced by the existence of both types of limits (BOTH). The magnitude of the intercept effect of the type 2 limit declines somewhat in fringe counties (TYPE2), however, its slope effect (TYPE2_y) becomes highly significant; the effect of potentially binding limits increases over time at one percent per year in these counties.

Overall the results indicate that limitations are indeed associated with an increase in the number of special districts organized to provide services to populations in metropolitan areas. Not surprisingly, this effect may be somewhat greater over time for less built-out areas as they can more easily adjust their evolving governance structure to any incentives implicit in the existence of tax and expenditure limitations.

Numbers of special districts are not particularly meaningful, however, outside of context. It is possible that if the existence of special districts simultaneously allowed for greater development of general purpose units to provide more localized services, they may work to enhance control and choice over a slightly more constrained set of general purpose services. General purpose governments maintaining their relative proportion compared to special districts (or growing in relative numbers) would reinforce this possibility. However, a decline in general purpose governments compared to special districts suggests an increase in functional fragmentation across services, without an increase in capacity to meet varied preferences through general purpose units; in essence a shift in responsibility to special districts.

Columns 5 through 8 of Table 4a display results of the same set of models regressed on the ratio of special districts to general purpose governments. The results in the upper panel indicate that across all metropolitan counties, the existence of both type 1 and type 2 limitations (BOTH) results in an 11 percent increase in the ratio of special district governments operating within a county compared to general purpose units.[52] These effects are not symmetrical across types of limitations. The imposition of non-binding limitations (TYPE1) were actually associated with a highly significant 10 percent decline in this ratio, while potentially binding constraints (TYPE2) were associated with a 13.5 percent increase. Assessment limits were

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52 The results for the non-transformed model were a whopping 40 percent increase.

individually significant, associated with a 22 percent increase.[53] The interaction terms for primary central county, showed no significant differential affects between the urban core and fringe. However, this sub-setted analysis did reveal a significant reinforcement of the effects of type 2 limits over time (TYPE_y) and the subgroup analyses showed the relative effect to be somewhat greater for the core counties, but the effects growing strongly at 1 percent per year in the fringe.

Overall, then, there appears to be greater relative growth in the number of special districts compared to general purpose governments. Effects are most associated with the implementation of potentially binding limitations and adjustments are gradual and more difficult to ferret out. Significance is not simply a question of number, it is also (and likely more directly and significantly) exercised in the control of resources and their expenditure.

Relative Fiscal Significance. One of the most important elements of local responsibility is control over resources. It provides the ability to allocate government goods and satisfy public preferences. Without budgetary control, significant local control is lacking. Table 4b focuses on relative fiscal control (fiscal significance) within metropolitan areas. Columns 1 through 5 consider the relative control of special and general purpose governments over public revenue generation, under the assumption that the generation of revenue conveys significance in the determination of public resource allocation. Columns 6 through 10 consider expenditure control.

[Insert Table 4b]

The overall results for the revenue control model indicate that the imposition of either a non-binding or potentially binding limitation (LIMITS) results in a highly significant and substantial shift in relative revenue authority to special district governments and away from general purpose units (column 1, upper panel). The associated effect is equal to a 38 percent increase in the relative role of special purpose governments. The coefficient for the simultaneous imposition of both types of limits is positive, but not significant in its reinforcement. These results hold highly significant ($p <= .01$) for type 1 and type 2 limitations (column 1, middle panel), where the imposition of type 1 limitations is associated with a 26 percent increase, and type 2 limitation a 37 percent increase, in relative revenue control. Limitation in the form of specific limits on general purpose governments (GP_LMT) are isolated as having the greatest effect, associated with a 57 percent relative increase in the revenue significance of special districts. It is again interesting that this result is somewhat mitigated by the existence of limits on school districts; it appears that reduced fiscal competition for general purpose governments created by limitations placed on school districts has reduced the need to mobilize resources through special district forms of government.

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53 Seven state enacted these forms of limitations across the period of study. The estimated coefficient for the non-transformed model was .56 (or a 75 percent increase), an indication of the need for a transformed model.

Interaction models reveal significant differences in effects in central/primary county areas relative to all counties. When these effects enter separately into the model (column 2) the parameter for BOTH becomes highly positive and significant, while BOTHi is highly negative and significant (canceling the positive value for BOTH in the primary counties). LIMITSi is significantly positive beyond that for all counties on average (doubling the effect). These results suggest that the effect in primary counties is greatest for the existence of any limitation, reinforcing for type 1 limits (TYPE1i) and general purpose limits (GP_LMTi), and countering of estimated effects of assessment limits (ASMT_Li and ASMT_L). Clearer effects emerge based on subgroup models for primary (column 3) and fringe (column 4) county status, however, the comparison is only to counties within each group without limits rather than a comparison to all counties without limits. The estimated effects for the existence of any limit are large and significant for both primary and fringe counties (LIMIT). Fringe counties with limitations see a 52 percent increase in the relative fiscal significance of special districts, primary counties see a relative increase of 29 percent. The models for prime and fringe counties also show the effect in each subgroup to be significant for both non-binding and potentially binding categories of limitations (TYPE1 and TYPE2), and the revenue effect of type 2 limitations appears to grow over time (TYPE2_yi) in primary counties at a substantial rate (2 percent per year). The effects of general purpose and school district limits remain consistent with the model for all counties, with the exception that school district limits are no longer associated with a statistically significant suppression of special district fiscal significance.

This (Table 4b)and all subsequent tables include a comparison not found in Table 4a. The final column (column 5) for each dependent variable reports results of regression models incorporating terms interacting the existence a limitation with counties likely experiencing higher relative levels of fiscal stress. As indicated in the research method section above, counties with median poverty rates greater that 110 percent of the average of all metropolitan counties in a state were classified as in relative stress. A binary variable indicating presence in this category was included in the model and interactions were created between it and the limitation measures. In the columns labeled "Stress Interact" coefficients for measures LIMITSi, BOTHi, TYPE1i, etc. are for these interaction terms. Results indicate that the simultaneous imposition of both type 1 and type 2 limitations in counties under relative fiscal stress is associated with a dramatic and highly significant increase in the fiscal significance of special districts (with the net positive effect being more than a 50 percent increase in the relative revenue role).[54] The effect of binding limitations individually is also increased in counties under stress above the overall effect by approximately 27 percent, however, the effect of overall and specific limitations, other than school district limitations is reduced.

As might be expected, the results of the models estimating the effects of tax and expenditure limitations on the expenditure roles of special districts relative to general purpose governments virtually mirror those for revenues (columns 6 through 10 of Table 4b). The overall (all county) model shows more than a 35 percent increase in the relative expenditure role

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54 That is $[[\exp[.692-.278]-1]\times100] = 51.28$.

of special districts with the imposition of any limit (column 6). Consistent with the revenue models, effect are significant for both type 1 and type 2 limitations, with a 35.5 percent increase associated with "non-binding" limitations and a 26 percent increase associated with those categorized as more restrictive. Almost identical result are also estimated for general purpose and school district limitations.

Differences between primary counties and all other counties are less significant based on the interaction models (column 7), however, rate limits are very significantly negative and assessment limits very significantly positive for the primary county interaction indicators. The separate primary (column 8) and fringe (column 9) county regressions again show similar results, basically unchanged from the substantive interpretations of the all county models. Counties in stress also experience a significantly greater response to the imposition of both limitations.

Overall, results on relative changes in governance composition and control are somewhat modest if represented by the relative number of governments, but changes in fiscal control and relative fiscal significance and responsibility border on the dramatic.

Local Autonomy and the Satisfaction of Local preferences

A related but more central issue, beyond governmental fiscal authority and structural control, is the potential effects of limitations on the ability of local governments to vary service packages to meet the varied preferences of populations within metropolitan areas. While implicit in such a requirement is variation in the mix of expenditures between government services and functions, it is also manifested in variations in aggregate overall differences in revenue generation and spending totals.[55] Table 4c and 4d display the results of regression models relating the existence of limitations to the levels of per capita and per student variation in general revenues and direct expenditures of general purpose (municipality, town and county) and school district governments. Variation is measured by calculating the population weighted coefficient of variations for per capita general purpose government revenue and expenditures and the student weighted coefficient of variation in per student spending in school districts. This is done by individually calculating per capita / per student spending by each unit of government in each county area and from that calculating the average overall variation within each county. Table 4c presents the results for general purpose governments, Table 4d presents the results for school districts.

[Insert Table 4c]

[Insert Table 4d]

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55 We leave exploration of the mix of spending to future study and focus here on aggregate revenue and
   expenditure levels.

Variation in General Purpose and School District Revenues. As explained above, limitations work to constrain variation if they have a rather uniform effect across levels of government (or are more constraining on higher spending units), they increase variation if they constrain relatively lower-spending / lower-capacity units more severely.

Column 1 in Table 4c presents the effect of limitations on the level of relative variation in per capita general purpose government general revenue across all units of government. For these units overall, the imposition of limitations has had limited effect, with the exception of a highly significant and increasing level of variation over time with the introduction of a type 2 limitation (TYPE2_y). This coefficient suggests a 1.1 percent annual increase in levels of revenue variation.

Estimates for the model including terms indicating the existence of a primary county suggest that there is substantial variability in effects between the urban core and fringe (column 2). Incorporating these interaction terms reveals a significant coefficient for the simultaneous existence of type 1 and type 2 limitations (BOTH), with a 12.5 percent increase in revenue variance when the entire sample of non-limited counties are grouped into the analysis as the reference point. This is reinforced by a significant value for either limit in a primary county (LIMITSi) and offset by a negative value for both limits (BOTHi). These differential effects continue (see middle panel, Table 4c) for the overall county effect (with negative effects of the primary county adjusted-out), resulting in a 6.6 percent increase in revenue variation for type 1 limitations and a nearly one percent annual increase associated with type 2 limits. Assessment limits seem to reduce variation within primary counties. These effects do not completely hold, however, when the models are run separately on the subgroups. Subgroup models assess the effect across subgroup means, rather that the mean of the full population. Instead of the effects of limitations being assessed against the results for all county areas without limitations, primary counties with limits are measured against primary counties without and fringe counties with are measured against fringe counties without. The sub-group models reveal a significant increase in revenue variation associated with imposing any limitation on primary counties (an increase of nearly 8 percent), and a significant variance enhancing effect for type 2 limitations over time (1.5 percent per year). This variation is reinforced by constraining school districts. The subgroup analyses for fringe counties indicates a highly significant variance enhancing effect for type 2 limitation over time also (at nearly one percent per year).

Effects also appear to vary for counties in stress. Column 5 shows a significant positive coefficient for the interaction term indicating the presence of any limit within a high poverty rate county (resulting in an increase in revenue variation of 6.9 percent). These effects are also positive for type 1 limits (TYPE1i) at 7.4 percent and narrowly miss statistical significance for type 2 limits.

 For school districts (table 4d, column 1), effects are substantially more pronounced. Across school districts, the existence of either a non-binding or potentially binding limitation

(LIMITS) has a rather large and highly significant positive effect on the variation in per student revenue (with a 35 percent increase and p <= 01). In the model exploring the effects across type 1 and type 2 limitations (the middle panel of Table 4d), the effect is attributed more to type 1 limitations (associated with a 45 percent increase in variation), and specifically attributable (in the lower panel of Table 4d) to an enormous coefficient associated with an overall rate limit (RATE_L)[56] and an almost equally huge negative effect associated with an assessment limit (ASMT_L). General purpose limits also seem to work toward increasing per student revenue variation (estimated at 20 percent).

Models containing interaction effects for primary central counties again show significant differences in the strength and direction of effects. Parameters for LIMITS and BOTH with the primary county effects adjusted-out are significant, however, the simultaneous existence of both limits in non-central counties has a negative effect on per student revenue variation. The coefficient for the LIMITSi and BOTHi within primary counties are also each significant, but here they are reinforcing. The imposition of any limit in a primary county on average boosts the effect .105 (11.1 percent above that for non primary counties). Compared to all counties without both limits, their simultaneous existence in a primary county boosts variance by .294, with a negative effect across all counties of -.178 this produces a net positive effect of .116 (or 12.2 percent). Type 1 limits are also significant in primary counties beyond that in counties overall, associate with an increase in per student revenue variance of of 34.4 percent. These effects are consistent for the models run on the primary and fringe county subgroups (columns 3 and 4). The imposition of either type of limit in either subgroup is associated with a highly significant increase in variance. For primary counties this increase is 49 percent; for fringe counties, it is 17 percent. Similar results hold in the subgroup analyses for type 1 limits, increasing revenue variance in primary counties by an estimated 80 percent and in fringe counties by 18 percent. Overall, within counties with relatively high rates of family poverty, limitations appear to show few significant effects beyond those for all counties with limitations, with the exception of an apparent moderation of both the extreme positive effects of rate limits and the extreme negative effects of assessment limits.

Variation in General Purpose and School District Expenditures. We would expect the effects on expenditures to mirror those for revenues; while similar patterns are shown magnitudes and statistical significance are more limited.[57] Results for models estimating the effects of limitations on the variation in per capita expenditures of general purpose governments across all counties (table 4c, column 6) show a marginally significant effect for the imposition of any limitation (LIMITS), suggesting a 4 percent increase in per capita spending differences between general purpose governments. This is also reflected in a statistically significant and positive effect over time for type 2 limits (TYPE2_y), resulting in a .4 percent annual increase in spending variation. Effects in primary counties vary slightly from those for counties overall

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56 The value for this coefficient appears well beyond the range of reasonableness, suggesting a 219 percent
   increase in per student revenue variation associated with this form of limitation.
57 This may be due to the fact that we have used direct general operating expenditures as the dependent variable,
   possibly masking transfers between governments.

(column 7), with an increase in the magnitude of the annual effect of type 2 limitations . These results are reinforced by the separate subgroup analyses, where the annual effect of type 2 limitations in primary counties indicates a per year increase of .7 percent in per capita spending differences. There appears to be little in the way of differential effect associated with counties under stress, beyond a highly significant and substantial variance suppressing effect of assessment limitations.

The estimated effects for limitations on differences in per student school district spending are more pronounced. For the all county analyses (table 4d, column 6) adopting any limitation is associated with 23 percent (.206) increase in spending variation. These results are also reflected in the separate adoption of type 1 or type 2 limitations (middle panel), where type 1 limits are associated with 52 percent increase and the effects of type 2 limitations grow at nearly one percent per year. Results for specific types of limitations show offsetting effects for rate and assessment limitations, and general purpose limitation serving to increase variation in school spending.

Models interacting limits with primary county status show significant differences between the effects of limitations in central counties compared to all non limited counties and non primary (fringe) counties with limits imposed. In counties reflecting the urban core, simultaneously implementing both type 1 and type 2 limitations (BOTHi, at 16 percent) is shown to be significant when compared to the effects for all counties. The overall net effect of type 2 limitations is just slightly positive (countering a negative value for type 2 limitations across all county in this model), and the net effect of time is less positive at .005 (.015-.010). Primary counties also vary on the specific effects of assessment limits, specific limits on general purpose governments and limits on school districts. In each case they moderate the effects show for the remainder of counties (i.e., the non-interacted terms). These overall results are reflected in the separate subgroup models, with both primary and fringe counties showing the importance of enacting any limitation, strong and significant variance enhancing effects of type 1 limitation, very strong positive effects of rate limits, an negative spending variance effects associate with assessment limits. Fringe counties also show an initial negative spending variance effect for type 2 limits, followed by an annual relaxation of this effect by 1.5 percent per year.

Overall, limitations are associated with increasing variation in revenues and expenditures across general purpose and school district governments. These effect, however, are more modest for general purpose governments. It first glance, these result may appear counter intuitive, as the imposition of constraints might be expected to decrease levels of variation. If constraints differentially affect different government, constraining some and not others, increased variation would likely be expected. Because of these differential effects, the ability to uncover subtle and situationally specific effects through changes in county level revenue and expenditure variance may be difficult, suggesting that these result may be conservative estimates of the overall effects. Still, it appears that limitation may have had a significant effect on the ability to satisfy local

preferences, an effect that is growing over time. The full extent of these implication may have not yet fully developed.

Alternative Financing

Limitations imposed state-wide to constrain government's ability to generate revenue and make expenditures do nothing to constrain demands and needs for public services. In the face of continuing demands, governments would be expected to find alternative means of satisfying resource needs. Previous research has shown a significant increase in fees and intergovernmental transfers in the face of limitations. In addition to resources from these sources, because limitations are often focused on property taxes with specific exemptions for debt service, another possible avenue would be the issuance of debt to finance public projects / services which would have been funded out of general revenues were there not constraints. Further, because general debt often faces its own constraint, this pressure for government services may be translated into increases usage of non-guaranteed forms of debt and contractual financing instruments (technically outside the definition of debt) in the form of leases and certificates of participation.

Tables 4e, 4f and 4g explore the use of two general categories of debt, guaranteed and non-guaranteed, by all units of government within metropolitan counties.[58] Specifically, Table 4e displays results for model regressing indicators of limitations (and various control measures) on per capita total debt outstanding and on per capita non-guaranteed debt outstanding for all units of government within each county area. Table 4f does so for the ratio of total non-guaranteed long-term debt to total long-term debt. Because changes in the relative stock of outstanding debt take several years to emerge (thus, reducing the ability of our models to discern the effects of imposing limitations), we have also estimated the effects of limitation on new debt issued. Table 4g shows the results of models for total per capita new long-term debt issued during the fiscal year and provides separate results for all governments and only county areas which actually had units issuing debt unit during the period.[59]

Per Capita Long-Term Debt Outstanding. Counter to expectations, the results of models exploring the overall effect of limitations across all counties on the level of total outstanding debt per capita, show a negative overall effect for the two broad categories of limitations (table 4e, column 1). The existence of any limitation is associated with an approximate 15 percent decline in outstanding debt. Type 2 (potentially binding) limits are driving this overall result, and their effect appears to grow over time. Specific forms of limitations show differential effects with overall property tax rate limits and assessment increase limits significantly associated with

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58 We realize that by this categorization we are missing the more creative and more easily available vehicles of long-term financing in the form of leases and certificates of participation. However, current data are bounded by census definitions and accounting of financing instruments, leaving gross measures such as these all that is available at the present time.

59 Additional models are being estimated for the ratio of non-guaranteed debt to guaranteed debt in new debt issues.

increasing outstanding debt (at 28.9 percent and and 22.5 percent respectively) and limitations specifically focused on general purpose units and school districts associated with a reduction in per capita debt.

[Insert Table 4e]

The results for models interacting limitations with primary county locations (column 2) show the effects of type 1 limitations in central counties to be counter that for non central county areas. These models also show a reinforcing positive coefficient for rate limits and a reinforcing negative effect for school district limits. These results are generally consistent with the subgroup models (columns 3 and 4), where type 1 limits are associated with a 10 percent increase in total debt for primary counties, and type 2 limits associated with a slightly smaller decline. For fringe counties, total debt declines with both type 1 and type 2 limitations. The primary county subset also shows a highly significant an positive effect of rate and assessment limits. The results for counties with higher relative poverty rates diverge somewhat from those for counties overall. The imposition of both limits is positive and highly significant, countering the statistically insignificant negative effect for all counties, with a net effect of a 30 percent increase in total debt. This effect is somewhat mitigated by a - 15.7 percent starting position with the imposition of a single limit (-.110+.-061), resulting in a net increase of approximately 14 percent. Overall assessment limits seem to be the most influential specific limits in these counties.[60]

Results for per capita total outstanding non-guaranteed debt diverge somewhat from those for total debt (table 4e, column 6). In the all county analysis, the existence of any limit (LIMITS) is only marginally significant in reducing total non-guaranteed debt. On the other hand, type 1 limitations are strongly associated with increased non-guaranteed debt. This type 1 effect is offset by a a strong negative effect of type 2 limitations, which grows significantly more negative with time. It appear that the specific form of limit matters. As with total debt, overall levels of non-guaranteed debt appear to be very substantially higher with the imposition of overall rate and assessment limitations and negative with the imposition of limits on school districts.

The results for models interacting limitations with primary county areas are reinforcing. That is, these basic results appear stronger for urban core areas. This effect is born out in the subgroup model results, where type 1 limitation have a more significant (double) effect in primary counties (compared to the all county results), associated with a 26 percent increase in non-guaranteed debt. The imposition of "any" limit (LIMITS) is insufficient in showing an effect in the urban fringe subset, but imposing both has a highly significant negative result. Type 1 limitations have no apparent effect in the fringe models. While type 2 limits are only marginally significant, their negative effect increases over time. Counties with relatively higher poverty populations show some significant divergence. For these counties, imposition of any

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60 These are associated with a total increase of 47.5 percent (the sum of log coefficients of .139+.250, with reverse transformation).

limit is associated with a substantially more negative non-guaranteed debt effect (-.268) , but the imposition of both types of limits counters the negative effect for counties overall, producing a net effect of .259 (or a 30 percent increase in debt) and offsetting the negative effect of a single limit.

Ratio of Total Non-Guaranteed Long-Term Debt to Total Long-term Debt Outstanding. Taking a somewhat different view of outstanding debt, Table 4f shows the results of models regressing limitations on the relative composition of total debt, rather than its absolute levels. For these model the dependent variable has not been transformed, so the coefficients reflect actual changes in the ratio (or, if multiplied by 100, percentage point changes) rather than percent changes.[61] Across all county areas, the imposition of any limit (LIMITS) results in a 4 percentage point increase in non-guaranteed debt's share of total debt. However, imposing both type 1 and type 2 limitations simultaneously (BOTH) produces a slightly higher negative effect, offsetting the positive effect of the individual limitation. Specific categories of limitations appear to have no overall effects (coefficients for TYPE1, TYPE2 and TYPE2_y are not significantly different from zero); however, limitations in the form of general rate limits, assessment limits and limits on general purpose governments all have significant positive effects (increasing the non-guaranteed portion of total outstanding debt by 16.8, 9.9 and 3.7 points, respectively). Limitations imposed on school districts reduce this ratio, apparently reducing the need for general purpose non-guaranteed debt.

[Insert Table 4f]

Models exploring the primary county effects (column 2), show relatively limited deviation from all counties. Where coefficients are significant, they tend to suppress the magnitude of effects. These results are born out in the subgroup models. The same pattern prevails as that for all counties in both the primary (core) county and fringe county subgroups, with effects being of greater magnitude in the fringe counties. Results for counties with higher poverty populations (stress) are a bit more divergent. The effects for imposing a single limitation or both types of limitations are significantly opposite those of the effects across all other counties, virtually canceling out the effects and resulting in near zero net coefficients for for these counties in stress. An exception is a significant reinforcing effect for overall rate limits, with rate limits appearing to have a slightly greater effect on an increased relative level of non-guaranteed debt in these counties (for a net effect of a 20.2 percentage point increase in the non-guaranteed debt ratio).

Per Capita Total New Debt Issued. Because changes in the relative stock of debt occur rather gradually over time and through changes in the issuance of new debt, it takes time for effects to materialize that can be correlated with limitations. Model results displayed in Table 4g attempt to more directly assess changes in the additions to the stock of debt, by regressing measures of limitations on the levels of new debt. Columns 1 through 5 present results of

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61 Diagnostics of residuals indicated no need for a log transformation of this measure.

models including all counties,[62] columns 6 through 10 present result for only counties with governments which actually issued debt during the fiscal year. Considering both sets of results for all counties in each model (columns 1 and 6), the imposition both type 1 and type 2 limitations (BOTH) is associated with significantly higher levels of new debt (32 percent higher levels for the model including county areas issuing no debt and 35 percent higher for the model including only county areas issuing new debt). For issuing counties, the effect of type 2 limitations appear to grow over time, with new issues increasing at a rate of 1.2 percent per year since the imposition of a type 2 limitation.

[Insert Table 4g]

The form of limitation also appears to be important, with both the all county panel and the issuer only panel showing relationships between limitation on general purpose governments (reducing the per capita dollar value of new issues) and school district limitations (increasing the per capita dollar value of new issues). Further, for issuing counties, the existence of an overall rate limitation has a marginally significant, though high magnitude positive effect (associated with a 47.5 percent increase).

Models interacting the existence of limitations with a primary county location suggest limited differences between these counties and other counties, with the exception of a marginally significant and positive effect for type 1 limits in the issuers only model. The subgroup models (columns 3, 4, 8 & 9), suggest that the internal group effects are greater in the primary counties. The effects associated with the adoption of both types of limitations appear slightly greater for primary counties (compared to fringe counties) in the all county models, and substantially greater in the issuer only models (where the effect in the fringe in insignificant). Further, the effect of type 2 limits over time is greater in the primary county subgroup (associated with a 1.3 percent annual increase since the imposition of the limitation), while the coefficient in not significant for fringe counties.

The effects are greatest for county areas in relative stress (i.e., with higher poverty rates). Results for the issuers only model (column 10) show positive parameter estimates for imposing any limits in these counties (LIMITSi) and significant increases in this effect if both types of limits (BOTHi) are instituted. Both limits produce and increase of .385 above that for the non-stressed counties resulting in a net effect of a 64 percent increase in new per capita debt, in addition to any positive effect of the first limit. County areas under stress in the issuer only subgroup also associate a significant increase in per capita new debt with the type 1 limits. Adopting this form of limitation produces and estimated effect of a 26 percent increase. The associated effects of type two limitations grow at a 2.6 percent per year. Results are substantially less pronounced in the models including non-issuers.

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62 In this case the log transformation used is Y+1 to allow the inclusion of units with zero values for new debt. Re-estimation of these models are currently being done using more sophisticated procedures.

Overall the imposition of limitations appears to have effected the use of debt. While its effect on the stock of total debt to date is mixed, with more expected effects in primary counties and counties experiencing stress, it seems to have increased the relative share of non-guaranteed debt and has had a more dramatic effect on new debt issuance, particularly in counties under stress.

Discussion and Conclusions

The results of our analyses suggest that tax and expenditure limitations do have significant and potentially important substantive effects on the organization of government in metropolitan areas, the package of services that they provide, and long-term mechanisms of finance. They suggest that different forms of limitations have different overall effects, that many effects vary by the structural position of the county (core or fringe) and more vary (sometimes dramatically) by relative prosperity of the county population. These result also suggest that specific limitations on general purpose or school district governments may provide increased revenue or expenditure flexibility for non-limited forms of government by decreasing competition for shared tax bases. Our basic results results can be summarized as follows:

> Tax and expenditure limitations are associated with an increasing absolute presence of special (single purpose) district forms of government in metropolitan areas. This effect shows growth over time particularly in less built-out county areas.

> Tax and expenditure limitations are associated with an increasing presence of single purpose districts relative to general purpose governments, though the effect is gradual.

> Tax and expenditure limitations are associated with a very substantial shift in relative revenue and expenditure authority and control away from general purpose governments toward single purpose districts. This shift is even more dramatic for counties with relatively less prosperous populations.

> Tax and expenditure limitations are associated with more modest increases of the variation in per capita revenue collections across general purpose governments in metropolitan counties that appear to be increasing over time. The magnitude of these effects are greater for core counties and counties with relatively less prosperous populations. Results for variations in direct expenditures show a similar pattern, however, magnitudes are more limited.

> Tax and expenditure limitations are associated more substantial increases of the variance in per student school district revenue. Results are similar to the pattern for general purpose governments, but the effects are far more pronounced. Magnitudes are greatest in county areas comprising the urban core. Limitations also result in an increase in the variation in per student spending across school districts in metropolitan county areas.

While magnitudes are not as great as for increases in expenditure variation, they are substantial.

Tax and expenditure limitations are associated with overall reduction in the level of total per capita outstanding debt in fringe county areas. These effects are largely offset in core counties and in counties with less affluent populations, where increase in per capita debt associated with limitations emerge.

Tax and expenditure limitations are associated with a mixed effect on total per capita non-guaranteed debt outstanding. Reductions in non-guaranteed debt are associated with limitation for fringe counties, while urban core and less affluent counties see substantial increases associated with some categories and forms of limitations.

Tax and expenditure limitations are associated with shifts in the proportion of non-guaranteed as a component of total debt. These effects are mix in direction, but are greatest for fringe counties (increasing the non-guaranteed portion with the introduction of an initial limitation) and suppressed in counties with less affluent populations.

Tax and expenditure limitations are associated with substantial increase in the issuance of new debt. Per capita additions to this debt stock are greater for core counties and greatest for counties with less affluent populations.

The imposition of limitations appear to not have a benign effect on the structure of the local public sector. The effects demonstrated at times border on the dramatic, with potentially significant implications for the functioning of the level of government responsible for delivering our most basic public services. Effects such as these have the potential to significantly alter the relationship between local governments and local populations and significantly affect the capacity to provide for public needs and wants. Whether or not these effects are reshaping the local public sector in "important" ways is open for discussion, however, what is clear is that they are shaping the sector in unintended ways. These changes are the results of local adjustments to the imposition of poorly conceived, haphazard institutional and structural constraints. While the effects are often asymmetrical they, are not random. They produce both general and varied effects. Often these effects vary by type of government and thus service subgroups, and by the demographics of resident populations. These constraints are producing systematic effects which are reshaping the local public sector.

PANEL 1
TYPES AND CLASSIFICATION OF TAX AND EXPENDITURE LIMITATIONS

Overall Property Tax Rate Limitations: Limits on property tax rates are the most common form of TEL. If the limit is on overall property tax rates, a rate ceiling is set that cannot be exceeded without a vote of the electorate, and applies to the aggregate tax rate of all local government.

> **Non-binding:** easily circumvented through alterations in assessment practices.
> **Potentially Binding:** if coupled with a limit on assessment increases.

Specific Property Tax Rate Limit: Same as for overall property tax rate limits except it applies to specific types of local jurisdictions (for example, school districts or counties) or narrowly defined service areas.

> **Non-binding:** can be circumvented through alterations in assessment practices or, in the case of specific services, through inter-fund transfers (fungibility).
> **Potentially Binding:** if coupled with a limit on assessment increases.

Property Tax Levy Limit: This type of limitation constrains the total amount of revenue that can be raised from the property tax, independent of the property tax rate. It is often enacted as an allowable annual percentage increase in the levy.

> **Potentially Binding:** the fixed nature of the revenue ceiling makes this, ceteris paribus, a more formidable constraint, however, it can be limited through a diversification of revenue sources (which is its underlying intent).

General Revenue or General Expenditure Increases: In the case of revenue limits, these cap the amount of revenue that can be collected, while expenditure limits attempt to constrain spending during the fiscal year. These are often indexed to the rate of inflation.

> **Potentially Binding:** the fixed nature of the revenue or expenditure ceiling makes this, ceteris paribus, a more formidable constraint.

Limits on Assessment Increases: Since the property tax collected is a function of the assessed valuation of the property, and the tax rate, this type of limitation controls the ability of local governments to raise revenue by reassessment of property or through natural or administrative escalation of property values.

> **Non-binding:** the constraint is easily avoided through an increase in property tax rate
> **Potentially Binding:** if coupled with an overall or specific property tax rate limit.

Full Disclosure - Truth in Taxation: These types of limitations generally require some type of public discussion and specific legislative vote prior to the enactment of tax rate or levy increases.

> **Non-Binding:** requires only a formal vote (generally a simple majority) of the local legislative body to increase the tax rate or levy.

TABLE 1
SUMMARY OF STATE IMPOSED LIMITATIONS -- NUMBER OF STATES BY CHARACTERISTIC

Type of Limitation	Occurrence	Scope/Classification	Growth Provisions	Exclusions	Override Provisions
Overall Property Tax Rate Limits	Prior to 1978: 8 1978 or after: 4	Multiple Classifications: 11 Residential Only: 1	Nat applicable.	Debt Service: 9 Special/Excess Levies: 6 Home Rule: 2 Special Dst: 1	Referenda: Simple Majority: 5 Super Majority: 1 Legislative: 1 Temporary: 2
Specific Property Tax Rate Limits	Prior to 1978: 28 1978 or after: 4	Counties: 24 Municipalities: 28 School Dst: 24 All: 21	Not applicable.	Debt Service: 22 Special Levies: 19 Home Rule: 3	Referenda: Simple Majority: 18 Super Majority: 3 Legislative: 1

Property Tax Levy Limits	Prior to 1978: 11
	1978 or after: 17
			Fixed Percent: 15
			Base Growth: 3
			Inflation: 4
			Fixed $ Amount: 2
			Limited to Assessment
			    Rollback: 7
				Debt Service: 12
				Annex., Improvements,
				    Construction: 9
				Capital Improvements: 2
				Contracts: 2
				Emergencies: 2
				Mandates:1
				Home Rule:1
					Referenda:
					Simple Majority: 12
					Super Majority: 2
					State Board: 1
					Court Appeal: 1

General Revenue Limits	Prior to 1978: 1 1978 or after: 3	Counties: 3 Municipalities: 3 School Dst: 2 All: 1	Fixed Percent/$: 2 Base Growth: 1 Inflation/CPI: 2 No New Tax or Rate Increase: 1	Debt Service: 1 Special Assessments: 1 Court Judgments: 1	Referenda: Simple Majority: 2
General Expenditure Limits	Prior to 1978: 6 1978 or after: 8	Counties: 3 Municipalities: 4 School Dst: 8 All: 3	Fixed Percent: 3 Inflation/CPI: 3 Base Growth: 2 Income: 2 Pupils: 3	Debt Service: 2 Mandates: 2 Emergencies: 2 Special Dst.: 2 Special Education: 2 Contracts: 2	Referenda: Simple Majority: 6 Legislative: Simple Majority: 1 State Board: 1

Property Assessment Limits	Prior to 1978: 1
	1978 or after: 6
		Base: Individual Parcel: 4
		    Aggregate: 2
		Residential Only: 2
			Fixed Percent: 5
			    (Range: 2% - 10%)
			Fixed Percent or CPI: 1
				Reassessment on Sale: 2
				Improvements/New
				    Construction: 6
					Referenda:
					Simple Majority: 1

Full Disclosure Limits	Prior to 1978: 7 1978 or after: 15	Counties: 21 Municipalities: 19 School Dst: 14 All: 14 Limited to Reassessment: 2	Not applicable.	Debt Service: 2 New Construction/ Additions: 2 Annexation: 1 Within Specified Percent: 4	Not applicable.

TABLE 2

DISTRIBUTION OF GOVERNMENTAL UNITS
BY TYPE AND ACROSS YEARS
FOR 787 METROPOLITAN COUNTY AREAS

Type of Government	% of 1972 Total	% of 1977 Total	% of 1982 Total	% of 1987 Total	% of 1992 Total	% of 1997 Total
County	2.5	2.4	2.3	2.3	2.2	2.1
Municipality	24.2	24.0	23.4	23.4	23.0	22.1
Town	17.4	16.6	15.9	15.7	15.3	14.5
Special District	35.2	37.0	39.1	39.2	41.3	42.7
School District	20.7	20.0	19.2	19.4	18.2	18.6
Total Units	29440	30332	31653	32077	32805	34516

Note: Forty-two percent absolute increase in special districts between 1972 and 1997.

Source: U.S. Department of Commerce, *Census of Governments: State and Local Government Finances*, machine readable files for 1972, 1977, 1982, 1987, 1992 and 1997 (Washington D.C.: Department of Commerce, various years).

TABLE 3

DISTRIBUTION OF TOTAL GOVERNMENTAL REVENUE
BY TYPE AND ACROSS YEARS
FOR 787 METROPOLITAN COUNTY AREAS

Type of Government	% of 1972 Total Revenue	% of 1977 Total Revenue	% of 1982 Total Revenue	% of 1987 Total Revenue	% of 1992 Total Revenue	% of 1997 Total Revenue
General Purpose	62.3	63.8	61.8	61.9	61.9	61.1
Special Districts	6.0	7.3	10.2	10.9	10.3	10.8
School Districts	31.7	28.9	28.0	27.2	27.8	28.1
Total	100.0	100.0	100.0	100.0	100	100.0

Note: Eighty percent relative increase in special district total revenue between 1972 and 1997.
Source: U.S. Department of Commerce, *Census of Governments: State and Local Government Finances*, machine readable files for 1972, 1977, 1982, 1987, 1992 and 1997 (Washington D.C.: Department of Commerce, various years).

TABLE 4A
EFFECT OF TAX & EXPENDITURE LIMITATIONS
ON LOCAL FISCAL AND GOVERNANCE STRUCTURE
(Pooled Cross-Sectional Time Series Regression Results)

Dependent Variables / Independent Variable	Special Purpose Districts Per-Capita (log transformation)				Ratio of Special District To General Purpose Units (log transformation)			
	All	Interact	Primary Interact	Fringe	All	Interact	Primary Interact	Fringe
LIMITS	.037	.049	-.001	.071~	-.005	.019	-.029	.010
BOTH	.099~	.079	.150~	.070	.108~	.095	.138~	.084
LIMITSi		-.026				-.063		
BOTHi		.044				.033		
Adj R-sq/N	.69/ 4416	.69/ 4416	.70/ 1824	.72/ 2592	.65/ 4416	.65/ 4416	.70/ 1824	.61/ 2592
TYPE1	-.047	-.068	-.081	-.018	-.104^	-.100*	-.123~	-.089~
TYPE2	.128^	.126^	.162*.	.106*	.127^	.120*	.159^	.091
TYPE2_y	.004	.007*-	-.001	.009^	.005	.007*	-.002	.010^
TYPE1i		.051				-.008		
TYPE2i		.007				.005		
TYPE2_yi		-.007				-.007		
Adj R-sq/N	.69/ 4416	.69/ 4416	.70/ 1824	.71/ 2592	.65/ 4416	.66/ 4416	.70/ 1824	.61/ 2592
RATE_L	-.184~	-.193	-.189	-.140	-.089	-.154	-.037	-.051
ASMT_L	.044	.018	.001	.053	.197*	.158	.159	.233~
GP_LMT	.171^	.150^	.140~	.169^	.064	.077.	.050	.061
SC_LMT	-.156^	-.123*	.086	-.152*	-.094	-.083	-.088	-.088
RATE_Li		.007				.106		
ASMT_Li		.046				.069		
GP_LMTi		.061				-.050		
SC_LMTi		-.080				-.015		
Adj. R-sq/N	.69/ 4416	.69/ 4416	.70/ 1824	.70/ 2592	.65/ 4416	.65/ 4416	.70/ 1824	.61/ 2592

"~" = p-value of <= .10; "*" = p-value of < =.05; "^" = p-value <= .01.

Parameter estimates for 20 control variables and 54 state and year effects were included in the estimated models but omitted from the results presented in the table.

TABLE 4b
EFFECT OF TAX & EXPENDITURE LIMITATIONS
ON LOCAL FISCAL AND GOVERNANCE STRUCTURE
(Pooled Cross-Sectional Time Series Regression Results)

Dependent Variables / Independent Variable	Ratio of Special District Revenue to General Purpose Revenue (log transformation, density wt.)					Ratio of Special District Operating Expenditures to General Purpose Operating Expenditures (log transformation, density wt.)				
	All	Primary Interact	Primary	Fringe	Stress Interact	All	Primary Interact	Primary	Fringe	Stress Interact
LIMITS	.324^	.200*	.258^	.420^	.438^	.300^	.350^	.230*	.380^	.514^
BOTH	.110	.374^	.080	.131	-.278*	.176	.284^	.145	.144	-.132
LIMITSi		.204*			-.115		-.105			-.322^
BOTHi		-.453^			.692^		-.198			.530^
Adj R-sq/N	.47/ 4332	.47/ 4332	.56/ 1800	.50/ 2532	.47/ 4332	.45/ 4284	.45/ 4284	.47/ 1794	.51/ 2490	.45/ 4284
TYPE1	.230^	.119	.213*	.221~	.217*	.304^	.276^	.239*	.335^	.413^
TYPE2	.314^	.312^	.294^	.374^	.193~	.229^	.299^	.243*	.208~	.180~
TYPE2_y	-.007	.004	-.020^	.005	.001	-.001	.007	-.011	.008	.007
TYPE1i		.199*			.072		.033			-.219*
TYPE2i		.015			.241~		-.990			.116
TYPE2_yi		-.012			-.008		-.014			-.007
Adj R-sq/N	.47/ 4332	.47/ 4332	.56/ 1800	.50/ 2532	.47/ 4332	.45/ 4284	.45/ 4284	.47/ 1794	.51/ 2490	.44/ 4284
RATE_L	.004	.191	.132	-.205	.447~	.052	.477	.226	-.382	.417~
ASMT_L	.107	-.341	.091	.326	.186	.037	-.414	.105	.066	-.001
GP_LMT	.451^	.338^	.453^	.536^	.667^	.446^	.393^	.465^	.461^	.698^
SC_LMT	-.223*	-.158	-.335*	-.228	-.632^	-.244*	-.035	-.410^	-.084	-.490^
RATE_Li		-.347			-.164		-.640^			-.346
ASMT_Li		.690^			-.634*		.720^			-.172
GP_LMTi		.235*			-.432^		.124			-.491^
SC_LMTi		-.152			.751^		-.036^			.488^
Adj. R-sq/N	.47/ 4332	.47/ 4332	.56/ 1800	.50/ 2532	.47/ 4332	.45/ 4284	.45/ 4284	.47/ 1794	.51/ 2490	.45/ 4284

"~" = p-value of <= .10; "*" = p-value of < =.05; "^" = p-value <= .01.
Parameter estimates for 20 control variables and 54 state and year effects were included in the estimated models but omitted from the results presented in the table.

TABLE 4c
EFFECT OF TAX & EXPENDITURE LIMITATIONS
ON LOCAL FISCAL AND GOVERNANCE STRUCTURE
(Pooled Cross-Sectional Time Series Regression Results)

Dependent Variables / Independent Variable	Variation in Per Capita General Revenues Between General Purpose Units (log transformation, density wt.)					Variation in Per Capita Expenditures Between General Purpose Units (log transformation, density wt.)				
	All	Primary Interact	Primary	Fringe	Stress Interact	All	Primary Interact	Primary	Fringe	Stress Interact
LIMITS	.032	-.010	.076*	-.005	.000	.040~	.021	.061	.030	.052~
BOTH	.019	.118^	.015	.033	.014	.007	.072	.009	.016	.003
LIMITSi		.075*			.067*		.042			-.023
BOTHi		-.18^			.010		-.120*			.015
Adj R-sq/N	.56/ 4380	.56/ 4380	.59/ 1788	.57/ 2592	.56/ 4380	.54/ 4380	.54/ 4380	.56/ 1788	.57/ 2592	.54/ 4380
TYPE1	.035	.064*	.061	.020	.004	.013	.025	.051	-20.000	-.003
TYPE2	-.042	-.043	-.015	-.057	-.078*	.021	.056	.009	.056	.012
TYPE2_y	.011^	.008^	.015^	.007^	.013^	.004*	.001	.007*	.002	.007^
TYPE1i		-.053~			.071*		-.019			.031
TYPE2i		.000			.070c		-.029			.013
TYPE2_yi		.005~			-.004		.006*			-.006
Adj R-sq/N	.56/ 4380	.57/ 4380	.59/ 1788	.58/ 2592	.57/ 4380	.54/ 4380	.54/ 4380	.56/ 1788	.57/ 2592	.54/ 4380
RATE_L	.003	-.026	.006	-.115	.002	.065	.034	.017	.095	.056
ASMT_L	-.095	.028	-.027	-.133	-.086	-.022	.116	.038	-.030	.082
GP_LMT	.025	.009	.019	.035	.005	.043	.013	.038	.052	.039
SC_LMT	.053	.030	.118*	-.040	.033	.010	.036	.039	-.037	.014
RATE_Li		.051			.093		.065			.029
ASMT_Li		-.190*			-.031		-.216*			-.377^
GP_LMTi		.033			.040		.067			.000
SC_LMTi		.032			.031		-.055			-.007
Adj. R-sq/N	.56/ 4380	.56/ 4380	.59/ 1788	.57/ 2592	.56/ 4380	.54/ 4380	.54/ 4380	.56/ 1788	.57/ 2592	.55/ 4380

"~" = p-value of <= .10; "*" = p-value of < =.05; "^" = p-value <= .01.
Parameter estimates for 20 control variables and 54 state and year effects were included in the estimated models but omitted from the results presented in the table.

TABLE 4d
EFFECT OF TAX & EXPENDITURE LIMITATIONS
ON LOCAL FISCAL AND GOVERNANCE STRUCTURE
(Pooled Cross-Sectional Time Series Regression Results)

Dependent Variables / Independent Variable	Variation in Per Student General Revenues Between School Districts (log transformation, density wt.)					Variation in Per Student Expenditures Between School Districts (log transformation, density wt.)				
	All	Primary Interact	Primary	Fringe	Stress Interact	All	Primary Interact	Primary	Fringe	Stress Interact
LIMITS	.297^	.240^	.400^	.156^	.263^	.206^	.178^	.184^	.232^	.223^
BOTH	-.020	-.178^	.013	-.089	-.029	.079	-.001	.090	.018	.072
LIMITSi		.105*			.070		.052			-.038
BOTHi		.294^			.017		.149*			.015
Adj R-sq/N	.42/ 3192	.43/ 3192	.42/ 1500	.50/ 1692	.42/ 3192	.40/ 3192	.40/ 3192	.44/ 1500	.47/ 1692	.40/ 3192
TYPE1	.376^	.237^	.590^	.162^	.360^	.420^	.379^	.346^	.483^	.449^
TYPE2	.032	-.040	.090	-.067	-.022	-.057	-.207^	.047	-.251^	-.033
TYPE2_y	.002	.003	.000	.004	.003	.008^	.015^	.002	.015^	.004
TYPE1i		.296^			.025		.089			-.064
TYPE2i		.119			.109		.239^			-.041
TYPE2_yi		-.001			-.001		-.010*			.009~
Adj R-sq/N	.42/ 3192	.43/ 3192	.42/ 1500	.50/ 1692	.42/ 3192	.41/ 3192	.41/ 3192	.47/ 1500	.49/ 1692	.41/ 3192
RATE_L	1.16^	.895^	1.19^	1.10^	1.24^	.753^	.782^	.460^	1.36^	.831^
ASMT_L	-.917^	-.802^	-.926^	-.862^	-1.04^	-.831^	-1.22^	-.037*	-1.74^	-.994^
GP_LMT	.185^	.207^	.252^	.112~	.109~	.161^	.245^	.102	.232^	.178^
SC_LMT	.008	-.100	-.001	-.042	.048	.004	-.118~	-.009	-.010	.021
RATE_Li		.359			-.387^		-.099			-.429^
ASMT_Li		-.179			.546^		.573^			.636^
GP_LMTi		-.058			.178^		-.184^			-.016
SC_LMTi		.188^			-.097		.230^			-.034
Adj. R-sq/N	.44/ 3192	.44/ 3192	.43/ 1500	.51/ 1692	.44/ 3192	.41/ 3192	.41/ 3192	.44/ 1500	.50/ 1692	.41/ 3192

"~" = p-value of <= .10; "*" = p-value of < =.05; "^" = p-value <= .01.
Parameter estimates for 20 control variables and 54 state and year effects were included in the estimated models but omitted from the results presented in the table.

TABLE 4e
EFFECT OF TAX & EXPENDITURE LIMITATIONS
ON LOCAL FISCAL AND GOVERNANCE STRUCTURE
(Pooled Cross-Sectional Time Series Regression Results)

Dependent Variables / Independent Variable	Per Capita Total Long-Term Debt Outstanding -- All Units of Local Government (log transformation, density wt.)					Per Capita Non-Guaranteed Long-Term Debt Outstanding -- All Units of Local Government (log transformation, density wt.)				
	All	Primary Interact	Primary	Fringe	Stress Interact	All	Primary Interact	Primary	Fringe	Stress Interact
LIMITS	-.141^	-.158^	-.123^	-.164^	-.110^	-.081~	-.029	-.090	-.041	.049
BOTH	.029	.034	.161^	-.106~	-.198	-.079	-.113	.101	-.300^	-.413^
LIMITSi		.028			-.061~*		-.087~			-.268^
BOTHi		-.007			.457^		.054			.672^
Adj R-sq/N	.42/ 4650	.42/ 4650	.48/ 1854	.44/ 2796	.42/ 4650	.40/ 4500	.40/ 4500	.50/ 1848	.32/ 2652	.41/ 4500
TYPE1	-.004	-.084*	.095*	-.097*	-.041	.116^	.045	.228^	.000	.091
TYPE2	-.112^	-.068	-.085*	-.153^	-.134^	-.148^	-.079	-.135*	-.150~	-.156*
TYPE2_y	-.004*	-.004	-.004	-.004	-.006*	-.010^	-.007	-.008*	-.011*	-.007
TYPE1i		.150^			.101^		.125*			.067
TYPE2i		-.066			.036		-.102			.009
TYPE2_yi		-.001			.003		-.006			-.006
Adj R-sq/N	.42/ 4650	.42/ 4650	.48/ 1854	.44/ 2796	.42/ 4650	.41/ 4500	.41/ 4500	.50/ 1848	.36/ 2652	.41/ 4500
RATE_L	.254^	.095	.381^	.027	.293^	.655^	.544^	.827^	.415	.644^
ASMT_L	.203^	.136	.231^	.181	.139~	.337^	.261	.424*	.230	.290*
GP_LMT	-.119^	-.159^	-.052	-.169^	-.119^	-.015	-.018	.060	-.060	.044
SC_LMT	-.118^	-.049	-.212^	-.045	-.133^	-.314^	-.208^	-.455	-.154	-.295^
RATE_Li		.207*			-.154		.155			-.097
ASMT_Li		.101			.250*		.121			.162
GP_LMTi		.088~			.010		.014			-.121
SC_LMTi		-.130^			.024		-.172*			-.007
Adj. R-sq/N	.42/ 4650	.42/ 4650	.50/ 1854	.44/ 2796	.42/ 4650	.41/ 4500	.41/ 4500	.52/ 1848	.36/ 2652	.41/ 4500

"~" = p-value of <= .10; "*" = p-value of < =.05; "^" = p-value <= .01.
Parameter estimates for 20 control variables and 54 state and year effects were included in the estimated models but omitted from the results presented in the table.

TABLE 4f
EFFECT OF TAX & EXPENDITURE LIMITATIONS
ON LOCAL FISCAL AND GOVERNANCE STRUCTURE
(Pooled Cross-Sectional Time Series Regression Results)

Dependent Variables \ Independent Variable	Ratio of Total Non-Guaranteed Long-Term Debt to Total Long-Term Debt Outstanding (density wt.)				
	All	Primary Interact	Primary	Fringe	Stress Interact
LIMITS	.039^	.051^	.031*^	.041^	.067^
BOTH	-.057^	-.078^	-.039*	-.081^	-.109^
LIMITSi		-.020~			-.060^
BOTHi		.037~			.105^
Adj R-sq/N	.50/ 4500	.50/ 4500	.60/ 1848	.46/ 2652	.50/ 4500
TYPE1	.019	.007	.046^	-.005	.017
TYPE2	-.001	.022	-.021	.021	.003
TYPE2_y	.000	-.001	.001	-.002~	.001
TYPE1i		.021~			.004
TYPE2i		-.036~*			-.008
TYPE2_yi		.001			-.002
Adj R-sq/N	.50/ 4500	.50/ 4500	.60/ 1848	.45/ 2652	.50/ 4500
RATE_L	.168^	.169^	.187^	.162^	.147^
ASMT_L	.099^	.113^	.086^	.113^	.114^
GP_LMT	.037^	.038^	.046^	.032~	.048^
SC_LMT	-.052^	-.037*	-.075^	-.043*	-.041^
RATE_Li		.005			.055^
ASMT_Li		-.020			-.064
GP_LMTi		.000			-.025
SC_LMTi		-.024			-.015
Adj. R-sq/N	.51/ 4500	.51/ 4500	.61/ 1848	.46/ 2652	.51/ 4500

"~" = p-value of <= .10; "*" = p-value of < =.05; "^" = p-value <= .01.
Parameter estimates for 20 control variables and 54 state and year effects were included in the estimated models but omitted from the results presented in the table.

TABLE 4g
EFFECT OF TAX & EXPENDITURE LIMITATIONS
ON LOCAL FISCAL AND GOVERNANCE STRUCTURE
(Pooled Cross-Sectional Time Series Regression Results)

Dependent Variables / Independent Variable	Total Per Capita New Debt Issued During Year -- All Units (log transformation, density wt.)					Total Per Capita New Debt Issued During Year -- Only Issuing Units (log transformation, density wt.)				
	All	Primary Interact	Primary	Fringe	Stress Interact	All	Primary Interact	Primary	Fringe	Stress Interact
LIMITS	-.138	-.093	-.255^	-.051	.033	-.019	-.083	-.082	-.037	-.090
BOTH	.280*	.391*	.369*	.358~	.058	.300^	.383^	.365^	.207	.108
LIMITSi		-.080			-.209*		.103			.130~
BOTHi		-.198			.451^		-.140			.385^
Adj R-sq/N	.32/ 4662	.33/ 4662	.32/ 1860	.33/ 2802	.32/ 4662	.26/ 4230	.26/ 4230	.31/ 1812	.27/ 2418	.26/ 4230
TYPE1	.008	.036	-.044	.154	.069	.087	.007	.091	.076	.002
TYPE2	-.014	.088	-.100	.015	.123	.002	.096	-.027	-.051	.073
TYPE2_y	.001	.000	.006	.001	-.014	.012^	.008	.013*	.009	-.004
TYPE1i		-.063			-.112		.153~			.228^
TYPE2i		-.161			-.257~		-.148			-.153
TYPE2_yi		.000			.027^		.008			.030^
Adj R-sq/N	.31/ 4662	.32/ 4662	.31/ 1860	.34/ 2802	.32/ 4662	.26/ 4230	.26/ 4230	.31/ 1812	.27/ 2418	.26/ 4230
RATE_L	.413	.410	.450	.963~	.424	.389~	.172	.415	.329	.465*
ASMT_L	.219	.005	-.011	.364	.126	.235	.213	.149	.449	.234
GP_LMT	-.286^	-.196	-.427^	-.138	-.154	-.196*	-.180~	-.239*	-.149~	-.252^
SC_LMT	.203~	.232	.199	.153	.116	.251^	.223*	.167	.241	.153
RATE_Li		-.014			-.008		.284			.014
ASMT_Li		.344			.268		.027			.010
GP_LMTi		-.186			-.287*		-.037			.104
SC_LMTi		-.008			.207		.052			.145
Adj. R-sq/N	.32/ 4662	.32/ 4662	.31/ 1860	.34/ 2802	.32/ 4662	.26/ 4230	.26/ 4230	.31/ 1812	.27/ 2418	.26/ 4230

"~" = p-value of <= .10; "*" = p-value of < =.05; "^" = p-value <= .01.
Parameter estimates for 20 control variables and 54 state and year effects were included in the estimated models but omitted from the results presented in the table.